C. A. Celikel5, D. G. Duman5

and to get idea for the regenerative capacity in the injured liver. Splenocytes were
of the rats. MSCs were labeled with GFP to check the localization of stem cells
and given MSCs (Healthy
buffered saline (PBS) (CBDL

MESENCHYMAL CELL TRANSPLANTATION

P0002 NATURAL KILLER CELLS MAY BE THE KEY FACTOR FOR THE AMELIORATION OF THE LIVER FIBROSIS AFTER MESENCHYMAL CELL TRANSPLANTATION

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Introduction: Liver cirrhosis is associated with an imbalance between vasodilation and vasocostriction in the sinusoids. Therefore the investigation of the nitric oxide - cyclic guanosine monophosphate (NO-cGMP) pathway, a key regulator of vascular smooth muscle tone, is essential.

Aims & Methods: The rat model of thioacetamide (TAA) was used to induce liver fibrosis/cirrhosis and alterations of the NO-cGMP pathway and subsequent liver damage were assessed. 25 male Wistar rats were studied (11 untreated controls and 14 TAA treated animals [0.03 g TAA/100 ml drinking water for 16 weeks]). TAA dosage was adjusted weekly based on body weight changes. Hepatic gene expression of endothelial and inductive NO synthase (eNOS and iNOS), phosphodiesterase 5 (PDE5), soluble guanylate cyclase subunit a1 and b1 (sGCa1 and sGcb1) was determined by qRT-PCR. Serum cGMP concentrations were measured by ELISA using blood samples taken from the carotid artery. Likewise liver damage was assessed by liver chemistry (i.e. alanine- and aspartate-aminotransferase (ALT and ASAT), alkaline phosphatase (AP), albumin and bilirubin). The degree of fibrosis was estimated by histological criteria (i.e. Desmet scores). PDE5-expression was determined by immunohistochemistry. Kruksal-Wallis test was used for statistical analysis of group differences.

Results: 43% (6/14) of TAA-treated rats developed liver fibrosis (Desmet score of 1–3) while 57% (8/14) developed liver cirrhosis (Desmet score of 4). No major differences in ALT, ASAT, and AP serum concentrations were observed in either group. However, bilirubin was significantly elevated in TAA-treated rats, while albumin concentrations were significantly reduced. Gene expression analysis revealed significantly increased expression of eNOS (1.5fold), PDE5 (7.7fold) and sGcb1 (2.1fold) in fibrotic livers compared to controls. cGMP concentrations in fibrotic animals were slightly decreased (34%). Significantly increased expression of eNOS (2.26fold), PDE5 (11fold), sGCa1 (1.70fold) and sGcb1 (3fold) was observed in cirrhotic livers compared to controls, while cGMP concentrations were significantly decreased (40%). iNOS expression was only detected in fibrotic and cirrhotic livers, but absent in controls. Immunohistochemistry revealed markedly increased PDE5-expression in cirrotic livers, which was predominantly localized in hepatic stellate cells.

Conclusion: The analysis of the animal model of TAA-induced liver fibrosis/cirrhosis revealed alterations of the NO-cGMP pathway, characterized by increased PDE5-expression. These changes reinforce the hypothesis that sinusoids remain in a contractile state in cirrhotic livers, thereby contributing to increased PDE5-expression. The role of NO-cGMP pathway and subsequent liver damage was assessed. While, the role of NO-cGMP pathway in liver damage was assessed.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Conclusion: In chronic hepatitis C SerpinB3 is involved in monocyte activation, leading to the release of CD163. These results support the correlation of these two molecules in serum of patients with more severe liver fibrosis and metabolic alterations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0004 THE PROTECTIVE EFFECTS OF GROUP 3 INNATE LYMPHOCYTE CELLS ON HEPATITIS B VIRUS RELATED LIVER FIBROSIS COULD BE IMPAIRED BY TH17 CELLS

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Introduction: Th17 cells have been proved to contribute to hepatitis B virus (HBV) related liver fibrosis. Group 3 innate lymphocyte cells (ILC3s), which have similar profiles of transcription factor and cytokines to that of Th17 cells, were also suggested to be involved in the progression of liver fibrosis.

Aims & Methods: The study was designed to explore the functions of ILC3s and the relationships between ILC3s and Th17 cells in liver fibrosis. Peripheral blood samples were collected from 60 patients with chronic hepatitis B (CHB), and 50 patients with HBV related liver cirrhosis (LC) as well as 30 healthy controls (HC). The percentages and cytokines secretion of ILC3s (Lin-CD127+CD117+CD274) and Th17 cells (CD4+IL-17+) were detected by flow cytometry. Peripheral blood mononuclear cells (PBMCs) and PBMCs without ILC3s cc-cultured with hepatic stellate cells (HSCs)-LX2 in contact and non-contact manners. Then Th17 cells, which were induced from naive CD4+ T cells in vitro, were transferred into Rag1-/- mice with carbon tetrachloride (CCL4) related liver fibrosis. In addition, ILC3s in Rag1-/- mice were depleted by injecting with anti-CD90.2 antibody.

Results: Compared with HC, the percentage of ILC3s increased in CHB group. The anti-inflammation cytokines secreted by ILC3s such as IL-22 increased, whereas pro-inflammation cytokines of ILC3s such as IL-17A, TNF-α, IFN-γ decreased in CHB patients. However, ILC3s decreased in LC patients with reduced cytokines secretion. Th17 cells frequencies significantly increased both in CHB and LC groups compared with HC. PBMCs without ILC3s, which were collected from CHB and LC patients, promoted the proliferation and activation of HSCs because of less IL-22 secretion. Similarly, compared with wild type mice, ILC3s in spleens and livers of C57BL/6 mice with liver fibrosis increased sequentially at time point of week 2 and week 4 following drug injection. Intriguingly, at week 6, ILC3s decreased compared with previous. However, Th17 cells increased gradually with CCL4 administration, even at week 6. Transferring Th17 cells into Rag1-/- mice with CCL4 related liver fibrosis made the ILC3s in spleens and livers decrease significantly, and the degree of mice liver fibrosis become more severe than control. Furthermore, ILC3s depletion correlated with reduced expression of IL-22 and more severe liver fibrosis. Transferring purified liver ILC3s into recipient mice resulted in liver inflammation and reverse liver fibrosis.

Conclusion: Our study has uncovered the protective role of ILC3s in liver fibrosis, which is through secretes IL-22 to reduce proliferation and activation of HSCs. However, the protective functions of ILC3s could be impaired by Th17 cells.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0005 EFFECTS OF INTERNAL AND EXTERNAL BILIARY DRAINAGE ON THE EXPRESSION OF INTESTINAL BILE ACID RECEPTOR AND TLR4/NO2 IN MICE WITH OBSTRUCTIVE JAUNDICE

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Introduction: Internal biliary drainage has been suggested better than external biliary drainage in alleviating the damage of intestinal mucosa barrier caused by obstructive jaundice; however, the relevant mechanism is not well understood.

Aims & Methods: We aimed to investigate the potential relationship between the expressions of bile acid receptor and TLR4/NO2 in intestinal mucosa and its influence on the intestinal mucosal barrier with obstructive jaundice. In this study, we mainly study the expression between FXR and TLR4, TGR5 and NO2. Sixty male adult Kunming mice were randomly assigned to four groups: SH (sham operation), OJ (obstructive jaundice), ID (internal drainage), ED (external drainage) (n = 15 in each group). On the 7th day from the first operation, the OJ and SH mice were executed and specimens of blood and ileal tissue of groups were collected. ED and ID were operated on day 8 for biliary drainage procedure. Blood was drawn from heart for liver function test. The terminal ileum specimen was collected for test of histology by haematoxylin-eosin staining. Western blot (WB) and real-time polymerase chain reaction (RT-PCR) were used to detect the expression of protein and mRNA of FXR, TGR5, TLR4 and NO2 in intestinal mucosa.

Results: We have successfully established the animal models. The histopathological examination revealed notable inflammatory infiltration and hyperplasia disruption at terminal ileum in OJ mice; significant alleviation of above injuries by ID while little improvement by ED. FXR-TLR4: After biliary obstruction, the expression of protein and mRNA of FXR were significantly increased, while the expression of protein and mRNA of TLR4 were significantly decreased compared with SH group’s (P < 0.001); after ED, compared with OJ group’s expression of protein of FXR was decreased while TLR4 were increased. The mRNA of both FXR and TLR4 were increased. After ID, the expression of protein and mRNA of FXR were significantly decreased compared with OJ group’s but were still higher than that in SH group and were significantly higher than ED group’s. And the expression of protein and mRNA of TLR4 were significantly increased compared with OJ group’s (P < 0.001), but were still lower than that in SH group and were still more than ED group’s. The trend of TLR4 expression was almost the same between vehicle group and no gavage group. After gavage with FXR agonist, the differences of TLR4 expression of four groups disappeared (P > 0.05). TGR5-NOD2: IHC and WB suggested that after OJ surgery, the protein expression of both TGR5 and NOD2 increased obviously compared to that of SH mice; then the level of TGR5 and NOD2 protein fell remarkably after ID surgery close to SH level while in ED group there was only a slightly reduction form OJ level and still with a high expression of TGR5 and NOD2 protein. Detection of RT-PCR found that TGR5 mRNA and NOD2 mRNA level in OJ group increased several times as that of the SH group; after ID surgery, the expression of TGR5 mRNA significantly reduced, NOD2 mRNA level also fell down significantly, but the effect was not observed in ED mice.

Conclusion: The expression of intestinal FXR and TLR4, TGR5 and NO2 could be one of the critical mechanism why internal drainage is better than external drainage in restore intestinal barrier function of obstructive jaundice mice.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0006 ALTERED SMALL INTESTINAL MICROBIOTA TOWARD FAMILY LACTOBACILLACEAE IN MIR-21 KNOCKOUT MICE

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Introduction: Alterations in the gut microbiota have been correlated to a wide variety of diseases, including liver diseases. Used as probiotics, several strains of Lactobacillus have been associated not only to modulation of intestinal tight junctions but also to amelioration of liver fibrosis. Common bile duct ligation (BDL) results in acute cholestatic injury and secondary biliary fibrosis, associated with early increased intestinal permeability and disturbed bile acid homeostasis. We have demonstrated that the oncocgenic microRNA-21 (miR-21) is upregulated in BDL mouse liver, mediating liver fibrosis. We aimed to investigate the role of miR-21 in the response of the small intestinal microbiota to BDL that may explain miR-21 effects in acute liver injury and fibrosis.

Aims & Methods: Three-month-old C57BL/6 wildtype (WT) and miR-21 whole body knockout (KO) mice were submitted to sham or BDL surgeries. After three days, the mice were sacrificed and small intestines in the littermate group were carefully removed and preserved. mRNA expression was analysed by qRT-PCR. Bacterial DNA was purified from the small intestinal lumen samples and analysed by next generation sequencing – metagenome analysis. Liver tissue and serum were also collected for biochemical analysis of hepatic damage and fibrosis.

Results: TNF-α and IL-1β mRNA levels increased in the small intestine of BDL mice compared with WT. TLR-4 and TGF-β expression was increased in both sham- and BDL-miR-21 KO mice which is in accordance with the higher LPS in blood plasma observed. Zona occludens (ZO-1) and occludin mRNA levels were decreased in WT mice after BDL. Strikingly, miR-21 KO reverted mRNA of tight junction proteins to control levels. BDL miR-21 KO mice showed decreased circulating levels of hepatic enzymes, concomitant with decreased fibrogenic gene expression in the liver, in comparison with WT mice, suggesting that miR-21 contributes to BDL-induced liver injury and fibrosis. Further, miR-21 KO not only show a decreased small intestine permeability through a ZO-1 and occludin pathway, as it is associated with development of beneficial strains of Lactobacillaceae that may also contribute to liver protection.

Conclusion: These data suggest that miR-21 depletion is associated with increased liver injury and fibrosis markers in the small intestine and better immune response to bacterial dysbiosis provoked by the BDL surgery, thus halting liver injury and promoting gut microbiota homeostasis. (Supported by PTPC/BIM-MEC/089572014, FCT)

Disclosure of Interest: All authors have declared no conflicts of interest.
Akkermansia muciniphila is associated with different microbial communities. Akkermansia muciniphila can regulate immunologic and metabolic functions.

However, little is known about its effects on gut microbiota structure and function.

Aims & Methods: This study investigated the effect of A. muciniphila on immune-mediated hepatitis and potential underlying mechanisms. Twenty-two C57BL/6 mice were assigned to three groups (N = 7–8 per group) and continuously administered A. muciniphila Mox (ATTC BAA-835) for 14 days. Mouse feces were collected for gut microbiota analysis on the eleventh day, and acute hepatitis was induced by Concanavalin A (Con A, 15 mg/kg) injection through the tail vein. Samples (blood, liver, ileum, colon) were assayed for liver inflammation, systemic inflammation, and intestinal barrier function.

Results: We found that oral administration of A. muciniphila (Akk) decreased serum ALT and AST and alleviated liver histopathological damage induced by Con A. Serum levels of pro-inflammatory cytokines (IL-2, IFN-γ) were decreased, and serum levels of regulatory cytokines (IL-12p40, IFN-γ, IL-12p70, IL-10) were increased. Akk significantly decreased hepatic cell apoptosis; Bcl-2 expression increased, but Bax and DR5 decreased. Further investigation showed that Akk enhanced Ocludin and Tjp-1, two proteins related to strengthened intestinal barriers. Feecal 16s rRNA sequence analysis indicated that Akk increased microbial diversity and richness. The community structure of the Akk group clustered distinctly from that of the Control and Normal groups. Relative abundance of Firmicutes increased, and Bacteroidetes abundance decreased. Correlation analysis showed that injury-related factors (IL-12p40, IFN-γ, DR5) were negatively associated with specific genera (Ruminococcaceae_UCG-009, Lachnospiraceae_UCG-011, Akkermansia), which were enriched in mice pretreated with Akk.

Conclusion: Our results suggested that A. muciniphila Mox (ATTC BAA-835) had beneficial effects on immune-mediated liver injury by alleviating inflammation and hepatocellular death. These effects may be driven by the protective profile of the intestinal community induced by the bacteria. The results provide new perspectives on the immune function of gut microbiota in host diseases.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: In this study, we investigated the mechanism of Sorafenib resistance in HCC cancer stem cells, and how ZBP-89 reduced drug resistance. The sensitivity of Huh7 and Hep3B parental and sphere-forming cells to Sorafenib was measured by MTT assay. We then examined the expression pattern of Notch1 and related factors (IL-12p40, IFN-γ) in human HCC tissue samples. The regulatory effects of ZBP-89 on CSC were evaluated using methods including colony formation, sphere formation, soft agar formation, and colony formation assay. Gene expression and protein interaction in stemness signaling pathways were analyzed.

Results: We found that sphere-forming HCC cells had significant higher resistance to Sorafenib, compared with their parental cells. The expression of Notch1 and EpCAM was increased along with the treatment of low dose of Sorafenib, suggesting that the activation of Notch1 pathway was associated with the drug resistance in liver CSC. Studies further indicated that ZBP-89 overexpression was able to improve the sensitivity of Sorafenib on sphere-forming HCC cells. Furthermore, we found that ZBP-89 expression was negatively correlated with CSC marker CD44 in human HCC tissues. In vitro study indicated that tumor sphere size was impaired upon transfection of ZBP-89, suggesting that ZBP-89 was involved in suppression of CSC phenotype. Detailed investigation against control cells showed that overexpression of ZBP-89 resulted in reduced expression of CSC markers EpCAM, CD133, Sox2 and c-myc at both mRNA and protein levels. In addition, the overexpression of ZBP-89 or silencing of Notch1 reduced the number of colonies formed by sphere-forming HCC cells, demonstrating opposite effects of these two proteins. Mechanistic studies revealed that ZBP-89 was able to repress the expression of Notch1 and reported that ZBP-89 overexpression was able to improve the sensitivity of Sorafenib on sphere-forming HCC cells. Furthermore, we found that ZBP-89 expression was negatively correlated with CSC marker CD44 in human HCC tissues. In vitro study indicated that tumor sphere size was impaired upon transfection of ZBP-89, suggesting that ZBP-89 was involved in suppression of CSC phenotype.

Conclusion: Sphere-forming HCC cells, which contained high levels of Notch1 and EpCAM, were resistant to Sorafenib. The overexpression of ZBP-89 was found to result in the loss of CSC phenotype and improve the sensitivity to Sorafenib in CSC through its interaction with activated Notch1. In conclusion, we believe that targeting ZBP-89 is likely to be a new therapeutic strategy to overcome Sorafenib resistance in HCC.
MOUSE MODELS OF NON-ALCOHOLIC FATTY LIVER DISEASE

Introduction: Non-alcoholic fatty liver disease (NAFLD) has become the most common liver disease worldwide, and is thought to be strongly associated with obesity, insulin resistance, obesity, and gut-driven endotoxin. Aims & Methods: This study was performed: 196 no steatosis; 90 liver steatosis. 251 patients with MS criteria and women (55.6%) presented MS: 135 patients with MS (49%); 141 without MS (51%). In 286 patients a MR study for the presence of liver steatosis was performed: 196 no steatosis; 90 liver steatosis. 251 patients with MS criteria and MR for steatosis: NMS group (128): no steatosis 103; steatosis 25; MS group (123): no steatosis 72, steatosis 51 (total: no steatosis 175, steatosis 76). When we study the presence of liver steatosis was more frequent in the MS group, the results obtained were statistically significant, p = 0.000. Conclusion: Nearly 50% of the patients referred for hyperferritinemia to the hospitals of our city had MS; the patients with MS had more frequently liver steatosis than the patients without MS. Disclosure of Interest: All authors have declared no conflicts of interest.

References
patients with HFE mutations and (transferrin saturation index (TSI) values
alone. But we did not have C282Y/C282Y patients in the series.

Aims & Methods: To study the relevance of HFE mutations and TSI in determining LIC for HF patients attending the outpatient clinic at 6 hospitals in the Basque country. Prospective study of 312 consecutive patients with HF. Group A: C282Y/C282Y, Group B: C282Y/H63D, Group C: H63D/H63D, and Group D: no predisposing mutations according to HFE mutations and TSI (Group A: no predisposing mutations (PM) for HH and TSI > 55 %; Group B: PM for HH: C282Y/C282Y; C282Y/H63D, H63D/H63D, and TSI > 45 %; Group C: no PM for HH and normal TSI;Group D: PM and normal TSI. In the Basque country, hereditary hemochromatosis (HH) predisposing mutations differ, with relevance of the H63D/H63D mutation. The LIC was measured by MRI.

Results: In all the patients LIC was measured; C282Y/C282Y 14 (4.49%); C282Y/H63D 10 (3.17%); wt/wt 98 (31.41%); C282Y/S65C 3 (1.02%); H63D/S65C 2 (0.64%); C282Y/wt 16 (5.13%); S65C/wt 10 (3.21%). LIC was obtained from all the patients by MR. Mean age: 53 ± 13.3, 272 men and 40 women. Group A: 35, Group B: 32 Group C: 160, Group D: 161. The mean LIC: group A: 72.71 ± 27.89, group B: 70.53 ± 56.87, group C: 35.23 ± 22.62, Group D: 42.67 ± 22.98. We compared the LIC mean values of the 4 groups (Bonferroni) with significant differences (p < 0.0001).

Conclusion: The LIC in different groups of patients referred for HF are significantly different with different predisposition to HH.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0014 LIVER IRON CONCENTRATION IN THE METABOLIC SYNDROME WITH HYPERFERRITINEMIA (DYSMETABOLIC HYPERFERITINEMIA), RESULTS FROM A PROSPECTIVE COHORT OF 312 PATIENTS


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Introduction: Approximately 25% of adult population in western countries have metabolic syndrome (MS). Hyperferritinemia (HF) is frequently present in patients with MS (dysmetabolic hyperferritinemia). There are some publications that suggest that HF is associated with a raised liver iron concentration (LIC) in these patients, but the doubts persist about this subject.

Aims & Methods: To study the LIC in patients referred for hyperferritinemia to six different hospitals in the Basque Country (multicenter study), Spain, and determine if there are differences between patients with or without metabolic syndrome. A prospective study of 312 consecutive patients with HF (> 200 µg/L men, > 300 µg/L women) was conducted from December 2010 to April 2013. The metabolic syndrome was defined by the presence of three of the following factors: waist circumference > 94 cm men, > 80 cm women; Triglycerides > 150 mg/dL or treatment for this dislipidemia; glucose 100 mg/dL or treatment for this dislipidemia; blood pressure > 130 mmHg/85 mmHg or treatment for arterial hypertension. LIC was measured by MRI.

Results: In 276 of 312 patients we have all the data to determine the MS presence: 115/240 men (48%) and 20/36 women (55.6%), 135 patients, presented in MS. In all 276 patients MRI for LIC determination (mean ± SD) was performed. (We have LIC data from (µmol/g) from the 276 patients.) The mean LIC was 30.83 ± 19.38 (women) and 38.84 ± 25.50 (men), with 37.66 ± 24.79 (CI 95%) 33, 44 to 41, 88 for all the MS group. In 141 patients MS was not diagnosed (NMS): 125/240 were men (52%), and 16/36 women (44.4%). The mean LIC was 34.88 ± 16.18 in women, and 44.48 ± 38.16 in men, with 43.39 ± 36.84(95%) 37, 32 to 49, 46 for all the NMS group. We compare the mean values of LIC from both groups (MS vs NMS) by Pearson’s Chi square test and Fisher’s exact test: no significant differences were seen (p = 0.12).

Conclusion: Patients with HF and MS (dysmetabolic hyperferritinemia) present a mean LIC near normal values and their values do not differ from those of patients with HF and without MS.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0016 LONG-TERM BENEFIT OF STATINS USED FOR TREATMENT OF NON-ALCOHOLIC STEATOHEPATITIS (NASH)

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Introduction: NASH is considered an important risk factor for liver fibrosis. Although literature data indicates that statins may be beneficial when given for NASH treatment, recent reports are controversial 1.

Aims & Methods: To evaluate if statins independently influence the evolution of fibrosis accompanying NASH using the scales of FibroMax. 120 patients with NASH and metabolic syndrome were followed-up for a period of 3 years. We excluded patients taking a series of drugs, with genetic metabolic disorders or impaired intestinal absorption (celiac disease) or alkoholics. Steatosis, fibrosis...
and NASH were quantified by using the FibroMax scales at baseline and after three years of treatment. Patients were randomized into two groups: the active group of 60 patients receiving low-dose hydrophilic statin (rosuvastatin 5 mg/day) and the witness group of 60 patients, matched by age, gender and sex, receiving placebo.

Results: 97% of subjects fulfilled the follow-up period. The FibroMax staging at baseline showed the following results in the active group: S1–29%, S2–41% and S3–30%; F1–50%, F2–30%, F3–13% and F4–7% of patients, respectively N1–31% and N2–69%. The staging according to FibroTest, SteatoTest and NashTest was similar in placebo group. After 2 years of low-dose hydrophilic statin, the mean ALT level from active group decreased from 72.22 IU/L to 32.80 IU/L, p < 0.05 (ss); in the witness group no significant ALT decrease was noticed (69.34 IU/L to 58.17 IU/L, p > 0.5). The FibroMax showed an increase in patients in active treatment, while in the witness group, there was no such increase in active group, compared with the witness group. After three years of statins, our active group was stratified as follows: S0–27%, S1–46%, S2–25%, respectively S3–2% of patients, respectively F0–38%, F1–32%, F2–28%, F3–2%; F4–0% of patients. NASH patients showed positive evolution of liver histology in active group, compared with placebo (N0–36%, N1–40% respectively N2–26%, p > 0.001, ss). After adjusting for age, BMI, diabetes, LDL-cholesterol and triglyceride values, statin therapy showed a significant correlation with the steatosis, fibrosis and NASH stages improvement in the active group (r = 0.92, r = 0.87, respectively r = 0.93, p < 0.005, ss). Conclusion: While statins proved to be safe and efficient for the treatment of NASH in our series, larger cohort studies are needed to further demonstrate this potential positive effect on liver fibrosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Aims & Methods: We aimed to study the relationship between CRP and homocysteine (HC) levels with pathological changes in the liver, determined with the non-invasive bioprognostic test Steatoscreen in patients with AO. The study included 60 patients aged 18–59 years with joints with a waist circumference >80 cm for women, and >94 cm for men. All patients underwent a bioprognostic test Steatoscreen. Depending on the severity of the pathological changes in the liver, the Steatoscreen scale divided all the patients into 3 groups: steatosis, fibrosis and steato-fibrosis. Depending on the presence or absence of cytolysis syndrome, 2 subgroups were distinguished in each group: subgroups of non-alcoholic steatohepatitis (ALT values, AST above the norm more than 2 times), and steatosis. In all, the levels of CRP and HC were studied. Results: The levels of CRP and HC in patients with AO were higher than in non-obese NASH patients. The most severe levels of pathological changes in the liver on the Steatoscreen scale: r = 0.6. n < 0.001; r = 0.85 p < 0.0006 for CRP and HC, respectively.

Conclusion: NAFLD in patients with AO is characterized by the development of severe forms of metabolic diseases accompanied with liver fibrosis. This fact can influence the risk of developing the pathology of not only the liver, but also atherosclerosis and proves the need for a more thorough examination of patients with AO and NAFLD for the purpose of early detection and correction of existing metabolic disorders.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Aims & Methods: Study of changes in the vascular wall of the common carotid artery (IMT CCA) and in patients with abdominal obesity (AO) and different forms of nonalcoholic fatty liver disease (NAFLD). The study included 60 patients with AO between the ages of 18 to 59 years (waist circumference >80 cm in women and >94 cm in men) and NAFLD, in the presence of clinical manifestations, provided written informed consent to participate in the study. All patients underwent an ultrasound examination of the abdominal cavity to determine the size of the liver and signs of steatosis. The level of severity of pathological changes in the liver tissue (fibrosis, steatosis and steatofibrosis) was assessed by non-invasive diagnostic method Steatoscreen. (Biopredictive laboratory, France). Measurement of the CCA IMT was performed according to standard procedures on the machine Voluson 730 Expert, equipped with a linear transducer phased array with a frequency of 7.5 MHz. The presence of early signs of atherosclerosis was defined as a local thickening of the IMT CCA more than 0.9 mm in any point of the carotid artery (CCA IMT max). Depending on the severity of the pathological changes in the liver, the Steatoscreen scale divided all the patients into 3 groups: steatosis, fibrosis and steatofibrosis. Depending on the presence or absence of cytolysis syndrome, 2 subgroups were distinguished in each group: subgroups of non-alcoholic steatohepatitis (ALT values, AST above the norm more than 2 times), and steatosis. In the future, the comparative and correlation analysis of the data was carried out. Results: Signs of early atherosclerosis, in the form of the IMT CCA, were detected in the majority of the patients (52%) and differed between the observed groups. The average thickness of the IMT CCA was significantly higher in patients with abdominal obesity and pathological changes in the liver in the form of severe steatofibrosis on the Steatoscreen scale than in groups of patients with less severe changes in hepatic tissue (0.83 mm for the steatosis group, 0.89 and 0.97 mm for fibrosis and steatofibrosis groups respectively, p < 0.001). At the same time, the maximum thickness of the IMT CCA was recorded in the group of patients with non-alcoholic steatohepatitis in the fibrosis group (1.14 mm, p = 0.002). In the process of regression analysis, a direct significantly relationship was found between the thickness of the carotid intima-media

P0019 INVESTIGATION OF THE RELATIONSHIP BETWEEN THE THICKNESS OF THE INTIMA-MEDIA COMPLEX OF COMMON CAROTID ARTERIES AND PATHOLOGICAL CHANGES IN THE LIVER IN PATIENTS WITH ABDOMINAL OBESITY AND NON-ALCOHOLIC FATTY LIVER DISEASE

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Introduction: In the last decade, the notion of non-alcoholic fatty liver disease (NAFLD) has undergone noticeable changes. It is shown that in the liver with fatty hepatosis, insulin and glucose utilization is disrupted, conditions are created for the synthesis of atherogenic forms of cholesterol and triglycerides. This contributes to the development of violations of carbohydrate and lipid metabolism, the early appearance of atherosclerosis and associated cardiovascular complications. Thus, NAFLD can be considered as an independent, additional risk factor of atherosclerosis. Obviously, it is important to clarify the nature of the relationship between NAFLD and the early manifestations of atherosclerotic vascular wall lesions are relevant.

Aims & Methods: Study of changes in the vascular wall of the common carotid artery (IMT CCA) and in patients with abdominal obesity (AO) and different forms of nonalcoholic fatty liver disease (NAFLD). The study included 60 patients with AO between the ages of 18 to 59 years (waist circumference >80 cm in women and >94 cm in men) and NAFLD, in the presence of clinical manifestations, provided written informed consent to participate in the study. All patients underwent an ultrasound examination of the abdominal cavity to determine the size of the liver and signs of steatosis. The level of severity of pathological changes in the liver tissue (fibrosis, steatosis and steatofibrosis) was assessed by non-invasive diagnostic method Steatoscreen. (Biopredictive laboratory, France). Measurement of the CCA IMT was performed according to standard procedures on the machine Voluson 730 Expert, equipped with a linear transducer phased array with a frequency of 7.5 MHz. The presence of early signs of atherosclerosis was defined as a local thickening of the IMT CCA more than 0.9 mm in any point of the carotid artery (CCA IMT max). Depending on the severity of the pathological changes in the liver, the Steatoscreen scale divided all the patients into 3 groups: steatosis, fibrosis and steatofibrosis. Depending on the presence or absence of cytolysis syndrome, 2 subgroups were distinguished in each group: subgroups of non-alcoholic steatohepatitis (ALT values, AST above the norm more than 2 times), and steatosis. In the future, the comparative and correlation analysis of the data was carried out. Results: Signs of early atherosclerosis, in the form of the IMT CCA, were detected in the majority of the patients (52%) and differed between the observed groups. The average thickness of the IMT CCA was significantly higher in patients with abdominal obesity and pathological changes in the liver in the form of severe steatofibrosis on the Steatoscreen scale than in groups of patients with less severe changes in hepatic tissue (0.83 mm for the steatosis group, 0.89 and 0.97 mm for fibrosis and steatofibrosis groups respectively, p < 0.001). At the same time, the maximum thickness of the IMT CCA was recorded in the group of patients with non-alcoholic steatohepatitis in the fibrosis group (1.14 mm, p = 0.002). In the process of regression analysis, a direct significantly relationship was found between the thickness of the carotid intima-media
PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE MAY OVEREXPRESSION OF HEPASSOCIN IN DIABETIC METABOLIC SYNDROME.

Results: There was stastically significant increase in mean value of serum hepassocin on group 1 and IV on comparing with group II and group III. For group III there was stastically significant increase in mean value of serum hepassocin on comparing with other groups. There was a significant serum hepassocin up regulation in patients with type 2 diabetes and non alcoholic fatty liver disease patients (Group 1) even than non alcoholic fatty liver disease (Group 2).

Conclusion: The present study provides evidence that overexpression of HPS may aggravates NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0020 OVEREXPRESSION OF HEPASSOCIN IN DIABETIC PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE MAY FACILITATE INCREASED HEPATIC LIPID ACCUMULATION

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Introduction: Insulin resistance is the main pathogenic determinant of both NAFLD and diabetes, and it can facilitate triglyceride accumulation in the liver. Overexpression of hepassocin (HPS) increased hepatic lipid accumulation and NAFLD activity scores (NAS), whereas deletion of HPS improved high fat diet-induced hepatic steatosis and decreased NAS in mice.

Aims & Methods: The aim of this study was to explore the relationship between hepassocin and diabetic patients with or without NAFLD. The study included 90 patients that were divided into 4 groups: Group I: included 20 patients who were diagnosed as diabetes mellitus type 2, Group II: included 20 patients who were diagnosed as non alcoholic fatty liver disease, Group III: included 20 patients who were diagnosed as diabetes type 2 and non alcoholic fatty liver disease, Group IV (control group): included 20 healthy person who were matched in age and sex with patients group.

Results: There was stastically significant decrease in mean value of serum hepassocin of group I and IV on comparing with group II and group III. For group III there was stastically significant increase in mean value of serum hepassocin on comparing with other groups. There was a significant serum hepassocin up regulation in patients with type 2 diabetes and non alcoholic fatty liver disease patients (Group 1) mostly than diabetic patients (Group 1) and even than non alcoholic fatty liver disease (Group 2).

Conclusion: The present study provides evidence that overexpression of HPS may facilitate increased hepatic lipid accumulation with NAFLD and Type 2 Diabetes mellitus.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0022 DIAGNOSTIC ACCURACY OF SHEAR WAVE ULTRASOUND ELASTOGRAPHY FOR EARLY DETECTION OF NON ALCOHOLIC STEATOHEPATITIS AMONG PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Introduction: Non alcoholic fatty liver disease (NAFLD) is a broad term describing simple steatosis, non alcoholic steatohepatitis (NASH), NASH cirrhosis and NASH-induced hepatocellular carcinoma (1). Incidence increased in patients with type 2 DM. At a level of 8.45 kPa by shear wave elastography, we can differentiate simple steatosis from steatohepatitis (2). Different diagnostic modalities have great limitations in differentiating simple steatosis from steatohepatitis (3). Liver biopsy remains the gold standard for diagnosis of NASH, however, it is invasive with potential severe complications (4). Several ultrasound elastography techniques have been described including transient elastography, acoustic radiation force impulse elastography and shear wave elastography(5). Shear wave elastography shows a stepwise increase of liver stiffness as the severity of liver inflammation increases(6).

Aims & Methods: We aimed to evaluate the accuracy of shear wave ultrasound elastography in differentiating simple steatosis from steatohepatitis in patients with type 2 DM. This was a prospective study including 60 patients 30 males and 30 females who visited our outpatient clinic or inpatient department at Specialized Medical Hospital. These patients were diabetic aged more than 30 years old with ultrasound showing fatty liver. Significant alcohol consumption, drugs causing steatosis and hepatic diseases were excluded by history, laboratory investigations and liver biopsy. All patients underwent full detailed history, examination, laboratory investigations (complete blood count, liver functions, kidney functions, random blood sugar, lipid profile, serology for hepatitis B and C viruses). Shear wave elastography was performed to all patients and stiffness of the liver was measured from different areas in kilopascal (kPa) then average stiffness was calculated. Liver biopsy was done and histopathological examination by Hematoxin, Eosin and Masson Trichrome stains, then NAFLD activity score (NAS) was calculated.

Results: Correlation between results of stiffness by elastography and NAS by biopsy revealed that: There was a significant positive association between average stiffness by elastography and definitive NASH (NAS 5 and 6) in patients with type 2 DM. At a level of 8.45 kPa by shear wave elastography, we can differentiate simple steatosis from steatohepatitis (Area Under Curve 0.936, sensitivity 90%, specificity 90%, positive predictive value 81%, negative predictive value 49%).

Conclusion: Shear wave ultrasound elastography is a promising non invasive technique to differentiate simple steatosis from steatohepatitis in patients with type 2 DM.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
References

P0024 A NOVEL TOOL FOR THE NON-INVASIVE QUANTITATIVE ASSESSMENT OF HEPATIC STEATOSIS USING A B-MODE IMAGE-GUIDED ULTRASOUND ATTENUATION IMAGING: A PROSPECTIVE STUDY
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Introduction: Nonalcoholic fatty liver disease is a main cause of chronic liver disease worldwide. A quantitative, non-invasive assessment of hepatic steatosis is desirable. Throughout the path of ultrasound (US), attenuation by liver parenchyma is uneven. This is the basis of the controlled attenuation parameter (CAP). However, further accumulation of data is needed to assess the role of CAP in the diagnosis of steatosis. We investigated the diagnostic performance of B-mode image-guided ultrasound attenuation imaging and quantification for assessing hepatic steatosis by a liver biopsy (LB, reference standard). It was compared with the liver-to-spleen ratio (LS) (ratio) from computed tomography (CT) and CAP.

Aims & Methods: We prospectively analyzed 112 consecutive patients with chronic liver disease who underwent ultrasound attenuation imaging, CT, and liver biopsy. Ultrasound attenuation imaging was performed using the LOGIQ E9 scanner (GE Healthcare) with a CL-6-convex array probe (frequency, 4 MHz). We acquired a B-mode image of liver parenchyma. RF signals corresponding to the images were compensated by the reference signal previously measured using the reference phantom (known attenuation, 0.5 dB/cm/MHz). The attenuation coefficient (AC) was calculated from the signals’ decay slope. Steatosis, liver fibrosis, and necroinflammatory activity were staged and graded during pathological analysis. The steatosis grade was categorized as follows: S0, <38%; S1, 38–50%; S2, 51–72%; S3, >72%. The diagnostic performance of AC for steatosis prediction was assessed using area under the curve (AUC) analysis; it was compared with the L/S ratio or CAP. Univariate and multivariate regressions analyses were used to identify variables correlated with AC values.

Results: Patients (51% men; 42% non-alcoholic fatty liver disease, 58% had hepatitis C virus) had a median body mass index of 26.4 kg/m2. Median AC values for grades S0 (n = 38), S1 (n = 47), S2 (n = 18), and S3 (n = 9) were 0.49, 0.55, 0.66, and 0.72, respectively, demonstrating a stepwise increase with increasing steatosis severity (P < 0.0001). AC was significantly correlated with the steatosis percentage (r = 0.800, P < 0.0001), L/S ratio (r = −0.670, P < 0.0001), and CAP (r = 0.639, P < 0.0001). AUCs of AC vs. the LS ratio for identifying grades S1, ≥S2, and S3 were 0.919 vs. 0.856, 0.957 vs. 0.902, and 0.960 vs. 0.919, respectively, showing significantly better results than those for the L/S ratio and CAP. For the sensitivity and specificity of AC ≥58.5%, cut-off values were 0.53 dB/cm/MHz for ≥S1, 0.60 dB/cm/MHz for ≥S2, and 0.64 dB/cm/MHz for ≥S3. Steatosis was the only factor independently affecting AC values.

Conclusion: Ultrasonic attenuation imaging had a high diagnostic accuracy for detecting hepatic steatosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
detected in the TAA group compared with that in the control group. However, celecoxib significantly decreased the area of splenic white pulp by 37.6%. Besides, the portal pressure was measured by a transmural perfusion method. The enzyme-linked immunosorbent assay was performed to evaluate the expression of proinflammatory cytokines.

Conclusion: Our data provide novel evidence for the differential expression of miRNAs in ascites in patients with PCA and SBP. Evaluation of ascites-miRNAs may offer an alternative approach for diagnosis of peritoneal carcinomatosis and create an avenue for therapeutic application as well.
with that of the control group, demonstrating that PJK/AKT signal pathway was involved in the development of pathological angiogenesis. However, the treatment with celexobux strongly decreased the protein expression of VEGF, CD31, PJK3 and AKT in the spleen of cirrhotic rats.

**Conclusion:** The present study indicates that COX-2 contributes to splenomegaly by facilitating angiogenesis, fibrosis and inflammation in the spleen. Moreover, inhibition of COX-2 by celexobux could ameliorate portal hypertension and splenomegaly.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0030 EPITHELIAL BARRIER DESTABILIZATION AND REGULATION OF P53 – A POSSIBLE BACTERIAL DEFENSE MECHANISM IN SPONTANEOUS BACTERIAL PERITONITIS?**

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**Introduction:** Spontaneous bacterial peritonitis (SBP) is a life-threatening complication in advancing liver cirrhosis. Translocation of intestinal bacteria or bacterial products from the gut to mesenteric lymph nodes is crucial for SBP, with *Escherichia coli* (E. coli), *Klebsiella pneumoniae* being the most common germs. Small intestinal bacterial overgrowth and a altered microbiota are so far known as risk factors for SBP. However, the exact mechanisms of bacterial translocation need to be identified as they are supposed to contribute to the development of early recognition systems and initiation of antibiotics.

**Aims & Methods:** With regard to the development of early recognition systems, pathomechanisms and signaling pathways of bacterial translocation in SBP were explored. These insights might lead to an initiation of antibiotics on time and reduced mortality in SBP.

Monolayers of human intestinal epithelial cell lines Caco-2 (p53 mutant) and HCT-116 (p53 wildtype) were cocultured with *E. coli* with different MOI (MOI 0, 1, 5 and 10) for 2 to 4 hours post confluence. Experiments with heat inactivated *E. coli* were performed as controls. Effects of microbial metabolic products were tested by using the supernatant of an overnight culture. qPCR and Western Blot analysis were performed to analyze changes in mRNA and protein levels of Occludin, E-cadherin and the p53 family including p53 and p73. Caco-2 cells displayed less reduction of Occludin and E-cadherin protein levels in comparison to HCT-116 cells, where significant decreases were observed. These effects might lead to an indication of antibiotics on time and reduced mortality in SBP.

**Conclusion:** By using an in vitro model, we demonstrate destabilizing effects of *E. coli* on intestinal cell junctions, p53 and p73. As far as these effects are dependent on incubation time, microbial concentration and living bacteria, these effects might represent the mechanism to protect the bacteria from intestinal immune responses and therefore to promote bacterial translocation in SBP.

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**P0031 INTESTINAL EPITHELIAL BARRIER IN EXPERIMENTAL LIVER CIRRHOSIS - A ROLE FOR BILE SALTS IN THE MUCUS LAYER**

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**Introduction:** Pathological bacterial translocation (BPT) in liver cirrhosis (LC) is the pathophysiological hallmark for spontaneous bacterial infections increasing mortality severely. Factors known to contribute to PBT in LC are among others an increased intestinal epithelial permeability.

**Aims & Methods:** Since mucus represents one of the major components of this barrier we hypothesize that: a) gut mucus is altered in LC and b) bile could be a modulator of its production. Two different models of experimental LC namely bile duct ligation (BDL) and the chronic treatment with carbon tetrachloride (CCl4) – as well as partial portal vein ligation (PPVL) and sham-operated mice were used. Finally the farnesoid X receptor (FXR) agonist obeticholic acid (OCA) par-tially restored GC loss in CCl4 treated animals (Control 0.63 GC/100µm of villus±0.08 vs Control OCA 0.65 GC/100µm of villus±0.07 vs CCl4 0.49 GC/100µm of villus±0.01 vs FEX-30.30 GC/100µm of villus±0.08). Moreover we have seen that farnesoid X receptor (FXR) agonist obeticholic acid (OCA) par-tially restored GC loss in CCl4 treated animals (Control 0.63 GC/100µm of villus±0.08 vs Control OCA 0.65 GC/100µm of villus±0.07 vs CCl4 0.49 GC/100µm of villus±0.01 vs FEX-30.30 GC/100µm of villus±0.08).

**Conclusion:** All these results suggest that a reduced bile production by the cirrhotic liver and not portal hypertension per se interfere in the goblet cell develop-ment and/or maturation. In addition, this effect can be, at least partially, be restored by the FXR agonist OCA. Our study opens the possibility, to a so far, unknown effect of bile salts in the intestinal epithelium development in the con-text of liver cirrhosis being a clear candidate for mucus layer regulation and hence protective effect against bacterial translocation.

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**P0032 CAPSACIN AND SULFORAPANE PREVENT THE ADVANCEMENT OF LIVER FIBROSIS IN AN EXPERIMENTAL MODEL OF LIVER CIRRHOSIS**

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**Introduction:** Liver fibrosis is an excessive accumulation of extracellular matrix (ECM) following a chronic liver injury. It is characterised by an increase in gene expression of proinflammatory molecules such as TGF-β1, IL-1β, IL-6 and TNF-α, as well as excess synthesis of ECM components such as COL-1. Capsaicin (CAP) is a pungent compound found in chili peppers which has shown anticarcinogenic, antiinflammatory and antifibrotic properties. Moreover, sulforaphane (SFN) is an isothiocyanate which is in cruciferous such as broccoli and it has exhibited an antioxidant effect in several in vitro and in vivo models.

**Aims & Methods:** The objective of this project was to evaluate the antifibrogenic and antiinflammatory effects of a daily supplementation with CAP and SFN in a rat model of liver fibrosis due to carbon tetrachloride (CCl4) intoxication. 35 male Wistar rats were included (n = 7/group); animals were administrated intra-peritoneally 5 times per week during 8 weeks with a mix of CCL4/minal (1/5: week 1, 1/4 week 2 and 1:3 week 3–8). Healthy and CCl4-fibrotic controls received only supplementation vehicle (Tween 2% in PBS). Treated groups receive SFN 5ug/kg, or CAP 2 mg/kg, or both supplements daily by oral gavage since the beginning of CCl4-intoxicacion regimen until sacrifice. Masson staining and PCR was performed in liver samples. Hepatic enzymes were ana-lysed in serum.

**Results:** Groups treated with CAP and SFN showed a decrease of ~30points in percentage of liver fibrosis according to Masson staining (p <0.05), hepatic function improve since ALT and AST serum levels diminish (p <0.01) also a lower gene expression of TGF-b1, Col-1, TNF-α, IL-1 β and IL-6 was detected in treated animals when compared with fibrotic controls (p <0.01). CCl4-induced fibrosis in this model of chronic-induced liver damage. These findings suggest that dietary sources of CAP and SFN might be included in dietetic guidelines for the preven-tion of liver fibrosis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0033 DIAGNOSIS OF GASTRIC VARICES BY ENDOCOMIC ULTRASONOGRAPHY USING COLOR DOPPLER**

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**Introduction:** Gastric variceal bleeding is common complication, and it is associated with higher morbidity and mortality rates than hemorrhage from esopha-gal varices. Oesophagogastroduodenoscopy is usually the initial investigation in the portal hypertension for the purpose of the distinction between gastric varices and gastric folds. The aim of this study was to investigate endo-scopic color Doppler ultrasonography (ECDUS) findings of gastric varices.

**Aims & Methods:** Two hundred-fifteen patients with gastric varices were evalu-ated with ECDUS. To begin with, identification of gastric varices was performed with B-mode scanning and then, color flow mapping was done. On B-mode scanning, submucosal gastric varices, and para-gastric collateral veins were observed as hypoechoic vessels within gastric wall or in the tissue and spaces exterior to the adventitia of gastric wall. ECDUS provides a color display of blood flow and evaluates the flow pattern using fast Fourier transform (FFT) analysis. FFT analysis can indicate the flow pattern and calculate the velocity of blood flow. We monitored the color flow images of gastric varices, and para-gastric or peri-gastric collateral veins. Endoscopic findings of gastric varices were evaluated according to the grading system outlined in The General Rules for

**Results:** The color flow images of gastric varices and peri-gastric veins were delineated in all 215 patients with ECDUS. Evaluation of blood flow velocity in the 215 gastric varices revealed velocities of 7.7–35.7 cm/s (mean, 18.2 ± 6.0 cm/s). Mean velocity of large, coil-shaped (F3) type gastric varices was 23.7 ± 6.2 cm/s (n = 52), while the mean velocity of enlarged tortuous (F2) type gastric varices was 16.7 ± 5.0 cm/s (n = 163). The velocities of F3 type gastric varices were significantly higher than those of F2 type (p < 0.0001). Next, we evaluated the wall of submucosal gastric varices. Two hundred-fifteen of the gastric varices were 1.0–2.2 mm (1.6 ± 0.4 mm) in gastric wall thickness. Mean thickness of red color (RC) or erosion positive varices was 1.2 ± 0.2 mm (n = 42), while the mean thickness of RC or erosion negative varices was 1.7 ± 0.3 mm (n = 173). The thickness of RC or erosion positive varices was significantly thinner than that of the negative cases (p < 0.0001). Seven cases of the 215 patients had the current history of gastric variceal bleeding, and the other three cases had experienced variceal rupture on follow up (bleeding cases, n = 10), and mean thickness of these bleeding cases were 1.2 ± 0.2 mm.

**Conclusion:** ECDUS is a useful modality for the diagnosis of hemodynamics of gastric varices and may allow the stratification of patients into low, high risk for hemorrhage.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0034 PORTAL HYPERTENSIVE COLOPATHY BUT NOT ILEOPATHY IS COMMON IN EGYPTIANS WITH LIVER CIRRHOSIS**

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**Introduction:** Liver cirrhosis and portal hypertension are associated with esophagogastric varices, gastric varices, small and large intestinal enteropathies.

**Aims & Methods:** We aimed to study the prevalence of colopathy and ileopathy in patients with portal hypertension secondary to liver cirrhosis. Chronic hepatitis C patients with portal hypertension secondary to liver cirrhosis were enrolled. Chronic hepatitis C patients admitted for variceal gastrointestinal bleeding. All patients were evaluated by upper endoscopy and colonoscopy for screening of portal hypertension complications. Esophageal varices were graded as small, moderate and big varices. Portal hypertensive gastropathy was classified as absent or present, and, if present, it was sub-classified as mild or severe. Coloscopy was done up to terminal ileum in all patients.

**Results:** Our study included sixty chronic hepatitis C patients with portal hypertension secondary to liver cirrhosis (53.33% females) their mean age (±SD) was 54.75 (±13.13) years. Child-Pugh class was A for 2 (3.34%), B for 33 (55.9%) and C for 24 (40.7%). 53 (88.3%) patients had esophageal varices (23 patients had small esophageal varices, 15 had moderate, and 8 had big varices, 2 post-banding ligation and 5 obliterated varices). Gastric varices were present in 3 patients (5%). Portal hypertensive gastropathy was noted in 43 patients (71.6 %) and was mild in 38 and severe in 5 patients. Coloscopy finding up to the terminal ileum revealed that portal hypertensive colopathy was present in 16 patients (26.7%). Portal hypertensive ileopathy was noted only in one case (1.7%). No colonic or ileal varices were noted.

**Conclusion:** Portal hypertensive colopathy but not ileopathy is common in Egyptians with liver cirrhosis. Ileal varices and ileopathy are not common in patients with cirrhosis and PHT.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0035 PREDICTIVE FACTORS FOR THE DEVELOPMENT OF ACUTE-ON-CHRONIC LIVER FAILURE IN PATIENTS WITH GASTROINTESTINAL BLEEDING**

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**Introduction:** Acute-on-chronic liver failure (ACLF) is a specific clinical form of liver failure in patients with liver cirrhosis, referred as acute deterioration of liver function associated with an acute specific complication of liver cirrhosis. ACLF is defined by the presence of renal failure or 2 or more organ failures. In the European Association for the Study of the Liver-International Chronic Liver Failure consortium: 1) circulatory- need for vasopressor support; 2) renal- serum creatinine value ≥2 mg/dL; 3) cerebral- Grade III or IV hepatic encephalopathy; 4) respiratory- SpO2/FiO2 ≤214.

**Aims & Methods:** We aimed to identify predictive factors for ACLF development in cirrhotic patients admitted for variceal gastrointestinal bleeding. All patients with ACLF were consecutively enrolled in the Institute of Gastroenterology and Hepatology Iasi (consisting of 8 secondary hepatology centers) between June and December 2016 were evaluated for ACLF (we excluded from the study the patients presenting ACLF diagnosis criteria on admission). We compared cirrhosis patients who developed ACLF after 12 hours of admission with those who did not.

**Results:** 99 cirrhotic patients with gastrointestinal bleeding were evaluated. 48.5% of patients admitted with variceal bleeding developed ACLF. Demographic data were similar in patients with ACLF vs. no ACLF in age (54.2 ± 7.3), BMI (6 ± 9.5 years), male sex (54 vs. 45), and diabetes (56 vs. 43) and significant difference was found in alcohol consumption (72 vs. 27). In patients with ACLF, the grade 1 was the most frequent (56.3%); grade 2 (33.3%) and 3 (10.4%) of ACLF were more rare and no significant differences between the ACLF subgroups was observed. The patients with ACLF were more likely to be admitted with infections and alcohol consumption, when compared to patients without ACLF. Independent predictors for ACLF development included a high admission MELD (p < 0.05), presence of infection and alcohol abuse (p < 0.001), hospitalization in the last 6 months (p < 0.05). Inhospital and 30-day mortality were significantly higher in patients with ACLF (p < 0.0001).

**Conclusion:** Patients admitted with variceal bleeding, with alcohol consumption, high MELD on admission, previous admission in < 6 months are more likely to develop ACLF and need to be monitored closely for the development of ACLF.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0036 HAEMOSTASIS IN PORTAL VEIN IN CIRRHOSIS: ROLE OF LOCAL ENDOTHELIAL DAMAGE**

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**Introduction:** Cirrhosis is characterized by both bleeding and thrombotic complications due to underlying procoagulative haemostatic imbalance [1]. Among thrombotic events, portal vein thrombosis (PVT) is the most common with annual incidence ranging between 4.6% and 12.8% [2, 3]. Demonstrated associated risk factors are severity of portal hypertension and slowed portal flow [4]. However, data regarding haemostasis in the portal venous system of cirrhotic patients is lacking.

**Aims & Methods:** To evaluate peripheral and portal venous haemocoagulative state in patients with cirrhosis in comparison with controls, through thrombin generation test (TGT), rotational-thrombelastometry (ROTEM) along with evaluation of endothelial dysfunction by quantification of circulating endothelial microparticles (MP). Correlate these results with activity levels of local pro and anticoagulant factors. Compare peripheral and portal venous districts in cirrhosis in terms of haemostatic balance. We consecutively evaluated adult patients with liver cirrhosis undergoing liver transplantation (LT) or transjugular intrahepatic portosystemic shunt (TIPS). Patients without liver disease awaiting liver surgery or deceased liver donors were enrolled as controls. The following laboratory tests were performed on citrated peripheral and portal venous blood samples: TGT with and without thrombomodulin (TM), ROTEM, dosage of main pro and anticoagulants factors activity and analysis of circulating endothelial MP.

**Results:** 25 cirrhotics (15 LT and 10 TIPS) and 6 controls (2 undergoing hepatic surgery or deceased liver donors were enrolled as controls. Peripheral blood in cirrhosis showed resistance to activation of PC-pathway at TGT (ETP with without TM 0.89 (0.78–0.92) vs 0.6 (0.3–0.74), p < 0.001), clofibrat stability at ROTEM (MCF-NATEM mm: 43.5 (36–51) vs 63 (53–69), p = 0.042), and significant increase of endothelial-MP (CD62EPM/L: 1391 (651–2301) vs 582 (380–1161), p = 0.046), indicative of higher endothelial damage compared to controls. Similar results were obtained comparing portal blood of cirrhotics and controls (ETP with/without TM 0.89 (0.78–0.92) vs 0.63 (0.33–0.75), p = 0.001; MCF-NATEM: 46 (39–51) vs 62 (49–66), p = 0.056; CD62EPM/L: 1606.5 (680–1885) vs 529.5 (266–781), p = 0.009). There was a significant correlation between diminished levels of PC, PS, AT, FII and either TGT or ROTEM parameters. Comparing portal and peripheral blood of cirrhotics, we detected endogenous heparinoids in portal (a-antigen NATEM 51 (46–57) vs
Aims & Methods: In this study 119 patients were included: 78% men with a mean age of 59 ± 13 years; 8% had hepatocellular carcinoma, and 45% had Child-Pugh C. The most frequent cirrhosis etiologies were alcoholic disease (60%) and HCV infection (12%). The precipitating factors, for the onset episode, more frequently detected were diuretic overdose (36%) and infection (31%). All patients were treated with standard therapy, with an adequate lactulose dose. The readmission rate after the first episode of HE was 72% (75% men). The estimated average time to relapse was 18 weeks. The most frequent causes of readmission were also diuretics overdose (31%) and infection (30%). The patients who were readmitted had a higher MELD score than patients without recurrent (13.9 vs. 11.6 points; p = 0.015). This association was verified in the multivariate analysis (OR = 1.1, p = 0.044).

Conclusion: In this cohort, there was a high rate of readmission for HE after the inaugural episode, which carries a great impact on individual health and high socio-economic costs. A higher MELD score was independently associated with a high probability of readmission for HE.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**P0039 SAFETY, EFFICACY AND RISK OF COMPLICATIONS FOR CIRRHOTIC HCV PATIENTS WITH THROMBOCYTOPENIA AND HYPOALBUMINEMIA TREATED WITH OMBITASVIR/ PARITAPREVIR/R+DASABUVIR/R+RIBAVIRIN – A REAL-LIFE COHORT**

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**Introduction:** The regulations for prescribing interferon-free treatment for patients infected with hepatitis C virus in Romania comprised only patients with F3/F4 fibrosis so the risk of hepatic decompensation and complications was higher compared to other cohorts. In previous interferon-based regimens, thrombocytopenia (<50,000) and hypoalbuminemia (<35 g/dl) was a contraindication for portal hypertension and its hepatic synthetic dysfunction, respectively, have been shown to reduce the likehood of sustained virological response and to increase the rates of serious adverse events.

**Aims & Methods:** The aim of this study was to evaluate the impact of thrombocytopenia and hypoalbuminemia on treatment outcome and disease complications. We included in this study 855 HCV-infected cirrhosis patients treated with ombitasvir/paritaprevir/r-dasabuvir/r-ribavirin for 12 weeks in 10 university hospitals in Romania. The following groups were studied: 151 patients (17.7%) with thrombocytopenia (<50,000/mm3) and 71 patients (8.3%) with both hypoalbuminemia and thrombocytopenia before initiating antiviral treatment. Safety (as AE in > 5% and SAE), efficacy (SVR4, SVR12) and complications were monitored. The prediction of mortality, even when excluding patients with in-hospital mortality was evaluated using Pearson’s correlation, multivariate analysis and Chi-Square test.

**Results:** Main patient characteristics were: 100% genotype 1, 82.5% median age of 66 (51.8-79) years, 54.7% high rate of previous interferon-based treatment (36.1%). End-of-treatment and sustained virological response rate were both >99% and there was no correlation with the presence of thrombocytopenia or hypoalbuminemia. The rate of adverse events in the whole cohort was 17.5% at 2 weeks reaching 18% at the end of treatment with only 0.8% severe adverse events with no statistical association with the presence of thrombocytopenia and hypoalbuminemia. The multivariate analysis showed significant association of thrombocytopenia (<10,000/mm3) with higher (>1) degree of oesophageal varices (p = 0.001), one of upper digestive hemorrhage during treatment (p = 0.011), and prior exposure to interferon based regimens (p = 0.025). Low albumin (<3.5 g/dl) also correlated with higher (>1) degree of oesophageal varices (p = 0.001) and onset of upper digestive hemorrhage during treatment (p = 0.002).

**Conclusion:** The efficacy and safety of the ombitasvir/paritaprevir/r-dasabuvir/r-ribavirin (as recommended by national regulations) was not different in cirrhotic patients with hypoalbuminemia and thrombocytopenia, but complications rate was higher so close follow-up and prophylactic measures should be recommended, especially if previously exposed to interferon containing regimens.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0041 REAL-WORLD IMPACT OF RIFAXIMIN-A USE IN HEPATIC ENCEPHALOPATHY PATIENTS WITH ADVANCED LIVER DISEASE ON CONTINUED ALCOHOL MISUSE: A POST-HOC ANALYSIS OF THE IMPRESS STUDY**

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**Introduction:** In the UK multicentre, retrospective, real-world study, IMPRESS, rifaximin-a (RFX) use in patients with hepatic encephalopathy (HE) significantly reduced hospitalisations and length of stay in the 6 and 12 months post-RFX initiation compared to the respective periods pre-RFX initiation. This post-hoc analysis of the IMPRESS data compared hospital resource use pre- and post-RFX initiation in 2 sub-groups of difficult-to-treat HE patients: those with advanced liver disease or current alcohol misuse.

**Aims & Methods:** Medical records of patients from 11 UK hospitals who were prescribed RFX for HE between July-2008 and May-2014 were retrospectively reviewed; details of demographic and clinical characteristics, and all-cause hospitalisations were collected in the 6 and 12 months pre- and post-RFX initiation. Patients with baseline MELD score ≥15 or not abstinent at the end of the study period were included in this analysis. Statistical significance of the mean change (standard error of the mean, SEM) was calculated using paired t-test or Wilcoxon test.

**Results:** Only patients alive at the end of the 6 and 12 months RFX-treatment periods were included: 114 and 102, respectively. Amongst these, 33/114 (29%, for the 6 months) and 26/102 (25%, for the 12 months) had baseline MELD ≥15; mean age, 63 years; 70% were male; 66% had alcohol-related liver disease; mean MELD 24. The mean (SEM) number of bed days/patient decreased from 25 (6.0) in the 6 months pre- to 15 (5.5) in the 6 months post-RFX initiation, and from 36 (9.5) in the 12 months pre- to 20 (7.7) in the 12 months post-RFX initiation (p value not significant). At 6 months post-RFX initiation, 15/114 (13%) patients were still actively drinking. At RFX initiation, mean age was 56 years; 73% were male, mean MELD was 19. Despite this, the mean (SEM) number of bed days/patient decreased from 36 (7.9) in the 6 months pre- to 15 (5.4) in the 6 months post-RFX initiation (p = 0.048), and the mean of hospitalisations/patient fell from 2.8 (0.8) to 1.2 (0.4) (t-test p = 0.059; Wilcoxon test p = 0.029). Too few patients with continued alcohol misuse were alive at 12 months to evaluate. Two patients reported adverse events, none serious.

**Conclusion:** In UK clinical practice, treatment with RFX for HE for 6 or 12 months suggested trends in reduced hospital length of stay in patients with advanced liver disease and those in continued alcohol misuse. However, larger studies are needed to strengthen these findings.

**Disclosure of Interest:** M. Hudson: Consultant for Norgine; advisory board member; has given sponsored lectures on behalf of Norgine.

P. Di Maggio: Employee of Norgine.

R. Cipelli: Consultant for Norgine; employee of pH Associates which was commissioned by Norgine to provide support with study design and management data analysis and scientific editorial services.

R. Aspinall: Consultant for Norgine; advisory board member; has given sponsored lectures on behalf of Norgine.

**P0042 BACTERIAL INFECTION IN PATIENTS WITH DECOMPENSATED CIRRHOSIS - A PREDICTOR OF LONG-TERM MORTALITY INDEPENDENT OF DISEASE SEVERITY**


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**Introduction:** Bacterial infections are common in cirrhotic patients and the pro-inflammatory response superimposed on the hemodynamic dysfunction of portal hypertension predisposes to the development of complications. Some authors suggest that the occurrence of infection should be considered a separate clinical stage, since it alters the natural history of cirrhosis.

**Aims & Methods:** Retrospective assessment of patients with cirrhosis hospitalized for first episode of decomposition between 2011-2015. The aim was to evaluate the prognostic significance of bacterial infections regardless of the severity of the underlying liver disease.

**Results:** Of the 547 patients (85% male, mean age 59 years, mean MELD 15, 72% alcoholic cirrhosis) were included with a total of 197 hospitalizations. Hospital admissions were more frequent due to variceal haemorrhage (42%) and encephalopathy (37%). The incidence of bacterial infection was 25%: 41% respiratory, 31% spontaneous bacterial peritonitis and 24% urinary. Of these, 51% were nosocomial and in 20% an infectious agent was isolated. The survival rates at 30 days, 3 months, 6 months and 1 year were 65%, 55%, 34% and 27% in patients with infection and 97%, 90%, 85% and 78% in those without infection (p < 0.001). In the multivariate analysis, survival was independently associated with MELD (hazard ratio (HR) 1.073, p = 0.048), and the mean of hospitalisations/patient fell from 2.8 (0.8) to 1.2 (0.4) (t-test p = 0.059; Wilcoxon test p = 0.029). Too few patients with continued alcohol misuse were alive at 12 months to evaluate. Two patients reported adverse events, none serious.

**Conclusion:** Patients with cirrhosis exposed to a bacterial infection are at increased risk of death. This risk remains in the long term when we exclude patients with in-hospital mortality and at 30 days and regardless of the severity of the underlying disease (MELD).

**Disclosure of Interest:** All authors have declared no conflicts of interest.
A174

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P0043 A PROPORTIONALLY GREATER ELEVATION IN LIVER TRANSPLANT CANDIDATE IN PATIENTS WITH NAFLD AND PORTAL VEIN THROMBOSIS

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Introduction: NAFLD progresses to cirrhosis and its complications including hepatocellular carcinoma. It is possible that risk factors for NAFLD-associated cirrhosis may differ in Eastern countries where the disease is different from those in the West. Thus, we aimed to document the characteristics of patients with NAFLD-associated cirrhosis from Turkey, a European country sharing 97% of its borders with Asia. Relative to other European, the Turkish population exhibits a higher rate of obesity that may influence the rate to that in the Western population.

Aims & Methods: To characterize non-alcoholic fatty liver disease (NAFLD) presentation with esophageal varices. METHODS: We have kept the records of patients at our hepatology unit and affiliated liver center. Data were collected for all patients who were at the advanced stage of cirrhosis. A cohort of patients with esophageal varices from 2003 to 2014 was reviewed. Eligible patients were ≥18 years of age and have had esophageal varices diagnosed by upper gastrointestinal endoscopy examination. They had regular clinical follow-up and endoscopic examinations at this clinic. Efficacy data were based on the last evaluation. Transplanted cases were excluded.

Results: Primary end-point of the study was to use this cohort of patients with esophageal varices to evaluate the relationship between this disease and several etiologies, including NAFLD, hepatitis B, hepatitis C or other liver-related diseases. We included 308 patients with a mean age of 67.8 ± 12.0 years and 62% of these patients were men. In this study, each patient was evaluated for fundal varices, PVT, cirrhosis, HCC, and mortality. After the first evaluation, patients were divided into 4 groups: Those with hepatitis B, hepatitis C, NAFLD and others related to autoimmune hepatitis. Wilson Disease, primary biliary cirrhosis, etc.

Results: Risk factors and predictive model for the

P0044 RISK FACTORS AND PREDICTIVE MODEL FOR THE DEVELOPMENT AND DROUG RESPONSE TO Bacterial INFECTIONS AND THE IMPACT ON PROGNOSIS IN HOSPITALIZED DECOMPENSATED LIVER CIRRHOSIS PATIENTS

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Introduction: Hepatitis C virus (HCV) diminishes health related quality of life (HRQOL). Currently, there is no published data on assessing of the impact of treatment of chronic hepatitis C with the new antiviral drugs in older-aged patients.

Aims & Methods: The aim is to study the effect of treatment of chronic hepatitis C with the new antiviral drugs in older-aged patients in HRQOL. About 132 patients with chronic hepatitis C (cirrhotic and non-cirrhotic) were enrolled in the study. Age of patients was sixty years old and older. All patients were treated with sofosbuvir/daclatasvir with or without ribavirin for three months. The HRQOL was assessed with sickness impact profile scoring (SIP) before start of treatment, at end of treatment and after three months of end of treatment.

Results: Old chronic hepatitis C patients who were treated achieved primary virological response (end of treatment) with percentage 100% and sustained virological response (SVR) (after 3 months of end of treatment) in about 96% of treated patients. Before treatment, patients with chronic hepatitis C had worse scores especially in work, sleep, rest and recreation and pastimes categories. After treatment, patients who received sofosbuvir/daclatasvir with or without ribavirin had significant improve in work, sleep, rest and recreation and pastimes categories with p-value 0.001. Numerical improvement was observed in total score, physical and psychosocial dimension scores. In patients with SVR, the most improvement was in work and psychosocial dimension scores. There was no significant difference in SIP between scores after end of treatment and after 3 months of end of treatment.

Conclusion: Treatment of chronic hepatitis C in old-aged patients had a significant improvement in HRQOL.

Disclose of Interest: All authors have declared no conflicts of interest.

Reference

P0045 EFFECT OF TREATMENT OF CHRONIC HEPATITIS C WITH SOFOSBUVIR AND DACLATASVIR IN PATIENTS OLDER THAN 60 YEARS

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Introduction: Hepatitis C virus (HCV) diminishes health related quality of life (HRQOL). Currently, there is no published data on assessing of the impact of treatment of chronic hepatitis C with the new antiviral drugs in older-aged patients.

Aims & Methods: The aim is to study the effect of treatment of chronic hepatitis C with the new antiviral drugs in older-aged patients in HRQOL. About 132 patients with chronic hepatitis C (cirrhotic and non-cirrhotic) were enrolled in the study. Age of patients was sixty years old and older. All patients were treated with sofosbuvir/daclatasvir with or without ribavirin for three months. The HRQOL was assessed with sickness impact profile scoring (SIP) before start of treatment, at end of treatment and after three months of end of treatment.

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Conclusion: Treatment of chronic hepatitis C in old-aged patients had a significant improvement in HRQOL.

Disclose of Interest: All authors have declared no conflicts of interest.

Reference
**PO046 EGY FIBRO-MARK: A PANEL OF ACCURATE LABORATORY MARKERS FOR IDENTIFICATION OF HEPATIC FIBROSIS PROGRESSION IN PATIENTS WITH CHRONIC HEPATITIS C**

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**Introduction:** Accurate determination of the degree of hepatic-fibrosis is mandatory not only for the diagnosis and prognosis of disease, but also for deciding on the antiviral treatment. Indeed, many studies have been dedicated to the search of non-invasive fibrosis markers capable of providing an accurate information about hepatic fibrosis stage in patients with chronic hepatitis C (CHC). Direct and indirect markers of hepatic fibrosis are useful for prediction of liver cirrhosis but have limited accuracy for the diagnosis of significant fibrosis. Therefore, the development of more advanced scores combining both direct and indirect markers may improve their diagnostic accuracy.

**Aims & Methods:** This work is concerned with determining the levels of some fibrosis markers, which are directly involved in deposition and removal of extracellular matrix (ECM), together with other indirect fibrosis markers so as to construct a predictive score capable of identifying the presence of significant fibrosis with a high degree of accuracy. Then, we aimed to estimate its performance against that of the other simple noninvasive tests in chronic hepatitis C patients.

**Material and Methods:** A total of 148 Egyptian HCV patients were subjected to routine laboratory workup in addition to estimation of serum AFP, hyaluronic acid (HA), platelet-derived growth factor (PDGF), tissue inhibitor of metalloproteinase-1 (TIMP-1) and collagen IV. According to fibroscan, patients were classified into those with non-significant fibrosis (F<2) and significant fibrosis (F>2).

**Results:** Based on univariate analysis, ten variables were significantly higher in patients with significant fibrosis. Patients with F2-F4 had 2.08-fold, 2.14-fold, 1.80-fold and 1.90-fold increase in the concentrations of collagen IV, HA, PDGF and TIMP-1, respectively. Multivariate regression demonstrated that only age, AFP, PDGF, collagen IV and TIMP-1 retained significance. Therefore, a five-marker name score Egyptian (EGY) Fibro-mark (FM) was developed. A significant correlation was found between its candidate markers and liver fibrosis progression. AFP was found to have highest correlation (r=0.47, P<0.0001) followed by collagen IV (r=0.46, P<0.0001), age (r=0.43, P<0.0001), TIMP-1 (r=0.40, P<0.0001) and PDGF (r=0.40, P<0.0001). ROC curve was used to estimate and compare the diagnostic accuracy of these candidate variables. As a consequence, these markers were in a decreasing rank: AFP (AUC 0.79), collagen IV (AUC 0.78), age (AUC 0.70), TIMP-1 and PDGF (AUC 0.75). Additionally, Bivariate Spearman’s rank correlation coefficient between EGY-FM and its candidate markers was determined for estimating the impact of each marker on the predictive criteria. The diagnostic value of Egy FM was then assessed by ROC curve showing an AUC of 0.89 for diagnosing significant fibrosis at an optimal cut-off point of 4.05 with 77% sensitivity, 83% specificity and 79% efficiency. Next, the area under the ROC curve (AUC) was used in order to simulate and compare the performance characteristics of different non-invasive scores. The AUC was greatest for Fibro-mark (0.89), then BRC (0.83), followed by FRT and King’s score (0.82), APRI (0.80), Fibro-a (0.70) and finally FibroQ (0.63).

**Table 1:** The correlation of each score to hepatic fibrosis progression

<table>
<thead>
<tr>
<th>Index</th>
<th>AUC</th>
<th>Cutoff</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Efficiency</th>
<th>Odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibro-mark</td>
<td>0.89</td>
<td>&gt;4.05</td>
<td>77</td>
<td>83</td>
<td>79</td>
<td>16.18 (6.59-39.70)</td>
</tr>
<tr>
<td>BRC score4</td>
<td>0.83</td>
<td>&gt;7.2</td>
<td>97</td>
<td>70</td>
<td>76</td>
<td>12.86 (3.44-48.13)</td>
</tr>
<tr>
<td>FRT score(3)</td>
<td>0.82</td>
<td>&gt;4.0</td>
<td>99</td>
<td>69</td>
<td>107.1 (1.21-94.60)</td>
<td></td>
</tr>
<tr>
<td>King’s score(4)</td>
<td>0.82</td>
<td>≥12.3</td>
<td>94</td>
<td>45</td>
<td>79</td>
<td>12.25 (4.39-34.19)</td>
</tr>
<tr>
<td>APRI score(2)</td>
<td>0.80</td>
<td>&gt;1.5</td>
<td>99</td>
<td>45</td>
<td>50</td>
<td>6.13 (1.76-21.30)</td>
</tr>
<tr>
<td>FibroScan score(4)</td>
<td>0.70</td>
<td>&gt;1.2</td>
<td>95</td>
<td>72</td>
<td>72</td>
<td>4.34 (1.33-14.17)</td>
</tr>
<tr>
<td>FibroQ score(4)</td>
<td>0.63</td>
<td>&gt;1.6</td>
<td>93</td>
<td>69</td>
<td>1.80 (0.53-6.04)</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** Egy Fibro-mark (FM) score, a more sophisticated score combining ‘direct’ and ‘indirect’ markers, is a useful tool to improve the staging of liver fibrosis in CHC patients and seems more efficient than BRC, FRT, King’s score, APRI, Fibro-score and FibroQ in this group of Egyptian patients.

**Acknowledgment:** This study was supported by the science and technology development fund (STDF); Project ID: 5380, basic and applied research.

**Disclosure of Interest:** D. Omran: This study was supported by the science and technology development fund (STDF), Egypt; Project ID: 5380, basic and applied research. All other authors have declared no conflicts of interest.

**Reference:**

Aims & Methods: further validate the accumulating data of the achieved high sustained virologic (DAAs) needs to be investigated in real world treatment settings in Egypt to disease. Proper management of these patients with direct acting antivirals

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Disclosure of Interest: All authors have declared no conflicts of interest.

Recent studies have shown that treating CHCV genotype 4 patients with persistently normal liver enzymes in a real-world cohort from Egypt. SOF/DCV/C6 combination was the most effective among the studied regimens. RBV combination was the most effective among the studied regimens.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: The aim of this study was to determine the prevalence of HCV infection among household contacts of HCV seropositive index patients. We also aimed to compare HCV genotyping distribution in upper and lower Egypt. In this Multicentre hospital case control based study a total of 4894 Egyptian individuals were recruited to the hospitals from different Egyptian population in Upper & lower Egypt (mainly from Dakahlia, Cairo and Assuit governorates). The index HCV patients were 1106 cases whereas the families or close household contacts of these index cases were 3788 cases. Ideally family was selected on the basis of containing at least one positive HCV index, one positive HCV member and other one negative HCV member with no history of any liver complications or disorders first and second degree consanguinity, living and sharing usual life activity and having at least 15 years of exposure to the index case). The positive case (index or contact cases) in the family were selected with inclusion criteria of 1-HCV positive by PCR RNA> 6 months, 2-Adults (above 18 years) of both sexes 3-Any stage of HCV related liver diseases. While cases were diagnosed as spontaneously cleared the virus (SVC). The HCV prevalence among household contacts was 20.71% but when PCR HCV was performed only 17.83% were positive while 2.9% & 8.3% as shown in the following table.

<table>
<thead>
<tr>
<th>HCV genotype</th>
<th>Upper Egypt (%)</th>
<th>Lower Egypt (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a</td>
<td>90.3</td>
<td>70.1</td>
</tr>
<tr>
<td>4m</td>
<td>4.8</td>
<td>11.8</td>
</tr>
<tr>
<td>4n</td>
<td>0.5</td>
<td>3.2</td>
</tr>
<tr>
<td>4o</td>
<td>0.2</td>
<td>2.9</td>
</tr>
<tr>
<td>4i</td>
<td>0.5</td>
<td>1.9</td>
</tr>
<tr>
<td>4y</td>
<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>1a</td>
<td>2.9</td>
<td>8.3</td>
</tr>
<tr>
<td>1g</td>
<td>0.0</td>
<td>0.3</td>
</tr>
<tr>
<td>1b</td>
<td>0.0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Conclusion: The prevalence of HCV was found to be 18.5% among household contacts of Egyptian families. The genotype 4a was predominant in upper Egypt (97.1%) more than lower Egypt (91.7%). On the other hand genotype 4a was higher in lower Egypt (8.3%) more than upper Egypt (2.9%).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

cancer incidence following DAA therapy may include the rapid clearance of hepatitis C virus, reconstitution of the immune system, and reduction of cancer immunosurveillance [2]. These changes may in fact have an impact on the development of cancer in other organs.

**Aims & Methods:** We conducted a retrospective analysis to compare the cancer incidence in patients treated with IFN-free DAA therapy with those treated with IFN therapy. All patients who achieved sustained viral response following antiviral therapy between 1992 and 2016 in our hospital were investigated retrospectively. Patient records were examined to identify new cases of cancer, as determined by pathology or medical imaging, in organs other than the liver following antiviral therapy. The date of diagnosis was determined based on the records, and the cancer incidence was compared between patients treated with DAA therapy and those treated with IFN therapy using the Kaplan-Meier method. Propensity analysis. Patients with recurrent cancer were excluded from the analysis. Propensity score analysis followed by inverse probability of treatment weighting (IPTW) was used to correct for the effects of confounding factors.

**Results:** There was a significant difference in the age and sex of the patients treated with DAA therapy (n = 324, median age: 70, male: 41%) and those treated with IFN (n = 445, median age: 58, male: 60%). Median lengths of the observation period for the DAA and IFN groups were 1.3 and 6.2 years, respectively. There were 12 and 25 cases of cancer occurring in organs other than the liver in the DAA and IFN groups, respectively. These cancer cases occurred mostly in the gastrointestinal tract, followed by the urinary organs, hematopoietic organs, biliary tract/pancreas, lungs, and other, and the median periods from the start of the antiviral therapy to the time of diagnosis were 0.9 and 6.8 years in the DAA and IFN groups, respectively. Cumulative rates of cancer after 1 and 2 years were 3.0 and 5.0% for the DAA group, and 0.2 and 0.0% for the IFN group, respectively. The difference between the groups was significant (p = 0.02) based on Cox regression analysis using IPTW.

**Conclusion:** Because cancer detection in organs other than the liver can be challenging in management of hepatitis, some cases with cancer found after the treatment might have been diagnosable before the treatment, possibly leading to an overestimation of the incidence after the treatment. The number of newly diagnosed cancer cases was small in the present study, resulting in a low statistical power. Nevertheless, the cancer incidence in organs other than the liver was significantly higher in patients treated with DAA therapy than those treated with IFN therapy. This difference persisted after correcting for possible confounding factors by age and sex of the patients. Our findings suggest that patients need to be carefully examined after DAA therapy for the development of cancer in various organs, including but not limited to the liver.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0054** **OPTIMIZATION OF DIRECT ANTI-VIRAL AGENT TREATMENT SCHEDULE: FOCUS ON HCV GENOTYPE 3

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**Introduction:** The shift from therapy with interferon to Direct antiviral agents (DAAs) has been a watershed for the management of HCV-related chronic liver diseases. In fact, treatment with second-generation DAAs cures the great majority of patients treated with HCV chronic infection, with the exception on genotype 3 cirrhotic patients.

**Aims & Methods:** The present report focuses on HCV genotype 3 cirrhotic patients treated with second-generation DAAs in order to identify which of the several treatment schedules recommended for genotype 3 would constitute the best option. Methods: 1. Twenty-four italian centers (ITAL-C consortium) were involved in this real-life study where HCV genotype 3 patients treated with DAAs. Eligible patients were >18 years old, noncirrhotic chronic HCV infection, either naive or treatment-experienced. In the analysis of any of the patients were excluded: infection with HCV genotypes other 3, active HCC on imaging, HIV and/or HBV co-infection, liver-transplant recipients, patients with an estimated glomerular filtration rate <30 ml/min. 2. With the intent to delineate treatment schedule with the new DAAs that would offer the higher chance of SVR to patients with HCV genotype 3, a systematic search of the literature data was implemented and the retrieved information was pooled and evaluated by a meta-analytical approach. Electronic, systematic review of the available evidence presented literature was performed via Medline from 2012 to 2016 by the following search keys: HCV Genotype 3 AND (DAA/OR (sofosbuvir) OR (daclatasvir) OR (ledipasvir) OR (Velpatasvir)).

**Results:** A total of 233 HCV genotype 3 patients were enrolled. In the entire population, the SVR rate was achieved by 205 subjects (88.0%). A successful treatment outcome was documented in 79.0% of patients treated with sofosbuvir in combination with RBV, in 92.0% of those who received sofosbuvir/ledipasvir or ledipasvir with or without RBV, and in all 7 patients treated with sofosbuvir/ledipasvir or without RBV. At the univariate analysis, baseline predictors of the SVR12 were gender (female patients being more responsive than males), BMI < 30 and the treatment schedule. Of relevance, age, stage of liver disease (advanced fibrosis or cirrhosis), RBV use, and treatment length were irrelevant to SVR12. At the stepwise logistic regression analysis, the only two factors independently associated with SVR12 were regimen containing sofosbuvir in combination with daclatasvir or ledipasvir (OR:4.25; 95%CI: 1.81-9.97; p = 0.001), and the BMI < 30 (OR: 2.64; 95%CI: 1.04-6.72; p = 0.041). The systematic review of literature provided data of 3311 patients from 17 full text article and two abstracts. The mean weighted SVR12 rate was 84.4%(CI:80.4–87.8); the rates varied from 79.0%(CI:70.9–85.3) with sofosbuvir/daclatasvir/ledipasvir, to 88.2%(CI:83.3–91.7) with sofosbuvir/daclatasvir. Conclusions: HCV genotype 3-infected patients, and in particular those progressed to cirrhosis, should be no more considered difficult-to-treat individuals, provided that an optimal therapeutic schedule is applied. Patients without cirrhosis should be treated with sofosbuvir and daclatasvir for 12 weeks. Patients with cirrhosis should be treated with sofosbuvir and daclatasvir for 24 weeks with or without RBV.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0055** **IS THERE AN INCREASE IN THE INCIDENCE OF HEPATOCELLULAR CARCINOMA IN CIRRhotIC PATIENTS WITH HEPATITIS C TREATED WITH THE DIRECT-ACTING ANTIVIRALS?**

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**Introduction:** The impact of the virological cure on the evolution of cirrhosis following treatment with direct-acting antiviral agents (DAAs) has been a watershed for the management of HCV-related chronic liver diseases. Recently, some papers reported an elevated incidence of recurrence of hepatocellular carcinoma (HCC) 1, 2 and others a possible rise on the de novo incidence of HCC in the first year after treatment with DAA 3, 4, but not others 5.

**Aims & Methods:** This is a prospective study of cirrhotic patients treated with DAA between February/2015 and January/2017, under HCC screening with ultrasound according to international guidelines. The main endpoint of the study was to determine the incidence of “de novo” and recurrent HCC. The second endpoint was to search for possible predictive factors associated with the occurrence of HCC. Statistical analysis performed on SPSS 24. Results: 106 cirrhosis (73% mean; 54.5±8.8 years), MLD 73±2.6, 60% with portal hypertension (n = 64) and 22% with decompensated cirrhosis (n = 23, 22 Child-Pugh B). Two patients with previous HCC, stage Barcelona Clinic Liver Classification (BCLC) A, invisible after loco-regional treatment. The sustained virological response at week 12 was 89.9% (71/79); 4 deaths, 1 relapse, 1 therapeutic failure and 2 losses to follow-up (FU). In 11±7 months of FU, we registered 1 case of HCC, 4 “de novo” and 1 recurrence, which corresponds to an incidence of 3.8% of “de novo” HCC (13% in decompensated cirrhosis). The BCLC staging was: 2 stage A, 2 stage B and the one with the recurrence was stage D. 8 A Child-Pugh B class (p = 0.004), low platelets level (p = 0.001) and hospitalization for decompensation (p = 0.005) were associated with the occurrence of HCC; the genotype did not have association. The mean time to HCC development was 7.5 months (2-14).
Aims & Methods: The regulation of miR-506 gene expression and its role in (InsP3R3), leading to cholestasis.

exchanger 2 (AE2) and type III inositol 1, 4, 5-trisphosphate receptor were transfected in human cholangiocytes (H69 cells) and the role of pro-cholangiocyte pathophysiology and immune activation was studied. Different centers were involved in liver transplantation for PBC patients.

Introduction: Salamanca, Salamanca/Spain

Results: Several pro-inflammatory cytokines were overexpressed in PBC liver biopsies [such as IL-8, IL-12, IL-17, IL-18 and TNFα] stimulated miR-506 promoter activity in human cholangiocytes, as revealed by luciferase reporter assays. Experimental overexpression of miR-506 in cholangiocytes dysregulated the cell proteomic profile (by mass spectrometry) affecting proteins involved in different biological processes including mitochondrial metabolism. In cholangiocytes, miR-506: (i) induced de-differentiation with downregulation of biliary and epithelial markers together with upregulation of mesenchymal and pro-inflammatory markers; (ii) increased oxidative and endoplasmic reticulum (ER) stress; (iii) induced DNA damage, and iv) sensitized to caspase-3-dependent apoptosis induced by cytotoxic bile acids. These events were also associated with impaired energy metabolism in mitochondria (proton leak and low ATP production) and PDC-E2 overexpression. Co-culture of miR-506 over expressing cholangiocytes with PBC immune cells induced activation and proliferation of PBC immunocytes.

Conclusion: Different pro-inflammatory cytokines enhance the expression of miR-506 in biliary epithelial cells. MiR-506 induces PBC-like features in cholangiocytes and promotes immune activation, representing a potential therapeutic target for PBC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Area under the curve and receiver operator characteristic (AUROC) compari-
sed the diagnostic accuracy of the eight methods. The interquartile range (IQR) and median of 10 SWE measurements using body mass index (BMI) and age were analysed using the Mann-Whitney U test.

Results: The study population consisted of 106 men and 94 women with a mean age of 65.1 ± 10.8 years and a median BMI of 25.4 kg/m². Fibrosis in F0/F1/F2/F3/F4 was F0/F1/F2/F3/F4 in 7/50/33/24/23 patients, respectively. The median SWE (median) of 10 measurements in patients with F0, F1, F2, F3, and F4 were 1.33, 1.57, 1.73, 1.95, 1.98, respectively. The median IQR/median was 0.21. Furthermore, we found that BMI (BMI ≥ 25) was related to significantly higher mean ADC values (P = 0.001) using b value 1000, there was a significant difference with higher mean ADC values of measurements taken. Our results suggest that 10 measurements are recom-

[51x77]d) respectively. In the cohort of obese (BMI ≥ 25) 0.24, < 25 0.20, p = 0.012) indicated significantly greater IQR/median.

There was no significant difference in the diagnostic accuracy between using the median or mean of three, five, and 10 measurements. The AUROCs to diagnose patients with severe fibrosis (F2) ranged from 0.77 (A) to 0.876 (H). AUROC increased based on the number of measurements. A signif-
cificant difference between 1 and 5 (p < 0.05), 1 and 10 (p < 0.01), 2 and 10 (p < 0.05) measurements was observed in pairwise comparison. Likewise, A significant difference between patients with severe fibrosis (F2) ranging from 0.821 (A) to 0.923 (G). A significant difference (p 0.05) was seen between one and 10 measurements. In the cohort of IQR/median < 0.3, the diagnostic accuracy of ≥F2 and ≥F3 ranged from 0.806 (A) to 0.877 (H), and from 0.832 (A) to 0.928 (H), respectively. In the cohort of obese (BMI ≥ 25) and old patients (age ≥ 65), the diagnostic accuracy of ≥F2 and ≥F3 ranged from 0.752 (A) to 0.862 (D), and from 0.735 (A) to 0.903 (H). Comparing the AUROC of one measurement, IQR/median < 0.3 showed greater AUROC than those of other co-
horts, however, the AUROCs of ten measurements were similar in each cohort.

Conclusion: No difference was found between reporting mean or median SWE measurements. The diagnostic performance of SWE increased with the number of measurements. Our results suggest that 10 measurements are recom-

mended to ensure the accuracy of SWE measurements in a practical setting.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0058 APPARENT DIFFUSION COEFFICIENT IN EVALUATING THERAPEUTIC Efficacy AFTER Radiofrequency ablation FOR HEPATOCELULAR CARCINOMA: PROMISING RESULTS

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Introduction: Percutaneous radiofrequency ablation (RFA) is a commonly used locoregional interventional procedure in treatment of hepatocellular carcinoma (HCC). There is growing evidence that apparent diffusion coefficient (ADC) value can be used in evaluating RFA therapeutic efficacy in treatment of HCC and thus represent a reliable predictor of local HCC recurrence after treatment.

Aims & Methods: We aimed to determine the therapeutic efficacy of RFA in patients with hepatocellular carcinomas using ADC value. A total of 52 patients with 58 HCCs were included, and were treated with RFA according to the guidelines. All lesions were evaluated by diffusion weighted imaging (DWI) and ADC value measurement before and after RFA treatment. DWI was obtained using axial a single-shot echoplanar imaging with two b-values (500, 1000 mm2/s) using 3 tesla MRI machine. Quantitative ADC maps were calculated using com-
mputer software and an image analysis. Diffusion weighted imaging (DWI) and magnetic resonance imaging (MRI) confirmed the HCC relied on triphasic CT and MRI, showing enhancement at the arterial phase of the therapeutic effect of RFA for treatment of patients with HCC and can be used as good non-contrast alternative to conventional imaging methods in post ablation follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0059 NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) EFFECT ON RESULTS OF SHEAR WAVE ELASTOGRAPHY FOR HEPATIC FIBROSIS STAGING

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Introduction: To study the effect of NAFLD on the results of shear wave elastography (SWE) in patients with chronic diffuse liver disease.

Aims & Methods: We have performed outcome analysis in 100 patients with chronic diffuse liver disease who were treated from 2015 to 2016. There were 41 male patients (41%), and 59 female patients (59%), age Me (LQ-UQ) 49 (39– 56), minimal age was 18 years, maximal age was 77 years. All patients were found to have chronic diffuse hepatic diseases and were hospitalized for morphological studies. Healthy volunteers, patients with liver cirrhosis (F0–F4) and healthy volunteers (F0–F1) were enrolled. 65 healthy volunteers (HV) were also examined. SWE was blindly evaluated. After the end of the study, all authors received results.

Results: Based on the obtained morphological results, we have formed the fol-

lowing subgroups of patients: F0 – F31 people, F2–9: 15 and F4–45 patients. Given that patients with a degree of fibrosis on the scale METAVIR F0 and F1 do not require active conservative therapy, we combined the data of the group into one F0–F1. The obtained results of shear wave elastography are presented in the form of quantitative variables. Median stiffness with interquar-
tile range (25–75%): in groups: F0 – F1: 5, (4, 6–5, 6) kPa, F2–8, (5, 3–8, 9) kPa, F3 – 13, 5 (10–14, 8) kPa and F4 – 22, 0 (18, 2–28, 5) kPa. The parameters of liver stiffnessometry in the various groups were: for stage F0: 2.5 mm2/s with a statistically significant difference compared to the other stages (P ≤ 0.003). Using b value 500, the mean ADC value before treatment didn't change significantly (P = 0.003), 1 and 10 (0.16, 0.12, 0.28 mm2/s with a statistically significant difference (P ≤ 0.05), 1 and 10 (0.16, 0.12 mm2/s) and stage F1 (1.46, 1.73, 1.95, respectively). The median IQR/median was 0.21. Furthermore, we found that BMI (BMI ≥ 25) was related to significantly higher mean ADC values (P = 0.001) using b value 1000, there was a significant difference with higher mean ADC values of measurements taken. Our results suggest that 10 measurements are recom-

mended to ensure the accuracy of SWE measurements in a practical setting.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0060 FEASIBILITY AND REPRODUCIBILITY OF NON-INVASIVE LIVER AND PANCREATIC STIFFNESS ASSESSMENT IN A COHORT OF PATIENTS WITH ALCOHOL-RELATED LIVER DISEASE

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Introduction: The estimation of liver stiffness (LS) has recently been evaluating by new elastographic techniques, such as Shear Wave Elastography (SWE), with a wider applicability than transient elastography (1). No studies evaluated LS in patients with alcoholic liver diseases (ALD) by using the elastographic methods. Moreover, exploring the possibility to assess the elasticity of other tissues, few studies evaluated the pancreatic stiffness (PS) by using transabdominal elastography (2,3), observing that chronic pancreatitis and alcoholic etiology had higher PS values (2).

Aims & Methods: The present study aimed at assessing the feasibility and repro-
ducibility of SWE at measuring LS and PS in a cohort of patients with alcohol abuse and known to have chronic liver disease and PS was performed by a single operator. The comparison of stiffness values between patients and HV was performed. Interobserver agreement for SWE was assessed by intraclass correlation coefficient (ICC). The effect of clinical and imaging data was assessed by using logistic regression model, with PS or LS as dependent variable. P values <0.05 were considered statistically significant.

Results: LS and PS by SWE were obtained in all the patients and HV. No failure was observed. LS and PS were significantly higher in patients than in HV: 22.1 kPa (95% CI, 16.9–36.2) vs 5.7 kPa (95% CI 5.2–6.4) for LS and 15.4kPa (95% CI 12.2–19.9) vs 12.4kPa (95% CI 9.5–13.6) for PS, p < 0.001. ICC for LS was good: 0.64 (95%CI, 0.50–0.74). ICC for PS was fair to good: 0.40 (95%CI, 0.24–0.54)
0.21–0.57). At univariate analysis LS was associated with liver cirrhosis (p < 0.0001), steatosis (p = 0.0003), liver surface nodularity (p = 0.0003), active alcoholic consume (p = 0.015), alcohol consumption/day (p = 0.0134), diabetes (p = 0.0223). At multivariate analysis cirrhosis (p < 0.0001) and steatosis (p = 0.0073) were independently associated with LS. At both univariate and multivariate analysis, PS was significantly correlated only with liver cirrhosis (p = 0.0058).

Conclusion: The present is the first series assessing LS and PS in ALD patients by using SWE. The feasibility of the technique was excellent. The reproducibility was good for LS and for PS. SWE was a good predictor of liver fibrosis in the ALD cohort. Liver cirrhosis was the only independent variable correlating with PS, whose estimation could be useful to detect alcohol-related pancreatic damage in patients with severe ALD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0061 EXOSOMIC miR-224 REGULATED TUMOR INVASION AND MIGRATION THROUGH IL-6/STAT3 PATHWAY IN HEPATOCELLULAR CARCINOMA
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Introduction: In our previous studies, IL-6/STAT3 pathway play key role, but the precise underlying mechanism remains to be explored. It was found exosomes are the vesicles released by the tumor cells into tumor microenvironment, they are a powerful diagnostic tool due to relative stability and composition covering the whole range of cancer-related biomarkers including proteins, metabolites, DNA, DNA modifications, coding and non coding RNA. Thus, study the roles of exosomic miRNA-145 20.65

Aims & Methods: The expression of miR-224, IL-6, STAT3 and SMAD4 in carcinoma (HCC).

Results: The expression of miR-224 were significantly increased compared to the rest of the world due to the high incidence of chronic infection with hepatitis C virus (HCV). In Egypt, HCV infection is the leading cause of HCC which is usually diagnosed at late stages. Due to the absence of reliable and accurate biomarkers for early detection of liver cancer, circulating microRNAs have recently emerged as great candidates for early diagnosis of HCC. These small non-coding RNA molecules are responsible for regulating gene expression and RNA stability. Therefore, the aim of this study is to investigate the potential of liver-specific circulating microRNAs as an accurate non-invasive diagnostic tool for the early detection of HCC-induced HCC.

Aims & Methods: Seven main miRNAs (miR-125a, miR-139, miR-34a, miR-221, miR-16, miR-145 and miR-199a) were selected due to their expression patterns in HCC as well as their contribution to the development of hepatocarcinogenesis. A total of 165 patients were enrolled in this study, from which serum samples were collected and categorized into four main patient groups: 42 healthy controls, 42 hepatitis B (CHB), 42 hepatitis C (CHC) without cirrhosis, 45 CHC with cirrhosis (LC), 38 HCC with HCV patients, and 40 healthy controls. The expression profile of the seven miRNAs was analyzed using TaqMan real-time transcription-polymerase chain reaction. Additionally, the conventional markers for HCC (alpha fetoprotein (AFP) and des-g-carboxyprothrombin (DCP)) were measured using commercial kits.

Results: Serum levels of miR-125a, miR-139, miR-145 and miR-199a were significantly decreased (p < 0.01) in HCC than in the CHC and LC groups (Table 1). On the other hand, miR-16 and miR-34a were significantly increased (p < 0.01) in HCC patients compared to the normal group. However, no significant difference was shown in the expression of miR-16, miR-34a, and miR-221 between the CHC, LC, and HCC groups. As a single biomarker, miR-34a showed the highest sensitivity and specificity among all miRNAs investigated, followed by miR-221, miR-125a, miR-139, miR-145, and miR-199a.

Table 1: Expression levels of serum microRNAs of the patients' group

<table>
<thead>
<tr>
<th>MicroRNAs</th>
<th>Normal</th>
<th>CHC</th>
<th>LC</th>
<th>HCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>miR-16</td>
<td>14.26 ± 0.69</td>
<td>24.09 ± 0.44**</td>
<td>23.29 ± 0.46**</td>
<td>22.35 ± 0.54**</td>
</tr>
<tr>
<td>miR-34a</td>
<td>27.32 ± 0.19</td>
<td>32.69 ± 0.34**</td>
<td>30.04 ± 0.54**</td>
<td>32.50 ± 0.94**</td>
</tr>
<tr>
<td>miR-221</td>
<td>22.82 ± 0.38</td>
<td>27.17 ± 1.44**</td>
<td>28.22 ± 0.41**</td>
<td>28.51 ± 0.46**</td>
</tr>
<tr>
<td>miR-125</td>
<td>20.57 ± 0.54</td>
<td>96.01 ± 4.36**</td>
<td>100.54 ± 0.81**</td>
<td>29.96 ± 0.57**</td>
</tr>
<tr>
<td>miR-139</td>
<td>29.96 ± 0.57</td>
<td>94.63 ± 0.38**</td>
<td>86.02 ± 0.40**</td>
<td>30.03 ± 0.43</td>
</tr>
<tr>
<td>miR-145</td>
<td>20.65 ± 0.52</td>
<td>83.51 ± 0.53**</td>
<td>80.74 ± 0.59**</td>
<td>20.64 ± 0.57</td>
</tr>
<tr>
<td>miR-199a</td>
<td>80.23 ± 0.72</td>
<td>330.38 ± 0.74**</td>
<td>311.98 ± 0.72**</td>
<td>66.16 ± 0.44**</td>
</tr>
</tbody>
</table>

**p < 0.01 significant increase than control; p < 0.01 significant decrease than CHC; **p < 0.01 significant decrease than CHC and HCC; p < 0.01 significant decrease than control; p < 0.01 significant decrease than CHC and LC; p < 0.01 significant decrease than CHC

Conclusion: These results indicate that measuring the expression levels of liver-specific circulating microRNAs can be used as a reliable diagnostic and prognostic tool for HCC. Our results demonstrated that the up-regulation of miR-16, miR-34a, and miR-221 can differentiate between normal individuals and patients with liver disease ranging from fibrosis, cirrhosis, and HCC. Meanwhile, the noticeable down-regulation of miR-125a, miR-139, miR-145 and miR-199a in the HCC patient group indicates that these microRNAs can differentiate HCC from CHC and LC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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P0063 EPIDEMIC INACTIVATION OF METALLOTHIONEIN IEG IN PATIENTS WITH HEPATOCELLULAR CARCINOMA
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Introduction: Primary hepatocellular carcinoma (HCC) is one of the most common malignancies all over the world. HCC is associated with poor prognosis. However, the mechanism of HCC initiation and development remains unclear. In our previous work, high-throughput microarray assay in collected clinical HCC samples followed by bioinformatic analysis suggested that Metallothionein IEG (MT1G) might be one of the key factors in HCC.

Aims & Methods: We detected the MT1G expression in paired HCC samples and HCC cell lines by RT-qPCR and Western blot. Then MSP (methylation specific PCR) and BGS ( Bisulfite genomic sequencing) were performed to evaluate methylation status of MT1G in HCC. The functional significance of MT1G in HCC was investigated by overexpression or knockdown in HCC cell lines. The effects of MT1G re-expression were also determined by flow cytometry.

Results: MT1G was inactivated in all (6/6) HCC cell lines tested, but was readily expressed in immortalized liver cell line LO2. The expression of MT1G was significantly decreased than control; **p < 0.01 significant increase than control; p < 0.01 significant decrease than CHC; **p < 0.01 significant decrease than CHC and HCC; p < 0.01 significant decrease than CHC and LC; p < 0.01 significant decrease than CHC
regulated in cancer tissues compared with the adjacent non-tumor tissues (R). The expression level of MTIG in the liver cancer tissue cells was closely correlated to the promotor hypermethylation status. The MTIG expression in silenced HCC cell lines could be restored by demethylation agent. We generated HCC cell lines overexpressed MTIG. Ectopic re-expression of MTIG by stable transfection in SMMC-7721 and Hep3B cells inhibited colony formation (P < 0.001), suppressed cell motility and invasiveness (P < 0.05), concomitant with up-regulation of E-cadherin; and down-regulation of PCNA, MMP2, MMP3 and Vimentin. The in vivo growth of HCC cells in nude mice was also markedly inhibited after stable expression of MTIG (P < 0.001). MTIG over-expression in HCC cells induced the cell apoptosis (P < 0.01).

Conclusion: Our results demonstrate that MTIG promoter methylation directly mediates the transcription down-regulation and commonly occurs in HCC. MTIG gene can act as a functional tumor suppressor in liver carcinogenesis by playing an important role in depression of cell proliferation, migration, invasion, and induction of cell apoptosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0064 THE FXR RECEPTOR PATHWAY IN HEPATOCELLULAR ADENOMA AND FOCAL NODULAR HYPERPLASIA, A PRELIMINARY EXPERIENCE
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Introduction: Hepatocellular adenoma (HCA) and focal nodular hyperplasia (FNH) may be confused on medical imaging. Both tumours are not connected to the biliary tree, however only FNH accumulates bile salts, suggesting that expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of pro-apoptotic genes. Its aberrant expression in tumor turns its role as foe. Aims & Methods: Here, we analyze the role exerted by CUX1 during deacetylase inhibitors mediated cell death in liver cancer cells. CUX1, endoplasmatic reticulum (ER) stress and autophagy markers were analyzed by RT-qPCR in two liver cancer cell lines HepG2 and Hep3B. Protein level was measured by western blotting. Cells were transfected with siRNA for CUX1 and furthermore treated with deacetylase inhibitors with up-regulated caspase 8 and protein level of survivin, p53 and caspase 3. Results: CUX1 knock down caused a suppression of ER stress and autophagy markers BIP, CHOP, ATFS, ATF6, Beclin1, MAP1LC3B, UVRAG and TFEB after early time point (6 hours) in both cell lines. Prolonged transfection did not alter the expression of the above mentioned markers; BIP was the only one suppressed in HepG2 after 24 hours. Interestingly, the deacetylase inhibitors are able to promote CUX1 over-expression after 6 hours of treatment, whereas they showed to lose this ability after 24 hours. CUX1 knock-down reduced significantly its protein level after treatment with deacetylase inhibitors. CUX1 knock down counteracts the accumulation of BIP protein after 24 hours of treatment with deacetylase inhibitors. Thapsigargin induced BIP independently from CUX1.

Conclusion: ER stress and autophagy markers are under the control of CUX1. The cell death induced by deacetylase inhibitors is strictly connected with CUX1 expression and activity. Further studies are needed to clarify the exact mechanism exerted by CUX1 in this scenario.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0065 CUX1 CONTROLS ENDOPLASMATIC RETICULUM STRESS AND AUTOPHAGY-RELATED CELL DEATH
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Introduction: CUX1 (CUTL1) is a transcription factor able to promote the expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of pro-apoptotic genes. Its aberrant expression in tumor turns its role as foe.

Aims & Methods: Here, we analyze CUX1 activity in TRAIL (Tumour necrosis factor related apoptosis inducing ligand) mediated cell death in liver cancer cells. CUX1 was knocked down in HepG2 and Hep3B cells. Cells were further treated for 48 hours with a strong ligand (superkiller) binding DR4 and DR5 (TRAIL death receptors). The cell death inducers were analyzed by FACS analysis. RT-qPCR was performed to detect the expression of apoptotic markers. Caspase activity was measured by luminescence. Apoptosis array was performed. Western blotting was performed for caspase 8 and FipL detection.

Results: Treatment with superkiller TRAIL, at 50 and 100ng/ml, caused cell death in HepG2 and Hep3B cells after 48h proven by an accumulation of 40% of sub-G1 events. CUX1 knock down caused a sensitization of liver cancer cells to TRAIL effect by increasing, significantly, the percentage of sub-G1 events (60% with 100ng/ml). CUX1 knock down did not change the expression of TP53, KRT18, CDCNK1A and CDCNK1B. Interestingly, silencing CUX1 increased the activity of caspase 3/7 after treatment with soluble TRAIL. The effect was neutralized by pan-caspase inhibitor zVAD. Apoptosis array evidenced an increased protein level of un-cleaved caspase 3 after CUX1 knock down. Caspase 8 uncleaved form was down-regulated at protein level after CUX1 knock down and treatment with TRAIL. Its cleaved forms were up-regulated. Flip decreased in favor of FlipS also.

Conclusion: CUX1 mediates the resistance of liver cancer cells to TRAIL signaling. Knock down of CUX1 restores the potential of TRAIL to trigger cell death.

Disclosure of Interest: All authors have declared no conflicts of interest.
The diagnosis of liver cancer depends on both screening with alpha-fetoprotein (AFP) and radiological imaging studies. Generally, normal levels of AFP are below 10 ng/ml but AFP greater than 200 ng/ml is suggestive of HCC. The sensitivity of AFP for liver cancer is about 67%; therefore a normal AFP does not exclude HCC. "Now another tumor marker, that together with AFP could improve the diagnostic utility of HCC."

Squamous cell carcinoma antigen (SCCA), a member of the high molecular weight family of serine protease inhibitors named serpins which are physiologically found in the granular layers of normal squamous epithelium but found to be typically expressed by neoplastic cells of epithelial origin in a number of different cancers for example cervical, lung, and head and neck cancers hence, it can be used as a clinical marker of these malignancies. [4] The structure of the serum ovalbumin revealed the archetype native serpin fold that typically have three β-sheets (termed A, B, and C) and eight or nine α-helices (hA-hI). Serpins also possess an exposed region termed the reactive centre loop (RCL) that includes the specificity determining region and forms the initial interaction with the target protease.

Recently much attention has been focused on the role of SCCA in HCV cirrhotic patients suggesting that high levels of SCCA can assess HCC development. [5] The aim of this study was to assess the serum level of squamous cell carcinoma antigen (SCCA) in cirrhotic chronic HCV patients with and without hepatocellular carcinoma in relation to alpha feto protein (AFP).

**Aims & Methods:** The aim of this study was to assess the serum level of squamous cell carcinoma antigen (SCCA) in cirrhotic chronic HCV patients with hepatocellular carcinoma in relation to alpha feto protein (AFP). These groups were from both sexes who are admitted to the inpatient ward and the outpatient clinic of Tropical Medicine Department, Faculty of Medicine, Alexandria University. This study was carried out on:

- Group A: 100 cases of hepatocellular carcinoma without interventions.
- Group B: same 100 cases of Group A before and 3 months after successful interventions.
- Group C: 100 cases of established cirrhosis.
- Group D: 100 cases with chronic hepatitis C virus infection without established cirrhosis.
- Group E: 100 healthy individuals as controls.

All patients in this study were subjected to: complete blood picture, liver biochemical profile, serum alanine aminotransferase (ALT), serum aspartate aminotransferase (AST), serum alkaline phosphatase, total and direct serum bilirubin, prothrombin time and activity, serum albumin blood urea nitrogen (BUN), serum creatinine. Fasting blood sugar. Serum alpha fetoprotein (AFP).

**Determination of squamous cell carcinoma antigen (SCCA):** Serum from selected patients and controls were used for estimation of SCC-Ag using CanAg SCC EIA. The CanAg SCC EIA is a solid phase, non-competitive immunoassay based on the direct sandwich technique. Calibrators and patient samples are incubated together with biotinylated Anti-SCC monoclonal antibody in Streptavidin coated microstrips. After washing buffered Substrate/Chromogen reagent (hydrogen peroxide and 3, 3’, 5, 5’ tetramethylbenzidine) is added to each well and an enzyme reaction in enzyme is allowed to proceed. During the enzyme reaction a blue colour will develop if antigen is present. The intensity of the colour is proportional to the amount of SCC present in the samples. The colour intensity is determined in a microplate spectrophotometer at 620 nm (or optionally at 405 nm after addition of Stop Solution). Calibration curves are constructed for each calibrator. The SCC concentrations of patient samples are the read from the calibration curve.

**Results:** Table 1 shows a statistical significant difference between different studied groups regarding alpha feto protein (P = 0.000).

**Table 1:** Comparison Between Different Studied Groups Regarding Alpha Feto Protein

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Minimum</th>
<th>Maximum</th>
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<tbody>
<tr>
<td>Gp. A</td>
<td>263.0</td>
<td>96.02</td>
<td>150.0</td>
<td>438.0</td>
</tr>
<tr>
<td>Gp. B</td>
<td>209.4</td>
<td>64.7</td>
<td>145.0</td>
<td>380.0</td>
</tr>
<tr>
<td>Gp. C</td>
<td>154.5</td>
<td>48.16</td>
<td>75.0</td>
<td>210.0</td>
</tr>
<tr>
<td>Gp. D</td>
<td>7.0</td>
<td>1.82574</td>
<td>5.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Gp. E</td>
<td>1.22</td>
<td>0.27406</td>
<td>0.8</td>
<td>1.6</td>
</tr>
<tr>
<td>F</td>
<td>38.208</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>P</td>
<td>0.000*</td>
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Table 2 shows a statistical significant difference between different studied groups regarding SCCA level (P = 0.000).

**Table 2:** Comparison Between Different Studied Groups Regarding SCCA Score

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Minimum</th>
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<tbody>
<tr>
<td>Gp. A</td>
<td>5.53</td>
<td>2.16</td>
<td>2.5</td>
<td>10.0</td>
</tr>
<tr>
<td>Gp. B</td>
<td>5.3</td>
<td>1.5</td>
<td>3.3</td>
<td>7.6</td>
</tr>
<tr>
<td>Gp. C</td>
<td>3.3</td>
<td>1.6</td>
<td>1.2</td>
<td>5.6</td>
</tr>
<tr>
<td>Gp. D</td>
<td>0.824</td>
<td>0.15897</td>
<td>0.6</td>
<td>1.05</td>
</tr>
<tr>
<td>Gp. E</td>
<td>0.646</td>
<td>0.23172</td>
<td>0.3</td>
<td>0.95</td>
</tr>
<tr>
<td>F</td>
<td>28.897</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>0.000*</td>
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Also, Positive significant correlation was found between AFP and SCCA in both groups (Table 3).

**Table 3:** Correlation Between AFP and SCCA

| | | | | |
|---|---|---|---|
| | SCCA | r | 0.629* |
| | p | <0.001 |

Note: r: Pearson coefficient, *: Statistically significant at p ≤ 0.05

When combined sensitivity of both markers were calculated in our study at the best-cutoff values (SCCA 3.2 ng/ml and AFP 200 ng/ml) sensitivity improved to 93% (Table 4).

**Table 4:** AUC for AFP, SCCA and SCCA + AFP

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<td>AUC</td>
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**Conclusion:** In the present study patients with HCC either with or without therapeutic intervention have significantly higher level of AFP in comparison to chronic HCV, cirrhotic and control groups this is in agreement with Awadhallah et al.[6] who reported a statistically highly significant elevation in the serum AFP in HCC group when compared with control group. Moreover, the mean serum level of AFP in group A (HCC before intervention) was 263 ng/ml that decreased to 209.4 ng/ml in group B after therapeutic intervention and this agreed with Peng et al.[7] and Molinari et al.[8] Also, at AFP level of 200 ng/ml the sensitivity was 90%, while the specificity was 60%.

Our results showed that SCCA level ranged from 2.5-10 with a mean of 5.53 in HCC patients without interventions, 3.3-7.6 with a mean of 5.3 in patients with HCC with therapeutic interventions, 1.2-5.6 with a mean of 3.3 in cirrhotic group, 0.6-1.05 with a mean of 0.824 in chronic HCV group while healthy control group had much lower values ranging from 0.3-0.95 with a mean of 0.646. Thus, a highly significant increase in serum SCCA level in patients with HCC before and after therapeutic intervention when compared to cirrhotic, chronic HCV and control groups (p < 0.001). These results were in accordance with Hussein et al.[9] and El Ezaawy et al.[10] SCCA was also higher among patients with HCC before intervention compared to patients with HCC after intervention as found by Bin et al.[11]

**Table 3:** Correlation Between AFP and SCCA

Applying the ROC curves analysis showed the best cut-off value to differentiate HCC patients from cirrhotic patients was 3.2 ng/ml for SCCA yielded 80% sensitivity and 90% specificity. These results were in agreement with Trevisani et al.[12] Patients with HCC, in our study were none randomized selected as BCLC stage B (either one HCC lesion < 5 cm in size or 3 lesions < 3 cm) so no statistical correlation was done between serum AFP level and tumor size.

Our results showed a significant positive correlation between serum SCCA and AFP among patients with HCC before and after therapeutic intervention. Our data are in agreement with that of Hussein et al.[9] and El Ezaawy et al.[10] who detected that SCCA were positively significantly correlated with AFP level. When combined sensitivity of both markers was calculated in our study at the best-cutoff values (SCCA 3.2 ng/ml and AFP 200 ng/ml) sensitivity improved to 93%. Matching results were found by Gianluigi et al.[4]

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


The overall survival rate of 80%, 66.7% vs 60%, 46.7% at 12 months and 30 months, respectively, was not statistically significant ($p = 0.098$) vs 73.3% and 80% ($p = 0.652$) for medium and large hepatomas during 30 months follow up were not statistically significant. The overall survival rates of 80%, 66.7% vs 60%, 46.7% at 12 and 30 months, respectively, was not statistically significant ($p = 0.390$). By multivariate analysis, BCLC stage (HR $= 3.904$, $p = 0.023$), MELD score (HR $= 1.220$, $p = 0.021$) and pre-treatment AST level (HR $= 1.028$, $p = 0.019$) were independent prognostic factors for overall survival.

Conclusion: Multiple bipolar RFA system can achieve high complete tumor necrosis rate and low complication rate and compared between medium and large hepatomas using Kaplan-Meier survival and the prognostic factors were using multivariate analysis.

Results: 30 patients were divided equally into two groups with 15 patients in each of medium and large hepatoma groups. 17 patients underwent artificial ascites (56.3%). The complete necrosis rate after ablation was 93.3% (14/15 patients) for either medium or large hepatomas. The local tumor progression rate and distant tumor recurrence rate of 40% and 60% ($p = 0.098$) vs 73.3% and 80% ($p = 0.652$) for medium and large hepatomas during 30 months follow up were not statistically significant. The overall survival rates of 80%, 66.7% vs 60%, 46.7% at 12 and 30 months, respectively, was not statistically significant ($p = 0.390$). By multivariate analysis, BCLC stage (HR $= 3.904$, $p = 0.023$), MELD score (HR $= 1.220$, $p = 0.021$) and pre-treatment AST level (HR $= 1.028$, $p = 0.019$) were independent prognostic factors for overall survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Introduction: Hepatocellular adenomas (HCA) are rare, benign tumors of pre- sumable epithelial origin, that occur predominantly, but not exclusively, in young women taking oral contraceptives (OC) or anabolic steroids. The Bordeaux adenoma tumor markers are a promising method of identifying the high-risk HCA of malignant transformation into hepatocellular carcinoma (HCC).

Aims & Methods: Aims: The authors propose to evaluate the demographics, etiology, clinical manifestations and prognosis of HCA.

We undertook retrospective analysis of patients with HCA, histologically confirmed (by guided biopsy or surgical resection), between 2008 and 2016, in a tertiary referral centre. When feasible, the subtype classification of HCA proposed by the Bordeaux group, was performed. Descriptive statistics, uni and multivariate analysis were performed using IBM SPSS Statistics 22, with p < 0.05 deemed to be statistically significant.

Results: In this study 27 patients were included, 2 man and 25 women, with a median age of 38 ± 11 years, followed for a mean time of 78 ± 36 weeks (lost follow-up in 7 cases). Three cases of hepatic adenomatosis were included. Forty-one percent of the women used OC and 38% of the patients had dyslipidemia. The mean size of the HCA was 70 ± 42 mm; 65% of the patients had abnormal liver tests at diagnosis, 46% were symptomatic and in 21% the diagnosis was performed due to ruptured HCA. Surgical resection was performed in 88% of the cases; complete resection was achieved in 75% of the cases. Of the 19 patients who performed abdominal-CT scan or abdominal-MRI before histological confirmation, only 50% had an imagiological diagnosis of HCA. In 12/44% cases, immunohistochemical analysis was performed. According to the Bordeaux classification of HCA, 8 (67%) cases were classified as inflammatory, 2 (17%) as HNF-la-mutated, 1 (8%) as β-catenin mutated and 1 (8%) as unclassified. During surgery, patient died due to hemorrhagic shock related with HCA rupture and in 2 (10%) was necessary surgical revision due to incomplete resection. There was no HCC cases diagnosed during the follow-up. The median size of the HCA that weren’t completely resected and also of those presenting with HCA rupture was significantly higher: (110 ± 55 mm [p = 0.035] and 105 vs 47 mm [p = 0.037], respectively). The 2 male patients had inflammatory HCA (p = 0.011).

Conclusion: In this cohort, HCA were prevalent in female taking OC and the inflammatory type HCA was the most common. In many cases, abdominal imaging is insufficient for a correct diagnosis, and biopsy specimen or surgical resection should be performed for a correct diagnosis. Lesion size was associated with the risk of rupture and incomplete surgical resection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


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Introduction: Endoscopic ultrasound (EUS)-guided fine needle aspiration (EUS-FNA) is one of the alternative methods for tissue sampling of liver solid mass. However, the diagnostic efficacy using cytological analysis was limited.

Aims & Methods: In this study, we evaluated the feasibility and diagnostic accuracy of EUS-guided fine needle biopsy (EUS-FNB) for hepatic solid masses in patients with suspected malignancy. The EUS-FNB using 20G, 22G or 25G ProCore needle (PCN) was performed to evaluate the patient with solid liver mass. The primary outcome was the diagnostic accuracy of EUS-FNB for malignancy, and adequacy of the specimen for histology. The secondary outcomes were (1) the proportions of patients in whom immunohistochemical (IHC) stain was possible, and (2) compared diagnostic yield of FNB according to the needle size (40-50 mm, 51-60 mm and >60 mm).

Results: Forty-one patients (13 women; mean age, 67.9 ± 10.3 years [range, 46–86]) underwent evaluation with EUS and identified hepatic lesions ranging in size from 0.7 cm to 15 cm. EUS-FNB with 20G (n = 10), 22G (n = 24) or 25G PCN (n = 7) was performed (right lobe: n = 10, left lobe: n = 31). The median number of needle passes was 2 ± 3.0 (range, 1–5). Technical success rates for tissue acquisition were 97.6%, but both specimen adequacy for histology and available HCA (30%) was 92.6%. Three (7%) cases were non-diagnostic, and subsequently proved to be malignant; 2 by smear cytology and 1 after surgical resection. The diagnostic yield, sensitivity and specificity of EUS-FNB for the diagnosis of malignancy were 92.6%, 92.6% and 100%, respectively. The diagnostic yield in 20G, 22G or 25G PCN was significantly superior to the 25 G PCN (p = 0.045). There was one bleeding complication, but controlled with endoscopic hemostasis with endoclips.

Conclusion: EUS-FNB with core biopsy needle may be a safe and useful modality in the management of patients with hepatic solid mass. Moreover, 20G and 22G FNB may be adequate for liver biopsy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


3. Disclosure of Interest: All authors have declared no conflicts of interest.

References

References


P0073 COMPARISON OF METHODS TO ESTIMATE LIVER FUNCTION IN NEWLY-DIAGNOSED HEPATOCELLULAR CARCINOMA PATIENTS WITH ASCITES

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Introduction: Liver function is a key element in determining outcome of patients with hepatocellular carcinoma (HCC). For HCC with ascites, estimation of liver function is particularly important, as they have already decreased liver function.

Aims & Methods: We aimed to find out best method to predict outcome of HCC patients with ascites. A total of 437 newly-diagnosed HCC patients with ascites (mean age = 56.0 y, male = 74.8%, hepatitis B virus = 73.2%) were analysed. We compared Child-Pugh score, Model for End-stage Liver Disease (MELD) score, MELD-Na score, and the Albumin-bilirubin (ALBI) grade for overall survival.

Results: During a median 9.0 months of follow-up (range: 0.1-154.0), mortality was recorded in 275 out of 267 patients' (50.3%) patients. MELD showed highest c statistic in predicting one-year survival (0.76). Higher scores were associated with worse survival. Patients with MELD-Na < 13 or ALBI grade ≤ 1 showed significantly worse survival than those who did not (median survival: 13.3 vs. 24.0 months, p < 0.001). When patients were further stratified by nUCC stage and MELD-Na score, treatment was not associated with better outcome for nUCC stage IV patients with MELD-Na ≤ 12 (median survival: 22.2 vs. 18.8 months for treatment vs. best supportive care, p = 0.15), while treatment was associated with better outcome in other subgroups.

Conclusion: In HCC patients with ascites, treatment was associated with better survival, except for subgroup with advanced tumor with decreased liver function, independent of ascites. These results are not absolute contraindication for HCC treatment. For these patients, MELD-Na showed better performance than MELD, Child-Pugh score and ALBI score for predicting overall survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0074 DIAGNOSTIC AND PROGNOSTIC ROLE OF SQUAMOUS CELL CARCINOMA ANTIGEN IN HEPATOCELLULAR CARCINOMA: SEROLOGICAL AND TISSUE DETERMINATION

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Introduction: The ideal serological marker in hepatocellular carcinoma (HCC) has not been identified yet since Alpha-fetoprotein (AFP) has unsatisfactory characteristics. Squamous Cell Carcinoma Antigen (SCCA) is expressed in tissue sample analysis of determined immunocomplexed with IgM (SCCA-IgM) has satisfactory diagnostic and prognostic performance.

Aims & Methods: Aim of our study was to evaluate, in HCC patients, the diagnostic and prognostic role of SCCA determination in tissue and in serum samples. SCCA-IgM levels were determined in 409 sera obtained from 196 HCC patients and 213 cirrhotics. SCCA tissue expression was analyzed in a subgroup of 62 patients with biopsy available at diagnosis. Sensitivity, specificity, correlation with clinical and tumor parameters, response to treatment and survival were evaluated.

Results: HCC patients had SCCA-IgM levels significantly higher than cirrhotics (P < 0.0001). Sensitivity, specificity, positive and negative predictive values were 76%, 52%, 60% and 78%, respectively. In comparison, sensitivity and specificity of Alpha-fetoprotein (AFP) and SCCA-IgM are 24% and 64%, respectively. SCCA-IgM levels were determined in 409 sera obtained from 196 HCC patients and 213 cirrhotics. SCCA tissue expression was analyzed in a subgroup of 62 patients with biopsy available at diagnosis. Sensitivity, specificity, correlation with clinical and tumor parameters, response to treatment and survival were evaluated.

Results: HCC patients had SCCA-IgM levels significantly higher than cirrhotics (P < 0.0001). Sensitivity, specificity, positive and negative predictive values were 76%, 52%, 60% and 78%, respectively. In comparison, sensitivity and specificity of Alpha-fetoprotein (AFP) and SCCA-IgM are 24% and 64%, respectively. SCCA-IgM levels were determined in 409 sera obtained from 196 HCC patients and 213 cirrhotics. SCCA tissue expression was analyzed in a subgroup of 62 patients with biopsy available at diagnosis. Sensitivity, specificity, correlation with clinical and tumor parameters, response to treatment and survival were evaluated.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0075 ADHERENCE TO BARCELONA CLINIC LIVER CANCER GUIDELINES IN FIELD-PRACTICE: RESULTS OF PROGETTO EPATOCARCINOMA CAMPANIA

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Introduction: The BCLC algorithm is the standard system for clinical management of HCC. Data on adherence to this therapeutic paradigm are scarce. The aim of this field-practice study is to provide a description of HCC patients in Southern Italy, to evaluate the adherence to BCLC guidelines and its impact on patients' survival.

Methods: We analyzed the region-wide Italian database of Progetto Epatocarcinoma Campania, which includes data of HCC patients, prospectively collected from January 2013 to December 2015 in 16 regional centers.

Results: Overall 1008 HCC patients were enrolled: 70.6% patients received therapy recommended by BCLC algorithm, while 29.4% underwent different treatment. Among patients who were treated in adherence to guidelines, a higher rate of diagnosis on surveillance programs, better liver function, lower rate of AFP > 200 ng/ml, more early stage and monofocal HCC, lower frequency of nodules > 5 cm, portal vein thrombosis and metastases were observed. The multivariable analysis showed that non-adherence to treatment guidelines was independently associated to the BCLC stage B, Child-Pugh classes B-C, and to the presence of neoplastic thrombosis and metastases. The mean overall survival in patients treated according to BCLC indications was 35.5months, while in patients managed differently was 31.9 months (p < 0.0001).

Conclusion: Adherence to BCLC algorithm in field-practice was high in early and end stage HCC patients, but it was poor in intermediate and advanced patients. This may be due to the wide heterogeneity of intermediate-stage patients, and to the limited use of sorafenib in advanced-stage patients. Strategies to improve treatment and stratification of HCC patients are required.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0076 A QUESTIONNAIRE SURVEY ON QUALITY OF LIFE WITH ANXIETY AND DEPRESSION SELF-RATING IN PATIENTS OF LIVER CIRRHOSIS

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Introduction: Liver cirrhosis is a great public health burden for Chinese health system. The most common cause are HBV, HCV, alcohol consumption and non-alcoholic fatty liver disease, etc. The quality of life of liver cirrhosis patients is impacted by the physical symptoms and psychological symptoms such as anxiety as depression.

Aims & Methods: We aimed to investigate the quality of life of patients with cirrhosis, as well as depression and anxiety. A questionnaire survey was carried out in 95 patients in our gastroenterology department, Peking University People's Hospital from May to August in 2016. The patients were divided into two groups, cirrhosis group and control group. The patients in cirrhosis group...
were diagnosed liver cirrhosis without complications. The control group included the digestive polyps patients without other diseases. The questionnaire included the World Health Organization Quality of Life (WHOQOL)-BREF, Self-rating Anxiety Scale (SAS) and Self-rating Depression Scale (SDS). The questionnaire scores of the two groups were analyzed.

Results: A total of 95 valid questionnaires were collected and divided into cirrhosis group (n = 40) and control group (n = 45). In the cirrhosis group, there were 22 males and 18 females, average age 57.97 ± 10.448 years. In the control group, there were 45 males, 23 males and 22 females, with an average age of 61.47 ± 13.081, showing no difference from cirrhosis group. WHOQOL includes four domains: physiological domain, psychological domain, social relationship domain, environment domain. The scores of liver cirrhosis group: physiological field (22.23 ± 3.312), psychological field (19.59 ± 3.925), social relationship field (9.64 ± 2.497), environment domain (26.23 ± 7.534) and control group (22.96 ± 3.275 in physiological field, 19.87 ± 3.152 in psychological field, 10.58 ± 2.061 in social relation field and 28.36 ± 5.091 in environmental field), they had no significant difference between the two groups (P > 0.05). The depression-sel- fnosis group (female 47.82%) was significantly higher (P = 0.034) than that of control group (42.61 ± 11.564). Meanwhile, there was no significant difference between the Self-rating Anxiety Scale scores of the cirrhosis group (38.46 ± 11.917) and control group (37.00 ± 12.521) (P > 0.05) (Table 1).

Conclusion: The quality of life and anxiety score in cirrhosis group had no sig- nificant difference from the control group, but the depression score was higher than that of the control group.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
0079 EARLY DIAGNOSTICS OF NAFLD: ANALYSIS OF RISK FACTORS USING BIOPHYSICAL TECHNIQUES. ASSOCIATION BETWEEN THE PREVALENCE STEATOSIS AND COMPONENT COMPOSITION OF THE BODY
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Introduction: Non-alcoholic fatty liver disease (NAFLD) is liver disease with histological signs of accumulation of cholesteryl excessive amount in hepatocyte in patients not consuming alcohol as a single cause (due to causes other than). The search for accessible, non-invasive and effective methods of screening for this pathology, allowing to detect NAFLD at early, potentially reversible stages of development is relevant. The purpose of the work was frequency estimation of the prevalence steatosis according to elastometry with controlled attenuation parameter (CAP%) among young people and associated with them specific body composition.

Aims & Methods: 59 volunteers (students of medical university) at the age of 19–28 years (the median age of 20.5) have participated in research. There were 22 (37.3%) men and 33 (62.7%) women among them without verified liver diseases. The survey was conducted in order to exclude or detect risk factors. Determining the body mass index (BMI), body composition, CAP% (CAP%) was used for the severity of steatosis. Moreover, there was the body electrical impedance analysis of body (BIA), evaluated: body mass index (BMI), body fat.

Results: The signs of violations of the structure of the liver were diagnosed in 15 people (25.4%). The signs of steatosis were found in 12 (20.3%) subjects. The symptoms of liver fibrosis were found in 7 (11.9%) people (E> 5, 8, 5KPa). At the same time the combination of liver fibrosis and steatosis was diagnosed in 4 (6.8%). After analyzing data of BIA it was revealed that body weight above normal in 25 (40, 3%) subjects, while body composition above normal values in 19 (33, 4%). Results of binary regression analysis showed that the chance of development of hepatic steatosis in case of excess adipose tissue increase 28 times (p = 0, 045), influence of BMI, gender, age was statistically insignificant.

Conclusions: Based on the obtained results, it can be concluded that there is high enough level of distribution of liver steatosis among young people. Transient elastography (TE) with controlled attenuation parameter (CAP%) is a fast, reliable, repeatable non-invasive method for the assessment of NAFLD. The development of hepatic steatosis among practically healthy young people was validly associated with the increase the amount of adipose tissue in the body. Confirmed the importance of evaluation of body composition and lack of information of using only BMI when evaluating the chances of development of NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0080 SALVAGE TECHNIQUE USING A MICRO GUIDEWIRE FOR DIFFICULT BILIARY CHOLANGIOPANCREATOGRAPHY
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Introduction: Biliary cannulation is indispensable for therapeutic endoscopic retrograde cholangiopancreatography (ERCP) in patients having biliary disease. Selective biliary cannulation is often difficult due to anatomical constraints. Numerious techniques have been attempted to overcome such problems. Although a wire-guided selective cannulation technique into the bile duct is a useful approach, conventional guidewires (0.025 or 0.035 inch) are relatively rigid to pass through the long curved narrow distal segment (NDS) or malignant stricture and sometimes get flicked off the NDS in such cases. It may be better to use finer and more flexible guidewires. Hence, we developed a novel guidewire technique using a micro guidewire (GT wire; 0.016 inch, 300 cm, TERUMO, Japan) designed for super-selective angiography in difficult cases of selective biliary cannulation.

Aims & Methods: We aimed to assess usefulness of GTWt for salvage technique in biliary cannulation. We studied 240 consecutive ERCP-naive patients between August 2014 and February 2017. We have tried to perform GTWI to ERCP-difficult cases that was defined as patients of unsuccessful cannulation despite attempts over 15 min with conventional techniques including wire-guided cannulation, pre-balloon dilatation, pre-placement of guidewire (0.025 or 0.035 inch). Following the unsuccessful attempts, the guidewire was changed to GT wire and selective biliary cannulation was performed under fluoroscopic control. We assessed the number of patients who benefitted from GTWI and whether overall success rate of biliary cannulation in ERCP was improved.

Results: Among 240 ERCP-naive patients, 40 were ERCP-difficult cases (success rate with conventional technique: 200/240; 83%). Among 45 ERCP-difficult cases, GTWI was successful in 32 patients (success rate with GTWI: 32/40; 80%). Overall success rate of ERCP-naive patients improved from 80% to 93% with GTWI, for patients with malignant stricture and four patients with difficult front of papilla. Among eight patients who failed with GTWI, seven were successful performing precut papillotomy or endoscopic ultrasound-guided biliary drainage and one was interrupted because of developed serious condition.

Conclusion: GTWt as a salvage technique for unsuccessful selective biliary cannulation cases improves the success rate of ERCP, and could be attempted before performing a precut papillotomy, endoscopic ultrasound-guided techniques or other cumbersome procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0081 ERCP IN VERY ELDERLY PATIENTS AGE 85 OR OLDER
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Introduction: Gallbladder stone (GBS) is a common gastrointestinal disease can progress to severe cholecystitis and is a strong risk factor for gallbladder cancer (GBC). Recently, clinical epidemiologic studies revealed that the alcohol consumption has a preventive effect for development of gallsone diseases.

Aims & Methods: To evaluate the relative risks of alcohol consumption for the gallstone stones disease development. Systematic searching was performed using MEDLINE, EMBASE and Cochrane library from January 1st, 1996, to December 31st, 2016 for studies assessed the relationship between alcohol consumption and gallstone development risk. The eligibility criteria included: 1) studies involving the patients with gallbladder stone with or without cholecystitis; 2) cohort or case-control studies investigated the association between alcohol consumption and gallstone disease development. Newcastle-Ottawa Scale was used to assess the methodologic quality of each studies. Data was obtained from each selected studies regarding: 1) baseline characteristics of the study (cohort, case-control); 2) number of participants; 3) participants’ clinical features; 4) country; 5) publication year; 6) Risk or odds ratio (OR) and 95% confidence intervals (95% CI). All studies were categorized into the following groups: 1) alcoholic groups (higher levels of alcohol consumption and risk of gallstone). The random effect model used was to estimate the pooled relative risks (RR) with 95% confidence intervals (CIs).

Results: Twenty-five cohort and case-control studies were included, and total 12, 581 cases with gallstone diseases among those 172, 599 controls. Alcohol consumption indicated a decreased risk of GSD development (Pooled RR = 0.84 [0.79–0.90], P < 0.001). Subgroup analyses according to the alcohol doses (g/d) confirmed a gradual risk-reduction effect on GSD compared to non-drinkers (Light: RR = 0.97 [0.94, 1.00], p = 0.864; Moderate: RR = 0.82 [0.79, 0.86], p = 0.777; Heavy: RR = 0.70 [0.62, 0.80], p < 0.01).

Disclosure of Interest: All authors have declared no conflicts of interest.

P0082 ALCOHOL CONSUMPTION CAN REDUCE THE RISK OF GALLSTONE DISEASE: A SYSTEMATIC REVIEW WITH DOSE-RESPONSE META-ANALYSIS OF CASE-CONTROL AND COHORT STUDIES
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Introduction: Gallbladder stone (GBC) is a common gastrointestinal disease can progress to severe cholecystitis and is a strong risk factor for gallbladder cancer (GBC). Recently, clinical epidemiologic studies revealed that the alcohol consumption has a preventive effect for development of gallstone diseases.

Aims & Methods: To evaluate the relative risks of alcohol consumption for the gallstone stones disease development. Systematic searching was performed using MEDLINE, EMBASE and Cochrane library from January 1st, 1996, to December 31st, 2016 for studies assessed the relationship between alcohol consumption and gallstone disease development risk. The eligibility criteria included: 1) studies involving the patients with gallbladder stone with or without cholecystitis; 2) cohort or case-control studies investigated the association between alcohol consumption and gallstone disease development. The eligibility criteria was included: 1) studies involving the patients with gallbladder stone with or without cholecystitis; 2) cohort or case-control studies investigated the association between alcohol consumption and gallstone disease development. Newcastle-Ottawa Scale was used to assess the methodologic quality of each studies. Data was obtained from each selected studies regarding: 1) baseline characteristics of the study (cohort, case-control); 2) number of participants; 3) participants’ clinical features; 4) country; 5) publication year; 6) Risk or odds ratio (OR) and 95% confidence intervals (95% CI). All studies were categorized into the following groups: 1) alcoholic groups (higher levels of alcohol consumption and risk of gallstone). The random effect model used was to estimate the pooled relative risks (RR) with 95% confidence intervals (CIs).

Results: Twenty-five cohort and case-control studies were included, and total 12, 581 cases with gallstone diseases among those 172, 599 controls. Alcohol consumption indicated a decreased risk of GSD development (Pooled RR = 0.84 [0.79–0.90], P < 0.001). Subgroup analyses according to the alcohol doses (g/d) confirmed a gradual risk-reduction effect on GSD compared to non-drinkers (Light: RR = 0.97 [0.94, 1.00], p = 0.864; Moderate: RR = 0.82 [0.79, 0.86], p = 0.777; Heavy: RR = 0.70 [0.62, 0.80], p < 0.01).

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: In this systematic review with meta-analysis, alcohol consumption has dose-dependent negative co-relation with the risk of gallstone disease development.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


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Introduction: ERCP with short-type SBE in patients with surgically anatomy is not practicable with high success rate, except for cases with HJ without gastrectomy. After that, several studies with long enteroscope have reported that balloon enteroscopy-assisted ERCP (BEA-ERCP) is a safe and effective procedure with about 69–100% of reaching the blind end. However long type enteroscope allows to use limited number of ERCP devices because of its length 200 cm. Then Olympus Co. introduce the prototype of short single balloon enteroscope (SBE) with bigger channel 3.2 mm in diameter was developed. We will present its usefulness and limitation.

Aims & Methods: In order to investigate the usefulness and limitation of short-type SBE, we have performed totally 183 cases/302 procedures of ERCP with short-type SBE (associated with B-II (24 cases, 30 procedures), R-Y gastrectomy (RY; 94, 138), Hepatico-Jejunostomy without gastrectomy (HJ; 29, 58), and Child/Whipple (CW; 36, 76) from 2009 to 2016. We have investigated its rate of reaching blind end, time of procedure, success rate of therapeutic procedure, complications and its limitations.

Results: Using short type SBE, the rate of reaching blind end is B-II: 97% (29/30), R-Y: 91% (126/138), HJ: 72% (39/56), CW-93% (71/76), and 88% (totally). Success rate of therapeutic procedure in reached blind end cases, is B-II: 100% (27/27), R-Y: 96% (104/108), HJ: 94% (34/36), CW:100% (67/67), and 97% (232/238) totally. The average time of procedure is B-II: 38.6 min, R-Y: 47.2, HJ: 38.5, and CW-44.3, respectively. The reason of unreached cases in HJ without gastrectomy were either for symptomatic stent change only or conservative management. In 27 patients duct clearance was not achieved; 26% (7/27) underwent surgical management (CBD exploration/on table cholangiogram and CCX). The remaining 74% (20/27) patients were deemed unsuitable for invasive intervention and were either for symptomatic stent change only or conservative management.

Conclusion: The time period between duct clearance and CCX was longer than anticipated, especially in patients with mild acute pancreatitis as none of them underwent CCX during index admission or within 2 weeks of ERCP/duct clearance. Some patients re-presented with CBDs while awaiting CCX. We looked into potential causes of delay in CCX – delayed referral to surgery, long waiting time for elective CCX and patient choice. We propose to develop a local pathway for patients with CBDs and gallstones and institute a robust system for referring patients for CCX following duct clearance. This would help to minimize readmission and potential complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: The aim of current study is to develop the multi-layer drug eluting membrane using ultrasonic spray coating method, which have uniform capacity of drug and be able to control the drug-release capacity. Methods: The drug eluting membrane was made using ultrasonic spray coating machine (MediCoat-23X). The membrane consists two kinds of coating material. One is silicone (MED-6604), that was used to basic structure of membrane and the other coating agent is polyurethane (tecophilic, tecothane, tecoflex and pellethane). The gemicitabine was used as antitumor drug, and coated to membrane by mixed form with polyurethane (gemicitabine, 250µg/ml; polyurethane, 500µg/ml). The thickness of membrane and the capacity of drug in membrane were measured at the proximal and distal end, and mid portion. The drug release capacity and duration was measured by using drug releasing test in vitro for 3 days. Results: The mean thickness of membrane was 50µm. The mean capacity of drug per unit area was 100 µg/cm², and the amount was constant in all tested area (Standard deviation, 5 µg/cm²). In drug release test, the capacity of releasing drug was different depended on the kinds of polyurethane. The total amount of released drug in 24 hours was 919 ug, 836 ug, 868 ug and 580 ug in tecophilic coating, tecothane coating, tecoflex coating, and pellethane coating. The total of released drug amount depended on polyurethane was described in table 1.

Table 1: The total of releasing drug amount in 72 hours

<table>
<thead>
<tr>
<th>Drug release amount</th>
<th>Gemicitabine (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coating Polymer</td>
<td>24hrs</td>
</tr>
<tr>
<td>Tecophilic</td>
<td>919</td>
</tr>
<tr>
<td>Tecothane</td>
<td>859</td>
</tr>
<tr>
<td>Tecoflex</td>
<td>681</td>
</tr>
<tr>
<td>Pellethane</td>
<td>580</td>
</tr>
</tbody>
</table>

Conclusion: The ultrasonic spray coating technique could be applied to make multi-layer drug eluting membrane with regular thickness. The membranes contained the uniform capacity of drug in all tested area. The releasing drug capacity is able to control by applying different kind of polyurethane.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

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P0087 ADVANCES IN CYTOLOGY FOR THE EARLY DIAGNOSIS OF PANCREATO-BILIARY MALIGNANCY

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Introduction: Liquid-based sample preparations for cytology have improved the cellular yield in pancreatic-biliary (PB) malignancy.1 The SurePath (SP) method-ology produces a pellet of concentrated cellular material which enables addi-tional slides for immunohistochemical (IHC) staining for tumour markers Ki67, p53 and CDX2. The presence of the mitosis-related marker, Ki67, in high con-centration in malignant cells with a specific diagnostic pattern adds a level of confidence in diagnosing malignancy using cytological preparations. The aim of this study was to assess Ki67 staining in biliary epithelium obtained from patients with bile duct obstruction.

Aims & Methods: Brushings were obtained from the common bile duct during endoscopic retrograde cholangiopancreatography (ERCP) in patients presenting with biliary obstruction. After collecting the sample, the brush was placed immediately into a SurePath vial and shaken vigorously for 24 hours to fix and suspend the cells. In cytopathology, the vial (with brush included) was agitated on a platform vortex for 10 minutes to shake the cells off the brush into the solution. The high cellular content enabled the preparation of multiple slides for H&E and these slides were reviewed independently by two senior cytopathologists.

Results: Thirty-four (34) consecutive patients with bile duct obstruction were included in the study. The cohort had a mean age of 70.2; 41% were female. Adenocarcinoma was identified in 19 (56%) and atypical/reactive cells in 9 (26%). Ki67 positive nuclei were present in 90-100% of the cells in malignant cell clusters, whereas sheets of normal cells had positive nuclei in less than 20% of cells. Atypical cells sheets had an intermediate percentage range.

Conclusion: SP is superior to conventional slide-based cytology preparations in the diagnosis of malignant bile duct structures. Advantages include ease of collect-ion, no requirement for a cytology technician, a sizable pellet of intact cells for the cytopathologist to examine and the ability to undertake IHC staining. Ki67 is a marker of cell division and cells stained with Ki67 are increased significantly in adenocarcinoma as confirmed by this study. The presence of a large number of cells stained with Ki67 as well as the pattern of intracellular staining adds a level of confidence for the cytopathologist to diagnose malignancy, particularly when there is no clinical or scan evidence of a tumour mass. Early diagnosis is the key for curative surgery and specific cell tumour markers and/or their pattern may impact significantly on the outcome.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P0089** PROGNOSTIC VALUE OF EARLY CA19-9 RESPONSE DURING CHEMOTHERAPY IN PATIENTS WITH ADVANCED OR RECURRENT BILIARY TRACT CANCER

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**Abstract**

**Purpose:** The aim of this study was to investigate the failure and complication rate of the initial drainage procedure in patients with unresectable PHC.

**Methods:** Between January 2006 and March 2016, a total of 185 advanced or recurrent BTC patients receiving a first line systemic chemotherapy for at least two cycles were retrospectively studied. Serum CA 19-9 was measured at baseline (CA19-9_Pre) and after two cycles of chemotherapy, and patients were categorized into three groups based on CA19-9 response: CA19-9 decrease group (≥30% decrease), stable group (<30% decrease and ≥20% increase), and increase group (≥20% increase). The Cox proportional hazards model was used to analyze the prognostic factors for OS and PFS, using the landmark method.

**Results:** The primary tumors were located as follows: 68 (37%) in intrahepatic bile duct, 43 (23%) in extrahepatic bile duct, 64 (35%) in gallbladder and 10 (5%) in ampulla. As for chemotherapeutic regimen, single-agent or combination therapy was given in 49 (26%) or 136 (74%), respectively. After 2 cycles of chemotherapy, CA19-9 decrease was obtained in 77 (42%), stable in 56 (30%), and increase in 52 (28%). The median CA 19-9 levels at baseline and after two cycles were 264 IU/mL and 194 IU/mL, respectively. After 2 cycles of chemotherapy, CA19-9 decrease was obtained in 77 (42%), stable in 56 (30%), and increase in 52 (28%). The median CA 19-9 levels at baseline and after two cycles were 264 IU/mL and 194 IU/mL, respectively. After 2 cycles of chemotherapy, CA19-9 decrease was obtained in 77 (42%), stable in 56 (30%), and increase in 52 (28%).

**Conclusions:** The decrease in CA 19-9 response was prognostic both for OS and PFS in addition to CA19-9_Pre and performance status.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Aim & Methods: The objective of the study was to evaluate if the systematic use of percutaneous drainage or emergency cholecystectomy. Among the patients with MHBO who underwent endoscopic biliary drainage with self-expandable metal stents (SEMS) at our institution from March 2012 to March 2017. Unilateral metal stenting was performed in 15 patients (Uni group) and bilateral metal stenting was performed in 18 patients (Bi group). In the Uni group, we placed uncovered SEMS. In the Bi group, we placed cross-wired metal stents with the SIS technique. Technical success rates, complication rates, and stent patency were compared between the groups. Results: There were no significant differences between the Uni group and the Bi group in technical success rate (100% vs. 94%), complication rate (0% vs. 0%), stent occlusion rate (15% vs. 18%) or median stent patency period (102.5 days vs. 98 days). There was no significant difference in cumulative stent patency between the groups (p = 0.669).

Conclusion: Endoscopic bilateral SEMS placement of metal stents for palliative treatment of MHBO had a high technical success rate and low complication rate, similar to those of unilateral placement.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0093 UNILATERAL VERSUS BILATERAL STENT-IN-STENT PLACEMENT OF METAL STENTS FOR MALIGNANT HILAR BILIARY OBSTRUCTION

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Introduction: Endoscopic biliary stenting is widely accepted as effective palliation therapy for unresectable malignant hilar biliary obstruction (MHBO). Although draining more than 50% of liver volume is associated with better outcomes, it can occasionally be technically difficult. Aims & Methods: The aim of this study was to evaluate differences in technical feasibility and clinical efficacy between unilateral and bilateral stent-in-stent (SIS) placement of metal stents for MHBO. We retrospectively reviewed 23 consecutive patients with MHBO who underwent endoscopic biliary drainage with self-expandable metal stents (SEMS) at our institution from March 2012 to March 2017. Unilateral metal stenting was performed in 15 patients (Uni group) and bilateral metal stenting was performed in 18 patients (Bi group). In the Uni group, we placed uncovered SEMS. In the Bi group, we placed cross-wired metal stents with the SIS technique. Technical success rates, complication rates, and stent patency were compared between groups.

Results: There were no significant differences between the Uni group and the Bi group in technical success rate (100% vs. 94%), complication rate (0% vs. 0%), stent occlusion rate (15% vs. 18%) or median stent patency period (102.5 days vs. 98 days). There was no significant difference in cumulative stent patency between the groups (p = 0.669).

Conclusion: Endoscopic bilateral SEMS placement of metal stents for palliative treatment of MHBO had a high technical success rate and low complication rate, similar to those of unilateral placement.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0094 CLINICAL ASSESSMENT OF THE SAFETY AND EFFICACY OF A NOVEL BIODEGRADABLE STENT IN PATIENTS WITH BILIARY OBSTRUCTION: A PILOT STUDY

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Introduction: The commonest indication for biliary stent is for the treatment of obstructive jaundice and for the management of bile leak. The currently available stents are made of either plastic or metal alloy. The stents can be inserted endoscopically to provide internal drainage of the bile into the duodenum. Among the disadvantages of plastic stents are recurrences of jaundice due to biofilms formation, which require a repeat ERCP procedure to remove the stent before 3 months. We have embarked to study the safety and feasibility of a biodegradable stent for biliary stenting, which can treat biliary obstruction without the need to undergo a repeat endoscopic procedure to remove the stents.

Aims & Methods: This is a pilot study enrolling 30 subjects with symptomatic jaundice and pruritus caused by either benign or malignant biliary obstructions that were amenable to treatment by ERCP guided stenting. Primary objective was technical success and safety. Procedural and technical successes were assessed during the stenting procedure. Adverse events or complications were monitored throughout the studies. The secondary endpoints were clinical success, which was measured by a reduction of at least 20% of the initial serum bilirubin level at Day 7 post stenting. A self-assessment scale from 0 to 10 was used to assess quality of life before and after the stenting.

Results: 30 patients had the Biodegradable Biliary Stent (BBS) implanted. 18 patients (60%) were males, the mean age was 56.9 years. 26 patients (86.7%) had benign biliary duct disease and 4 (13.3%) patients had malignant condition.
P0096 THE IMPAIRED FUNCTION OF THE PLASMA MEMBRANE CA2+ PUMP RESULTS IN CA2+ OVERLOAD AND CELL DAMAGE IN CFR KNOCK OUT PANCREATIC DUCTAL CELLS

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Introduction: The cystic fibrosis transmembrane conductance regulator (CFTR) has a major role in pancreatic ductal secretion and it's genetic defects damage the pancreas. It is known that intracellular Ca2+ homeostasis is disturbed in bronchial epithelial cells in cystic fibrosis (CF), but the connection of CFTR and the intracellular Ca2+ signaling has never been suggested in pancreatic damage in CF.

Aims & Methods: Our aim was to characterize the Ca2+ homeostasis of CFTR-deficient PDC. Wild type (WT) and CFTR knockout (KO) mouse pancreatic ductal and acinar cells and iPSC (induced pluripotent stem cell) derived human organoids from 2 CF patients and controls, human CF pancreatic cell line (CFPAC-1; ΔF508 mutant) were used for intracellular Ca2+ measurements. Mitochondrial membrane potential (ΔΨm) and mitochondrial morphology was assessed in isolated pancreatic ducts. Immunofluorescent staining and quantitative PCR measurements were performed to detect changes of mRNA and protein expressions.

Results: The plateau phase of the agonist-induced Ca2+ signal was elevated in CFTR-deficient PDC, which was caused by decreased function of the plasma membrane Ca2+ pump (PMCA). The functional inhibition of CFTR had no effect on the PMCA activity. Human CF organoids have shown decreased PMCA function compared to control while the 24h treatment of the CF organoids with VX-809 have restored the PMCA function to the control level. Similarly native CFPAC-1 cells and PDEC treated with siRNA to inhibit the expression of CFTR showed the same PMCA dysfunction. Viral transfection of CFPAC-1 with CFTR gene completely restored PMCA function. Sustained [Ca2+]i levels decreased ΔΨm and induced cytochrome c release in CFTR KO PDEC without significant alterations in mitochondrial morphology.

Conclusion: Dysfunction of PMCA leads to disturbed Ca2+ homeostasis in CFTR-deficient PDC and the consequent cellular Ca2+ overload impairs mitochondrial function contributing to the pancreatic damage in CF.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0097 EXPDF IMPACTS PANCREATIC DIFFERENTIATION OF HUMAN PLURIPOTENT STEM CELL DERIVED PANCREATIC ORGANOIDs

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Introduction: Given their capability to differentiate to every cell type of the human body, human induced pluripotent stem cells (hiPSCs) provide a unique platform for translational and regenerative medicine. The generation of a pancreatic progenitor (PP) cells from pluripotent stem cells follows the sequential induction of virtually pure definitive endoderm (DE), foregut endoderm (GTE) and pancreatic endoderm (PE). We have recently reported the generation of a novel three-dimensional pancreatic organoid culture system that generates functional acinar-duodenal-like structures from pluripotent stem cells (Hohwieler et al., GUT, 2016).

Aims & Methods: In the current study we implemented this culture system to understand the role of exocrine differentiation and proliferation factor (ExpdF), a signalling molecule proposed to be involved pancreatic differentiation in zebrafish. CrisprCas9 technologies were used to ablate ExpdF in human embryonic stem cells, while a piggy bac engineering approach allowed us timed expression to study the role of both loss and gain of ExpdF function during pancreatic differentiation.

Results: First, a limited role of ExpdF was observed until the PE stage, while PP formation was strongly diminished. Moreover, a dramatically altered organoid morphology was observed in ExpdF knockout lines leading to mostly cystic structures. Phenotyping for duodenal and acinar lineage allowed to investigate these
changes in more detail and genome wide expression profiling helped us to under- 
stand the role of Expdf in more detail.

**Conclusion:** Thus, we report a novel signalling molecule playing a critical role 

**Disclosure of Interest:** All authors have declared no conflicts of interest.

Reference


P0098 MELATONIN METABOLITE; N1-ACETYL-N2-FORMYL-5-METHOXYKYNUMURAMINE STIMULATES PANCREATIC ENZYME SECRETION VIA CCK RELEASE. STUDY ON THE RATS

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Introduction: N-acetyl-N-formyl-5-methoxykynuramine (AFMK), melatonin metabolite was determined recently as a secretagogue in response to acute pancreatic overload against acute inflammation. AFMK significantly attenuated acute pancreatitis; however, its effect on pancreatic exocrine function has not been investigated yet.

Aims & Methods: 1. To investigate the effects of intraduodenal (i.d.) application of AFMK on pancreatic enzyme secretion under basal conditions and following the stimulation of this secretion with diversion of pancreatic-biliary juice (DPBJ) and to examine the role of CCK in this process. 2. To assess the effect of AFMK on CCK receptor in pancreatic acinar cell line AR42J. Material and methods: For in vivo study Wistar rats weighing 300 g were employed. Under pentobarbi- 
tane anesthesia the animals were surgically equipped with silicone catheters, inserted into pancreatic-biliary duct, and into duodenum. AFMK (5.10 mg/kg i.d.) was given to the rats under basal conditions or following stimulation of pancreatic secretion with DPBJ. Lorglumide, the CCK1 receptor antagonist (1 mg/kg i.d.) was administered 15 minutes prior to the application of AFMK. Samples of pancreatic-biliary juice were collected to measure the amylase outputs. The blood samples were taken for determination of CCK by ELISA kit. For in vitro study AR42J were incubated in presence of AFMK alone or in combination with CCK. The protein signal of CCK receptor was determined by Western blot.

Results: AFMK given i.d. produced the dose-dependent increases of pancreatic amylase secretions both; unstimulated, as well as that induced by DPBJ. The rises of pancreatic amylase outputs were accompanied by significant increase of CCK plasma levels. Administration of lorglumide, a CCK1 receptor blocker, comple- tely abolished the stimulation of pancreatic exocrine function induced by AFMK. This melatonin metabolite failed to affect protein signal for CCK recep- tor in AR42J cells.

Conclusion: The stimulatory effect of AFMK on pancreatic enzyme secretion in the rats is indirect and dependent on the release of CCK by this melatonin metabolite.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0099 INVESTIGATION OF THE FUNCTION OF TRPM2 IN MOUSE PANCREATIC ACINAR CELLS

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Introduction: Aberrant intracellular Ca2+ signaling is the hallmark of acute pan- creatitis (AP) inducing mitochondrial damage, intraacellular digestive enzyme activ- ity of cells. Thus prevention of toxic cellular Ca2+ overload is a promising therapeutic target. The transient receptor potential metallastat 2 (TRMP2) is a non-selective cation channel that plays major role in oxidative stress induced cellular Ca2+ overload in different cell types. Although likely, its role in pancreatic acinar cells and the pathogenesis of AP was not investigated yet.

Aims & Methods: Our aim was to characterize the functional activity of TRPM2 in pancreatic acinar cells. In our experiments pancreatic acinar cells (PAC) were isolated from wild type (WT) and TRPM2 knockout (KO) mice with enzymatic digestion. The changes of the intracellular Ca2+ level was measured with high fluores- cent microscopy using FURA2-AM.

Results: The intracellular Ca2+ signals evoked by 100 mM carbachol were not different in WT and TRPM2 KO PAC. On the other hand, 1 mM H2O2 induced significantly higher intracellular Ca2+ elevation in WT PAC compared to the TRMP2 KO. In Ca2+ free extracellular solution the Ca2+ signal in response to 1 mM H2O2 was markedly reduced in WT PAC confirming that H2O2 activates dominantly intracellular Ca2+ influx.

Conclusion: Our result confirmed the functional activity of the TRPM2 channel in pancreatic acinar cells. In further investigations we aim to clarify the pathogenetic role of TRPM2 in AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0100 INVESTIGATION OF THE PANCREATIC DUCTAL ION SECRETION IN PANCREATIC DUCTAL ORGANOID CULTURES

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Introduction: Pancreatic ductal fluid and HCO3− secretion are crucially impor- tant in the physiology and pathophysiology of the exocrine pancreas. However, the role of human pancreatic secretory processes is great challenge due to the limited access to human pancreatic ductal cells. The recently developed three- dimensional pancreatic organoid cultures (OC) may help to overcome this limit- ation. However, the ion secretory processes in pancreatic OC is not known.

Aims & Methods: Our aim was to characterize the ion transport processes in mouse pancreatic OC. Mouse pancreatic ductal fragments were isolated by enzymatic digestion. The isolated ducts were grown in Matrigel on 37°C for a week in OC media. Changes of the intracellular pH was measured to characterize the ion transporter activities of the epithelial cells in OC.

Results: Basolateral administration of 20 mM NH4Cl in standard HEPES or CO2/HCO3− buffered solution resulted in rapid intracellular alkalization, while the apical administration of NH4Cl induced rapid acidification followed by regeneration to the resting pH levels. The regeneration phase was inhibited by the removal of extracellular Na+ . The administration of 10 mM CFTRinh172, a selective inhibitor of cystic fibrosis transmembrane conduc- tance regulator decreased the regeneration from alkali load. Basolateral administration of 20 mM amiloride and 20 mM H2DIDS decreased the intracel- 

lular pH suggesting the activity of Na+/H+ exchanger and Na+/HCO3− cotrans- porter on the basolateral membrane.

Conclusion: The ion transport activities in mouse OC are similar to those observed in freshly isolated primary tissue. This suggest that OC will be suitable to study human ductal epithelial ion transport.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0101 INVESTIGATION OF THE ORA11 MEDIATED CA2+ ENTRY IN MOUSE PANCREATIC DUCTAL CELLS

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Introduction: Acute pancreatitis (AP) is the most common inflammatory disorder in the gastrointestinal tract with an overall mortality of 20–30% in severe cases. The treatment of AP is not resolved yet, urging the identification of novel drug targets. Toxic cellular Ca2+ overload was highlighted as a key event in pancreatic acinar and ductal cells during the pathogenesis of AP. In addition, the inhibition of Orai in pancreatic acinar cells markedly decreased the Ca2+ toxicity and the severity of AP. However, We have no information regarding the role of Orai in pancreatic ductal physiopathology.

Aims & Methods: Wild type FVB/N mice were used for the isolation of pancreatic ductal fragments. The intracellular pH and Ca2+ level of the pancreatic ductal cells (PDC) were measured by microfluorimetry. The effect of selective Orai inhibitors provided by CalciMedica was evaluated.

Results: The tested compounds dose-dependently inhibited Ca2+ influx during the carbachol induced Ca2+ signal in PDC. Inhibition was complete at a con- centration of 10 μM (CM-B: 99.87%, CM-C: 95.29%). Next, endoplasmic reti- 
culum Ca2+ stores were depleted with cyclopiazonic acid and the inhibition of store-operated Ca2+ entry (SOCE) was investigated after the re-addition of extra- 
cellular Ca2+. Under those conditions CM-B and CM-C significantly, but not completely, decreased SOCE in PDC (55.96% and 55.03% respectively). The removal of extracellular Na+ to abolish activity of the Na+/Ca2+ exchanger had no effect on the inhibition of SOCE by CM-B or CM-C. We also showed that the inhibition of Orai has no effect on the basal secretion of HCO3− by PDC, which is the main physiological function of these cells.

Conclusion: We showed that Orai has a significant role in the Ca2+ signaling of PDC. In the next step we will evaluate the pathophysiological relevance of the channel.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0102 ACUTE PANCREATITIS OF UNKNOWN ORIGIN AND IDIOPATHIC JUVENILE PANCREATITIS IN SWEDEN


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Respiratory failure 3.13(2.01–4.89)
Advanced age 2.64(1.78–3.93)

Introduction: Acute pancreatitis (AP) is among the most difficult diseases faced by gastroenterologists and surgeons. In some cases it is difficult to understand etiology of AP. Hereditary pancreatitis (HP) is an autosomal dominant genetic disorder characterized by recurrent attacks of acute pancreatitis.

Aims & Methods: We analyzed medical records of patients who were diagnosed with severe juvenile pancreatitis of unknown etiology (UEP) at the Center for Digestive Diseases at Karolinska University Hospital from January 2008 to December 2016.

Results: During the observation period, 44 patients (17 male and 27 female) were registered with the ICD code chronic or relapsing pancreatitis, and onset of symptoms before the age of twenty. At time of first visit, the mean age was 36.7±26.9 years, range 24–57. The average period between the occurrence of first symptoms and diagnosis was 14.0 years (range 1–39 years). All patients (100%) clinically presented with recurrent acute pancreatitis. There were 28 (63.7%) patients with genetic mutations. Five out of 28 genetic positive patients (17.9%) had a definitive diagnosis of genetic etiology of pancreatitis. Seven out of 28 genetic positive patients (25%) had complications: in five patients endoscopic treatment due to pancreatic duct stenosis was performed; one patient had pancreatic and bile duct stenosis and one patient (female, age 28, CFTR heterozygous mutation) a pancreatic tumor (mucinous cystadenoma with high dysplasia that was successfully surgically treated with excision). One patient died due to non-pancreatic related disease (kidney cancer). None of the patients reported alcohol overconsumption. Four out of 28 genetic positive patients (14.3%) were active smokers. Fecal elastase-1 (FE-1) was tested in 28 (63.6%) patients: 16 (57.1%) in genetic positive and 12 (75%) in genetic negative group of patients. Pancreatic exocrine insufficiency (PEI) was found in 5 out of 12 (41.7%) of genetic negative patients and in 5 out of 16 (31.2%) genetic positive patients. Average age at onset of PEI was 38 years (range 27–53). Diabetes mellitus (DM) was diagnosed in one patient in group with genetic alterations and 2 patients in group without genetic alterations.

Conclusion: We found high proportion of genetic alterations in patients with juvenile pancreatitis and PUE. In patients in whom pancreatitis remains unexplained after excluding of the most often etiologies and presence of genetic alteration, hereditary pancreatitis seems as reasonable explanation even in patients with other genes than PRSS1. Routine follow-up of patients with regular testing on pancreatic exocrine insufficiency and diabetes mellitus and pancreatic cancer surveillance is necessary.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: All authors have declared no conflicts of interest.
and their evolution after 24 h were evaluated. Accuracy was measured using different methods or operating characteristic (ROC) analyses.

Results: Of the 817 eligible patients, 118 were excluded, most for a previous episode before admission. We analyzed 699 patients with a median age of 57.5 years (IQR: 45.1–72.7), 57.4% males. Most frequent comorbidities were: diabetes (18%), hypertension (16.6%), and COPD (7.7%). Median length of stay was 7 (5–10) days. Most common causes were: biliary (53.9%), idiopathic (21.8%) and alcoholic pancreatitis (14.3%). A CT scan was performed in 56.1% identifying local complications in 36.2% of them, acute fluid collections in 16.8%. There were 42 (6.6%) severe and 196 (28%) moderately severe cases. Overall mortality was 2.4% (1.5–3.9%), 35.7% (23.0–58.7%) among severe cases. BUN at admission AUC: 0.88 [0.85–0.90], aBISAP score [AUC: 0.88 [0.85–0.90] and APACHE II [AUC: 0.87 [0.84–0.89]] had a high overall ability in predicting death. APACHE II resulted in the highest sensitivity, 100% (81.6–100%), while the BISAP score presented the highest specificity, 93.1% (90.6–94.8%). BUN at admission [AUC: 0.89 (0.86–0.91)] and the aBISAP score [AUC: 0.87 (0.84–0.89)] also presented the best predictive potential. The BISAP score obtained the highest correlation coefficient (94.2% (92.2–95.8%), although with a low PPV, 32.1% (21.4–45.2%). On the other hand, diagnostic accuracy for mild AP was poor, as all predictors presented an AUC < 0.7. The aHAPS score reached the highest specificity, 87.8% (83.9–91.4%), but presented a very poor sensitivity (28.9% [24.3–33.9%]).

Conclusion: The revised Atlanta classification accurately identifies those patients at higher risk of death. Among the available predictors of severity, BISAP and BUN at admission presented an excellent performance, with an AUC of nearly 0.9. New scores are needed to predict a mild course, as none of the available indexes presented an AUC > 0.7.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0107 LARGE-VOLUME FLUID RESUSCITATION IN PATIENTS WITH SEVERE ACUTE PANCREATITIS IS ASSOCIATED WITH REDUCED MORTALITY: A MULTI-CENTRE RETROSPECTIVE STUDY
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Introduction: The severity of acute pancreatitis varies widely, from a mild self-limited disease to one with a severe clinical course complicated by multiple organ dysfunction syndrome.1 No pharmacologic treatment for acute pancreatitis has shown to improve the prognosis of patients with severe acute pancreatitis, while the quality of supportive care including early fluid resuscitation is critically important.2 Fluid resuscitation maintains adequate intravascular volume by compensating for fluid shifts to the third space.3 However, there is a lack of consensus regarding the details of optimal fluid administration such as the type of fluid, infusion rate and volume of administration, and the physiologic goals of fluid resuscitation.4

Aims & Methods: The aim of this study is to evaluate the association between the administered fluid volumes during the first 24 hours and pancreatitis severity in patients with severe acute pancreatitis. We conducted a secondary analysis of data from a multi-centre retrospective study of patients with severe acute pancreatitis in Japan, which was registered with the University Hospital Medical Information Network Clinical Trials Registry (Registry number 00012220) and approved by the Institutional Review Board or the Medical Ethics Committee at each institution.5 The diagnosis of severe acute pancreatitis was based on criteria of the Japanese Ministry of Health, Labour and Welfare (Japanese Severity Score).1 Patients classified in the fluid ≥6000 ml group had significantly higher mortality than those in the fluid <6000 ml group. There were no significant differences between the two groups and clinical outcomes using multivariable logistic regression analysis. The primary outcome was in-hospital mortality. As a sensitivity analysis, we conducted an identical analysis for patients with severe acute pancreatitis diagnosed according to the revised Atlanta classification.7

Results: We analysed 1097 patients, and the mean fluid volume administered was 5618±3018 ml (mean±standard deviation), with 708 and 389 patients stratified into the fluid <6000 ml and fluid ≥6000 ml groups, respectively. Overall in-hospital mortality was 12.3%. The fluid ≥6000 ml group had significantly higher mortality than the fluid <6000 ml group (15.9% vs. 10.3%, p < 0.05). However, in multivariable logistic regression analysis, conversely fluid ≥6000 ml within the first 24 hours was significantly associated with reduced mortality (OR 0.58, 95%CI 0.34–0.98). We performed subgroup analyses for patients diagnosed with severe acute pancreatitis based on the revised Atlanta classification.7 One thousand-seven patients were classified in the fluid <6000 ml group, and 201 patients classified in the fluid ≥6000 ml group. There were no significant differences between the two groups with regard to in-hospital mortality (fluid <6000 ml: 35.3% vs. fluid ≥6000 ml: 28.4%, p = 0.18). In multivariable logistic regression analysis, administration of fluid ≥6000 ml within the first 24 hours was associated with significantly less mortality (OR 0.56, 95%CI 0.32–0.98).

Conclusion: In patients with severe acute pancreatitis, administration of fluid ≥6000 ml within the first 24 hours is associated with decreased mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Table 1a: AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Severe Acute Pancreatitis. (SAP: Severe acute pancreatitis, AUC: Area under the curve, PPV: positive predictive value, NPV: Negative predictive value.)

<table>
<thead>
<tr>
<th>SAP</th>
<th>Cut-off values</th>
<th>AUC (95% CI)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISAP</td>
<td>≥ 3</td>
<td>0.9 (0.83–0.97)</td>
<td>70.6% (46.9%–86.7%)</td>
<td>93.3% (89.5%–95.7%)</td>
<td>41.4% (25.9%–59.3%)</td>
<td>97.9% (95.3%–99.1%)</td>
</tr>
<tr>
<td>RANSON</td>
<td>≥ 4</td>
<td>0.85 (0.76–0.95)</td>
<td>88.2% (65.7–96.7%)</td>
<td>79% (73.5–83.5%)</td>
<td>22.1% (13.8%–33.3%)</td>
<td>99% (96.4%-99.7%)</td>
</tr>
</tbody>
</table>

Table 1b: AUC, sensitivity, specificity, positive predictive values and negative predictive values of scoring systems and biomarkers in predicting Mortality. (AUC: Area under the curve, PPV: positive predictive value, NPV: Negative predictive value.)

<table>
<thead>
<tr>
<th>Mortality</th>
<th>Cut-off values</th>
<th>AUC (95% CI)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISAP</td>
<td>≥ 3</td>
<td>0.97 (0.93–0.99)</td>
<td>100% (67.6%–100%)</td>
<td>92% (88%–94.7%)</td>
<td>27.6% (14.7%–45.7%)</td>
<td>100% (98.4%–100%)</td>
</tr>
<tr>
<td>RANSON</td>
<td>≥ 4</td>
<td>0.94 (0.89–0.99)</td>
<td>100% (67.6–100%)</td>
<td>77% (71.5%–81.7%)</td>
<td>11.8% (6.1%–21.5%)</td>
<td>100% (98.1%–100%)</td>
</tr>
</tbody>
</table>

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P0110 POST-ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAHY: MORBIDITY AND PREDICTORS OF SEVERITY

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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is increasingly used for therapeutic management of various biliary and pancreatic diseases\(^1\). However, ERCP is not a procedure without morbidity\(^2\). Post-ERCP pancreatitis (PEP) remains the most common and serious complication after ERCP\(^3\).

Aims & Methods: To detect risk factors for post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PEP) and investigate the predictors of its severity. This is a prospective cohort study of all patients who underwent ERCP. Pre-ERCP data, intraoperative data, and post-ERCP data were collected.

Results: The study population consisted of 996 patients. Their mean age at presentation was 56.42 (±14.72) years, and there were 454 male and 442 female patients. Overall, PEP occurred in 102 (10.2%) patients of the study population; 38% (84.7%) of cases were of mild to moderate degree, while severe pancreatitis occurred in 22 (21.6%) patients. No hospital mortality was reported for any of the PEP patients during the study duration. Age less than 35 years (P = 0.001, OR = 0.305), narrow common bile duct (CBD) diameter (P = 0.0001) and increased number of pancreatic cannulations (P = 0.0001) were independent risk factors for the occurrence of PEP. Patients with these risk factors are candidates for prophylactic and preventive measures against PEP.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0112 COTTON VS. REVISED ATLANTA CRITERIA TO DEFINE SEVERITY OF POST-ERCP PANCREATITIS

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Introduction: The Cotton criteria (1) and the revised Atlanta classification (2) are advocated to define post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PEP) severity (3). Whereas Cotton puts the emphasis on length of hospitalisation, Atlanta focuses on the presence of local (necrosis) and systemic (organ failure) complications. The number of hospitalization days may not be a proper representation of PEP severity, because it is influenced by other diagnoses such as ERCP complications and comorbidity. The goal of this retrospective cohort study is to compare the Cotton and Atlanta criteria for the severity of PEP.

Aims & Methods: All ERCP procedures from a Dutch university medical centre and a teaching hospital between 2012 and November 2016 were checked retrospectively for patients with PEP. Patients were eligible if they met the Cotton criteria or Atlanta criteria for acute pancreatitis. All records were checked up to 48 hours after ERCP to capture delayed PEP. Patients were excluded if they had acute pancreatitis prior to ERCP or had chronic pancreatitis. In the primary analysis, mild/moderate and severe PEP were compared between Cotton and Atlanta with Fischer's exact test. Atlanta was regarded as the golden standard. Secondarily, we compared the sensitivity and specificity of both definitions for mortality.

Results: Out of a total 2156 ERCPs, 66 patients (3%) had PEP. Two patients died 16 days after ERCP due to documented mesenteric ischemia during the early phase (<8 days) and 3/10 patients during the late phase (>8 days). IPN was present in 62 patients (43%), all requiring an intervention (i.e. radiological, endoscopic, and/or surgical). 35% of patients (22/62) had only one modality (drainage/anticoagulant or transgastric) and did not require necrosectomy. For 30 patients (48%), additional necrosectomy was needed because of lack of improvement after drainage alone. 10 patients (17%) had only necrosectomy without prior drainage procedure. Complications such as hemorrhage and perforation of visceral organ occurred more frequently in the IPN group (14.5% vs 14.4%, p<0.001 and 5% vs 8.5%, p=0.02 respectively). The late phase mortality (>8 days) was significantly higher in the IPN group (14.5% vs 14.4%, p<0.01). In multivariate analysis factors associated with IPN were number of OF and postrevascular mesenteric venous thrombosis (table 1). 39 patients (68%) received anticoagulants with a median time of 6 [3-6] months and among them, 25 patients developed cauvermanea, irrespective of whether or not they receive systemic anticoagulants.

Table 1: Multivariate analysis of factors associated with infected pancreatic necrosis

<table>
<thead>
<tr>
<th>ORadj (95%CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause of pancreatitis</td>
<td>1.24[0.79-7.45]</td>
</tr>
<tr>
<td>Alcohol abused Biliary Others</td>
<td>5.36[1.59-18.12]</td>
</tr>
<tr>
<td>Number of organ failure (OF)</td>
<td>1.44[1.07-18.40]</td>
</tr>
<tr>
<td>Postrevascular mesenteric vein thrombosis</td>
<td>8.16[3.06-21.76]</td>
</tr>
</tbody>
</table>

Conclusion: In conclusion, this study performed in routine practice conditions showed that IPN occurs in almost half of patients hospitalized in ICU for severe AP, and is associated with increased mortality and complications rates. Overall mortality was 17.6%, and factors associated with mortality were a high BMI, CTSI and persistent OF. Those results are consistent with previous studies1, 2, but we reported a high rate of mesenteric ischemia (7/26 patients deceased) while this complication is occasionally described. IPN patients required an intervention for drainage of infected tissue removal, which was performed using minimally invasive techniques in the vast majority of cases, with no complication or severe side effect. 35% of patients were treated with drainage alone without any additional necrosectomy. Finally, PSMT and early OF appeared to be associated with risk of developing an IPN but anticoagulation for PSMT did not protect for cauvermanea occurrence and can expose to intestinal bleeding. Our results also suggest that the optimal and early management of OF and detection of PVSMT might prevent IPN and/or its complications. Such hypothesis will need to be tested in large multicentre prospective studies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0113 RISKS FACTORS AND OUTCOMES OF INFECTED PANCREATIC NECROSIS: RESULTS FROM A COHORT OF 148 PATIENTS ADMITTED IN ICU FOR SEVERE ACUTE PANCREATITIS

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Introduction: Acute pancreatitis (AP) is a common but potentially lethal pathology due to the multiplicity and severity of its complications. Infected pancreatic necrosis (IPN) occurs in 30% of patients with necrotizing AP and is associated with an increase in mortality ranging from 15% to 39%. While interventional drainage and/or removal of the infected tissue remain the mainstay of therapy of IPN, important progress have been achieved over the last decade and minimally-invasive treatments have been developed. The aim of this study was to identify factors associated with IPN and to describe outcomes and mortality.

Aims & Methods: This was a retrospective study of collected data from all patients admitted in Intensive Care Unit (ICU) in a single centre from 2012 to 2015 for a severe AP. Baseline characteristics of the overall population were expressed as frequencies (percentages) for categorical variables, as mean ± standard deviation (SD) for continuous data. For the analysis of mortality, multivariate analysis with Cox proportional hazards regression modeling was used to identify independent predictors. Association between IPN and patients' characteristics at baseline was evaluated using logistic regression.

Results: In total, 148 patients were included in this study. Overall mortality was 17%. Body mass Index, computed Tomography Severity Index (CTSI) ans persistent (>48H) organ failure (OF) were independently associated with overall mortality. Of the 16 patients died during the early phase (<8 days) and 3/10 patients during the late phase (>8 days). IPN was present in 62 patients (43%), all requiring an intervention (i.e. radiological, endoscopic, and/or surgical). 35% of patients (22/62) had only one modality of drainage (anticoagulant or transgastric) and did not require necrosectomy. For 30 patients (48%), additional necrosectomy was needed because of lack of improvement after drainage alone. 10 patients (17%) had only necrosectomy without prior drainage procedure. Complications such as hemorrhage and perforation of visceral organ occurred more frequently in the IPN group (14.5% vs 14.4%, p<0.001 and 5% vs 8.5%, p=0.02 respectively). The late phase mortality (>8 days) was significantly higher in the IPN group (14.5% vs 14.4%, p<0.01). In multivariate analysis factors associated with IPN were number of OF and postrevascular mesenteric venous thrombosis (table 1): 39 patients (68%) received anticoagulants with a median time of 6 [3–6] months and among them, 25 patients developed cauvermanea, irrespective of whether or not they receive systemic anticoagulants.

Table 1: Multivariate analysis of factors associated with infected pancreatic necrosis

<table>
<thead>
<tr>
<th>ORadj (95%CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause of pancreatitis</td>
<td>1.24[0.79-7.45]</td>
</tr>
<tr>
<td>Alcohol abused Biliary Others</td>
<td>5.36[1.59-18.12]</td>
</tr>
<tr>
<td>Number of organ failure (OF)</td>
<td>1.44[1.07-18.40]</td>
</tr>
<tr>
<td>Postrevascular mesenteric vein thrombosis</td>
<td>8.16[3.06-21.76]</td>
</tr>
</tbody>
</table>

Conclusion: In conclusion, this study performed in routine practice conditions showed that IPN occurs in almost half of patients hospitalized in ICU for severe AP, and is associated with increased mortality and complications rates. Overall mortality was 17.6%, and factors associated with mortality were a high BMI, CTSI and persistent OF. Those results are consistent with previous studies1, 2, but we reported a high rate of mesenteric ischemia (7/26 patients deceased) while this complication is occasionally described. IPN patients required an intervention for drainage of infected tissue removal, which was performed using minimally invasive techniques in the vast majority of cases, with no complication or severe side effect. 35% of patients were treated with drainage alone without any additional necrosectomy. Finally, PSMT and early OF appeared to be associated with risk of developing an IPN but anticoagulation for PSMT did not protect for cauvermanea occurrence and can expose to intestinal bleeding. Our results also suggest that the optimal and early management of OF and detection of PVSMT might prevent IPN and/or its complications. Such hypothesis will need to be tested in large multicentre prospective studies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0114 EARLY PREDICTORS AND OUTCOMES OF FLUID SEQUESTRATION IN ACUTE PANCREATITIS

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Introduction: Although it is well known that some patients with AP have an increased need for fluid therapy, it is not clear who should get fluids aggressively. Changes in hematocrit, BUN and serum creatinine, has been documented to limit fluid sequestration. In this prospective cohort study 300 consecutive patients of acute pancreatitis were included. Fluid sequestration was calculated by adding the total amount of fluid administered and subtracting the total amount of fluid lost in the first 48 hours of hospitalization. Local complications were defined...
Pancreatic guidewire is a potential candidate for prophylactic pancreatic stent to prevent post-ERCP pancreatitis: a matched propensity analysis

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Introduction: Post-ERCP pancreatitis (PEP), that can potentially result in procedure-related death is still great concern in pancreatic-biliary endoscopists because it may be a potentially preventable complication but it is difficult to prevent. Among reported prophylactic procedures for PEP, placement of prophylactic pancreatic stent (PPS) is known as a promising one to decrease the risk of PEP in high-risk patients. It is, however, still unclear what high-risk patient is a good candidate for PPS. We have previously reported the two predictive factors for PEP; the cannulation time longer than 13 min and 2-hour amylase level over 264 IU/L (World J Gastrointest Endosc 2016; 8: 777–784). In the present study, we evaluated if PPS for PEP was useful in high-risk patients with using the propensity score matching method.

Aims & Methods: This is a retrospective single center cohort study of consecutive patients that underwent ERCP from January 2010 to December 2015. A total of 2298 patients (average age 73 ± 11, female 42.2%) were enrolled. Of them, 174 cases with the following conditions were excluded: 1) gallstone pancreatitis, 2) unreachable to papilla, 3) missing data of procedure time or serum amylase levels. Finally, 2124 cases were analyzed. Overall, 86 of 2124 cases developed PEP (3.96%). PEP in high-risk patients with the cannulation time longer than 15 min were revealed as significant high-risk factor of PEP using a univariate analysis. There were a total of 216 patients with above two risk factors (HR group). Of them, 30 patients developed PEP (13.9%). Using logistic regression, propensity scores were used to prevent selection bias between with and without PPS. The covariates entered in the propensity model were age, gender, native papilla, endoscopic biliary stent, endoscopic metallic stent, pancreatic guidewire, pancreatic injection, endoscopic sphincterotomy, precut, endoscopic papillary balloon dilatation, pancreatic guidewire without duct brush. Subsequently, 1-to-1 matched PPS and non-PPS group (each N = 64) were extracted from the cohort using the closest matching score.

Results: After matching, mean propensity matching score in PPS and non-PPS group were 0.46 ± 0.2 and 0.46 ± 0.2 respectively. There were 62 female (48.4%) with a mean age of 71 in each group. A total of 17 patients with HR developed PEP (13.2%). The PEP rate in PPS group was significantly lower than in non-PEP group (6.3% vs 20.0%; p = 0.019). Mean post-ERCP 2 h amylase levels were 191 IU/L (106–359) in PPS group than non-PPS group (196 IU/L (90–411); p = 0.002).

Conclusion: Using a propensity analysis revealed that PPS significantly reduce the risk of developing PEP in high-risk patients with longer cannulation time and pancreatic guidewire. Consequently, we considered patients with above two risk factors be a good candidate for PPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0115 LONGER CANNULATION TIME AND Pancreatic PAP Pancreatitis: A MATCHED PROPENSITY ANALYSIS

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Introduction: Post-ERCP pancreatitis (PEP), that can potentially result in procedure-related death is still great concern in pancreatic-biliary endoscopists because it may be a potentially preventable complication but it is difficult to prevent. Among reported prophylactic procedures for PEP, placement of prophylactic pancreatic stent (PPS) is known as a promising one to decrease the risk of PEP in high-risk patients. It is, however, still unclear what high-risk patient is a good candidate for PPS. We have previously reported the two predictive factors for PEP; the cannulation time longer than 13 min and 2-hour amylase level over 264 IU/L (World J Gastrointest Endosc 2016; 8: 777–784). In the present study, we evaluated if PPS for PEP was useful in high-risk patients with using the propensity score matching method.

Aims & Methods: This is a retrospective single center cohort study of consecutive patients that underwent ERCP from January 2010 to December 2015. A total of 2298 patients (average age 73 ± 11, female 42.2%) were enrolled. Of them, 174 cases with the following conditions were excluded: 1) gallstone pancreatitis, 2) unreachable to papilla, 3) missing data of procedure time or serum amylase levels. Finally, 2124 cases were analyzed. Overall, 86 of 2124 cases developed PEP (3.96%). PEP in high-risk patients with the cannulation time longer than 15 min were revealed as significant high-risk factor of PEP using a univariate analysis. There were a total of 216 patients with above two risk factors (HR group). Of them, 30 patients developed PEP (13.9%). Using logistic regression, propensity scores were used to prevent selection bias between with and without PPS. The covariates entered in the propensity model were age, gender, native papilla, endoscopic biliary stent, endoscopic metallic stent, pancreatic guidewire, pancreatic injection, endoscopic sphincterotomy, precut, endoscopic papillary balloon dilatation, pancreatic guidewire without duct brush. Subsequently, 1-to-1 matched PPS and non-PPS group (each N = 64) were extracted from the cohort using the closest matching score.

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Conclusion: Using a propensity analysis revealed that PPS significantly reduce the risk of developing PEP in high-risk patients with longer cannulation time and pancreatic guidewire. Consequently, we considered patients with above two risk factors be a good candidate for PPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
were good. Case B: 29 y/o female. Alcoholic chronic pancreatitis, pancreatic duct, stones were removed easily. This is our first case of EPDBD. In our hospital, stones were removed by basket catheter and severe pain continued, so EPDBD was done. Pancreatic calculi (PC) are a sequelae of chronic pancreatitis (CP) – ITS USEFULNESS AND SAFETY

Introduction: We started our original EPDBD (endoscopic pancreatic duct balloon dilatation) therapy for pancreatic diseases in 1996. In these 22 cases, 698 cases were treated by this method. We would like to show its usefulness and safety.

Aims & Methods: The balloon (6 mm diameter, 15 mm long -Boston Scientific) was inflated in the stenotic portion of the pancreatic duct at 6 atm. pressure for 1 minute several times. Then stone removal or EPS (endoscopic pancreatic stenting) was evaluated: the stone free rate and stone relapse rate in 586 pancreatic stone cases treated by EPDBD 2. The prognoses of 114 EPS-successful pseudocyst cases treated by EPDBD 3. The prognoses of 16 EPS-successful divi

Results: The purpose of EPDBD therapy for pancreatic stone was to use endoscopic procedures in the pancreatic duct and stone removal, and to reduce stone relapse rates. 508 cases of pancreatic stone were treated by EPDBD. They consisted of 90 cases treated by endoscopic sphincterotomy, stone extraction, and minor papillotomy (28), and 478 cases treated by ESWL + endoscopic method (via major papilla 381, minor papilla 97). After EPDBD therapy, the stone free rate was 75.3%, the pain free rate 97.1%. The stone relapse rate was 5.7% - this is a much lower result compared to other reports. We think that EPDBD contributes to this good result. Complications of EPDBD therapy were only minor bleeding from orifice at the therapy and mild pancreatitis after therapy for several days. Case A: 22 y/o male. Idiopathic chronic pancreatitis, pancreas stone: After 4th ESWL, small stones remained in the head duct which can’t be removed by basket catheter and severe pain continued, so EPDBD was done under good informed consent. After several dilations of the orifice and the head duct, stone was removed easily. This is our first case of EPDBD therapy for pancreatic stone. In our hospit

Disclosure of Interest: All authors have declared no conflicts of interest.

P0118 ENDOSCOPIC ULTRASOUND AS A PREDICTOR AND GUIDE TO SUCCESSFUL ENDOThERAPY IN CHRONIC Pancreatitis
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Introduction: Pancreatic calculi (PC) are a sequelae of chronic pancreatitis (CP) and have important clinical implications. Endoscopic pancreatic duct stenting and minor papilla stenting are the successful management modality in CP. The rationale for endoscopic treatment of obstructing PC is based on the observation that pain subsides when the stone(s) is removed and drainage of pancreatic secretion is restored. Indications for endotherapy include stones <5 mm size, stones in head of pancreas which are not impacted and absence of downstream strictures. The assessment prior to the procedure is done by MRCP. EUS has an additional advantage of making a diagnosis of ampullary/papillary stones and biliary obstruction which can be treated endoscopically. It can guide whether endotherapy needs to be performed through major or minor papilla. EUS by diagnosing pancreatic (tumour/strictures missed on other imaging modalities) allows early diagnosis and hence improves long-term prognosis. It can prevent unsuccessful attempts at endotherapy and its possible risks/costs. We conclude that EUS before endotherapy plays an important role regarding further management decisions in patients with CP.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Mera K. et al Serum levels of apoptosis inhibitor of macrophage are associated with hepatic fibrosis in patients with chronic hepatitis C. BMC gastroenterology 2014

P0119 UTILITY OF SERUM APOPTOSIS INHIBITOR OF MACROPHAGE FOR DIFFERENTIATING IGG4-RELATED DISEASE FROM MALIGNANT DISEASE
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Introduction: IgG4-related disease (IgG4-RD) is characterized by the infiltration of inflammatory cells, such as plasma cells and macrophages, and fibrosis in tissues. We previously reported that apoptosis inhibitor of macrophage (AIM), which is secreted by macrophages, is related to the progression of hepatic fibrosis in chronic hepatitis C. Some studies have observed a relationship between IgG4-RD and malignancy. IgG4-RD is considered to represent a premalignant state or paraneoplastic condition.

Aims & Methods: To clarify the significance of the serum AIM levels in patients with IgG4-RD, we measured these levels in 22 healthy controls, 32 patients with IgG4-RD, and 36 patients with other pancreatic diseases (chronic pancreatitis [CP], intraductal papillary mucinous neoplasm [IPMN], pancreatic cancer [PC]). We also analyzed the prevalence of malignancy, the relationship between the appearance of malignancy and the diagnosis of 42 IgG4-RD, the type of cancer, and related factors, and we compared the age, gender, laboratory data, and AIM level.

Results: Fifteen malignancies were seen in 12 of 42 patients (28.6%). These malignancies were seen in 2 patients with IgG4-RD and 3 patients with IgG4-RD, and 3 patients with other pancreatic diseases (chronic pancreatitis [CP], intraductal papillary mucinous neoplasm [IPMN], pancreatic cancer [PC]). The serum AIM level was significantly higher in the IgG4-RD patients with malignancy than in those without malignancy. No significant differences were seen in the mean age or gender between patients with and without malignancy. Ten of 17 patients with IgG4-RD had malignancies. Among the 16 patients with IgG4-RD and malignancy, 15 patients had malignancies in the pancreatic ductal system, and one patient had testicular cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0120 ENDOSONOGRAPHY FOR SUSPECTED Pancreatic NEOPLASMS: OUTCOME AND FOLLOW-UP OF PANCREATIC LESIONS IN THE SETTING OF A NORMAL OR INFLAMED PancreAS
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Introduction: Endosonography (EUS) is one of the main diagnostic tools for the differential diagnosis of pancreatic masses. The aim of our study was to determine pitfalls of this technique in patients suspected of having pancreatic cancer.
This was done in consideration of the current knowledge about lesions mimicking cancer in the setting of a normal pancreatic parenchyma or existence of signs for pancreatic neoplasm.

Aims & Methods: Retrospective analysis of prospectively collected data in our tertiary University center. From March 2007 to October 2015, 218 (124 men, 94 women; age range, 20–80 years) patients underwent EUS for suspected solid pancreatic neoplasm because of cross sectional imaging results, idiopathic acute pancreatitis, weight loss, pancreatic hyperenzymemia, painless jaundice and elevated Ca 19-9 values. Cystic pancreatic lesions, pseudocysts and cystic pancreatic neoplasms were excluded from the analysis.

Results: Malignant lesions were diagnosed in 98 (45%) patients. 54 patients (24.8%) underwent surgery and 61 patients (28% of all patients) underwent clinical follow-up (16.5 ± 2.7 months, 18 needed surgery). 43 lesions not undergoing surgery needed EUS follow-up before achieving final diagnosis: pancreatic cancer (n = 6, 9.8%), neuroendocrine tumor (NET) (n = 10, 16.4%), paraduodenal neoplasms (n = 5, 8.9%), chronic pancreatitis (n = 13, 21.3%), necrosis (n = 3, 4.9%), autoimmune pancreatitis (AIP) (n = 3, 4.9%), microcystic serous neoplasms (n = 2). SDF-1 was elevated in 21 (35.4%) pancreatic lesions in the non-pancreatitis group (n = 121) and 44% and 87.1% in the pancreatitis group (n = 97). Ca 19-9 elevation, rapid onset jaundice, double duct sign are useful indicators of malignancy both in the setting of normal and inflamed pancreas. Patients without pancreatitis the presence of enlarged lymphnodes or a mass in EUS, weight loss and worsening diabetes are predictor of malignancy. In patients without pancreatitis and without jaundice Ca 19-9 sensitivity for malignancy was 95% and specificity was 39%. In the pancreatitis group, Ca 19-9 sensitivity for malignancy (in patients without jaundice) was 45% and specificity was 86%. IgG4 elevation presented a sensitivity of 83.3% and a specificity of 88.8% for AIP, where one false elevation was seen in a dural cholangiocarcinoma.

Conclusion: Diagnostic accuracy of EUS is lower in the presence of pancreatitis. Focal autoimmune pancreatitis and paraduodenal neoplasms are still confused with pancreatic cancer in the setting of normal or inflamed parenchyma. EUS in the setting of a normal parenchyma is an excellent tool to exclude pancreatic cancer. Tumor markers like Ca 19-9 and IgG4 values should be measured in the evaluation of pancreatic masses, also in the setting of chronic pancreatitis. Clinical and imaging features of the neoplasms were the most useful indicator for malignancy (usually EUS with CT) were necessary for achieving a definitive diagnosis. If there is a high clinical suspicion of pancreatic neoplasm in a patient that does not undergo surgery and if EUS or other available imaging modalities are not repeated EUS after 2–3 months may be useful for detecting an occult pancreatic neoplasm.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


0P012 WHOLE-GENE SEQUENCING OF PANCREATIC TUMOR VIA NEXT-GENERATION SEQUENCING USING EUS-FNA SPECIMENS

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Introduction: Intraductal papillary mucinous neoplasms (IPMN) are common pancreatic cystic neoplasms often detected by chance, and are sometimes precursors of invasive pancreatic cancer. Although the originate in the pancreatic ducts, these neoplasms are distinct from pancreatic ductal adenocarcinoma (PDA), conventional pancreatic cancer. In some IPMN cases, they cannot be detected before invasive and metastatic carcinoma development. Knowledge of genetic backgrounds may lead to the discovery of IPMN with poor prognosis. Although whole-genome sequencing by next-generation sequencing (NGS) has become popular, the use of minute samples obtained by EUS-FNA is scarce. The value of NGS of pancreatic cystic fluids or walls has not been clear relative to imaging impressions. On the other hand, in some kinds of cancer, genetic analysis by NGS was used to select the treatment method. In this study, we analysed whether minute clinical samples from EUS-FNA are useful for genetic analysis and whether that aids in deciding the appropriate treatment.

Aims & Methods: We analysed IPMN or PDA tissues using NGS and assessed the impact of NGS on clinical diagnosis. From January to December 2015, 14 tissue samples of undiagnosed pancreatic tumours (from 8 male patients, 6 female patients; mean age, 79 years; age range, 65–100 years; mean tumour size, 29.6 ± 17.9 mm; tumour size range, 10–66 mm) were collected by EUS-FNA. The locations of the tumours were the head (3), body (4), and tail (5); we obtained their samples through the stomach or duodenum. EUS-FNA was performed using a curvilinear echoendoscope (GF-UCT 260; Olympus Medical Systems, Tokyo, Japan) and 22- or 25-gauge needles (ProCore; Cook Japan, Tokyo, Japan/Expect; Boston Scientific, Tokyo, Japan). Both slow-pull and negative pressure techniques were used to obtain specimens. We performed whole-genome sequencing on EUS-FNA obtained from IPMN or PDA using the Comprehensive Cancer panel, and compared their genetic mutations. Additionally, in the case of IPMN, we compared the differences in results between mural nodules and cystic fluids or walls.

Results: Pathological diagnoses showed 2 adenocarcinomas, 3 intraductal papillary mucinous carcinomas, 7 intraductal papillary mucinous adenomas; the remaining 2 cases could not be diagnosed. We used minute specimens obtained from EUS-FNA, and analysed genetic mutations of 10 cases using NGS. Homogenous genetic mutations were approximately 18% and heterogeneous genetic mutations were approximately 25%. Five of the cases had mural nodules inside the cysts. We could analyse genetic mutations of cystic fluids or walls by the same way as of mural nodules. For the gradually growing IPMN without...
mural nodules, it is useful to analyse genetic mutations of cystic fluids or walls. Currently, inadequate samples from EUS-FNA were unsuccessfully used in and some cases, we could not make a pathological diagnosis. Even in such cases, genetic analysis and the subsequent diagnoses of malignant or benign tumours may be possible. We could identify several cancer-related genes, such as GNAS, Kras, Trp53, and BRAF.

Conclusion: In this study, we performed whole-genome sequencing of samples obtained from IPMN or PDA using EUS-FNA. Consequently, genetic analysis by NGS may be effective in addition to pathological diagnosis when deciding the management of pancreatic tumours.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


PO1023 PTPN11 DRIVES TUMOR DEVELOPMENT AND DEFINES A NOVEL THERAPEUTIC TARGET IN KRAS-MUTANT CANCERS

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Introduction: The ubiquitously expressed non-receptor protein tyrosine phosphatase SHP2, encoded by *PTPN11,* is involved in the regulation of multiple signal-transduction cascades. SHP2 was the first reported oncogenic tyrosine phosphatase, although more recently demonstrated tumor suppressive properties as well. SHP2 has been proven to be required for proper wild-type RAS activation, yet studies addressing the relevance of SHP2 for mutated KRAS dependent cancers, such as pancreatic and lung cancer are lacking.

Aims & Methods: In this study, we performed whole-genome sequencing of samples obtained from IPMN or PDA using EUS-FNA. Consequently, genetic analysis by NGS may be effective in addition to pathological diagnosis when deciding the management of pancreatic tumours.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


PO1025 COMONITTING PANCREATIC CANCERS ARISING ADJACENT TO INDEX INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS SHARE IDENTICAL KRAS MUTATIONS AND ARE ASSOCIATED WITH A FAVORABLE PROGNOSIS

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Introduction: Intraductal papillary mucinous neoplasms (IPMNs) are precursors of pancreatic ductal adenocarcinoma (PDAC) and are also associated with multicentric lesions (field effect), where concurrence of neo PDA, independent of index IPMN lesion, can also develop. However, there are cases where PDAs arise adjacent to the index IPMNs, and occasionally they are pathologically indistinguishable whereas the carcinoma developed from IPMN or was coincidental to the IPMN. A genetic approach can be useful to clarify the origin of each tumor compartment to determine if they shared molecular signatures.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: Twenty concomitant PDAs and IPMNs (39 samples, including concurrent lesions) from surgically resected patients were enrolled in this study. Resected pancreata were sliced at 5-mm intervals for whole-section histological analysis, and the distance between PDA and IPMNs was measured after precise pathological mapping. Target amplicon sequencing that covers 18 PDA-assos- ciated mutations including KRAS, GNAS, TP53, SMAD4, CDKN2A and RNF43, was performed using Ion PGM™ system (Thermo Fisher Scientific). Protein expression of TP53, SMAD4, p16, cathepsin, and RNF43 was also analyzed immunohistochemically.

Results: KRAS mutations were detected in 19/20 (95%) of PDAs and in 38/39 (97%) of IPMNs. “Adjacent” concomitant PDAs, defined as those that are 5 mm or less away from the IPMN (n = 11), tended to harbor identical KRAS mutations as the index IPMNs (KRAS identical; n = 8, 72%, KRAS different; n = 3, 27%). All three cases with contiguous neoplastic lesions via the main pancreatic duct between PDAs and IPMNs had identical KRAS mutations. In contrast, 7 of 9 “distant” concomitant PDAs, defined as those greater than 5 mm away from the IPMN (n = 9), possessed distinct KRAS mutations from the index IPMNs (75%) and the KRAS mutations were demonstrated in 14/20 (70%) of index IPMNs and in 29/39 (74%) of all PDAs, but not in PDAs, supporting de novo carcinogenesis rather than progression from the IPMNs. PDAs harboring identical mutations in KRAS as IPMNs were significantly closer to the IPMNs (KRAS identical; n = 16, 0.35 mm, versus 3.5 mm and 7.2 mm relative to cases with distinct KRAS mutations in the PDAs and IPMNs (n = 23, 0.75 mm, average 20 mm, p = 0.0397). The KRAS identical group had a better prognosis than the KRAS different group (disease-free survival p = 0.0245, overall survival p = 0.205). Curiously, the molecular signature of 18 PDA-associated genes was not significantly different between two groups.

Conclusion: Multiple clones with distinct KRAS mutations were identified in pancreata during initiation and progression of IPMNs, and a subset of PDAs arising within the field defect share the same KRAS mutation with index IPMN lesions. Interestingly, PDAs adjacent to IPMN tend to have identical KRAS mutations, suggesting PDAs and index IPMNs may arise from a common foun- dation. The KRAS identical group appears to have better prognostic relative to the KRAS different group, implying distinct molecular patterns may govern our biological evolution.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0126 POLYMORPHISM OF TP53 GENE, LEVELS OF INSULIN AND PRO-INFLAMMATORY CYTOKINES IN PATIENTS WITH PANCREATIC CANCER

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Introduction: The pancreatic cancer is a leading cause of death in cancer carriers worldwide.

Aims & Methods: To study the polymorphism of the TP53 gene on the suppressor and to evaluate proinflammatory cytokines in IL-1β, TNF-α, insulin blood serum levels at patients with various pathologies of the pancreas (cancer (PCa), acute and chronic pancreatitis (OP and CP)) with various geno- types of TP53. 150 patients were followed in a one-stage clinical trial (42 patients with PCa, 107 patients with OP, 8 patients with CP). The blood samples were collected by two independent teams: one - with patients with PCa and the other - with patients with OP and CP. The blood samples were collected at different time periods: the 1st set was included 47 PCa patients in stage I and II, and 21 patients with OP and CP. The 2nd set was included 16 PCa patients and 16 OP and CP patients. Patients were aged 30–75 years, average 61 years. The data were compared with age-matched healthy volunteers (HV). All patients were declared no conficts of interest.

Results: The concentration of insulin in different genotypes in patients with PCa with different genotypes of the TP53 gene did not differ significantly and amounted to 1.1 ± 0.2 pg/ml in patients with the Arg/Arg genotype, with Arg/Pro genotypes of 1.2 ± 0.3 pg/ml, p > 0.05. The level of TNF-α in the serum of patients with PCa with the Arg/Arg genotype was 1.2 ± 0.2 pg/ml, and did not significantly differ from the level in the serum of patients with the Arg/Pro genotype - 1.3 ± 0.1 pg/ml.

Conclusion: The Pro/Pro genotype of the TP53 gene was significantly more common in patients with PCa compared with the patients with CP. We detected significant differences in serum insulin levels in the comparison group and in patients with heterozygous genotypes, p < 0.05. The level of TNF-α in patients with CP was significantly lower than in patients with OP, and the level of IL-1β was significantly lower in patients with PCa than in patients with CP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0127 VALIDATION OF SERUM/PLASMA METABOLIC BIOMARKERS AGAINST PANCREATIC CANCER BY QUANTITATIVE TARGETED GC/MS

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Introduction: Pancreatic cancer (PC) is one of the most lethal diseases due to the difficulty of early detection. There is no effective blood biomarker for screening. Recently metabolomics is considered to be a promising approach to discover disease biomarkers. We previously reported that the serum/plasma levels of metabolites in patients with PC were significantly changed compared with those of healthy individuals.

Aims & Methods: The aim of this study is to confirm and develop our candidate metabolomic biomarkers in blood of PC patients. Blood samples from PC patients (PC) and healthy volunteers (HV) were collected by two independent groups consisting of multiple institutions. The 1st set was included 55 PC in stage I and II and 58 HV. The 2nd set was included 16 PC and 16 HV. Sixteen candidate metabolites were selected from previous report. Quantitative analy- ses were performed by gas chromatography/tandem mass spectrometry (GC/MS/MS) together with their corresponding stable isotopes. In the 1st stage, diagnostic models were constructed via multivariate logistic regression analysis. These results were validated using the 2nd set.

Results: In the 1st set, the level of 14 metabolites differed significantly between PC and HV. Model Y consisting of 2 metabolites, i.e., histidine and xylitol showed high sensitivity (70.4%) than CA19-9. Furthermore, combination of model Y with CA19-9 increased its sensitivity (90.7%) and specificity (89.5%). In the 2nd set, combination of model Y with CA19-9 demonstrated high sensitivity (81.3%) and specificity (93.8%). In particular, it displayed very high sensitivity (100%) for PC in a resectable state.

Conclusion: Quantitative analysis using GC/MS/MS confirmed the possibility of metabolomics-based screening methods for PC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0128 COMBINED HISTO-CYTOLOGICAL ANALYSIS OF EUS-FNA SAMPLES FROM SOLID LESIONS USING STANDARD FNA NEEDLES GIVES BETTER DIAGNOSTIC YIELD AND ACCURACY

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Introduction: Diagnostic yield from EUS-FNAC (fine needle aspiration cytology) has improved in the past few years with better tissue acquisition techniques. Core biopsy needles are now available but are more expensive than FNAC needles. We assessed the diagnostic yield and accuracy of FNAC samples processed for both cytology and histology.

Results: A total of 211 patients (118 male) were included. Samples were sent to cytology (n = 135; 107 pancreas, 10 biliary, 7 lymph nodes, 11 other), or cytology & histology (n = 76; 56 pancreas, 12 biliary, 5 lymph nodes, 3 other). Sample adequacy was 80.7% and 98.7% (p = 0.0004). Diagnostic yield (64.4%, 94.7%) and accuracy (81.3%, 96.1%) was significantly better in the combined histology & cytology group (p < 0.0001, p = 0.003). Within the combined group, diagnos- tic yield and accuracy improved by 20.5% (p = 0.007) and 26% (p = 0.0002) respectively when the sample was processes for both histology and cytology.

Conclusion: Our study confirms significant improvement in diagnostic yield and accuracy when samples were sent for both cytology and histology using standard FNAC needles.

Disclosure of Interest: All authors have declared no conflicts of interest.
Disclosure of Interest:
nosis in such cases is a problem for the future.
showed high predictive ability in BD-IPMN patients with WF. However, about
was acceptable. Mural nodules observed with EUS
had malignant IPMN. The rate of malignancy was
significantly higher than that of WF patients without MN (69% vs 33%). With
MN with EUS observation. The rate of malignancy in patients with MN was
considered to be essential. As for size of MN, EUS measurements were used in all
patients. Pathological findings of these patients were noninvasive carcinoma in 6,
results. However, prospective studies are needed in order to determine
agnostic potential of this instrument compared to the other modalities cur-
ently used.
Disclosure of Interest: All authors have declared no conflicts of interest.
References

P0130 USE OF A NOVEL THROUGH-THE-NEEDLE MICRO-
BIOPSY FORCES IN DIAGNOSING PANCREATIC CYSTS – A
MULTICENTER FEASIBILITY STUDY
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Aims & Methods: The aim of this study was to evaluate the use of the novel micro-forceps in a multicenter clinical setting. The patients referred for EUS evaluation of pancreatic cysts were included retrospectively from five European tertiary centers. Inclusion criteria were age of 18 or above and a pancreatic cyst of a size that allowed for FNA puncture. Exclusion criteria were pregnant or lactating females. A standardized data collection sheet includ-
ing the information about patient demographics, cyst size, EUS/FNA findings, technical and clinical success, and the results of the biopsies taken was sent to the collaborating centers. Technical success was defined as successful puncture of the pancreatic cyst, subsequent successful mounting of the micro-biopsy forceps, and extraction of at least one micro-biopsy. Clinical success was defined by obtaining useful histological results.

Results: Twenty patients were included. There was a slight overrepresentation of female patients (n = 12, 60%) and the median age was 65 (range: 41–80). The patients had a median cyst size of 30 mm (range: 15–130 mm) and a median procedural time was 30, 5 min (range: 17–58 min). We report a technical success rate of 85% (n = 17) - technical failure was only seen in transdudal puncture (n = 3, 15%). Biopsies were generally of good quality and contributed to the diagnosis in 14 patients (clinical success of 82%). Among these, there were ten cases of intraductal papillary mucinous neoplasia, two serous cystic adenomas, one mucinous cystic adenocarcinoma, and one pseudocyst. Two mild adverse events were recorded (10%), a case of re-admission due to non-specific abdominal pain and a mild acute pancreatitis.

Conclusion: The use of micro-biopsy forceps was until now only reported in case reports. It is a first larger-scale feasibility study. We conclude that the use of the micro-forceps seems feasible and safe with acceptable rates of technical and clinical success. However, prospective studies are needed in order to determine diagnostic potential of this instrument compared to the other modalities currently used.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0131 PANCREATIC DUCTAL CYTOLOGY: AN UNDERUSED
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Introduction: The diagnosis of pancreatic malignancy can be performed by brush cytology of the common bile duct or main pancreatic duct (MPD) during endo-
copic retrograde cholangiopancreatography (ERCP). We suggest that the use of
cystic brushing of the MPD is safe and has a sensitivity equal to or
slightly higher to that of bile duct cytology, although its clinical application is not
defined.

Aims & Methods: In this work we report our experience in the execution of MPD brush cytology. ERCPs between 2014 and 2015 that involved brush cytology of pancreatic strictures were included. Cytologies were obtained using the Brush Master V (Olympus Medical System). Histological evaluation was performed by two experienced cytopathologists.

Results: Of the 18 patients evaluated, 16 were men and 2 women, with a median age of 62 years (range: 43–89). All patients underwent abdominal computed tomography and 3 patients had magnetic resonance imaging. In addition to a pancreatic strictures, abdominal computed tomography revealed cephalic pancreatic lesions. 51% findings suggestive of chronic pancreatitis in 28%, pancreas divisum in 6%, and pancreatic inflammatory features in 6%. The distribution of the strictures was: head - 16, head and body - 1, tail - 1. The pancreatic duct was dilated in 16 patients (a median of 6.5–13). The diagnostic yield of MPD brush cytology for pancreatic cancer was: sensitivity - 81.8%, specificity - 100%, positive predictive value - 100%, negative predictive value - 77.8%, acuity - 88.9%, Sixty-one percent (n = 11) of the patients had a final diagnosis of pan-
creatic adenocarcinoma, 5.6% (n = 1) of neuroendocrine tumor and 33.3% (n = 6) inflammatory stricture. All the adenocarcinomas lead to strictures in the head of the pancreas. The diagnosis of neuroendocrine tumor was made by...
endoscopic ultrasonography fine needle aspiration. One patient developed mild pancreatitis (6.15%).

Conclusion: In patients suspected cephalopancreatic adenocarcinoma referred for ERCP, MDP brush cytology may be performed beyond biliary cytology, as it may improve cytopathologic diagnosis of malignancy without increasing complications rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0132 ANALYSIS OF PROGNOSTIC FACTORS IN PANCREATIC METASTASIS: A RETROSPECTIVE ANALYSIS

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Introduction: Pancreatic metastases (PM) account for 1–2% of pancreatic tumors. Several cancer types metastasize to the pancreas, but even recently developed cross-sectional imaging modalities have difficulties distinguishing PM from primary pancreatic tumors. Moreover, their prognostic significance is poorly defined.

Aims & Methods: The aims of this study were to clarify the incidence of primary tumors leading to PM, the clinical characteristics, and prognoses, and to define the prognostic factors for survival. A retrospective analysis was performed at 39 Japanese tertiary referral hospitals between January 2005 and August 2015, after receiving approval from the institutional review board of each hospital. We identified the patients based on data obtained from each institutional database, and analyzed patient and tumor characteristics, and survival time. All the patients enrolled in the analysis were histopathologically or cytopathologically diagnosed with PM. Kaplan-Meier analysis and Cox's proportional hazard models were applied to evaluate overall survival and survival analysis, respectively.

Results: We enrolled 159 patients (median age 74.5 years) with a pathologic diagnosis of PM. The most common primary tumor was renal cell carcinoma (38.4%, n = 61), followed by lung cancer (24.5%, n = 39), colorectal cancer (11.3%, n = 18), sarcoma (6.3%, n = 10), breast cancer (6.3%, n = 10), and other cancer (n = 21). At the time of the diagnosis of PM, 38 patients (24%) had at least one tumor-related symptom. Additional extra-pancreatic metastases were diagnosed in 94 patients (59%). Sixty-four patients (40%) underwent surgery resection, and no surgical resection was performed in 95 patients (60%). Additional therapies were chemotherapy (n = 69), chemoradiation (n = 4), radiation (n = 3), palliative care, and unclear (n = 2). Eight patients were lost during follow-up and 151 patients were included in the statistical analysis. All patients with PM had a median overall survival of 43.0 months, with 3- and 5-year survival rates of 52.5% and 42.6%, respectively. Among the five frequent primary sites of PM, prognoses of RCC, breast cancer, and colorectal were better than those of lung cancer and sarcoma. Univariate Cox proportional regression analysis identified four prognostic factors: pancreatic resection (hazard ratio [HR] 0.31, 95% confidence interval [CI] 0.18–0.57, p < 0.001), extra-pancreatic metastases (HR 3.07, 95%CI 1.71–5.51, p < 0.001), tumor-related symptoms at PM diagnosis (HR 3.83, 95%CI 1.77–8.41, p < 0.001), and pathologic diagnosis of primary tumors (p < 0.001). Multivariate Cox proportional regression analysis identified three independent prognostic factors: extra-pancreatic metastases (HR 2.13, 95%CI 1.11–4.07, p = 0.02), tumor-related symptoms at diagnosis (HR 5.39, 95%CI 2.92–9.91, p < 0.001), and pathologic diagnosis of primary tumors (p < 0.001).

Conclusion: Treatment strategies and prognoses for PM completely differ according to the primary tumor type. A definitive pathologic diagnosis of PM is essential for selecting the appropriate treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0133 LUNG METASTASIS IN PANCREATIC CANCER: SHOULD STAGING CHEST CT BE ROUTINELY PERFORMED?

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Introduction: National Comprehensive Cancer Network (NCCN) guidelines recommend chest x-ray or chest computed tomography (CT) for the staging of potential resectable pancreatic adenocarcinoma (PDA). However, there is limited data supporting these guidelines, and the prevalence of lung metastasis is not well defined on staging CT scans. We report our findings of patients with lung metastasis during initial staging and follow-up of patients with PDA.

Aims & Methods: Data was prospectively collected from May 2013 to September 2016 for PDA patients who were presented at a multidisciplinary pancreas center (MDPC) at a large tertiary care center. All patients were staged with CT pancreatic protocol, CT chest and Endoscopic Ultrasound. Patients with findings of lung lesions on initial staging chest CT were followed prospectively. Metastatic lung lesions were determined based on definite imaging characteristics with clinical consensus or lung biopsy results.

Results: A total 278 PDA patients referred to MDPC were staged with CT chest (Table 1). Out of these, 36 (12.6%) patients were found to have either malignant (N = 6) or indeterminate (N = 30) lung lesions on initial staging CT chest. Out of the six malignant lung lesions, 5 (83.3%) patients had metastatic PDA lesions, and 1 (16.7%) patient had incidental primary lung cancer. On a follow-up of 30 patients with indeterminate lung lesions, 8 patients (26.7%) were later determined to be lung metastasis. The overall prevalence of definite lung metastasis was at least 4.8% (13/278). The prevalence of lung metastasis in pancreatic head cancer was 3.0%, while body and tail masses was 10.5%. Lung metastasis was almost four times more likely in the body, and tail masses (OR = 3.83, CI 1.2–11.8, p = 0.02) compared to head. Overall CT chest resulted in change in management plan in 9 (2.9%) patients due to change in the stage to metastatic (8) and diagnosis primary lung cancer (1). Staging with CT chest changed otherwise resectable disease to unresectable/metastatic in 5 patients (1.8%) and borderline resectable to metastatic disease in 2 (0.7%) patients. Prevalence of isolated PDA lung metastasis without any other metastasis was 2.8% (8/278).

Table 1: Comparison of patient and tumor characteristics.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Patients without Lung metastasis</th>
<th>Patients with Lung Metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>265</td>
<td>13</td>
</tr>
<tr>
<td>Age (yrs)</td>
<td>68.6</td>
<td>64.8</td>
</tr>
<tr>
<td>Male (%)</td>
<td>48.4</td>
<td>69.2</td>
</tr>
<tr>
<td>Race, Caucasian (%)</td>
<td>90.2</td>
<td>100</td>
</tr>
<tr>
<td>Mass size (mm), mean (SD)</td>
<td>26.9</td>
<td>31.1</td>
</tr>
<tr>
<td>Mass Location</td>
<td>76.7</td>
<td>46.2</td>
</tr>
<tr>
<td>Head (%)</td>
<td>23.3</td>
<td>53.8</td>
</tr>
<tr>
<td>Body/Tail (%)</td>
<td>899 (1528)</td>
<td>961 (482)</td>
</tr>
</tbody>
</table>

Conclusion: Our study showed that the prevalence of pulmonary metastasis in PDA was clinically relevant to mandate routine staging with CT chest. Prevalence was significantly higher for pancreatic body and tail cancers compared to the head. Staging CT chest resulted in a change in the stage of PDA and management decisions.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0134 VALUE OF EUS IN EARLY DETECTION OF TUMOR LESION IN THE REMNANT PANCREAS

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Introduction: New lesions (metachronous pancreatic cancer) and recurrence may develop in pancreas after initial cancer and Intraductal Papillary Mucinous Neoplasm (IPMN). Endoscopic ultrasonogra-
phy (EUS) is proved as a more specific and sensitive method for pancreatic lesion. However, there is no report about EUS after pancreatectomy. If it is possible to observe the anastomotic part to remnant pancreas under the EUS, remnant pancreatic cancer may be pointed out an early stage.

Aims & Methods: The aim of this study was retrospectively to investigate the observation ability of EUS for remnant pancreas. In this retrospective study, 44 patients who underwent EUS for remnant pancreas were enrollment. The definition of observation under the EUS for remnant pancreas was as follows, total observation for remnant pancreas observed from linear white line (anastomotic part) to opposite side pancreas, otherwise it was insufficient observation. We compared the detection rate of EUS findings and that of CT or MRI findings.

Results: Among the 395 patients who underwent pancreatectomy at the JA Onomichi General Hospital between December 2002 and March 2016, the enrolled patients were 44 who underwent EUS for remnant pancreas. In the surgical procedure, pancreaticoduodenectomy (PD) including pylorus-preserving PD (PPPD) and subtotal stomach-preserving PD (SSPPD) was 20 cases and distal pancreatectomy (DP) was 24 cases. Total observation of remnant pancreas was possible in 41 cases (93%). Seven of 44 cases showed the lesion of recurrence in the remnant pancreas. Although CT or MRI was able to point out it in only 2 cases, EUS was able to point out it in the remnant pancreas of all cases. Stage of six cases were as follows, 1 case of stage 0, 2 cases of stage Ia, 3 cases of stage IIIb. The other cases were IPMN, we were able to perform EUS-FNA for lesion in the remnant pancreas in all cases. Pathological results were positive in 5 cases. One of the other 2 cases was negative (class II), but it was a recurrence by surgery. The other case was strongly suspected to recurrence by Positron emission tomogra-
phy (PET). Second pancreatectomy was performed in 4 out of 7 cases. The sensitivity of EUS-FNA was 71.4% (5/7), the specificity was 85.7% (6/7) and the accuracy was 71.4% (5/7). In addition, a comparison of detection ability of EUS and CT or MRI findings showed that EUS was significantly superior to CT or MRI (P < 0.001).

Conclusion: EUS was able to observe remnant pancreas in almost cases. We were able to perform EUS-FNA for lesion in the remnant pancreas. In addition, the detection ability of EUS was significantly superior to that of CT or MRI. We believe that EUS and EUS-FNA should be performed for lesion in remnant pancreas, and that remnant pancreatic cancer may be pointed out an early stage.

Disclosure of Interest: All authors have declared no conflicts of interest.
pared with 33.1 months (95% CI, 9.0–27.2) in the 2nd PDAC group (N: 259 vs. 215, respectively). 54% of patients in the 3rd PDAC group were excluded from this study: 51 lesions due to anticoagulation therapy; 25 lesions in patients receiving antitumor therapy excluding single-LDA and DAPT; and 20 lesions due to inoperable indications at the same time. Thus, a total of 495 patients were enrolled in this study. The patients were categorized according to antitumor therapy (APT). APT was defined as follows: oral administration of single-LDA (aspirin [100 mg/day]) or DAPT (aspirin [100 mg/day] plus clopidogrel [75 mg/day]). Logistic regression analysis was performed for risk factors of bleeding after gastric ESD. Results: The patients were categorized into two groups: no APT (n = 370) and APT (n = 125). APT included single-LDA (n = 74) and DAPT (DAPT plus clopidogrel; n = 51). Among them, 46 received continuous LDA on single-LDA and 40 received continuous LDA on DAPT. The postoperative bleeding rate in the APT group was significantly higher than that in the no APT group (16.0% vs. 5.9%; P < 0.001). Postoperative bleeding occurred in seven and nine patients in the continuous single-LDA group (15.2%) and the continuous LDA on DAPT group (22.5%), respectively. In multivariate analysis, specimen size of ≥ 40 mm (odds ratio [OR] 3.19; 95% confidence interval [CI], 1.65–6.16; P < 0.001) was a sole independent risk factor for postoperative bleeding (Table 1). In subgroup univariate analysis among APT users, continuous single-LDA and continuous LDA on DAPT were not related to postoperative bleeding. Table 1 Multivariate analysis for postoperative bleeding after ESD.

<table>
<thead>
<tr>
<th>Odds ratio 95% CI P-value</th>
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<tbody>
<tr>
<td>Coronary artery disease 1.52 0.61–3.78 0.370</td>
</tr>
<tr>
<td>CKD with hemodialysis 3.21 0.97–10.60 0.056</td>
</tr>
<tr>
<td>Continuous LDA 2.13 0.83–5.45 0.116</td>
</tr>
<tr>
<td>Specimen size ≥ 40 mm 3.19 1.65–6.16 &lt;0.001</td>
</tr>
</tbody>
</table>

Conclusion: This study suggests that continuous LDA may be acceptable for gastric ESD in patients on DAPT. However, patients with continuous LDA on DAPT should be monitored carefully for postoperative bleeding after gastric ESD because the rate of postoperative bleeding in the continuous LDA on DAPT group was higher than that in the other groups. Disclosure of Interest: All authors have declared no conflicts of interest.

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5. Tounou S, Morita Y, Hosono T. Continuous aspirin use does not increase the risk of bleeding during or after endoscopic submucosal dissection for early gastric cancer. Gastric Cancer 2014; 17: 489–96.
INTRODUCTION: Peroral endoscopic myotomy (POEM) has received wide acceptance as a first-line treatment for esophageal achalasia. In addition, small-scale studies are ample but long-term large-scale studies are few.

Aims & Methods: The aim of this study was to systematically analyze our long-term results of POEM, with particular emphasis on POEM failures and associated factors. This is a single-center study. Consecutive POEM patients between Aug, 2010 and Dec, 2012 were included. Kaplan-Meier survival function was used to estimate clinical success rate at each year. The Cox proportional hazards model was used to analyze risk factors related to recurrence.

RESULTS: A total of 564 patients were included. Mucosa injuries happened in 93 patients (16.5%) and 36 patients (6.4%) experienced major perioperative adverse events. The Eckardt score and lower esophageal sphincter (LES) pressure were significantly decreased after POEM (median Eckardt score 8 to 2, p < 0.05; median LES pressure 29.7 mm Hg to 11.9 mm Hg, p < 0.05). In a median follow-up period of 49 months (range 3-67 months), fifteen failures occurred within 3 months, 23 between 3 months and 3 years, and 10 after 3 years. The estimated clinical success rates at 1, 2, 3, 4, and 5 years were 94.2%, 92.2%, 91.1%, 86.0% and 87.1%, respectively. Multivariate Cox regression revealed long disease duration (> 10 years) and history of prior interventions to be risk factors for recurrence. Clinical reflux occurred in 37.3% (155/416) patients.

Conclusion: POEM is a highly safe and effective treatment for esophageal achalasia with favorable long-term outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO140 PATIENTS WITH CHRONIC GASTROINTESTINAL ISCHEMIA HAVE AN ALTERED SUBLINGUAL MICROCIRCULATION

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Introduction: Chronic gastrointestinal ischemia (CGI) results of insufficient blood supply to the gastrointestinal tract. The majority of CGI patients have systemic disorders of the circulatory system including hypertension, diabetes and other cardiovascular risk factors. Studies in patients with chronic gastrointestinal ischemia found a correlation between intestinal ischemia and sublingual microcirculatory alterations. However, little is known about microcirculatory alterations in patients with CGI. We hypothesized that patients with CGI may reveal sublingual microcirculation alterations. We further hypothesized that such alterations will be amplified when challenging the patient to enteral caloric challenges. This would provide a patient-friendly means to identify CGI.

Aims & Methods: Consecutive patients with CGI and healthy controls were prospectively included between September 2014 and August 2015. All patients and controls were included. Mucosa injuries happened in 93 patients (16.5%) and 36 patients (6.4%) experienced major perioperative adverse events. The Eckardt score and lower esophageal sphincter (LES) pressure were significantly decreased after POEM (median Eckardt score 8 to 2, p < 0.05; median LES pressure 29.7 mm Hg to 11.9 mm Hg, p < 0.05). In a median follow-up period of 49 months (range 3-67 months), fifteen failures occurred within 3 months, 23 between 3 months and 3 years, and 10 after 3 years. The estimated clinical success rates at 1, 2, 3, 4, and 5 years were 94.2%, 92.2%, 91.1%, 86.0% and 87.1%, respectively. Multivariate Cox regression revealed long disease duration (> 10 years) and history of prior interventions to be risk factors for recurrence. Clinical reflux occurred in 37.3% (155/416) patients.

Conclusion: POEM is a highly safe and effective treatment for esophageal achalasia with favorable long-term outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


PO141 CONVENTIONAL NARROW BAND IMAGING HAS GOOD CORRELATION WITH OLGA STAGING OF GASTRITIS

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Introduction: The operative link of gastritis assessment (OLGA) staging system is essential to assess the risk of Helicobacter pylori related gastric cancer on the basis of several biopsy samples taken from the antrum and corpus.

Aims & Methods: In this study we attempted to evaluate whether gastritis staging using conventional narrow band imaging (NBI) endoscopy is equivalent to that determined by histopathology. Fifty (50) consecutive patients with Helicobacter Pylori (H. Pylori) related gastric atrophy selected according to NBI endoscopic findings 1. The diagnosis of H. Pylori based on direct detection of the organism by histopathology assessment. The NBI grade of lower gastric atrophy scored from 0 to 3. The histopathological assessment of lower gastric atrophy was based on OLGA scoring system. Furthermore, we assessed the presence or absence of intestinal metaplasia. The NBI and histology stages of gastric atrophy were assessed using a combination of scores for the antrum and corpus. These stages further classified into low risk (stage 0, I and II) and high risk (stage III and IV). Finally the degree of correspondence between NBI and histopathology, in prediction of gastric cancer risk, was assessed.

Results: The mean age of included patients was 38.7 ±15.6 years, they were 21 (42%) males and 29 (58%) females. 38 (76%) and 13 (26%) patients have pseu-
doplyoric and intestinal metaplasia respectively. Overall 41 (82%) and 9 (18%) patients have low and high gastric cancer risk respectively. The sensitivity of NBI in diagnosis of Helicobacter pylori infection, gastric atrophy and intestinal metaplasia were 96% (n = 48/50), 100% and 61.5% (n = 8/13) respectively. The degree of correspondence between the scores obtained by NBI and by histology was 58% (29/50) for the lower gastric body atrophy and 86% (n = 43/50) for the antral intestinal metaplasia. The degree of correspondence between the high risk and low risk groups determined on the basis of NBI endoscopy on one hand and histopathology on the other hand was 80% (n = 40/50).

Conclusion: NBI is able to approximate histopathological staging of gastritis to a good extent. More studies and training will further improve the performance of our suggested new staging method.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


PO142 SAFETY ADVANTAGE OF THE NEW DEVICE (SPLASH-M KNIFE®) FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY GASTRIC CANCER

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Introduction: Endoscopic submucosal dissection (ESD) is a standard treatment for early gastric cancer. Development of the ESD device has been conducted recently with M-Knife® and the new multi-functional M device was invented to achieve complete ESD with a simple device. It achieves clear marking, better hemostasis and smoother operation during a procedure without replacing the knife.

Aims & Methods: The aim of this study was to investigate clinical outcome of ESD for early gastric cancer with a new device (Splash-M-knife®). In total, early gastric cancer treated by ESD with a needle-type knife between January 2012 and August 2016 at Kitakyushu Municipal Medical Center were retrospectively reviewed. Lesions treated by ESD with a conventional needle-knife (ESD-C, n = 76) and by ESD with a new device (ESD-N, n = 73) were compared. Multivariate analyses and propensity score matching were used to compensate for the differences in age (≥75 years vs < 75 years), sex (male vs female), underlying diabetes (none vs with cardiovascular disease or cirrhosis), anti-thrombotic drugs (not receiving or discontinuation vs continuation), tumor size (≥21 mm vs <21 mm), lesion location (in the upper or middle third of the stomach vs in the lower stomach), lesion position (in the lesser curvature of the stomach vs others), macroscopic type (flat or depressed vs elevated), presence of ulceration (presence vs absence) and operator level (experience of ≥50 vs experience <50). As primary endpoint, the rates of the lesions that need hemostatic forceps was compared.
among two groups. As sub-analyses, the cutting time, rate of en-block/complete resection and rates of adverse events were evaluated among two groups.

Results: Propensity score matching analysis created 46 matched pairs. Adjusted comparisons between two groups showed a significantly smaller usage rate of hemostatic forceps in ESD-N than that in ESD-C (4.35% vs 84.8%, p < 0.001), and similar treatment rates (en-block resection rate: 100% between both groups; complete resection rate: 97.8% vs 100%, p = 1; cutting time: 84.6 min vs 83.0 min, p = 0.89; perforation during ESD: 0% in both groups).

Conclusion: Splash M-Knife® achieved better hemostasis and safer ESD for early gastric cancer to reduce cost for ESD by reducing usage of hemostatic forceps during ESD procedure.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0143 INTUBATION FAILURE DURING GASTROSCOPY – INCIDENCE, PREDICTORS AND FOLLOW-UP FINDINGS
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Introduction: Intubation failure (IF) when a trained endoscopist is unable to progress into the upper oesophagus via the oropharynx. The incidence is unknown, but estimated at 1.8%. There have been no studies exploring IF and follow-up findings. We aimed to assess the incidence, causes of IF, predictors of pathology in patients with IF, and follow-up findings.

Aims & Methods: We retrospectively identified all gastroscopists performed at a district general hospital between August 2010–August 2016 from an endoscopy database, and reviewed cases with IF. We excluded patients who had achieved oesophageal intubation. Data on sedation use, endoscopist status, indications, radiological and endoscopic findings were recorded. Procedural limitations were classified into 2 groups to ‘tolerance’ (e.g. pulling out scope, anxiety) and ‘failure to progress’. Statistical analyses were made using Pearson’s chi² and Wilcoxon signed rank test.

Results: The incidence of IF was 0.95% (284/29630). 238 patients were identified, with a mean age of 63.2 (SD 16.1), with ‘failure to progress’ in 41 and ‘failure to tolerate’ in 197. Subsequent investigations included barium radiology (59.7%, n = 142), CT (21%, n = 50), repeat gastroscopy (29.4%, n = 70) and no further investigations (19.7%, n = 47). Structural pharyngeal abnormalities were diagnosed comprising of cricopharyngeal hypertrophy (CPH) [49%], Zenker’s diverticulum (ZD) [14.6%], pharyngeal web [12.2%], CPH with ZD [9.8%], cervical spondylosis [7.3%] and other (7.3%). Endoscopist status was a predictor of IF (OR for medical vs. non-medical endoscopist 0.7, 95% CI: 0.5–0.9, p = 0.007). Within the IF cohort, predictors of structural causes on barium radiology included: dysphagia (OR 5.5, 95% CI: 2.5–11.8, p < 0.001), failure to progress (OR 5.2, 95% CI: 2.3–12.0, p < 0.001) and age ≥ 65 (OR 4.0, 95% CI: 1.8–8.9, p < 0.001). Repeat gastroscopy was successful in 65/70 (2 using nasendoscope) after increasing midazolam dosage (mean increase = 1.5 mg, 95% CI: 1.0–2.0 mg, p < 0.001). Diagnostic yield for barium radiology, CT and repeat gastroscopy were 69.0%, 54.0% and 64.3% respectively. The concordance of endoscopy indication and pathology on further investigation for IF was 110/192 (57.5%). In patients undergoing barium radiology and repeat gastroscopy, the false negative rate for endoscopy was 17/30 (56.7%), consisting of pharyngeal web (12.2%), Zenker’s diverticulum (ZD) [14.6%], pharyngeal mucus and 8.6 for enlarged fold in subjects with infected status.

Conclusion: We present novel data regarding IF, and report an incidence of 0.95% and similar treatment outcomes (en-block resection rate: 100% in both groups; cutting time: 84.6 min vs 83.0 min, p = 0.89; perforation during ESD: 0% in both groups).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0144 DIAGNOSTIC CAPABILITY OF ENDOSCOPY FOR HELICOBACTER PYLORI INFECTION
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Introduction: Balloon tamponade, sometimes with Sengstaken-Blakemore tubes (SBT), remains the main immediate salvage therapy for acute variceal bleeding uncontrolled by variceal ligation or injection therapy. Previous cohort studies from the 1970–1980s report success rates of 40–94% for initial haemostasis but high re-bleeding rates of 40–70% on removal [1–3]. Despite guidelines recommending balloon tamponade as initial therapy in treating endoscopically uncontrollable variceal bleeding, specialists and trainees feel uncomfortable with SBT insertion [4] given the perceived difficulties and complications [5].

Aims & Methods: We aimed to describe the current practices surrounding inser- tion of SBT for acute variceal bleeding, the outcomes and to identify areas requiring improvement. A retrospective audit of all patients from 2008–2016 who required SBT insertion for control of acute variceal bleeding was undertaken at Monash Health, a large tertiary Australian centre. These patients were identi- fied from coding classifications. Details regarding their admission were obtained via electronic records.

Results: Approximately 14% of all patients with variceal bleeding required inser- tion of SBT. Of these 42 patients the majority were males (31), median age of 55 years (range 34–78). Alcohol was the most common aetiology for cirrhosis (62%), with 65% actively drinking. Most patients had cirrhosis severity scores of Child-Pugh B (67%) or Child-Pugh C (29%) and a median MELD score of 15 (range 6–39). At the time of initial variceal bleed, 87% were haemodynamically unstable and 29% were encephalopathic. All received standard medical therapy with octreotide or terlipressin, antibiotics and blood products as required. The time to initial endoscopy from 1st onset bleeding was prompt (median 6.62 hours). Most bleeding varices were oesophageal (90%). Initial liga- tion/injection was performed in 64% with the remaining patients having such large volumes of blood in the UGI tract that satisfactory views were unable to be obtained. The current practice surrounding SBT insertion is shown in the table.
below. Re-look endoscopy post-SBT insertion was performed in 86% patients at a median of 39 hours after insertion with further endoscopic therapy in 47%. Complications of SBT insertion occurred in 31% and included minor oesophageal ulceration (9%), significant oesophageal ulceration (3), aspiration pneumonia (4) and oesophageal perforation (1).

Current practice surrounding Sengstaken-Blakemore Tube insertion

<table>
<thead>
<tr>
<th>Variable</th>
<th>Results (n = 42)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication for SBT insertion</td>
<td>Incomplete haemostasis 74%, poor view 50%</td>
</tr>
<tr>
<td>Confirmation of position</td>
<td>Direct endoscopic visualisation 13, imaging 25, none 6</td>
</tr>
<tr>
<td>Volume of balloon inflation</td>
<td>Gastric balloon - 306 ml mean (60-450 ml) Oesophageal balloon - 25-300 ml (n = 15)</td>
</tr>
<tr>
<td>Duration of balloon inflation (median hours)</td>
<td>Gastric balloon - 35.1 (1-140.3) Oesophageal balloon - 16 (1-62.8)</td>
</tr>
<tr>
<td>Time to re-look endoscopy after SBT (median hours)</td>
<td>39.3 (11.5-348.2)</td>
</tr>
</tbody>
</table>

Re-bleeding occurred in 45% patients during the admission despite SBT insertion, of which 79% did not survive. Seven other patients subsequently underwent a palliative procedure for these still died. The median time of discharge and mortality was 50% and 41% respectively. The median duration of hospitalisation, intensive care and mechanical ventilation was 13 days (1-56), 6.2 days (0.3-36.2) and 120 hours (1-708) respectively.

Conclusion: Primary haemostasis was achieved in 93% of patients; however, re-bleeding occurred in 45% and was associated with a poor survival rate of 20%. Short and long-term survival overall has not significantly improved since studies in the 1970s-1980s despite advances in pharmacological therapy. Current practices of SBT insertion are variable and would benefit from further education. Rates of direct visualisation of balloon position prior to inflation with endoscopy should be improved as with referrals for early TIPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0146 CONSCIOUS SEDATION FOR ESOPHAGEAL SUBMUCOSAL RESECTION BY USING DEXMEDETOMIDINE

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Introduction: To evaluate the feasibility and safety of the dexmedetomidine (DEX) for conscious sedation during endoscopic submucosal dissection (ESD).

Aims & Methods: This study was a prospective trial, and was conducted at the Yamashita Hospital. Between January 2016 and December 2016, all 50 patients were enrolled in this study. The inclusion criteria for the study was the presence of esophageal, gastric or duodenal tumors. The criteria for exclusion from this study is as follows: patients who were allergic to the drugs used, a baseline heart rate less than 50 beats/minutes or systolic blood pressure was less than 90/60 mmHg. All patients were intravenously infused with atropine sulfate hydrate (0.125 mg-0.25 mg). During procedure, the percentage of the time that the depth of sedation from RASS –1 to –3 during procedure were evaluated. Body movement leading to the deviation of ESD were recorded appropriately. After the procedure, all patients were intravenously infused with fumazenil (0.3 mg) and observed until the Aldrete score reached 9 points.

Results: During this study period, 50 patients with esophageal, gastric and duodenal tumors were identified as eligible for participation. Among these patients, 37 males and 13 females, and the mean age was 67.5 ± 8.6 y. 27 patients regularly consumed alcohol and 5 patients use sleeping drugs regularly. Tumors were located in the following locations: 9 cases in the esophagus, 38 cases in the stomach. The mean tumor size was 23.8 ± 16.5 mm and the procedure time was 88.0 ± 59.5 minutes. The histologic results of ESD were squamous cell carcinoma (n = 9), adenoma (n = 17) and adenocarcinoma (n = 24). ESD by using DEX were successfully performed in all 50 tumors. No adverse events that were the results of procedures occurred. The mean achievement rate of conscious sedation during procedure was 84.7 ± 16.5%. The median frequency of disturbance by patient’s movement was 0 times (range 0-3 times). 33 cases reduced and 14 cases discontinued a continuous infusion of DEX. In 23 cases of 50 patients, the administration rate of conscious sedation was 0.1 mg/kg/hour.

Conclusion: Conscious sedation with DEX is effective, safe and a high level of satisfaction for endoscopists and patients for upper gastrointestinal ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0147 DIAGNOSTIC ACCURACY OF BLUE LASER IMAGING WITH MAGNIFYING ESOPHENDY SCOPY FOR INVASION DEPTH OF SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA

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Introduction: Preoperative diagnosis of invasion depth of superficial esophageal squamous cell carcinoma (SESCC) is very important to select appropriate therapeutic procedure. The Japan Esophageal Society (JES) classification using narrow-band imaging with magnification (M-NBI) was used for evaluating gastro-intestinal neoplasms such as predicting invasion depth or tumor detection.

Aims & Methods: We aim to investigate the diagnostic value of M-NBI by comparing it with M-ULD. Our study was a single-center retrospective study and approved by the Ethical Review Committee of Kyoto Prefectural University of Medicine, and performed in accordance with the World Medical Association’s Declaration of Helsinki. All patients provided informed consent for undergoing both M-ULD and M-NBI. Consecutive 166 patients underwent endoscopic submucosal dissection (ESD) for esophageal tumor at Kyoto Prefectural University of Medicine between April 2014 and March 2016. Endoscopic images of SESCCs were recorded by both M-ULD and M-NBI prior to ESD. SESCCs were pathologically diagnosed by ESD specimens. Three endoscopists with no information of the lesions evaluated invasion depth of SESCCs using M-ULD and M-NBI images according to JES classification. The diagnostic value of each procedure was then evaluated.

Results: 124 SESCCs were analyzed in this study. The numbers of male/female were 104/20, respectively. Median age was 68.5 years old. Median size of tumor was 17.6 mm. The proportion of tumor location at U1/Me/L1 was 13/70/17%, respectively. The proportion of macroscopic type for 0-Ia/Ba/B1/B2 was 16.5%. The median size of tumor was 9.1±6.8 mm. The median frequency of disturbance by patient’s movement was 0 times (range 0-3 times). 33 cases reduced and 14 cases discontinued a continuous infusion of DEX. In 23 cases of 50 patients, the administration rate of conscious sedation was 0.1 mg/kg/hour.

Conclusion: Conscious sedation with DEX is effective, safe and a high level of satisfaction for endoscopists and patients for upper gastrointestinal ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.
References

P0148 IMPACT OF NEEDLE-BASED CONFOCAL LASER ENDOMICROSCOPY (NCLE) IN IMPROVING DIAGNOSIS OF PANCREATIC CYSTIC NEOPLASMS: SINGLE CENTER EXPERIENCE
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Introduction: Endoscopic Ultrasound (EUS) has been found to be an effective tool in diagnosing pancreatic cystic neoplasms (PCN). Carcinomaenoxyantigen (CEA) tumor marker has also been used to differentiate PCN and is the most accurate marker of mucinous cystic neoplasms. Recently, needle-based confocal laser endomicroscopy (nCLE) has been increasingly used for the diagnosis of PCN. nCLE allows for evaluation of pancreatic cysts with results similar to that of a pathological diagnosis. In this study, we will compare our standard of care, EUS and the combination of CEA and nCLE to determine which combination of modalities is a better predictor of PCN.

Aims & Methods: In this retrospective chart review, 22 patients with pancreatic cysts were evaluated. Specificity and Negative Predictive Value (NPV) of EUS alone and of EUS with combined CEA and nCLE were evaluated and diagnostic accuracy was compared with pathology using McNemar’s test. Worrisome features (increased cyst size, wall thickness, main pancreatic duct size, and presence of non enhanced mural nodules, abrupt changes, distal atrophy and lymphadenopathy) were tested by determining dissimilar calculations using Euclidean distance and later were used in hierarchical clustering to create two clusters based on Euclidean distance.

Results: Diagnosis of PCN using EUS alone had a specificity of 0.75 and a NPV of 0.88. EUS and CEA had a specificity of 0.95 and a NPV of 0.90. Finally, EUS with CEA and nCLE combined had a specificity of 0.80 and a NPV of 0.94. Worrisome features clustering was able to predict pathology, p = 0.00289.

Conclusion: We concluded that specificity and NPV of EUS predicting PCN are positively impacted by the addition of CEA and nCLE. We also found that clustering of worrisome factors predicts pathology, however, a larger cohort is required for future studies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0149 FULL-SPECTRUM ENDOSCOPY FOR UPPER GASTROINTESTINAL SCREENING INCLUDING PRECISE OBSERVATION OF THE AMPULLA OF VATER AND THE ANAL SQUAMO-COLUMNAR JUNCTION
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Introduction: Endoscopic submucosal dissection (ESD) is accepted as the treatment of intestinal-type early-stage gastric cancer. However, ESD occasionally results in unfavourable outcome due to technical difficulties. Therefore, predictions of difficulties in ESD would preclude complications associated with ESD. Aims & Methods: The aim of this study is to determine the predictive factors of procedural difficulties in ESD. Between January 2009 and July 2016, 577 consecutive patients who underwent ESD for gastric lesions were enrolled. These patients were classified into 3 groups: group S, group L, and others. Group S comprised 30 patients who underwent ESD for the shortest duration (10–16 min). Group L comprised 30 patients who underwent ESD for the longest duration (149–215 min). Multivariate analysis was performed between Groups L and S using the following factors: location (cardia, posterior wall of angle, lesser curvature of lower gastric body and others), macroscopic type (protruded, depressed, or others), and morphological type (preoperative scar and others), mixed size of the resected specimen, preoperative scar, number of preoperative biopsies, and others, and as predictor for submucosal fat tissue, body mass index, waist circumference, visceral fat tissue measurements on CT, blood test findings (glycated hemoglobin, triglyceride and total cholesterol), blood pressure, and heart rate before ESD.

Results: Significant differences were found regarding the number of biopsies (group L, 8.5; group S, 6.8; P = 0.0211), (group L, 616.7mm2; group S, 998.5mm2; P = 0.0027), biopsy visualization of SCJ was good at 32% (108/340) (P = 0.0086). Based on these factors and odds ratio, we prioritized sensitivity to avoid missing cases with removal difficulties during ESD and suggested predictive factors for procedural difficulties during ESD. For example, when examining 43 cases, no patients underwent ESD for gastric neoplasms between August to November 2016 the sensitivity was 87.5% and the specificity was 80%.

Conclusion: Our results suggest that the number of biopsies, size of the resected specimen, biopsy diagnosis, preoperative scar, and biopsy location are predictive factors for difficulties in ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0150 PREDICTIVE FACTORS OF PROCEDURAL DIFFICULTIES IN ENDOSCOPIC SUBMUCOUS DISSECTION OF EARLY-STAGE GASTRIC CANCER
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Conclusion: Our results suggest that the number of biopsies, size of the resected specimen, biopsy diagnosis, preoperative scar, and biopsy location are predictive factors for difficulties in ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
in the lesser curvature (43.9%, 284/647). Posterior EGC was more frequent in the middle third stomach than the anterior part (20.4%, 31/157 vs. 16.4%, 11/67, respectively). For EGCG characteristics compared between the lower and mid-to-upper parts, submucosal invasive EGC was found to be significantly different (odds ratio, 1.919; confidence interval, 1.014–3.623; p = 0.045).

Conclusion: Most of the EGCs resectable with ESD were found in the lower part of the stomach and lesser curvature of the stomach. The incidence of the posterior part in the mid-to-upper part of the stomach was higher than that of anterior part. The EGCG located in the mid-to-upper part of the stomach was found to have a higher incidence of invasive cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

#P0152 A STUDY OF THE RECOGNITION OF ENDOSCOPIC IMAGES BY MACHINE LEARNING WITH CONVOLUTIONAL NEURAL NETWORK AND DEEP LEARNING

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Introduction: The recognition of general images by machine learning (ML) with the convolutional neural network (CNN) and deep learning (DL) is good. However, the possibility of the recognition of endoscopic images by ML with CNN and DL is undetermined.

Aims & Methods: The aim of this study was to clarify the possibility of the recognition of endoscopic images by ML with CNN and DL. We selected 816 endoscopic images of 8 categories which include laryngeopharynx (LP), thoracic esophagus (TE), abdominal esophagus (AE), gastric fundus (GF), gastric body (GB), gastric antrum (GA), duodenal bulb (DB) and descending part of the duodenum (DD). Each category had approximately 100 images. These images were randomly separated into two groups, 60% (489 images) for learning and 40% (327 images) for testing. We increased the learning group images to 8133 by addition additionally rotated images of each five degrees. We made an ML model with three CNN layers, three Activation Function layers, two Max-Pooling layers and two Dense layers by TensorFlow and Keras. We trained the ML model with the learning group images (n = 8133) and then tested it with the testing group images (n = 327) to determine whether it can recognize the endoscopic site. Two members of our hospital staff performed the same test utilizing the same images.

Results: It took 73 minutes for the ML model to learn and 6 seconds to answer the test. The percentage of correct answers of the ML model was 70.6% in all categories (n = 327), 77.1% in LP (n = 48), 91.5% in TE (n = 47), 64.4% in AE (n = 45), 73.7% in GB (n = 38), 61.5% in GA (n = 39), 52.8% in GF (n = 36), 65.6% in DB (n = 32) and 71.4% in DD (n = 42). The average percentage of correct answers of humans was 95.4% in gastroenterologists (n = 38), 85.2% in junior residents (n = 2), 81.2% in endoscopy nurses (n = 5), 54.4% in medical clerks (n = 5) and 51.8% in floor nurses (n = 4). The percentage of correct answers of the ML model was lower than those of humans who have knowledge about endoscopic images. However, it was higher than those of other humans who do not.

Conclusion: We suggest the possibility of the recognition of endoscopic images by ML with CNN and DL. Further study is necessary to confirm the ability of it because this study was conducted in a simple ML model with three CNN layers and a small number of images.

Disclosure of Interest: All authors have declared no conflicts of interest.

#P0153 CONVENTIONAL VERSUS TRACTION-ASSISTED ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC NEOPLASMS (CONNECT-G): A MULTICENTER, RANDOMIZED CONTROLLED TRIAL


Introduction: To clarify whether traction assist improves technical outcomes of conventional submucosal dissection (ESD).

Aims & Methods: A superiority, randomized phase 3 trial was conducted at 14 institutions across Japan. Patients with single gastric neoplasm meeting the indication of the Japanese gastric treatment guidelines were enrolled and assigned to conventional ESD or dental floss clip traction ESD (DFC-ESD) by a computer-generated random sequence with stratification by institution, tumor location, tumor size and operator’s proficiency. The primary endpoint was ESD procedure time, which was defined as the time from the start of submucosal injection to the end of lesion removal.

Results: Between July 2015 and September 2016, 640 patients underwent randomization. 316 patients assigned to conventional ESD and 319 patients assigned to DFC-ESD were included in the analysis set. Mean ESD procedure time was 60.7 minutes in the conventional ESD group and 58.1 minutes in the DFC-ESD group (p = 0.45). Perforation was less frequent in the DFC-ESD group (conventional ESD vs. DFC-ESD: 2.2% vs. 0.3%, p = 0.04). Among the lesions in the greater curvature of the upper or middle stomach, mean procedure time in the DFC-ESD group was shorter than the conventional ESD group (conventional ESD vs. DFC-ESD: 104.1 vs. 57.2 minutes, p = 0.01).

Conclusion: This study reveals that traction-assisted ESD does not result in quicker procedures in the entire population, but it can reduce the risk of perforation. Selectively applied to the lesions in the greater curvature of the upper or middle third stomach, traction assist contributes to a remarkable reduction of procedure time.

Disclosure of Interest: All authors have declared no conflicts of interest.

#P0154 MACHINE LEARNING-BASED AUTOMATIC DETECTION SYSTEM FOR DEMARCATION LINE OF GASTRIC CANCER WITH IMAGES

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Introduction: The vessel plus surface (VS) classification system proposed by Yao is widely used for endoscopice diagnosis of early gastric cancer1. However, this diagnosis is performed by visual observation and no quantitative index exists.

Aims & Methods: In this study, a method for automatically detecting early gastric cancer lesions by narrow-band imaging (NBI) using a magnifying endoscopic image in the stomach is proposed to support diagnosis. The proposed system quantitatively shows the demarcation line (DL) of lesions in narrow-band images. Machine learning is introduced into the VS classification and image processing system performed. In this study, texture and color features, which is a type of image processing, is used to assess the mucosal surface. In addition, the proposed system uses a color feature that quantitatively expresses mucosal vessels. Furthermore, the narrow-band image contained 200 superpixels, and each superpixel contained texture and color features; a superpixel is a collection of pixels with similar features. Finally, lesions were identified by a support vector machine, which is a model for machine learning, and DL was detected. In this computational experiment, the validity of the system was verified by identifying 25 early-stage gastric cancer lesions (50 endoscopic images) using NBI-magnified observation at the Department of Gastroenterology, Murakami Memorial Hospital, Asahi University, Gifu.

Results: The average detection rate of the lesion area greatly improved to 63.0% with the proposed method compared with 28.8% with the conventional method. In addition, the obtained DL was similar to that indicated by an experienced medical physician. Based on these results, the proposed system enabled the automatic detection of early gastric cancer DL in narrow-band images, suggesting that the proposed system is useful for the determination of DL.

Conclusion: In this study, a method to assess features of gastric lesions combined with the use of superpixels was proposed. The average detection rate of the lesion range using the proposed method greatly improved compared with that using the existing method, enabling the detection of DL without depending on a physician’s experience.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
### P0155 ENDOSCOPIC TREATMENT OF FISTULAS AFTER SLEEVE GASTRECTOMY: ASSESSMENT FOR SWITCHING TOWARDS INTERNAL DRAINAGE IN A REFERENCE CENTER

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**Introduction:** Post-sleeve gastrectomy fistulas (PSGF) are major complication of bariatric surgery. Endoscopic management evolved from a fistula closure to an internal drainage (ID) strategy within the 2013 year. The main objective of this study is to evaluate the different endoscopic approaches.

**Aims & Methods:** This retrospective study included all patients treated for PSGF in a referral center. "Closure" management was defined as: initial treatment using covered-metal-stent and endoclips. ID management was defined as: initial treatment using nasojejunal tube and/or double-pigtail-stent. The failure was defined as: need for surgery, or death.

**Results:** Between 2007 and 2015, 101 patients (women: N = 78; mean age: 42 ± 12.2 years) were included. The mean delay between SG and the first endoscopy was 92 ± 48 days. Overall success of endoscopic treatment was 86% within 6 ± 2.7 months. Two patients died. Primary success of ID and closure management occurred in 19/22 (86%) and 49/77 (63%) patients, respectively. Among patients in failure of closure management, 22 had secondary ID (18 being successful). Success of initial management was significantly higher for ID (P < 0.05).

Factors associated with failure of closure management were in multivariate analysis: collection > 5 cm (P = 0.013, OR = 3.89% [CI: 1.3–10.9]), Factors associated with duration of management over 6 months were in multivariate analysis: reoperation before endoscopy (P = 0.044, OR = 3.95% [CI: 1.0–14.9]) and purulent flowing at endoscopy (P = 0.043, OR = 4.65% [CI: 1.0–20.4]). Factors associated with post-2013 management were in multivariate analysis: first endoscopy within 6 months (P = 0.016), Clavien-Dindo-type 4 and 5 (P = 0.016), and absence of glue sealing (P = 0.027).

**Conclusion:** Endoscopic management of PSGF healed in 86% of cases. In case of collection greater than 5 cm, an internal drainage should be proposed first. A stricture was defined as a difficulty in swallowing solids or an inability to pass an EGD (9.2 mm diameter endoscope). Management in our center has changed over time with earlier first endoscopy and management of more severe patients. **Disclosure of Interest:** M. Barthet: Boston scientific consultant. All other authors have declared no conflicts of interest.

### P0156 CLOSURE BY USING OVER-THE-SCOPE CLIPS AFTER ENDOSCOPIC FULL-THICKNESS RESECTION

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**Introduction:** Endoscopic full-thickness resection (EFTR) is a mini-invasive technique for gastrointestinal subepithelial tumors, which enables a full-thickness resection of tumors and can provide a complete basis for pathological diagnosis. Gastrointestinal fistula closure after EFTR is a challenge for endoscopists. In this study, we introduced EFTR with fistula closure using the over-the-scope clip (OTSC) system for gastrointestinal subepithelial tumors originating from the muscularis propria.

**Aims & Methods:** We aimed to evaluate the feasibility and safety of fistula closure with OTSC by a retrospective analysis on the cases of EFTR with defect closure associated with long-term care. Management in our center has changed over time with earlier first endoscopy and management of more severe patients.

**Disclosure of Interest:** M. Barthet: Boston scientific consultant. All other authors have declared no conflicts of interest.

### References

### P0157 EFFICACY OF ORAL MIXTURE OF HYDROCORTISONE SODIUM SUCINNATE AND ALUMINUM PHOSPHATE GEL FOR THE PREVENTION OF STRICURE AFTER ≥2/3 CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR ESOPHAGEAL CANCER—A SINGLE CENTER PILOT STUDY FROM CHINA

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**Introduction:** ESD has been performed on many patients with early stage esophageal squamous cell carcinoma and adenocarcinoma. Endoscopic submucosal dissection is the most important issues for quality of life in patients which is drastically decreased and repeat, periodic endoscopic balloon dilatation (EBD) is usually required over long periods. It is well known that hormone for external use is more easily absorbed in broken skin. Accordingly, We explored an innovative strategy with oral mixture of hydrocortisone sodium succinate and aluminum phosphate gel for prevention of the stricture.

**Aims & Methods:** To evaluate the efficacy of this mixture in single center of Beijing, China.

**Patients and Methods:** In total, 13 patients who underwent more than 2/3 circular or complete circular ESD for esophageal superficial squamous cell carcinoma were included in this study. They all received preventative strategy for stricture and were divided into three groups randomly. Four patients received systemic steroid treatment (ST group), three patients received endoscopic intraluminal steroid (triamicinolone acetonide 80mg) injection accompanied with systemic steroid treatment (IT + ST group), six patients received oral mixture of hydrocortisone sodium succinate and aluminum phosphate gel (OHA group). We compared the two groups in terms of stricture rate and total number of endoscopic balloon dilatation (EBD) sessions. ST group started with 30mg/day prednisolone on the second day post-ESD, and continued with a gradually tapering prednisolone dose, finally discontinuing systemic steroid administration 8 weeks later. IT + ST group started with 80mg intraluminal steroid at the end of ESD procedure, and 30mg/day prednisolone on the second day post-ESD which exactly was the same as ST group of tapering process. OHA group started with mixture of hydrocortisone sodium succinate and aluminum phosphate gel for 20g, qid for 2 weeks and continued with a gradually tapering OHA dose on the second day post-ESD. Esophagogastroduodenoscopy (EGD) was performed on demand whenever patients complained of dysphagia. Among those cases, EBD was performed when patients experienced persistent dysphagia. If the patient had progressive dysphagia, EBD was performed 8 weeks after ESD to evaluate any possible stricture. The primary endpoint in this study was the stricture rate after ESD followed by oral mixture therapy. The secondary endpoint was the number of EBD sessions required to resolve the stricture. A stricture was defined as a difficulty in swallowing solids or an inability to pass an EGD (9.2 mm diameter endoscope).

**Results:** There were two complete and two 75% circular ESD cases in IT + ST group, and one complete and five 75% circular ESD cases in OHA group. 12 cases were resected en bloc with tumor free lateral and basal margins. No complications were seen after this procedure. The stricture rates of ST, IT + ST, OHA group after ESD were 100% (4 of 4 patients), 33.3% (one of three patients), 0% (none of six patients), respectively. One patient with stricture after ESD had lateral recurrence at the margin of ulcer. One EBD was performed in three patients in ST group and one patient in IT + ST group with esophageal stricture. One patient in ST group underwent subsequent EBD operation in response to patient demand.

**Conclusion:** Short period, oral mixture of hydrocortisone sodium succinate and aluminum phosphate gel showed promising results for the prevention of stricture after ESD for early stage esophageal cancers. **Disclosure of Interest:** All authors have declared no conflicts of interest.
P0106 ARTIFICIAL INTELLIGENCE DIAGNOSIS OF HELICOBACTER PYLORI INFECTION USING LINKED COLOR ENDOSCOPY

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Introduction: Esophagogastroduodenoscopy (EGD) is of growing importance in the diagnosis of Helicobacter pylori (HP) gastritis, because HP infection is strongly associated with gastric carcinogenesis. However, the accuracy of endoscopy diagnosis of HP infection may vary according to the experience and technique of the attending endoscopist. Here, we challenged to establish a computer aided endoscopic diagnosis system for HP infection using two novel technologies. First is a Link color imaging (LCI). It is a new Image-enhanced endoscopy (IEE) using a LASER light source to enhance slight differences in mucosal color. Second is an Artificial Intelligence (AI) technology. Deep Learning has attracted attention in diagnostic imaging. It is a type of AI which imitates neural network in the brain.

Aims & Methods: The aim of this study was to establish an AI diagnosis of HP infection using LCI. We designed a prospective study of all patients who underwent EGD and were tested for serum anti-HP IgG antibodies at our medical clinic. Subjects who had a history of HP eradication therapy were excluded in this study. A total of 220 examinees were candidates who underwent EGD and underwent HP IgG antibody testing, 147 of whom were HP IgG antibodies positive (test of anti-HP IgG antibodies were 112). The HP IgG antibody titer of each subject was taken as the gold standard for HP infection status for this study. During EGD an endoscopist took 3 LCI pictures of the lesser curvature, greater curvature and antrum of the stomach by EG-L580NW (FUJIFILM Co., Japan). Finally, we used a total of 639 LCI pictures in the study. The specifications of the AI used in this study were as follows: Operating system: Linux (Ubuntu 14.04 LTS), Neural network: GoogleNet1,2, Framework: Caffe1,2, and Graphic processor unit: Geforce GTX TITAN X (NVIDIA Co., Japan). The AI diagnosis of HP infection using LCI was developed with Fast Feature Embedding. ACM Int Conf Multimed [Internet], 2014: 675–8.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
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Resolution Light Endoscopy (HR-WLE) followed by HR-NBI. A careful evaluation of the antrum and corpus mucosa was performed and EGGM score was calculated. Five different areas were considered (lesser and greater curvature in the antrum, lesser and greater curvature in the corpus and incisura) and in each area 0 (no IM), 1 (focal IM, less or equal than 30% of the area) or 2 points (extensive IM in that area, more than 30% of the area) were attributed for a total of 10 points. Biopsies were taken where the endoscopists observed IM and, if IM was not present, random biopsies were taken using the updated Sydney System protocol. Biopsies from the different sites were sent for histopathologic evaluation and IM grading. The diagnostic performance of EGGM was then compared to OLGIM (gold standard) and sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated.

Results: IM was staged as OLGIM 0, 2, 3 and 4, respectively: 32 (41%), 23 (29.5%), 17 (21.5%), and 6 (7.7%) pts (no patients with OLGIM 1 were found). Table 1 shows detailed the EGGM scores compared to OLGIM. Compared to OLGIM as gold standard for the evaluation of IM, sensitivity, specificity, PPV and NPV of EGGM classification were 97.8%, 81.2%, 88.2% and 96.3%, respectively. All 6 patients with false positive results using the EGGM classification were H. pylori positive. Analyzing the subgroup of patients with OLGIM 3 and 4, the diagnostic performance of EGGM was: sensitivity 95.6%, specificity 90.9%, PPV 81.5% and NPV 98.0%. Two of the 5 patients who resulted false positive using the EGGM classification were H. pylori positive. A high agreement between EGGM and OLGIM scores was observed (83%).

% of total (within each OLGIM grade) EGGM score
0 1–2 3–4 5–7 8–10
OLGIM 0 33 (81) 5 (12) 3 (7) 0 0
1 0 0 0 0 0
II 1 (4) 8 (26) 14 (48) 4 (13) 3 (9)
III 0 0 1 (6) 17 (76) 4 (18)
IV 0 0 4 (50) 4 (50)

Extent of intestinal metaplasia
Absent Focal Moderate Extensive

Conclusion: The EGGM classification showed a high diagnostic performance compared to OLGIM, in particular in patients with OLGIM 3 and 4. A possible confounding factor leading to overestimation of presence of intestinal metaplasia might be the presence of H. pylori infection. This approach could be used to simplify the surveillance of these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

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2. Capelle LG et al. The staging of gastritis with the OLGA system by using intestinal metaplasia as an accurate alternative for atrophic gastritis. *Gastrointest Endosc* 2010.


P0163 COMPARISON OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY VERSUS RADIOLOGIC GASTROSTOMY IN TERMS OF INDICATIONS, EFFICACY, COMPLICATIONS; A RETROSPECTIVE ANALYSIS

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Introduction: Gastrostomy is the current method of choice for medium and long-term enteral feeding. Available techniques include Percutaneous Endoscopic Gastrostomy (PEG) and Percutaneous Radiologic Gastrostomy (PRG). Both methods are preferred over surgical gastrostomy. Previous studies that have compared outcomes between PEG and PRG are limited due to small sample sizes, high risk of confounding and selection bias. Our primary aim was to retrospectively analyse data from our centre with respect to complications and mortality between PEG and PRG procedures in relation to indications. These data may help to predict which technique is best for an individual patient.

Aims & Methods: A retrospective analysis including all adult patients receiving initial PRG (January 2010 until April 2016) and PEG (January 2008 until April 2016) in our university hospital. Inclusion criteria were patients with indication for gastrostomy and EGGM classification 0-4 were included. Outcomes were complications (early (5 days) and late), success rates and mortality (procedure related, 30-day, and overall). Chi², Fisher’s exact and t-tests were used. Multivariate logistic regression and Cox proportional hazards regression analysis were performed.

Results: A total of 760 initial procedures (469 PRG and 291 PEG) were included in the analysis (62.9% male, mean age 62.8yrs [SD 12.6yrs]). Most common indications for gastrostomy were Head and neck tumours (HN, PRG 69.9%, p < 0.001), and Radiotherapy (H, PRG 69.9%, p < 0.001). Cerebrovascular Accident (CVA, PEG 13.7%, PRG 2.1%, p < 0.001) and Motor Neuron Disease (MND, PEG 2.7%, PRG 9.8%, p < 0.001). Success rates for placement were 92.1% for PEG (failure mostly due to absence of transillumination, n=14) and 97.1% for PRG (p = 0.001). Major complications (e.g. abscess, buried bumper, perforation) were defined and classified. Complications did not differ amongst groups, neither did procedure-related mortality, which was 6.7% in PEG (n = 51) vs. 5.8% in PRG (n = 31). Procedure-related mortality between PEG and PRG procedures in relation to indications. These data may help to predict which technique is best for an individual patient.

P0162 PERCUTANEOUS TRANSESOPHAGEAL GASTROSTOMY (PEG) IN THE COMPRESSION TREATMENT FROM THE GASTROINTESTINAL TRACT AS THE IDEAL PALLIATIVE CARE FOR THE PATIENTS WITH MALIGNANT DISEASE

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Introduction: Percutaneous transesophageal gastrostomy (PTEG) was developed as an alternative route to access the gastrointestinal tract for the patients that cannot be managed conservatively. This approach could be used to simplify the surveillance of these patients.

Aims & Methods: The aim of this study is to evaluate the clinical usefulness of PTEG supported by endoscopy for the patients who need decompression from gastrointestinal tract due to malignancies. A rupture-free balloon (RFB) catheter is inserted into the upper esophagus. Percutaneous balloon puncture with a specialized needle is then performed from the left side of patient’s neck under ultrasonographic control. A guide wire is inserted through the needle into the RFB, followed by a dilator and sheath. A placement tube is then inserted through the sheath, and the sheath is removed. Double Balloons equipped Over tube type RFB are pulled over the balloon and the sheath is removed. Double Balloons delivered the over tube to the stomach, where the over tube is punctured into the over tube trough the balloon. We perform PTEG in a total of 62 patients (37 men and 25 women, mean age 61.8 years) in whom PEG was not feasible for decompression. Every patient suffered discomfort to the prior insertion of nasal tube especially for the patients with carcinomatous obstruction. Complications were minor oozing bleeding in three patients that did not require blood transfusion, thyroid puncture in three patients, which were treated conservatively. No patient required surgical treatment or died after PTEG.

Conclusion: PTEG is feasible, safe, and useful. PTEG could be an only procedure to be free from a nasal tube especially for the patients with carcinomatous obstructions. PTEG is the ideal solution for the patients with malignant gastrointestinal obstruction. PTEG is one of the best tool in palliative care for the patients with malignant disease.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0165 COMPREHENSIVE EVALUATION OF THE LEARNING CURVE FOR PERORAL ENDOSCOPIC MYOTOMY: LESSONS FROM 1346 PATIENTS

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Introduction: Peroral endoscopic myotomy (POEM) is being increasingly performed worldwide. However, studies on its learning curve are limited. A comprehensive evaluation based on risk factors is needed.

Aims & Methods: This study was aimed to evaluate the impact of various factors on the learning curve of POEM. From August 2010 to July 2015, 1346 POEM procedures performed in Zhongshan Hospital were analysed. The primary outcome of the study was a composite outcome of aborted procedures and complication. The secondary outcomes included procedure time and hospital stay. The impact of risk factors was assessed by backward conditional logistic regression on primary and secondary outcomes. The risk-adjusted CUSUM and moving average methods were used to evaluate the outcomes.

Results: Fifty-four (4%) patients had the composite outcome with 10 aborted procedures and 44 adverse events. The composite outcome was related to case number, full-thickness myotomy and procedure time in the multivariate logistic regression. Adjusted for these risk factors, the CUSUM analysis showed that the composite outcome gradually decreased after 150 cases. The procedure time was higher in the early stage and decreased after 71 cases. Case number, in representativeness of the operative experience, is also an independent risk factor for a longer procedure time and hospital stay.

Conclusion: For POEM operators, seventy cases might be considered a threshold for case volume, i.e., technical proficiency. A hundred-and-fifty cases might be considered a threshold for the decrease of aborted procedures and adverse events, i.e., technical reliability.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0166 CLINICAL CURATIVE EFFECT ANALYSIS OF 162 GASTRIC STROMAL TUMORS RESECTED BY ENDOSCOPIC TREATMENTS

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Introduction: Gastrointestinal stromal tumor (GIST) is one of the most common tumors originating from mesenchymal tissue of gastrointestinal tract, which accounts for about 0.2% of gastrointestinal tumors. Gastric stromal tumors are more common, accounting for about 40% ~ 70% of GIST. At present, the endoscopic treatments of gastric stromal tumors includes endoscopic submucosal dissection (ESD), endoscopic full-thickness resection (EFR) and combined endoscopic and laparoscopic surgery.

Aims & Methods: Our study is aimed to assess the safety and effectiveness of endoscopic treatments for gastric stromal tumor. Clinical data of 1346 patients with gastric stromal tumor who underwent endoscopic treatments from June 1, 2011 to July 31st 2015 were analyzed retrospectively. The primary outcome of the study was a composite outcome of aborted procedures and complication. The secondary outcomes included procedure time and hospital stay. The impact of risk factors was assessed by backward conditional logistic regression on primary and secondary outcomes. The risk-adjusted CUSUM and moving average methods were used to evaluate the outcomes.

Results: Complications were observed in 8 patients (4.9%): bleeding during operation, i.e., technical reliability. The introduction of the Registrar of the Week Service provides a valuable opportunity for StRs to be trained in endoscopic haemostasis and acquire a measure to AVUGIB patients. As per this study case each StR on an average performed endoscopy on 24 AVUGIB patients. If this is extrapolated, each StR will be able to perform 48 procedures in 1 year and 240 procedures over 5 years. In the case of the StR, on average a StR can perform around 4 interventions over 6 months, which comes to 8 per year and 40 in 5 year program. 1

Conclusion: The introduction of the Registrar of the Week Service provides a valuable opportunity for StRs to be trained in endoscopic haemostasis and acquire a measure to AVUGIB patients. As per this study case each StR on an average performed endoscopy on 24 AVUGIB patients. If this is extrapolated, each StR will be able to perform 48 procedures in 1 year and 240 procedures over 5 years. In the case of the StR, on average a StR can perform around 4 interventions over 6 months, which comes to 8 per year and 40 in 5 year program. 1

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0167 GASTROENTEROLOGY REGISTRAR OF THE WEEK: A SOLUTION FOR AVUGIB ENDOSCOPY TRAINING?

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Introduction: Much concern surrounds Gastroenterology Specialist Registrar (SIR) endoscopy training, especially in regards to endoscopic management of Acute Upper Gastrointestinal Bleeding (AVUGIB). Recent evidence suggests there has been a decline in exposure and experience in AVUGIB endoscopy. 1 In July 2013 our University Hospital introduced a Consultant-led and Registrar-supported Monday to Friday, 9 to 5 pm in-reach service. It comprises of a morning visit to the acute medical units and a daily inpatient emergency list. This study looked at registrar AVUGIB endoscopy training after its implementation.

Aims & Methods: Endoscopy reports of patients presenting with haematemesis, melena or both who had undergone endoscopy during the period of 1st of March 2015 to 31st August 2015 were retrieved using the endoscopy reporting tool Unisoft and analysed. Reports where StRs were the primary operator were considered. Number of procedures, haemostatic intervention and nature of haemostasis was analysed. This was then compared to data from the year before implementation (01/03/2012 to 31/08/2012).

Results: A total of 7 StRs (5 Full Time and 2 Less than Full Time) performed gastroscopies on AVUGIB patients as first operators under Consultant supervision. Over the 6-month period a total of 166 gastroscopies were undertaken (Mean 24). On 26 occasions, endoscopic intervention (EI) was performed (Mean 4). On average, 16% of the AVUGIB patients required EI. In cases of Non Variceal Bleeding, Dual therapy was applied in 87.5% of the cases. In cases of Vascular lesions the dual therapy was used in all cases. 1

Conclusion: This study looks at registrar AVUGIB endoscopy service but provide adequate endoscopic procedure for current specialist registrars in order to ensure future competent and confident consultants.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0168 HIGH PERCENTAGE OF VISIBLE LESIONS IN PATIENTS WITH BARRETT’S ESOPHAGUS REFERRED WITH DYSPLASIA IN RANDOM BIOPSIES

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Introduction: Endoscopic recognition of dysplasia or early cancer in Barrett’s esophagus (BE) is difficult. Experience in recognition of early neoplastic lesions is thought to increase the detection of visible dysplastic lesions. A previous study reported that endoscopists in community hospitals detect neoplastic lesions at a significant lower rate than referral centres. The aim of the study we want to assess the significance of dysplasia in random biopsies in BE, in the absence of reported visible lesions as well as the final outcome of pathology.

Aims & Methods: We retrospectively analysed all patients referred from 19 community hospitals to our tertiary referral centre with the diagnosis of BE with dysplasia (A2). Early adenocarcinoma (EAC) between February 2008 and April 2016. All patients underwent a dedicated imaging endoscopy with high-definition endoscopy supplemented with virtual chromoendoscopy and/or acetic acid staining at the discretion of the endoscopist. All procedures were performed by an endoscopist with extensive experience in the detection of early neoplastic lesions in BE. During endoscopy all visible lesions were noted and biopsied and/or removed by endoscopic resection (ER). Patients were included for analysis in case of absence of reporting visible lesions at referral.

Results: In total 184 patients were referred with dysplasia or EAC of which 82 patients (80.5%) made, age 42–81 years (median 68) did not show a visible lesion upon referral endoscopy. Referral diagnosis of these 82 patients was 32 low-grade dysplasia (LGD), 43 high-grade dysplasia (HGD) and 7 EAC. In three of 32 patients (9.4%) referred with LGD, a visible lesion during imaging endoscopy was detected. Two cases of histology proved EAC and one confirmed LGD. In twenty-six of 43 patients (60.5%) referred with HGD, a visible lesion with histology specimens corresponding to HGD (10) and EAC (16) were found,

Disclosure of Interest: All authors have declared no conflicts of interest.
respectively. All cases of EAC were detected (7/7). In 18/75 (24%) patients referred with dysplasia (LGD/HGD) without a visible lesion, the referral diagnosis was thus upstaged to EAC. Overall, 41/82 (50%) lesions were found additionally.

Conclusion: The presence of any grade of dysplasia in random biopsies in BE screening in community hospitals is a potential marker for more severe final pathology after endoscopic work-up in an expert centre. Training in Barrett imaging is mandatory for non-expert endoscopists.

Disclosure of Interest: All authors have declared no conflicts of interest.

**TABLE 1:** Demographics & Results

<table>
<thead>
<tr>
<th>Clinical failure</th>
<th>Clinical success</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>n = 22</td>
<td>n = 12</td>
</tr>
<tr>
<td>Gender</td>
<td>Male:Female</td>
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</tr>
<tr>
<td>Etiology</td>
<td>Post-surgery</td>
<td>7</td>
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<tr>
<td>Post-dilation</td>
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<td>3</td>
</tr>
<tr>
<td>Post-radiation</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Post-invasive ventilation</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Pulmonary location</td>
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<td>10</td>
</tr>
<tr>
<td></td>
<td>Right bronchus</td>
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<tr>
<td></td>
<td>Left bronchus</td>
<td>0</td>
</tr>
<tr>
<td>Orifice size</td>
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</tr>
<tr>
<td>Medium</td>
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<td>3</td>
</tr>
<tr>
<td>Large</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Timing of closure</td>
<td>Resolution at 3 months</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Resolution at 6 months</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>No resolution at 6 months</td>
<td>12</td>
</tr>
<tr>
<td>Endoscopic treatment</td>
<td>Mean number of esophageal stents</td>
<td>3.6 (±3.9)</td>
</tr>
<tr>
<td></td>
<td>Mean number of OTSc</td>
<td>1.2 (±1.8)</td>
</tr>
<tr>
<td></td>
<td>At least one esophageal stent</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>At least one OTSc</td>
<td>6</td>
</tr>
</tbody>
</table>

**Results:** A total of 22 patients were included and analyzed. The etiologies of ERF were esophageal surgery in 12 patients (54.5%), esophageal dilation in 3 (13.6%), invasive ventilation in 3 (13.6%), radiation therapy in 2 (9.1%) and tracheostomy in 2 (9.1%). A total of 93 procedures were performed with a mean of 4.2±4.5 per patient. At some point of the management, twenty-one patients (95%) had esophageal stents placement, eight patients (36%) had over the scope clips (OTSC) placement and seven had OTSC associated with esophageal stent. The clinical success rate was 45.5% (n = 10), and 55% of the patients had a functional success (n = 12). Serious adverse events occurred in 9 patients (40.9%) such as gastrointestinal bleeding (4 patients, 18.2%), stent migration (4 patients, 18.2%), thoracic spondylodiscitis (2 patients, 9.1%) alimentary esophageal impaction (1 patient, 4.5%), stent mucosal impac- tion (1 patient, 4.5%), major chest pain (1 patient, 4.5%). Six patients died (27%). Clinical success was reached for 67% of punctiform ERF (p = 0.193), 50% of medium ERF (p = 1) and 14% of large ERF (p = 0.17). The factor associated with the failure of endoscopic treatment was the persistence of the fistula after 6 months (OR = 44; IC95: 3.38–573, 4; p = 0.004 multivariate ana- lysis). The orifice’s size was associated with the mortality with 71% of death among large fistulas (p = 0.001 univariate analysis).

**Conclusion:** Endoscopic treatment of ERF can lead to 45.5% of clinical success and 55.5% of functional success. However, this outcome appears to be influenced by the size of the fistula. Moreover, the absence of resolution after 6 months of endoscopic treatment dramatically decreases the chance for ERF healing. In conclusion, the endoscopic approach seems reasonable for small or medium orifices, and has to be attempted during six months. After this time or for larger orifices, surgery or palliative therapy should be considered.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0169 ENDOSCOPIC MANAGEMENT OF BENIGN ESOPHAGEAL FISTULAS**

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**Introduction:** Nonmalignant esophageo-respiratory fistulas (ERF) are rare but frightening clinical situations. They usually involve surgery, but the morbidity and the mortality is high. The knowledge about the modalities and outcomes after endoscopic management of ERF remain limited.

**Aims & Methods:** The aim of this study was to describe and assess the endoscopic management of benign ERF in our center. This was a retrospective study involving patients manage for benign ERF in our tertiary center between July 2012 and December 2016. The inclusion criterion was the presence of communication between esophagus and bronchial tree diagnosed and treated by endoscopy, and malignant ERFs were excluded. The ERFs were classified into three groups of sizes: punctiform (if the orifice was no larger than a straight catheter), medium and large (with visibility of bronchial tree). The primary endpoint was defined as the closure of the fistula confirmed by endoscopy and persisting >6 months. The secondary endpoints were to document the characteristics of endoscopic treatment, the functional success and death, and to identify factors associated with success and death.

**TABLE 1:** Clinical utilization of narrow band imaging magnifying endoscopy for MM/MM1 squamous cell carcinoma

| Gender | Male:Female | 6:6 | 7:3 | 0.342 |
| Etiology | Post-surgery | 7 | 6 | 0.665 |
| Post-dilation | 0 | 3 | 0.062 |
| Post-radiation | 2 | 0 | 0.138 |
| Orifice size | Punctiform | 3 | 6 | 0.193 |
| Medium | 3 | 3 | 1 |
| Large | 6 | 1 | 0.17 |
| Timing of closure | Resolution at 3 months | 0 | 7 | <10^-3 |
| | Resolution at 6 months | 0 | 8 | <10^-3 |
| | No resolution at 6 months | 12 | 2 | <10^-3 |
| Endoscopic treatment | Mean number of esophageal stents | 3.6 (±3.9) | 2.3 (±2.7) | 0.069 |
| | Mean number of OTSc | 1.2 (±1.8) | 0.4 (±0.7) | 0.082 |
| | At least one esophageal stent | 11 | 9 | 0.892 |
| | At least one OTSc | 6 | 2 | 0.146 |

**Results:** A total of 22 patients were included and analyzed. The etiologies of ERF were esophageal surgery in 12 patients (54.5%), esophageal dilation in 3 (13.6%), invasive ventilation in 3 (13.6%), radiation therapy in 2 (9.1%) and tracheostomy in 2 (9.1%). A total of 93 procedures were performed with a mean of 4.2±4.5 per patient. At some point of the management, twenty-one patients (95%) had esophageal stents placement, eight patients (36%) had over the scope clips (OTSC) placement and seven had OTSC associated with esophageal stent. The clinical success rate was 45.5% (n = 10), and 55% of the patients had a functional success (n = 12). Serious adverse events occurred in 9 patients (40.9%) such as gastrointestinal bleeding (4 patients, 18.2%), stent migration (4 patients, 18.2%), thoracic spondylodiscitis (2 patients, 9.1%) alimentary esophageal impaction (1 patient, 4.5%), stent mucosal impac- tion (1 patient, 4.5%), major chest pain (1 patient, 4.5%). Six patients died (27%). Clinical success was reached for 67% of punctiform ERF (p = 0.193), 50% of medium ERF (p = 1) and 14% of large ERF (p = 0.17). The factor associated with the failure of endoscopic treatment was the persistence of the fistula after 6 months (OR = 44; IC95: 3.38–573, 4; p = 0.004 multivariate ana- lysis). The orifice’s size was associated with the mortality with 71% of death among large fistulas (p = 0.001 univariate analysis).

**Conclusion:** Endoscopic treatment of ERF can lead to 45.5% of clinical success and 55.5% of functional success. However, this outcome appears to be influenced by the size of the fistula. Moreover, the absence of resolution after 6 months of endoscopic treatment dramatically decreases the chance for ERF healing. In conclusion, the endoscopic approach seems reasonable for small or medium orifices, and has to be attempted during six months. After this time or for larger orifices, surgery or palliative therapy should be considered.

Disclosure of Interest: All authors have declared no conflicts of interest.
emerging modality for refractory gastroparesis with promising preliminary results.

Aims & Methods: The aim of this prospective case series was to assess our first (single center) experience with POEP. Main outcomes were: 1) the efficacy defined by improvement of GCSI score; 2) gastric emptying evolution and 3) safety. From Nov 2015, a total of 7 patients underwent POEP. POEP for gastroparesis was post-operative in 4, diabetic in 2 and idiopathic in 1 patient. One patient underwent POEP for gastroparesis following a multisystemic transplantation; one patient underwent both POEP and POEM (as a single procedure) for coexisting refractory gastropathic symptoms and acidularis. All patients had severe gastroparesis as defined by elevated GCSI score and delayed gastric emptying scintigraphy. Follow visit at 3, 6, 12-months were completed in 7/7 (100%), 5/7 (71%) and 1/7 (14%) patients, respectively. Upper GI endoscopy and scintigraphy were performed 3 months after the procedure.

Results: POEP was successfully performed in all patients. Mean procedure time was 70 minutes (range 63–106). After POEP, mean GCSI decreased from 3.0±1.2 to 0.8±0.7 (at 3-months) and 0.9±0.8 (at 6-months). One woman failed to follow up and was lost to follow-up. Treatment success was reached in 6/7 (85%) of patients, one female patient with diabetic gastroparesis did not have a major symptomatic improvement despite normalisation of gastric emptying study. Gastric scintigraphy normalized in all patients, mean half emptying time decreased from 108±30 min to 62±23 min; and mean bolus retention at 4 hours decreased from 17±9.2% to 2.0±2.0%. One patient developed bleeding ulcer 10 days after POEP, this adverse event was successfully managed endoscopically (clips) and by parenteral proton pump inhibitor.

Conclusion: We report our first experiences with POEP for refractory gastroparesis, demonstrating its feasibility and safety with promising clinical efficacy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0172 BLUE LIGHT IMAGING FOR BARRETT’S NEOPLASIA CLASSIFICATION (BLINC): THE DEVELOPMENT AND VALIDATION OF A NEW ENDOSCOPIC CLASSIFICATION SYSTEM TO IDENTIFY BARRETT’S NEOPLASIA

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Introduction: Neoplasia in Barrett’s can be subtle and difficult to identify. Blue light imaging (BLI) by Fujifilm is a novel advanced endoscopic technology that provides high-intensity contrast imaging for superior visualisation of mucosal surface and vessel patterns. This can improve the identification of Barrett’s neoplasia. To date there is no formal classification system that enables the characterisation of neoplastic and non-neoplastic Barrett’s. The aim of this study was to develop and validate a classification system for the diagnosis of Barrett’s neoplasia using BLI.

Aims & Methods: The aim of our study was to develop and validate a classification system to identify Barrett’s neoplasia using BLI. 3 expert endoscopists formed a working group to identify criteria characterising neoplastic and non-neoplastic Barrett’s on BLI using a modified Delphi method. A simple classification system utilising pit, vessel pattern and colour was developed using a database of 40 images. 6 experienced endoscopists then assessed a library containing 45 images of neoplastic and non-neoplastic Barrett’s using the proposed criteria. Sensitivity, specificity, positive (PPV) and negative predictive values (NPV) were calculated to assess its performance. The same parameters were then evaluated for each component criteria.

Results: The BLINC classification descriptors are as follows: Non Neoplastic Barrett’s: Pit pattern: circular, tubular or branching with normal density; Vessel pattern: regular, pericryptal non dilated vessels with normal density; Colour: pale Neoplastic Barrett’s: Pit pattern: irregular, crowded with increased density; Vessel pattern: irregular, non cryptal, dilated vessels with increased density; Colour: focal darkness The overall sensitivity and specificity, negative and positive predictive values with corresponding 95% confidence intervals are as follows:

<table>
<thead>
<tr>
<th>Pit pattern</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>96.0 (91.5–98.5%)</td>
<td>98.3 (94.1–99.8%)</td>
<td>98.6 (94.8–99.7%)</td>
<td>95.2 (90.7–99.7%)</td>
</tr>
<tr>
<td>Vessels</td>
<td>94.7 (89.8–97.7%)</td>
<td>93.3 (87.3–97.1%)</td>
<td>94.7 (90.1–97.2%)</td>
<td>95.2 (90.9–99.7%)</td>
</tr>
<tr>
<td>Colour</td>
<td>86.7 (80.2–91.7%)</td>
<td>78.3 (69.8–85.3%)</td>
<td>83.3 (78.0–87.6%)</td>
<td>82.5 (75.6–87.7%)</td>
</tr>
</tbody>
</table>

Conclusion: We have developed the first internally validated simple classification system for the diagnosis of Barrett’s neoplasm using BLI. The classification criteria demonstrated high sensitivity and specificity particularly with regards to mucosal pit and vessel patterns. We aim to use the proposed classification in future studies for real time optical diagnosis of Barrett’s neoplasia.

Disclosure of Interest: P. Bhandari: Educational grants for research received from Olympus, Pentax and Fujifilm. All other authors have declared no conflicts of interest.

P0173 TREATMENT OF MULTIPLE GASTROINTESTINAL Submucosal TUMORS BY SUBMUCOSAL TUNNELING ENDOSCOPIC RESECTION

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Introduction: Submucosal tunneling endoscopic resection (STER) is a novel technique to remove the gastrointestinal submucosal tumors. Previous studies mainly focused on technical feasibility for patients with one single gastrointestinal submucosal tumor. No systematic studies about multiple upper gastrointestinal submucosal tumors synchronously removed by STER are addressed. The aim of this study was to evaluate the safety and outcome of STER in treatment of multiple gastrointestinal submucosal tumors.

Aims & Methods: From January 2011 to January 2017, 42 patients with multiple gastrointestinal submucosal tumors undergoing STER were included. Variables of each tumor and patient were analyzed. Detailed tumor characteristics included max size, sum of max size and number of tumors, and longest distance of tumor. While detailed technique information included number of tunnels, tunnel length, hospital stay, procedure time, complication, follow-up, recurrence, and mortality.

Results: Among all the cases, 96 lesions of upper gastrointestinal submucosal tumors were removed by STER. The median procedure time was 50 min (range 13.6–84.9 min). The median number of tumors was 2 (2–4). The median max size of each tumor was 1.8 cm (range 0.7–3.5 cm) and the median sum of max size of each tumor of each patient was 3 cm (range 1.3–8.6 cm). Six patients had perioperative complications (14.2%), with 3 pneumothorax/hydropneumothorax (7.2%), 1 mucosal injury (2.4%), 1 pneumonia (2.4%), and 1 major bleeding (2.4%). Patients with different number of tunnels had similar tumor characteristics and techniques. There were significant differences in longest distance of tumors comparing two groups (p < 0.001). No local recurrence or distant metastasis was detected with a median follow-up of 33 months.

Conclusion: STER is a safety and feasible technique for multiple upper gastrointestinal submucosal tumors no matter in one tunnel or two tunnels resection. Based on the longest distance of tumors, different number of tunnels can be performed with similar procedure technique and prognosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**P0174 COMPARISON OF THE LINKED COLOR IMAGING (LCI) TECHNOLOGY AND CHROMOENDOSCOPY WITH ACETIC ACID FOR DIAGNOSIS OF BARRETT’S ESOPHAGUS**

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**Disclosure of Interest:**

Introduction: LCI is a new imaging technique based on 4 independently acting LEDs that is enhancing the mucosal vascular pattern and surface pattern morphology. To date, chromoendoscopy with acetic acid is considered the gold standard for diagnosis of Barrett’s oesophagus. Therefore, consecutive patients with Barrett’s oesophagus were prospectively included. All Barrett segments were carefully evaluated by using high-definition white-light imaging, followed by LCI and acetic acid spraying. At each examination targeted biopsies were taken from all visible lesions, followed by random four-quadrant biopsy samples. 

**Aims & Methods:** The aim of this prospective study was to evaluate the recently introduced LCI technique compared to conventional dye spraying with acetic acid for diagnosis of Barrett’s oesophagus. Therefore, consecutive patients with Barrett’s oesophagus were prospectively included. All Barrett segments were carefully evaluated by using high-definition white-light imaging, followed by LCI and acetic acid spraying. At each examination targeted biopsies were taken from all visible lesions, followed by random four-quadrant biopsy samples. 

**Results:** The diagnostic yield of conventional dye spraying was significantly higher for diagnosis of Barrett’s oesophagus compared to high-definition white-light imaging. Of note, no significant difference for diagnosis of Barrett’s oesophagus was noted between acetic acid chromoendoscopy and the LCI technique. LCI diagnosis was always consistent to traditional dye spraying (100% concordance). The random four-quadrant biopsy protocol did not add additional information to the one already obtained by using LCI.

**Conclusion:** The newly introduced LCI technique is superior to high-definition white light endoscopy for diagnosis of Barrett’s oesophagus and equally effective to acetic acid dye spraying. Therefore, the LCI technique has the potential to facilitate the diagnosis of Barrett’s oesophagus and to overcome the limitations of a random 4-quadrant biopsy protocol.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0175 ALBERTA FAMILY PRACTICE ELECTRONIC ENDOSCOPY STUDY (AFPEE)**

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2Tuber Medical Clinic, Tuber/Canada/AB

**Disclosure of Interest:**

Introduction: In Canada, gastroenterologists and general surgeons perform 97% of the colonoscopies. There are a small number of rural Canadian Family Physicians who perform colonoscopies. These endoscopists may improve access for rural patients who require endoscopy and help improve provincial endoscopy wait times. Although some studies demonstrate that adequately trained Family Physicians are able to perform quality endoscopy, other studies question the quality of colonoscopies performed by non-gastroenterologists.

**Aims & Methods:** The Alberta Family Physician Electronic Endoscopy (AFPEE) study aimed to examine the quality of colonoscopies performed by Family Physicians. These endoscopists may improve access for rural patients who require endoscopy and help improve provincial endoscopy wait times. Although some studies demonstrate that adequately trained Family Physicians are able to perform quality endoscopy, other studies question the quality of colonoscopies performed by non-gastroenterologists.

**Results:** In this six-month study, 9 Family Physicians performed 1769 colonoscopies in 11 rural Alberta sites. The proportion of successful cecal intubations; proportion of patients 50 years and older having a polyp, and a polyp >10 mm found at colonoscopy were aged 55 (64.8% male). Additional ADR at colonoscopy was 35.2%, with malignant diagnoses in 15% (all detected at BS). The adenoma miss rate at BS was 5.2%. On univariate analysis (Table 1), polyp ≥10mm was the only indication associated with increased ADR at colonoscopy (OR 2.13, p = 0.001). Additional predictors identified included villous (not tubulovillous) histology (OR 4.41, p = 0.002), and male gender (OR 2.35, p < 0.001). These factors also significantly predicted new ≥10mm adenoma. 57% (14.8%) underwent colonoscopy outside protocol, which reduced ADR (OR 0.29, p = 0.05). After controlling for high risk indications, changing the conversion criteria from any villous to villous only altered sensitivity from 27.2% to 83.3%, and specificity from 84.5% to 80.5%.

**Table 1:** Indications for progression from BS to colonoscopy (in bold), [1] and likelihood of new adenoma detection. *Patients in multiple categories are included multiple times. **p < 0.05

<table>
<thead>
<tr>
<th>Indicator</th>
<th>N*</th>
<th>New adenoma</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 3 polyps</td>
<td>78</td>
<td>45 (57.7%)</td>
<td>1.46 (0.88-2.43)</td>
<td>0.14</td>
</tr>
<tr>
<td>At size ≥10 mm</td>
<td>196</td>
<td>86 (43.9%)</td>
<td>2.13 (1.39-3.27)</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>High grade dysplasia</td>
<td>16</td>
<td>5 (31.3%)</td>
<td>0.82 (0.28-2.41)</td>
<td>0.72</td>
</tr>
<tr>
<td>Any villous component</td>
<td>190</td>
<td>69 (36.3%)</td>
<td>1.09 (0.72-1.76)</td>
<td>0.66</td>
</tr>
<tr>
<td>&gt; 20 hyperplastic polyps</td>
<td>3</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>None of the above</td>
<td>57</td>
<td>9 (15.8%)</td>
<td>0.29 (0.14-0.62)</td>
<td>0.001**</td>
</tr>
<tr>
<td>Villous only histology</td>
<td>10</td>
<td>7 (70.0%)</td>
<td>4.41 (1.12-17.36)</td>
<td>0.02**</td>
</tr>
</tbody>
</table>

**Conclusion:** At BS, male gender, ≥10mm polyps, and villous histology are predictors of proximal colonic pathology. Further analyses are required to clarify the benefits of converting low-risk tubulovillous adenomas at BS to colonoscopy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference:**

1. WS Atkin, Lancet 2010, 375:1624-33
INTRODUCTION: Cold snare polypectomy is an established method for the resection of small colorectal polyps (SCPs); however, significant incomplete resection rates still leave room for improvement. We aimed to assess the efficacy of cold snare polypectomy with submucosal lift (SL-CSP) versus endoscopic mucosal resection (EMR), for nonpedunculated polyps 6–10 mm (ClinicalTrials.gov NCT02678663).

Aims & Methods: Dual-center, randomized, noninferiority trial. Consecutive adult patients with at least one nonpedunculated polyp 6–10 mm were enrolled. Eligible patients were randomized (1:1) to be treated with either SL-CSP or EMR. The primary noninferiority endpoint was histologic eradication, with a noninferiority margin of –1%. Evaluation of histologic complete resection relied on a postpolypectomy biopsy protocol (4 biopsies obtained in a 4-quadrant fashion from the polypectomy site margins; 1 biopsy from the base). Secondary outcomes included occurrence of intraprocedural bleeding (IPB; defined as any immediate episode requiring endoscopic haemostasis), clinically-significant postprocedural bleeding (CSPPB; any episode requiring emergency department presentation, hospitalization, or reinsertion within 30 days of the procedure) and perforation.

Results: Among 689 patients screened, 155 patients with 164 eligible polyps (SL-CSP: n = 83; EMR: n = 81) were included. The overall rate of histologic complete resection was 92.8% (77/83) in the SL-CSP group and 96.3% (78/81) in the EMR group (difference 3.5%; 95% CI, –4.1 to 11.56; showing noninferiority of SL-CSP compared with EMR). The rate of CSPPB technique was noninferior to EMR (5.5% vs. 1.0%, p = 0.05) and among those who did not perform advanced endoscopy (37.3% vs. 28.1%, p = 0.05). For small polyps (6–9 mm), cold snare polypectomy was most frequent among endoscopists who performed more than 10 colonoscopies per week (32.0% vs. 17.7%, p = 0.05). However, hot snare polypectomy was most frequent among endoscopists who performed less than 20 colonoscopies per week (40.7% vs. 27.2%, p = 0.05) and among those with more than 10 years in practice (<10 years vs. >10 years, 53.8% vs. 44.7%, p = 0.05).

Conclusion: There is a remarkable heterogeneity in the techniques used for removal of polyps <20 mm among Spanish endoscopists. Cold snare, hot snare and EMR are the preferred techniques to be an effective modification of standard cold snare technique, obviating the need to use diathermy for 6–10 mm colorectal polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: The techniques used for the excision of colorectal polyps smaller than 20 mm

<table>
<thead>
<tr>
<th>Technique</th>
<th>SL-CSP</th>
<th>EMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small cold biopsy forceps</td>
<td>16.2%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Jumbo cold biopsy forceps</td>
<td>16.2%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Hot biopsy forceps</td>
<td>1.0%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Cold snare</td>
<td>16.2%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Hot snare</td>
<td>16.2%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Endoscopic mucosal resection</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

P0178 COLONOSCOPIC POLYPECTOMY PRACTICE AMONGST SPANISH CLINICAL GASTROENTEROLOGISTS. RESULTS OF A NATIONAL SURVEY FROM THE SPANISH ENDOSETSOCIETY ELECTRONIC HELM GROUP

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Introduction: Colonicoscopy is a diagnostic tool that is essential to colorectal cancer. Variations in the technique have been implicated in the effectivity of the resection and in the complication rates. However, there is no consensus regarding the optimal polypectomy technique for diminutive (<5 mm) colorectal polyps. There are scarce of data about polypectomy practices among European endoscopists.

Aims & Methods: To determine the different techniques used by Spanish endoscopists for resection of sessile or flat colorectal polyps smaller than 20 mm. A 70-item survey was sent by email to all gastroenterologists in all Spanish hospitals (1678 gastroenterologists). The survey was conducted from December 2015 to February 2016.

Results: The rate of participation was 20.3% (341/1678). All physicians indicated they were practicing gastroenterologist (none were trainees). Most respondents (60%) were males and 50% had more than 14 years in practice. The mean number of colonoscopies per week was 21 ± 12.3. Half of participants performed endoscopies for ≥3 days per week and 49.6% did not performed advanced therapeutic endoscopy. The techniques used for the excision of polyps smaller than 20 mm were: cold snare (by Spanish clinicians are summarized in Table 1). Significant differences were noted in the polypectomy techniques used for the resection of polyps 1–3 mm, 6–9 mm and 10–19 mm in diameter; being cold forceps, hot snare and endoscopic mucosal resection (EMR), the preferred techniques respectively for the different sizes. However, for polyps 4–5 mm in size, both the cold snare and cold forceps were the most commonly used techniques, though no method was use more often than the other. Years in practice, colonoscopy volume per week and performing advanced therapeutic endoscopy were associated with different choices of polypectomy technique. For polyps measuring 4–5 mm, cold snare was the favourite method among endoscopists who performed ≥20 colonoscopies per week (>20 colonoscopies/week vs. <20 colonoscopies/week, 42.4% vs. 26.6%, p < 0.05), among those who performed endoscopies >5 days/week (≥5 days/week vs. <5 days/week, 49.6% vs. 25.7%, p < 0.05) and among those who performed advanced endoscopic advanced advanced (EMR) to non advanced advanced (EMR), 40.4% vs. 29.2%, p < 0.05). However, cold forceps was the preferred technique among endoscopists who performed endoscopies <3 days per week (38.9% vs. 22.6%, p < 0.05). No CSPPB or perforation occurred in either group.

Conclusion: There is a remarkable heterogeneity in the techniques used for removal of polyps <20 mm among Spanish endoscopists. Cold forceps, hot snare and EMR are the preferred techniques to be an effective modification of standard cold snare technique, obviating the need to use diathermy for 6–10 mm colorectal polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: On average, experts required the shortest time to reach the caecum, followed by video gamers, trainees then novices. Polyp detection rate (as a proportion of total number in the model simulator colon) was the highest in the novices (91.67%) followed by the experts (86.11%), then equally, trainee and video gamers (79.17%). Four out of nine participants attended the second session where they were asked to repeat the procedure from the first session. Each participant had a lower caecal intubation time during session 2 in comparison with session 1. The depth of improvement of the Accuracy, Sensitivity, and specificity was 90% and 70%, respectively. Each of the participants also had the same or higher polyp detection rate with range of improvement between 0% and 25%. Qualitative assessment of feedback from all participants indicated that most experts felt that the role of the novel test would be likely to provide a diagnostic priori in an out of hospital setting. Expert operators felt that training in the device was easier but also provided less ability to torque steer due to automated sequences.

Conclusion: This project is the first step in identifying specific training needs and providing improved early diagnosis of cancer. This study also has the potential to reduce the length of time for skills acquisition associated with standard colonoscopy training through the use of semi-automated robotic devices.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0180 WHITE OPAQUE SUBSTANCE, A NEW OPTICAL MARKER OF DIAGNOSING COLORECTAL EPITHELIAL NEOPLASMS

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Introduction: Yao et al. observed gastric epithelial neoplasms and chronic gastritis using endoscopy on magnification imaging, which visualized subepithelial microvasculature (1). Furthermore, the morphology of the WOS is a useful marker for differentiating between adenoma and carcinoma in gastric epithelial neoplasms (1). Recently, we reported for the first time that WOS is also detected in colorectal epithelial neoplasms (2). However, it is unclear whether the morphology of the WOS in colorectal epithelial neoplasms is useful in the differential diagnosis of adenoma and carcinoma in colorectal epithelial neoplasms. The primary endpoint was the diagnostic performance of morphological analysis of the WOS (accuracy, sensitivity, specificity) for early colorectal cancer taking irregular WOS as an indicator. The secondary endpoint was the diagnostic accuracy for the differentiation between early cancer and adenoma using irregular WOS as an indicator of cancer was 87%. The sensitivity was 91% and specificity was 86%. The frequency of irregular WOS in M or SM-s cancer and SM-m cancer was 67.8% (21/31) and 75% (19/25), respectively. There was no significant difference in the prevalence between irregular WOS in M or SM-s cancer and SM-m cancer (p = 0.727, chi-square test).

Conclusion: These findings suggest that in colorectal epithelial neoplasms in which irregular WOS was visualized because of WOS, the morphology of the WOS may be a useful marker in the differential diagnosis of adenoma and carcinoma using magnifying endoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: Colon cleansing efficacy of NER1006 was compared to three currently used bowel preparations in patients aged ≤65 years and in patients aged >65 years. NER1006 was compared to sodium picosulfate + magnesium citrate (NaPic + MgCit), trisulfate and 2L PEG with ascorbate (2L PEG + Asc), in three multicentre randomised Phase 3 clinical trials: DAYB, NOCT and MORA, respectively. 2L PEG + Asc was administered over 2 days and in the MORA trial, the doses of NER1006 were administered either both in 1 day morning-only (N1D) or, as with 2L PEG + Asc, split over 2 days (N2D). In the DAYB study, NER1006 was administered evening-only the day before colonoscopy (NDB). Treatment-blinded central readers rated colon cleansing according to the Harefield Cleansing Scale. Following segmental scoring, overall colon cleansing was graded from A to D. Grades A and B were judged as successful cleansing; grades C and D were judged as failed cleansing.

Results: Pooling the data from the three trials to assess colon cleansing in the two age groups showed successful cleansing in 80.5% (1158/1438) of patients aged ≤65 years, whereas in patients aged >65 years, successful cleansing was 75.6% (277/368) of patients aged >65 years (difference of 8.9%, 95% CI: 4.1–12.3%). Within each trial the difference in colon cleansing in the age groups indicated that the effect of increased age on cleansing efficacy was greater in the NER1006-treated patients than in patients treated with the active comparators (Table 1). For example, in patients treated with NER1006 the rate of successful colon cleansing in patients aged >65 was 5.2% higher than in patients aged ≤65, whereas in patients treated with NaPic + MgCit, there was 3.5% lower successful cleansing rate in patients aged >65 than in patients aged ≤65.

Conclusion: NER1006 was efficacious in successful colon cleansing in patients aged >65 (in whom successful colon cleansing is harder to achieve) as well as in patients aged ≤65. Statistical significance was not reached in these comparisons.

Disclosure of Interest: R. Jover: Received grants support from MSD; Advisory board participation for Norgine

R. Ng Kwt Shing: Employee of Norgine

All other authors have declared no conflicts of interest.

References

Abstract No: P0183

Patients with successful cleansing, n (%)  
<table>
<thead>
<tr>
<th></th>
<th>DAYB (1:1)</th>
<th>NOCT (1:1)</th>
<th>MORA (1:1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NER1006 (NDB)</td>
<td>NaPic + MgCit</td>
<td>NER1006</td>
</tr>
<tr>
<td>Aged ≤ 65 N (%)</td>
<td>127/196 (64.8)</td>
<td>115/205 (56.1)</td>
<td>192/208 (92.3)</td>
</tr>
<tr>
<td>Aged &gt; 65 N (%)</td>
<td>28/40 (70.0)</td>
<td>20/38 (52.6)</td>
<td>43/47 (91.4)</td>
</tr>
<tr>
<td>Difference (%)</td>
<td>5.2</td>
<td>3.5</td>
<td>0.9</td>
</tr>
<tr>
<td>P-value</td>
<td>0.522</td>
<td>0.699</td>
<td>0.856</td>
</tr>
<tr>
<td>95% CI (%)</td>
<td>−21.4–11</td>
<td>−14.4–21</td>
<td>−8.1–9.8</td>
</tr>
</tbody>
</table>

N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon)

P0184 ACHIEVING ADEQUATE LEVEL BOWEL PREPARATION WITH EVENING/MORNING OR MORNING-ONLY SPLIT-DOSING REGIMENS OF NER1006 VERSUS STANDARD 2L PEG WITH ASCORBATE: POST HOC ANALYSIS OF A PHASE 3 TRIAL

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2Clinical Development, Norgine Ltd., Harefield, Uxbridge/United Kingdom

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Introduction: Effective colonoscopy requires effective bowel preparation. For detection of polyps larger than 5 mm, an ‘adequate’ segmental cleansing level has recently been defined as 2 or more on the Boston Bowel Preparation Scale (BBPS). The Phase 3 trial MORA compared NER1006 as an evening/morning split-dosing or a morning-only dosing regimen, against 2L PEG with ascorbate as an evening/morning split-dosing regimen (2L PEG + Asc). Treatment-blinded central readers assessed the bowel cleansing efficacy using both the Harefield Cleansing Scale (HCS) and the BBPS. This post hoc analysis shows the BBPS scores for the two primary endpoints, in those patients who had a readable colonoscopy.

Aims & Methods: In the MORA trial, 794 patients aged 18–85 were randomised to bowel preparation with morning-only or evening/morning split-dosing using either NER1006 or 2L PEG + Asc. Adequate level cleansing success was assessed according to the BBPS for both overall colon (all segments ≥2) and right colon cleansing (segmental score ≥2). The analysis includes all subjects for whom colonoscopy videos were available for assessment by central readers.

Results: A total of 792 patients were analysed. When using an evening/morning split-dosing, 249/262 (95%) patients on NER1006 achieved adequate level overall colon cleansing compared to 232/260 (89%) on 2L PEG + Asc (Table 1). Using morning-only dosing, 243/270 (90%) patients on NER1006 achieved the same. Using evening/morning split-dosing, 254/262 (97%) patients on NER1006 achieved adequate level right colon cleansing compared to 242/260 (93%) on 2L PEG + Asc. Using morning-only dosing, 253/270 (94%) patients on NER1006 achieved adequate level right colon cleansing. Adequate level cleansing success was achieved significantly more often with NER1006 evening/morning split-dosing than 2L PEG + Asc, both in the overall colon (P = 0.013) and in the right colon (P = 0.042). The slight improvement seen with NER1006 morning-only dosing in the cleansing rate of the overall colon and right sided colon was not statistically significant. Table 1: Adequate level cleansing of the overall colon and right colon (BBPS segmental scores ≥2–3) as determined by treatment-blinded central readers

Disclosure of Interest: R. Bisschops: Norgine, self: salary, speaking and teaching; funded attendance by Norgine for Investigator’s Meeting trip for the MORA trial

L. Clayton: Employee of Norgine

References

P0185 ASSESSMENT OF COLONOSCOPY QUALITY IN CLINICAL PRACTICE COMPARED WITH EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY PERFORMANCE INDICATORS


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2Hospital General Universitario de Alicante, Alicante/Spain
3Digestive Endoscopy Unit, Catholic University Rome, Rome/Italy
4Doncaster Royal Infirmary, Doncaster/United Kingdom
5Gastroenterology, Comenius University Hospital, Coimbra/Portugal
6R1 Gastrounit, Herlev Hospital Gastro/Surgical, Herlev/Denmark
7Medizinische Klinik II, Klinikum Aschaffenburg II, Med, Aschaffenburg/Germany
8Aschaffenburg Hospital, Aschaffenburg/Germany

Abstract No: P0197

Patients with successful cleansing, n (%)  
<table>
<thead>
<tr>
<th></th>
<th>DAYB (1:1)</th>
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<th>MORA (1:1)</th>
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<td>P-value</td>
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<td>−21.4–11</td>
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<td>−8.1–9.8</td>
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</tbody>
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N.B. successful cleansing defined here as a Harefield Cleansing Scale grade of A or B (overall colon)
Abstract No: P0184

**NER1006 evening/morning split dosing**

<table>
<thead>
<tr>
<th>Patients (N)</th>
<th>262</th>
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</thead>
<tbody>
<tr>
<td>Patients with an adequate level cleansing success of the overall colon, n (%)</td>
<td>249 (95)</td>
</tr>
<tr>
<td>Patients with an adequate level cleansing success of the right colon, n (%)</td>
<td>254 (97)</td>
</tr>
<tr>
<td>P vs. 2L PEG + Asc (overall colon)</td>
<td>0.013</td>
</tr>
<tr>
<td>P vs. 2L PEG + Asc (right colon)</td>
<td>0.042</td>
</tr>
</tbody>
</table>

**NER1006 morning only dosing**

<table>
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<tr>
<th>Patients (N)</th>
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<tbody>
<tr>
<td>Patients with an adequate level cleansing success of the overall colon, n (%)</td>
<td>243 (90)</td>
</tr>
<tr>
<td>Patients with an adequate level cleansing success of the right colon, n (%)</td>
<td>253 (94)</td>
</tr>
<tr>
<td>P vs. 2L PEG + Asc (overall colon)</td>
<td>0.722</td>
</tr>
<tr>
<td>P vs. 2L PEG + Asc (right colon)</td>
<td>0.722</td>
</tr>
</tbody>
</table>

**2L PEG + Asc evening/morning split dosing**

<table>
<thead>
<tr>
<th>Patients (N)</th>
<th>260</th>
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</thead>
<tbody>
<tr>
<td>Patients with an adequate level cleansing success of the overall colon, n (%)</td>
<td>232 (89)</td>
</tr>
<tr>
<td>Patients with an adequate level cleansing success of the right colon, n (%)</td>
<td>242 (93)</td>
</tr>
<tr>
<td>P vs. 2L PEG + Asc (overall colon)</td>
<td>0.722</td>
</tr>
<tr>
<td>P vs. 2L PEG + Asc (right colon)</td>
<td>0.722</td>
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**P0186 SEDATION IN GASTROINTESTINAL ENDOSCOPY: CURRENT PRACTICES OF GREEK GASTROENTEROLOGISTS**

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**Introduction:** When it comes to gastrointestinal endoscopy, considerable heterogeneity is observed between gastroenterologists regarding the use of sedation and the preferred sedative agents. The sedation protocol used by a gastroenterologist may have a significant effect on endoscopic quality, patient cooperation and both the doctor's and the patient's satisfaction with the procedure.

**Aims & Methods**

The aim of this study was to document current endoscopic practices of Greek gastroenterologists and investigate whether they use sedation to perform gastrointestinal endoscopy and which pharmaceutical agents are usually involved. A 39-item online questionnaire was devised, addressing demographic data, use of sedation in endoscopy and monitoring practices. It was subsequently made available to 509 Greek gastroenterologists by e-mail.

**Results:** A total of 195 questionnaires were successfully completed (38.3%). 49 gastroenterologists did not use sedation to perform esophagogastroduodenoscopy (EGD) or colonoscopy (25.1%). The younger gastroenterologists were more likely to use sedation (p = 0.005). Among those using sedation, midazolam was the most frequently used agent in EGD (50%) and the combination of midazolam/fentanyl was the most frequently used in colonoscopy (24.6%), followed by midazolam (21.9%). Out of 137 physicians using benzodiazepines (midazolam, diazepam) as part of their endoscopic sedation regimen, 91 (66.4%) routinely used flumazenil to facilitate pharmacological antagonism after the completion of the endoscopy. In total, 45 physicians, 23.1% of the participants and 30.8% of those using sedation, used propofol or a combination of propofol and other agents. 30 gastroenterologists routinely administered propofol without the aid of an anesthesiologist (66.6%). Medicolegal issues (33%), inadequate training in the use of propofol (26.4%) and risk of cardiopulmonary complications (23.6%) were cited as the main reasons for not using propofol. As far as monitoring practices go, the majority of gastroenterologists observed heart rate and oxygen saturation (96% and 97% respectively). Regarding the safety equipment available to the gastroenterologists, 160 (82%) reported having access to devices or laryngeal airway masks, 92 (47%) to endotracheal intubation equipment and 86 (44%) to a defibrillator. When asked to rate their level of satisfaction with their preferred sedation regimen (or with not using sedation) in a scale of 1 to 10, 72 physicians rated their satisfaction level as 9 or 10 (36.9%) and 92 as 7 or 8 (47.1%). While there was no significant difference in terms of satisfaction between the doctors that used sedation and those who did not, there was a statistically significant difference between the gastroenterologists that used propofol (alone or in combination with other agents) and those who used other sedative agents (p = 0.003). When asked on their preferred method of sedation, if they were themselves subjected to gastrointestinal endoscopy, 104 physicians opted for propofol-based sedation regimens (53.3%).

**Conclusion:** Gastrointestinal endoscopy is performed with the use of sedation by the majority of Greek gastroenterologists. Propofol-based regimens are seldom used in everyday clinical practice, despite a vast number of Greek gastroenterologists identifying them as their preferred regimen, in case they themselves should undergo endoscopy. Compared to a past survey, Greek gastroenterologists are still hesitant about using propofol. However, an increasing tendency towards administering propofol without the aid of an anesthesiologist is observed. Also, physicians using propofol seem to be more satisfied with their sedation practices than the doctors using other sedation regimens. Absence of a distinct legal framework, inadequate training and fear of cardiopulmonary complications are identified as the main reasons preventing Greek gastroenterologists from using propofol.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**Disclosure of Interest:**

- A. Naidoo: Employee of Norgine
- C. Spada: Consultant fee by Norgine
- A. Ono: Consultancy and Advisory Board participant for Norgine
- L. Petruzziello: Consultancy and Advisory Board participant for Norgine
- W. Fischbach: Consultancy and Advisory Board participant for Norgine
- P. Amaro: Consultancy and Advisory Board participant for Norgine
- R. Jover: Consultancy and Advisory Board participant for Norgine
- A. Protopapas, E. Stournaras, G. Neokosmidis, A. Protopapas

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**P0187 QUALITY MEASURE IN COLONOSCOPY: DUE TO IMPLEMENTATION OF COLONOSCOPY QUALITY MONITORING IN A BELGIAN UNIVERSITY HOSPITAL**

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1Department Of Gastroenterology, Hepatopancreatologic And Digestive Oncology, Erasme Hospital, Universite Libere de Bruxelles, ULB, Brussels/Belgium
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**Introduction:** Indicators for colonoscopy quality assessment were developed and promoted during this last decade. However technical and human resources constraints limit local implementation of continuous recording of endoscopic quality indicators (QI). Automatic system of data extraction and presentation could help endoscopy units in their seek for quality improvement. We hereby report our local experience in implementing colonoscopy QI record through an automatic data extraction from separate databases (DB), and assess the colonoscopy quality at unit and individual levels.

**Aims & Methods:** We locally adapted a company reporting system for colonoscopy by adding in a dedicated tab, selected procedure indicators. Endoscopic QI data from reporting system DB and pathologic results from another DB were extracted and merged together in a separated DB. On a regular period basis or on request, key QI are calculated and extracted. It includes adenoma detection rate (ADR), polyp detection rate, caecal intubation rate, quality of bowel preparation (using the Boston bowel preparation score) and type of sedation. During a first period of 6 months starting in January 2016, endoscopists were encouraged to fulfill the dedicated tab on a voluntary basis. In a second period, filling of QI was mandatory for all endoscopists. Performance measures of all endoscopists were compared to global results of our department and results from second period are presented. Performance measures of all endoscopists were compared to global results of our department and results from second period are presented. Performance measures of all endoscopists were compared to global results of our department and results from second period are presented.

**Conclusion:** In a March-April 2016 “mandatory-filling period” (July-December 2016), 1802 colonoscopies were performed with a QI tab filled in 100% of cases compared to 63.1% after the “free-filling period” (p < 0.0001). The global caecal intubation rate for screening colonoscopy was 92.9%. Mean Boston bowel preparation score was 7.2 ± 0.76 with 86.9% of cases with adequate preparation (Boston score > 5; 89.9% among outpatients and 81.9% among inpatients). Colonoscopies were performed under propofol sedation in 94.1%. During this second period, the global ADR was 32.4% (range: 0–55.7%). The polyp detection rate was 44.4% with a mean of 1.19 polyp removed by colonoscopy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Aims & Methods: The aim of this study was to develop a computer-aided detection (CAD) algorithm for colonoscopy using deep learning. To evaluate the developed CAD algorithm, we retrospectively viewed colonoscopy videos from a previous randomized controlled study (UMIN000017083) conducted from April 2015 to October 2015. All examinations were performed using CF- HP500i (Olympus Medical Corp., Tokyo, Japan). In this study, two endoscopists (M.M, Y.M.) manually annotated 43 colonoscopy videos with 238 min of 17,903,967 frames. These videos included 75 polyps (48 neoplasms, 27 non-neoplasms), and annotations were made on the presence or absence of polyps in every frame. Forty-three videos were divided into 300 short video for machine learning and validation process. Among 300 short videos, 246 were used for the machine-learning process. The remaining 54 (33 included a lesion used to validate the CAD algorithm and 21 as independent data) were evaluated using a full high-definition quality using VHO-1000MD (Sony Corp., Tokyo, Japan).

In this study, two endoscopists (M.M, Y.M.) manually annotated 43 colonoscopy videos with 238 min of 17,903,967 frames. These videos included 75 polyps (48 neoplasms, 27 non-neoplasms), and annotations were made on the presence or absence of polyps in every frame. Forty-three videos were divided into 300 short video for machine learning and validation process. Among 300 short videos, 246 were used for the machine-learning process. The remaining 54 (33 included a lesion used to validate the CAD algorithm and 21 as independent data) were evaluated using a full high-definition quality using VHO-1000MD (Sony Corp., Tokyo, Japan).

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Results: The mean probability of a poly-positive video was 62.1±27.9%, whereas that of a poly-negative video was 18.1±24.6% (P < 0.001). The area under the ROC curve was 0.887, indicating the present algorithm could detect a polyp with 90.9% sensitivity and 76.2% specificity.

Conclusion: Our preliminary results showed that state-of-the-art artificial intelligence has the potential for achieving automatic detection of colorectal polyps. A prospective study is now planned after more machine-learning sessions.

Disclosure of Interest: K. Mori: Kensaku Mori received research funding from Cybernet System Company and Olympus Company.

All other authors have declared no conflicts of interest.

References

P0192 TREATMENT OUTCOMES OF HIGH FORCEoola POLYPOUTES FOR PATIENTS WITH DIMINUTIVE POLYPOIS: A PROSPECTIVE FOLLOW-UP STUDY
H. Hasegawa¹, S. Bamba¹, H. Ban¹, H. Imadada¹, A. Nishida¹, O. Inatomi², M. Sasaki¹, M. Sugimoto¹, A. Andoh³
¹Dept. Of Gastroenterology, JCHO Shiga Hospital, Otsu, Japan
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Introduction: The results of the Poloid Study Popy are premised on the removal of all adenomatous lesions. Cold forces polypectomy (CFP) using jumbo biopsy forceps is a simple and safe technique used for diminutive polyps (<5 mm). The recurrence rate after CFP for patients with diminutive polyps has not been elucidated.

Aims & Methods: We have prospectively enrolled patients with diminutive polyps treated with CFP from June 1, 2015 to March 2017. Multiple colonoscopy was used for all procedures. The location, size, endoscopic findings and procedures were recorded. The patients who have undergone CFP had their follow-up colonoscopy in one year after CFP.

Results: CFP was performed for total 515 polyps from 277 patients. The size of the polyps was <3 mm/4–5 mm/5 mm/3.3 ml/379/101.36. The rate of one-bit polypectomy for adenoma was <3 mm/4–5 mm/5 mm/379/101.36. There was no significant difference in the one-bit rate between endoscopists’ experience. No cancer was observed in histology. Rates of delayed bleeding after CFP was 0.19% (1/515). Concomitant use of anticoagulation use of antplatelet drugs was found in 14% (72/458), and none of them experienced delayed bleeding. No perforation occurred. Seventy-five patients had their follow-up colonoscopy so far. There are no polyps suspected residual or recurrent lesions. Among 75 patients, 62 patients had less than two polyps removed at their first colonoscopy (Group A). On the other hand, 33 patients had more than three polyps removed at their first colonoscopy (Group B). Follow-up colonoscopy revealed that the rates of newly discovered polyps in the same segment were 8% and 23% in groups A and B, respectively. The rates of newly discovered polyps in the different segment were 27% and 61% in groups A and B, respectively. When the initial CFP was performed by the endoscopist with the experience of <5 years/5–9 years/10 years/more than 10 years, the rate of newly discovered polyps found at follow-up colonoscopy was 54% (14/26)/42% (8/19)/37% (11/30), respectively.

Conclusion: The rate of one-bit polypectomy was significantly higher for diminutive polyps especially less than 3 mm. Importantly there are no polyps suspected residual or recurrent lesions in the following colonoscopy. CFP is a safe and effective option for diminutive polyps (5 mm). Although the rate of one-bit polypectomy was not related to the endoscopists’ experience, adenoma detection rate is seemed to be low in young endoscopists. Since achievement of “clean colon” is necessary to achieve “clean colon” especially if the patients have more than two polyps at the first examination.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0193 EFFICACY OF CIMETROPION BROMIDE ON POLYPY DEEECTION IN COLONOSCOPIO WITHDRAWAL: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, CLINICAL TRIAL
Pusan National University Yangsan Hospital, Yangsan/Korea
Reference E-mail Address: sulupum@sulaver.co
Introduction: Colonoscopy is the most effective method for preventing colorectal cancer, as it offers easy detection and resection of polyps. Cimetropium bromide
P0194 ADHERENCE TO EUROPEAN SOCIETY OF GASTROENTEROLOGY ENDOSCOPY (ESGE) POLYPECTOMY GUIDELINES: AN IRISH EXPERIENCE

N. O’Morain1, V. Parail1, O. O’Dwyer1, P. Maheshwari1, L. Kumar1, S. Fennelly1, N. Breslin2, B. Ryan1, D. Mcnamera1
1Gastroenterology & Hepatology, Tallaght Hospital, Dublin/Ireland
2Gastroenterology Tráthnón Academic Gastroenterology Group (T/GA), AMNCH Tallaght, Dublin/Ireland

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Introduction: Colorectal cancer (CRC) accounts for up to 11% of all cancers in women and 14% of men in Ireland, and is the second most common cancer across sexes. The adenoma-carcinoma sequence of colorectal carcinogenesis lends itself to screening with the aim of complete excision of polyps. It has been estimated that incomplete resections of polyps are involved in 19–31% of interval cancers. ESGE guidelines state that polyps 5 mm or greater should be removed by snare resection. Previous cohort studies report non-adherence rates of up to 46% with some trend towards more propofol per kg body weight in women (3.98 ± 1.81 mg versus 3.72 ± 1.75 mg, p = 0.022, n.s.).

Main outcome measures: The effect of gender aspects should be taken into account upon polyp induced sedation for gastrointestinal endoscopy. That includes adequate dosing for female as well as cautiousness regarding potential overdosing of male patients.

Trial registration: ClinicalTrials.gov (Identifier: NCT02687568). Data were presented at a national meeting (DGEBV) in Germany.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0195 WOMEN AWAKE FASTER THAN MEN AFTER EEG-MONITORED PROPOFOL SEDATION - FIRST PROSPECTIVE OBSERVATIONAL STUDY OF GENDER DIFFERENCES IN PROPOFOL DOSES AND RECOVERY TIMES FOR COLONOSCOPY

A. Riphaus1, M. Slotije1, J. Bulla1, C. Keil1, C. Mentzel1, V. Limbach1, B. Schultz1, C. Unzicker1
1Department of Medicine, Laestzen/Germany
2Department of Mathematics, Bergen/Norway
3Department of Anaesthesia MHH, Hannover/Germany

Contact E-mail Address: ariphaus@web.de

Introduction: Sedation for colonoscopy by using intravenous propofol has become standard in many Western countries.

Aims & Methods: While gender-specific differences have been shown for general anaesthesia used in dentistry, no such data exist as yet for gastrointestinal endoscopy. In a prospective observational study at an Academic teaching hospital of Hannover Medical School 219 patients (108 women and 111 men) were studied. After informed consent sedation was using EEG monitoring during a constant level of sedation depth (D0 to D2) performed by trained nurses or physicians after bodyweight adjusted loading-dose.

Main outcome measures: Primary endpoint was the presence of gender-specific differences in wake-up time (time from end of sedation to eye - opening and the complete orientation of the patient); secondary outcome parameters analysed were total dose of propofol, sedation associated complications (bradycardia, hypotension, hypoxia, apnoea), patient cooperation and patient satisfaction. Multivariate analysis was performed to correct confounding factors such as age and BMI.

Results: Women awake significantly faster compared to men with a time to eye opening of 26.2 ± 3.69 versus 31.9 ± 3.31 min. (p = 0.005) and time until complete orientation 9.14 ± 3.88 versus 10.4 ± 3.71 min (p = 0.008); propofol dosage was not significantly different, with some trend towards more propofol per kg body weight in women (3.98 ± 1.81 mg versus 3.72 ± 1.75 mg, p = 0.022, n.s.).

The effect of gender aspects should be taken into account upon polyp induced sedation for gastrointestinal endoscopy. That includes adequate dosing for female as well as cautiousness regarding potential overdosing of male patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0196 EFFECT OF PREOPERATIVE COLONOSCOPIC TATTOOING USING BOTH SIDE INJECTION OF INDOCYANINE GREEN FOR IMPROVEMENT OF LYMPH NODE HARVEST IN COLORECTAL CANCER

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Contact E-mail Address: mdkkwcock@gmail.com

Introduction: Consensus guidelines suggest to assess at least 12 lymph nodes for adequate staging of colorectal cancer and the correlation between number of lymph nodes retrieved and the patient survival has been formerly reported. To facilitate the retrieval of lymph nodes, preoperative endoscopic tattooing to mark the site of the tumor has been proposed. In this study, we aimed to evaluate the effect of preoperative colonoscopic tattooing (PCT) using indocyanine green (ICG) for lymph node harvest in colorectal cancer. Additionally, we evaluated the effect of both side injection of ICG for improving the rate of adequate lymph node harvest.

Aims & Methods: 1023 patients who underwent curative resection for colorectal cancer between Jan 2012 and Aug 2016 at the Pusan National University Yangsan Hospital in Korea were retrospectively divided into the tattooing group and the non-tattooing group depending on whether PCT using ICG was done. Pathological findings and lymph node harvest were compared between the two groups.

Results: The rate of adequate lymph node harvest (retrieval of more than 12 lymph nodes) was similar in tattooing group and non-tattooing group (91.9% vs. 91.4%). However, when comparing the both side injection group and...
nontattooing group, both side injection group was better result (94.7% vs. 92.0%, OR 4.235, p-value 0.047). Most results did not have statistical association with higher lymph node yield in colorectal cancer. But in T1 cancer, the rate of adequate lymph node harvest was higher in the both side injection group, statistically (94.7% vs. 81.0%, OR 4.235, p-value 0.047).

Conclusion: CSP was associated with higher lymph node harvest in colorectal cancer, especially in T1 cancer. And both side injection of ICG increased the rate of adequate lymph node harvest. Further studies and methods are needed to harvest adequate lymph nodes in colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Lorenzo-Zúñiga García, V., Moreno De Vega, I., Mariní, N., Caballero, R., Bartolle, I., Bon, J., Boix, R.
2. Endoscopy/ter Group, Germans Trias/IJGT, Badalona/Spain

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Introduction: Prevention of complications secondary to endoscopic resection techniques (EMR or ESD) requires avoiding deep thermal damage and increase mucosal healing. Platelet-rich plasma (PRP) has demonstrated efficacy in preclinical studies and endoscopic resection models [1]. The EndoPRP study was a prospective single-center study to assess the efficacy of PRP on endoscopic resection of large sessile lesions (larger than 35 mm). (Study registered at ClinicalTrials.gov: NCT02931149)

Aims & Methods: In the EndoPRP study 15 patients (males and females, aged 52–80) were assigned to receive PRP (6–15 mL); i) Endoscopic Shielding Technique (EST, n = 4), applying PRP as a shield after standard resection technique, and ii) Submucosal injection (SMI, n = 11), performing a submucosal injection of PRP prior to EMR or ESD. Patients were informed and accepted to participate with a written consent. PRP was obtained from a sample of patient’s blood (18–36 mL) drawn at the time of endoscopy. Patients underwent endoscopic follow-up after 4 weeks. The efficacy of PRP was assessed by the incidence of adverse events (delayed bleeding or perforation). Mucosal healing rate (MHR) was defined as a percentage of mucosal restoration after 4 weeks.

Results: Shielding technique with PRP was performed in 4 lesions at rectum (Æ 53.7±20.6 mm, range 35–80 mm). Submucosal injection of PRP was used in 11 lesions (2 at antrum, 3 at rectum, and 8 at colon) (Æ 41.6±9.6 mm, range 35–70 mm). Delayed bleeding occurred after EMR of 1 lesion (no required blood transfusion or endoscopic treatment; 6.6% of all lesions: 1 patient at EST group, 0 patients at SMI group). MHR was significantly higher in patients treated with SMI than EST (p = 0.03).

Conclusion: PRP applied as a shield over the scar or as submucosal fluid cushion has proved clinical efficacy in endoscopic resection of large lesions. Submucosal injection of PRP has showed better mucosal healing rate as comparison with shielding technique.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: All authors have declared no conflicts of interest.

References
with a defined AE. Treatment options, including none required, were taken from SoC-defined lists and were examined by the AE committee. Unrelated procedures, unplanned hospital admission, and death. Payers were surveyed about costs for interventions, provider time, hospital administration, and admissions. Outliers were identified using Dixon’s Q test. The mean treatments and outcomes per AE per country were calculated with responses weighted by the AE frequency reported by physicians and the outliers replaced by global means. Mean costs were calculated per intervention and outcome, with outliers removed.

**Results:** 101 providers and 26 payers completed the surveys, with a minimum of 20 respondents per country with 52 (53%) respondents per country. Over 62% of providers were gastroenterologists and anaesthesiologists. Local guidelines determined practice in most cases, and propofol and midazolam were the main sedation agents employed. The most common AEs reported were hypotension and bradycardia, with 9% and 4% of respondents, respectively, estimating each to occur during >10% of procedures. Mean provider time required to treat AEs ranged from 1.7 minutes for mild desaturation in Germany to 3.10 minutes for cardiac arrest in the USA. Accounting for interventions and provider time, the median direct cost per range from EUR 12 for bradycardia in Germany to USD 3,877 for cardiac arrest in the USA (Table). When costs were “fully loaded” these became EUR 39 and USD 19, 722, respectively. Although of low direct cost, bradycardia in Germany was reported to cause procedure termination or substantial delay in 3.8% of cases. In Euro countries, the median of direct costs for an AE was EUR 40 (IQR: 29–67). When costs of outcomes of AEs were included the median “fully loaded” cost reached EUR 301 (IQR: 115–738).

**Table:** Costs of select adverse events by country. FL: Fully-loaded (costs including hospital administration, time, inpatient stays, delays, and cancellations, but excluding legal costs)

<table>
<thead>
<tr>
<th>Country, currency</th>
<th>Mild Hypotension</th>
<th>Moderate desaturation</th>
<th>Bradycardia</th>
<th>Prolonged cardiac arrest</th>
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<td>US, USD</td>
<td>247</td>
<td>841</td>
<td>465; 1549</td>
<td>529; 1715</td>
</tr>
</tbody>
</table>

**Conclusion:** Costs of sedation-related AEs can be substantial regardless of country of origin. Disruption of patient flow and provider efficiency may add to the cost burden. Even relatively minor events may prompt additional intervention, increasing the overall cost of care.

**Disclosure of Interest:** R. Saunders: Rhodri Saunders is the owner of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and performing this research. J. C. Marín-Gabriel is the owner of Coreva Scientific GmbH & Co KG, which received consultancy fees for designing and performing this research. P. Kranke: Peter Kranke did not receive any remuneration for work on this research project. He has previously consulted for Medtronic and Covidien. D. Whitaker: David Whitaker did not receive any remuneration for work on this research project. She has previously consulted for Medtronic Inc.

**P0200 COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ENSD); KNIFE-ASSISTED SNARE RESECTION (KAR) AND SPREAD RATE: A WESTERN EUROPEAN EXPERIENCE IN SPAIN**

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**Introduction:** Performing CR-ESD remains challenging in Western countries and surveillance studies in this setting are not fully described. KAR has been advised as a reasonable strategy for non-expert endoscopists and difficult lesions. However, some KAR eventually requires a piecemeal resection (p-KAR). A direct comparison between these two techniques is lacking. Additionally, when the specimen is resected en bloc regardless of what procedure is used, and the only pathological risk factor for recurrence is lateral margin (LM) involvement, its implications concerning the recurrence rate should be assessed.

**Aims & Methods:** 1.) To compare the recurrence rate after R0 and R1/Rx endoscopic resection (ER), on an ESD “intention-to-treat” basis, in a Western European setting where CR-ESD is performed by non-experts. 2.) To evaluate the impact of LM involvement on local recurrence when neoplasms without risk factors for lymph node metastasis are resected en bloc. We prospectively included 89 consecutive CR neoplasms planned for ESD from September 2008 to December 2015. When technical difficulties arose or for patient’s safety reasons, we performed a KAR. Kaplan-Meier survival curves were used to assess the recurrence rate over time. The end of follow-up was considered when a local recurrence occurred or at the end of the surveillance period in those patients who did not develop the event. Comparisons were made using the log-rank test. The recurrence rate during follow-up was stratified considering advanced histology, en bloc resection and R0 resection.

**Results:** The ER was aborted in 5 cases (perforation n = 3; technical difficulties n = 2). Surgical intervention was needed after ER because of submucosal or linfvascular invasion in 4 patients. Five out of the remaining 80 cases, were lost to follow-up. Finally, 75 CR neoplasms were included in 74 patients (43 male; 58.1%). Median age was 71 years (range: 37–93). Median size of the lesions was 32 mm (range 10–100). Histology was 26 (34.7%) Vienna category 3; 46 (61.3%) Vienna 4 and 3 (4%) sm1-Vienna 5. En bloc resections were obtained in 44 cases (58.7%); 33 ESD (48%) and 11 KAR (14.7%). The ER finished as p-KAR in the 31 remaining lesions (41.3%). R0 resections (n = 23; 30.7%) were achieved in 18/33 ESD and 5/42 KAR [OR = 8.9 (CI 95%: 2.8–28.3); p < 0.0001]. The median follow-up period was 16 months (IQR: 9–61). Local recurrence occurred in 11 cases: 9 of the latter throughout the first year (18.8%). No surgery was needed because of recurrence. The overall recurrence rate at 36 months was 15%. The recurrence rate at 3 years showed a statistical significant difference when R0 resections were compared with R1/Rx: 0% vs. 21.5% (p = 0.03). When results were stratified according to histology and en bloc resections, no significant differences were found in the recurrence rate. When en bloc resections in pT1a/T1b (sm1); y; c; (+); pVM0 lesions (n = 44) were analysed separately, LM distribution was: 23 LM0 (52.3%), 18 LM1 and 3 LM3 (6.8%). There was a non-significant trend concerning the recurrence rate when LM0 (n = 23) lesions were compared with LM1/LMx (n = 21%): 0% vs. 14.8% at 3 years; p = 0.06.

**Main characteristics of the resected lesions by procedure**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>ESD</th>
<th>en bloc KAR</th>
<th>p-KAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean tumor size</td>
<td>28 (11–50)</td>
<td>20 (11–65)</td>
<td>42.1 (17–100)</td>
</tr>
<tr>
<td>Length of procedure</td>
<td>225 (62–340)</td>
<td>175 (60–300)</td>
<td>270 (75–400)</td>
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<tr>
<td>Rectal location</td>
<td>22 (68.7)</td>
<td>5 (41.6)</td>
<td>21 (67.7)</td>
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<tr>
<td>Vienna category</td>
<td>23 (71.8)</td>
<td>6 (50)</td>
<td>20 (64.5)</td>
</tr>
</tbody>
</table>

**Conclusion:** ESD R0 resections were 9 times greater than that of KAR on an ESD “intention-to-treat” basis. R0 resections were associated with lower recurrence rates in comparison with R1/Rx resections. LM involvement increased the recurrence rate but without a statistical significance when it was the only pathological risk factor for recurrence and the specimen was resected en bloc.

**References**

**P0201 ASSOCIATION BETWEEN SIZE, LOCATION AND HISTOLOGICAL CHARACTERISTICS OF COLORECTAL LATERALLY SPREADING TUMORS**

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**Introduction:** Laterally spreading tumors (LST) are important precursors of colorectal cancer (CRC). The endoscopic characteristics of the LSTs, such as size and location, appear to correlate with the histological findings, which is an essential data for the decision of the best therapeutic procedure to be carried out.

**Aims & Methods:** To determine the association between size, location and the histological characteristics of colorectal LSTs by reviewing of the colonoscopy and histopathological reports of the LSTs endoscopically removed between October 2013 and June 2015 at the digestive endoscopy department of a tertiary hospital. The Vienna revised classification was used for the adenomatous lesions, and the World Health Organization (WHO) classification for the “sessile serrated adenomas” (SSA). The regions of the colon were referred to...
as either “proximal” or “distal” colon. Thereafter the division into six anatomical segments was considered (cecum, ascending, transversal, descending, sigmoid and rectum).

**Results:** A total of 218 LSTs were included in this study. Most patients (59.4%) were female. The mean age was 66.1 years, and the average size of the LSTs included was 1.69 cm. The most common type of occurrence of the LSTs, with 34.3%, was the proximal ascending colon. The most common histological type was the low grade dysplasia adenoma (Vienna 3), followed by the SSA without dysplasia with 21.6%. There was significant correlation between size and histology (p < 0.005), where the adenomas/malignant lesions were found to be larger than the other categories. The SSAs, however, did not show this association. We identified association between location and histological type (p < 0.005): the adenomas with low grade dysplasia were most prevalent in the proximal colon. However, when the subdivision of the colon into anatomical segments was considered, the SSA without dysplasia was the most common type at the ascending colon.

**Conclusion:** There is association between the size and the histological characteristics of colorectal LSTs. Adenomas with high grade dysplasia were found to be larger than the other classifications. This association, however, is not observed between SSAs lesions. There is association between location and histology; with the SSAs without dysplasia being the predominant type at the ascending colon.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0202 SAFE AND SUCCESSFUL RESECTION OF DIFFICULT GI LESIONS USING A NOVEL SINGLE-STEP FULL-THICKNESS RESECTION DEVICE (FTRD)**

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**Introduction:** Endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) are well-established and effective techniques for the endoscopic resection of mucosal neoplasms along the gastrointestinal (GI) tract. However, these procedures are limited to superficial lesions. In the case of deeper ingrowth into the gut wall as well as anatomic sites prone to perforation, the removal of full-thickness resection device (FTRD®) opens a new dimension of possibilities for endoscopic resection.

**Aims & Methods:** Sixty patients underwent therapeutic endoscopic full-thickness resection (eFTR) at our institution. The procedures were carried out as follows: First, the target lesion is marked with electrocautery and the endoscope is then retracted. The full-thickness resection device (FTRD, Ovesco® Endoscopy AG, Tübingen), is fitted onto a therapeutic endoscope. The endoscope with the FTRD® is advanced to the previously marked lesion. Grasping forces are used to take hold of the target lesion and carefully pull it into the plastic cap of the FTRD®. Immediately after deployment of the OTSC®, eFTR is performed using the hydrothermic snare within the plastic cap. The full-thickness specimen is retrieved and processed for histopathological examination. Safety, learning curve, R0 resection rate and clinical outcome of all 60 interventions were studied.

**Results:** EFTR was performed for the following indications: 1. Recurrent adenomas (n = 22.3%) with a non-lifting sign after previous incomplete polypectomy and adenomas with a primary non-lifting sign on saline injection (n = 23%). 2. Non-lifting base after extensive piecemeal resection of a spreading adenoma (n = 4), rectal diverticulum (n = 3%). 4. Polyposis the cecal appendix (4.6%). 5. Submucosal lesions (n = 5,8%). 6. Early carcinoma (n = 7,1%). 7. Follow-up resection of a malignant polyp (n = 0,1%) had. 8. EFTR over endoloop resection (n = 2,3%). In 97% (38/40) of the interventions, the FTRD®-mounted endoscope reached the previously marked lesion and eFTR was performed (technical success). Full-thickness resection was achieved in 88% of the cases, with an R0 resection on histological examination in 79%. The clinical success rate based on follow-up histology was even higher (88%). The following adverse events occurred: Apendixitis of the residual cecal appendix after eFTR of an appendiceal adenoma (1/58,2%). Minor bleeding at the eFTR site (2/58,3%). EFTR performed accidently without proper prior deployment of the OTSC® (1/58,2%). There was no secondary perforation or eFTR-associated mortality.

**Conclusion:** In conclusion, after specific training, endoscopic full-thickness resection is a feasible, safe and promising resection technique. It allows complete resection of lesions affecting layers of the gut wall beneath the mucosa, without the risk of perforation. In the future, eFTR may become a valuable alternative to a surgical approach in cases where endoscopic resection was previously thought impossible.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0203 VASCULAR AND PIT-PATTERN ANALYSIS ACCORDING TO KUDO, SANO AND NICE CLASSIFICATIONS IMPROVES AFTER AN IMAGE-BASED TRAINING PROGRAM**

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**Introduction:** Narrow Band Imaging (NBI) and chromoendoscopy with methylene blue are enhancing techniques which are helpful in differentiating vascular and pit patterns of colorectal neoplasms. Therefore, they have a key-role for the adequate management of the lesions which might be candidates for endoscopic resection.

**Aims & Methods:** The aim of our study was to measure the interobserver agreement and the diagnostic accuracy in an endoscopic unit using methylene blue and NBI for the evaluation of the pit and vascular pattern according to the Kudo, Sano and NICE classifications of colo-rectal neoplasms, before and after an image-based training program. We retrospectively collected consecutive endoscopic images (NBI and with methylene blue) of colo-rectal neoplasms from the internal database. The image set was then evaluated by our gold standard composed by two expert endoscopists. Their evaluation resulted confident with histology reports in 88% of cases. The images set was then evaluated by the 9 endoscopists of the unit, before and after a 30-minutes image-based training program on enhancing techniques and surface colorectal patterns. NBI and colonic neoplasms' surface and vascular patterns. Interobserver agreement was calculated using the kappa statistic by Cohen. By using the gold standard evaluation as criterion standard, the accuracy of colo-rectal neoplasms' evaluation before and after the training was also calculated using the Mc Nemar test. A value of p < 0.05 was considered statistically significant.

**Results:** A total of 30 images were obtained (see Table). Before the training process, the interobserver agreement was minimal for Kudo (0.10 ±0.03) and Sano (0.12 ±0.04), and poor for the NICE classification (0.24 ±0.05). Diagnostic accuracy was 0.33 ±0.07, 0.54 ±0.12 and 0.60 ±0.10 for Kudo, Sano and NICE classifications, respectively. After the image-based training program, interobserver agreement moved to moderate for the Kudo classification (p < 0.0001) and to good for Sano and NICE classifications (p < 0.0001). Diagnostic accuracy increased significantly, too, with values of 0.60 ±0.05, 0.76 ±0.05, 0.80 ±0.05 for Kudo, Sano and NICE classifications, respectively (p < 0.0001).

**Conclusion:** To the best of our knowledge, we present the first study on the ability of an image-based training program in increasing the interobserver agreement and diagnostic accuracy in differentiating pit and vascular patterns of colo-rectal neoplasms using all the available endoscopic classifications (Kudo, Sano and NICE classifications). Such training seems mandatory for endoscopists using enhancing techniques especially when advanced lesions are planned to be treated endoscopically.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Classification**

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P0204 YIELD OF 2ND SURVEILLANCE COLONOSCOPY IN “INTERMEDIATE RISK” PATIENTS. COULD SURVEILLANCE INTERVALS BE REFINED?

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Introduction: Data regarding the yield of 2nd surveillance colonoscopy after index procedure findings of advanced colonic neoplasia (ACN) are limited. The yield of ACN at 2nd surveillance is associated with high risk index or 1st surveillance findings (1). However, previous studies have been heterogeneous and definitions of ACN include characteristics of both "intermediate" (IR, >3 adenomas or any adenoma >10 mm) and "high risk" groups (HR, >5 adenomas or >3 adenomas with at least 1 >10 mm) as defined by BSG guidelines.

Aims & Methods: We aimed to evaluate the differences in yield of advanced colonic neoplasia at 2nd surveillance colonoscopy (S2) between “intermediate” and “high” risk patients at index colonoscopy in our unit. ACN was defined as ≤5 adenomas, any adenoma ≥1 cm, tubulovillous histology or high grade dysplasia, or cancer. Patients with HR or IR index procedures undertaken by 3 experienced, accredited bowel cancer screening colonoscopists and at least 2 surveillance colonoscopies, were identified from our local database between 2008 and 2016. Findings at 1st and 2nd surveillance procedures were assessed for the presence of ACN. Statistical analysis was undertaken using GraphPad Prism 5 using Fisher’s exact test. All tests were two tailed and a p value of <0.05 was considered significant. ORs with a 95% CI were calculated for significant findings.

Results: 218 patients meeting inclusion criteria were identified. 53% of patients had IR index findings. The median time to S2 was 49 months (IQR 48–49.4) for HR index patients and 72 m (IQR 70–73) for IR index patients. 11% of all patients had ACN at S2. 4% of IR patients v 18% of HR patients had ACN at S2. OR 0.4 (95% CI 0.2–0.6). 3% of HR patients without ACN at S1 had ACN at S2 v 15% of IR patients with ACN at S1 (ns). 11% of HR patients without ACN at S1 v 37% with ACN at S1 had ACN at S2; OR 0.2 (95% CI 0.07–0.6).

Conclusion: Stratification of high-risk index findings into HR and IR groups facilitates a low-risk group at second surveillance colonoscopy. The second surveillance interval for IR patients without ACN at first surveillance might be increased as ACN is infrequently detected in this group.

Disclosure of Interest: J. Landy: Educational support from Norgine.
Narrow band imaging optical diagnosis of small colorectal polyps in routine use.


A novel blue laser imaging system for the diagnosis of colorectal polyps.


Aims & Methods: Between May 2014 and December 2015, 181 colorectal polyps in 65 patients were imaged and resected in our single center study. Each polyp was evaluated using white light endoscopy, BLI with and without magnification. An independent expert reviewed the pictures and the videos of the polyps and staged them using NICE, Sano and WASP classifications: his conclusions were compared with the actual histology of the polyps. Diagnostic performances of BLI and magnification were calculated with each endoscopic classification.

Results: 181 polyps were studied, among which 125 adenomas, 24 sessile serrated adenomas/polyps, 25 hyperplastic polyps, 2 adenocarcinomas and 11 normal colorectal mucosal samples. The median polyp size was 7 mm. Overall, the NICE, Sano and WASP classifications were comparable in terms of diagnostic performances for the optical diagnosis of colorectal adenomas (p = 0.7).

Conclusion: Our study did not establish significant difference between the three classifications. However, the ASEG criteria for the implementation of the "exact and discard" strategy were met for the classifications of Sano and WASP with a negative predictive value for the diagnosis of adenoma beyond 90% in the rectosigmoid.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


permeability process after IRE by providing the real-time images. Additionally, Mammography is an effective and accurate alternative to surgical resection of large polyps. Endoscopic experience, polyp morphology, and benign histology are the main predictors of complete resection at index EMR. Further data are required to evaluate the longer-term outcomes of malignant polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0211 LARGE (>30MM) POLYP ENDOSCOPIC MUCOSAL RESECTION: OUTCOMES AND PREDICTORS OF SUCCESS**

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Introduction: Endoscopic mucosal resection (EMR) is an established therapeutic option for large (>30 mm) colonic polyps. We aimed to assess characteristics and outcomes of this cohort. Primary outcomes consisted of rates, predictors and durability of EMR success, whilst secondary outcomes included complications, malignant risk, and conversion to surgery.

Aims & Methods: We prospectively identified patients referred for large polyp EMR from a polyp multidisciplinary team meeting between August 2008–2016 in a district general hospital with tertiary EMR expertise. Data on demographics, polyp site, morphology, size, accessibility (SMSA), histology and follow-up endoscopy were retrospectively collected. Binary logistic regression modelling was performed using SPSS, with components comprising of year, individual SMSA components, and histology. The Kaplan-Meier approach was used to measure durability of EMR success.

Results: Large polyp EMR was performed in 91 patients out of 125 MDT referrals (73%). Patients had a median age of 72 (interquartile range [IQR] 14.4), and were predominantly male (60%). Polyps were sessile (46%), flat (49%) or pedunculated (4%), with a median size of 40 mm (IQR 20.5 mm), and were left-colon in 81%. Bleeding occurred in 16.5%, of all whom achieved haemostasis. The 30-day complication rate was 1.1% (delayed bleeding in 1 patient), 54 (59%) were fully resected in one session, with overall EMR successful in 75 (81.5%) after an average of 1.5 sessions. On multivariable analysis, significant predictors of complete resection at first attempt (Table 1) included: increasing year, sessile vs. flat morphology, and non-malignant histology. Malignant histology (p < 0.001) predicted overall EMR failure, but not age, gender, year of EMR, SMSA score, or concomitant argon plasma coagulation. Of the EMR failure group, 11/16 (69%) underwent surgical resection, of which 7/11 (64%) harboured adenocarcinoma. Of the EMR success group, 4/80 were malignant polyps with R0 endoscopic resection. The overall malignant histology rate in this cohort was 11/91 (12%). In this cohort, the R0 EMR success rates was 4/11 (36%), with no recurrence after 60 months of follow-up. The overall 12-month recurrence rate following complete EMR was 1.5%, with no significant factors affecting EMR durability identified.

Table 1: Predictors of complete resection on first EMR attempt. p-values derived from bivariate regression, with bold values significant if p < 0.05. Increase in OR for each increase in year. **p-value < 0.05 considered statistically significant.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>1.41*</td>
<td>1.04–1.90</td>
<td>0.048**</td>
</tr>
<tr>
<td>Size (3-39 cm vs. &gt;4.0cm)</td>
<td>2.96</td>
<td>0.85–10.3</td>
<td>0.088</td>
</tr>
<tr>
<td>Site (left vs. right colon)</td>
<td>0.46</td>
<td>0.09–2.48</td>
<td>0.367</td>
</tr>
<tr>
<td>Access (easy vs. difficult)</td>
<td>1.39</td>
<td>0.38–5.14</td>
<td>0.619</td>
</tr>
<tr>
<td>Morphology (sessile vs. flat)</td>
<td>3.38</td>
<td>1.04–11.0</td>
<td>0.043**</td>
</tr>
<tr>
<td>Non-malignant histology</td>
<td>41.5</td>
<td>3.74–461</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: Large polyp EMR is a safe and effective alternative to surgical resection of large polyps. Endoscopist experience, polyp morphology, and benign histology are the main predictors of complete resection at index EMR. Further data are required to evaluate the longer-term outcomes of malignant polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0212 PROSPECTIVE RANDOMIZED CONTROLLED TRIAL COMPARING Efficacy of 1-L PEG-ASC with PRUCALOPRIDE and 2-L PEG-ASC for BOWEL PREPARATION**

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Introduction: Though numerous research has enabled decrease of the bowel preparation solution volume, it is still a major complaint of patients preparing for colonoscopy. There have been studied that additional administration of laxatives could lessen the amount ofavenous formula with prokinetic effect. Prucalopride is a serotonin (5-HT4) receptor agonist which stimulate colonic mass movements and provide main propulsive force for defeation.

Aims & Methods: The aim of this study is to compare 2-L PEG-Asc and 1-L PEG-Asc plus prucalopride while prepe for quality of bowel cleansing while investigating the result to traditional 2-L PEG-Asc preparation. 1-L PEG-Asc plus prucalopride preparation method could be an alternative method for bowel preparation which can relieve patient discomfort.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0213 IMPROVING SURVEILLANCE FOLLOW UP RATES AFTER COLONOSCOPY ENDOSCOPIC MUCOSAL RESECTION: A QUALITY IMPROVEMENT PROJECT**

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Introduction: Endoscopic mucosal resection (EMR) is an effective and safe treatment for large (>20mm) laterally spreading colorectal lesions. Although colon EMR has been established as a minimally invasive technique for treatment of large colorectal lesions, risk of adenoma recurrence is the main limitation. Current guidelines recommend first follow-up at 3–6 months; however, there are no well-designed prospective-studies published establishing an optimal surveillance schedule. We aimed to identify an optimal surveillance schedule and assess adherence.

Aims & Methods: We performed a cross-sectional study of all patients who underwent colonoscopy with EMR followed by surveillance colonoscopy at our endoscopy center practices.

Results: 25 patients included in intervention group were compared to 66 patients in the nonintervention group (88%, 95% CI [0.80%-0.94%] vs 64%, 95% CI [0.54%-0.73%]). Table 1.

Table 1: Demographic, clinical characteristics, follow up rates

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention group (n = 25)</th>
<th>Non-intervention group (n = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, Mean (SD)</td>
<td>62 (8.7)</td>
<td>66 (10.5)</td>
</tr>
<tr>
<td>Sex, Male (%)</td>
<td>38% (10)</td>
<td>58% (35)</td>
</tr>
<tr>
<td>Size of polyp(mm)</td>
<td>35 (18)</td>
<td>30 (12)</td>
</tr>
</tbody>
</table>

(continued)
Table 1 Continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intervention group (n = 25)</th>
<th>Non-intervention group (n = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site of polyp resection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectum</td>
<td>8% (2)</td>
<td>5% (3)</td>
</tr>
<tr>
<td>Sigmoid</td>
<td>4% (1)</td>
<td>7% (4)</td>
</tr>
<tr>
<td>Recto-sigmoid</td>
<td>0%</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Descending colon</td>
<td>0%</td>
<td>3% (2)</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>15% (4)</td>
<td>12% (7)</td>
</tr>
<tr>
<td>Hepatic flexure</td>
<td>15% (4)</td>
<td>8% (5)</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>23% (6)</td>
<td>37% (22)</td>
</tr>
<tr>
<td>Mid ascending colon</td>
<td>0%</td>
<td>5% (3)</td>
</tr>
<tr>
<td>Cecum</td>
<td>23% (6)</td>
<td>13% (8)</td>
</tr>
<tr>
<td>Cecum with appendice orifice</td>
<td>8% (2)</td>
<td>0%</td>
</tr>
<tr>
<td>Ileocecal valve</td>
<td>4% (1)</td>
<td>8% (5)</td>
</tr>
<tr>
<td>Polyp histology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sessile serrated adenoma</td>
<td>23% (6)</td>
<td>30% (18)</td>
</tr>
<tr>
<td>Tubular adenoma</td>
<td>35% (9)</td>
<td>35% (21)</td>
</tr>
<tr>
<td>Tubular adenoma with HGD</td>
<td>8% (2)</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Tubulovillous adenoma</td>
<td>31% (8)</td>
<td>32% (19)</td>
</tr>
<tr>
<td>Tubulovillous adenoma with HGD</td>
<td>4% (1)</td>
<td>0%</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>0%</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Follow-up Rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median(range)</td>
<td>7.3 months (6–15 months)</td>
<td>7.3 months (6–66 months)</td>
</tr>
<tr>
<td>Mean (±SD)</td>
<td>8.2 months (2.6)</td>
<td>10.4 (9.1)</td>
</tr>
<tr>
<td>Colon EMR follow-up rate of 6–9 months, % (n)</td>
<td>88%, 95% (25)</td>
<td>64%, 95% (35)</td>
</tr>
<tr>
<td></td>
<td>CI [0.8%–0.94%], CI [0.54%–0.73%], (22)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: These preliminary results suggest significant improvement in SC1 compliance with our intervention. We believe that continuing these efforts and further refining the intervention process, requiring less personnel resources, may be helpful to improve the follow-up time until 3–6 months interval while also enduring as a sustainable change for our practice.

Disclosure of Interest: M.B. Wallace: Michael Wallace reports grant support from Boston Scientific, Medtronic, Cosmo pharmaceuticals, and equity interest in iLumen. Dr Wallace is a consultant to Aries Pharmaceuticals and Lumendi Inc.

References

P0214 META-ANALYSIS SUGGESTS: INSPECT TWICE TO INCREASE RIGHT COLON ADENOMA DETECTION RATE
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Introduction: Missed adenomas in the right colon are of major concern for interval colorectal cancer (CRC) development. There is evidence from cohort and randomized controlled studies (RCTs) that a second examination of the right colon – either in direct view or in retroflexion- increases the diagnostic yield of the procedure. However, data are not accepted unanimously.

Aims & Methods: The aim of this meta-analysis was to examine the effect of a second, back-to-back mucosa inspection on the diagnostic yield of colonoscopy in the ecum and the ascending colon. We performed literature searches in MEDLINE to identify studies evaluating the effect of a second pass endoscopic examination on adenoma detection rate (ADR) and advanced ADR (AADR) in the right colon. Study outcomes effect sizes were calculated using RevMan 5.3 software fixed or random effect model, as appropriate, and they are presented as OR[95% CI]. Heterogeneity was measured using the I2 statistics. Publication bias was assessed by funnel plots inspection and the quality of the meta-analyzed studies was assessed using the Jadad criteria.

Results: We identified 8 studies (5 cohort and 3 RCT, with 9 sets of data and 5639 subjects – mixed CRC screening/surveillance and symptomatic population) that reported on the aforementioned outcomes. Two sets of data examined the yield of the second direct view as compared to that of a single inspection, one set examined the cumulative yield of two passes compared to that of an extended (timely) inspection of the right colon and six sets of data evaluated the yield of the second examination of the right colon with scope retroflexion compared to that of the single direct view. We were moderate risk of bias studies; suspicion for publication bias was detected in the direct view arm of the analysis. As compared to a single pass, the second right colon inspection significantly increased ADR (1.31 [1.15–1.49], I2 = 49%). The effect size of ADR was higher in the direct view second pass arm (1.73 [1.41–2.12], I2 = 0%) as compared to the retroflexion arm (1.17 [1.06–1.29], I2 = 0%). Sensitivity analysis with removal of one study each did not identify a single study responsible for the detected heterogeneity. Our analysis did not show significant increase in right colon AADR (1.5 [0.76–1.56], I2 = 0%) after the second exam.

Conclusion: In comparison to a single pass, the second inspection of the right colon either in direct view or with scope retroflexion increases ADR in this colon segment. However, results should be interpreted cautiously due to the small number of meta-analyzed studies with mixed indications populations, and the detected moderate levels of heterogeneity and risk for bias.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Abstract No: P0215

Table 1: T1 early rectal cancer features, indications to endoscopic full-thickness resection, and follow-up.

<table>
<thead>
<tr>
<th>#</th>
<th>Rectal site</th>
<th>Endoscopic features</th>
<th>Positive Ueno’s criteria after en bloc EMR</th>
<th>Indication to EFTR</th>
<th>Pre-EFTR staging</th>
<th>Histology following EFTR</th>
<th>Follow-up after EFTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Distal</td>
<td>30 mm, Is, Kudo V, negative lifting sign</td>
<td>Tumor budding, excision margin, Kikuchi’s level, width of submucosal invasion</td>
<td>unfit for surgery (ASA IV)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS, and CT negative at 3 and 12 months; Endoscopy and EUS negative at 18 months.</td>
</tr>
<tr>
<td>2</td>
<td>Distal</td>
<td>20 mm, Is, Kudo III, negative lifting sign</td>
<td>Tumor budding, Haggitt’s level, excision margin, depth and width of submucosal invasion</td>
<td>refusing surgery (ASA II)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months</td>
</tr>
<tr>
<td>3</td>
<td>Distal</td>
<td>18 mm, Is, Kudo III, negative lifting sign</td>
<td>Haggitt’s level, excision margin, depth and width of submucosal invasion</td>
<td>refusing surgery (ASA III)</td>
<td>T0, N0</td>
<td>R0, complete submucosal resection but no muscularis propria layer in the specimen; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months</td>
</tr>
<tr>
<td>4</td>
<td>Proximal</td>
<td>0.6 mm, Is, Kudo V, negative lifting sign</td>
<td>Haggitt’s level, excision margin</td>
<td>unfit for surgery (ASA IV)</td>
<td>T1, N0</td>
<td>R0, full-thickness resection; histology positive for adenocarcinoma</td>
<td>Endoscopy, EUS and CT negative at 6 months. Patient died for severe cardiac disease at 8 months follow-up month.</td>
</tr>
<tr>
<td>5</td>
<td>Distal</td>
<td>0.7 mm, Is, Kudo IV, negative lifting sign</td>
<td>Low tumor differentiation grade, excision margin</td>
<td>unfit for surgery (ASA IV)</td>
<td>T0, N0</td>
<td>R0, full-thickness resection; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months</td>
</tr>
<tr>
<td>6</td>
<td>Distal</td>
<td>18 mm, Is, Kudo III, negative lifting sign</td>
<td>Tumor budding, excision margin, width of submucosal invasion</td>
<td>refusing surgery (ASA III)</td>
<td>T0, N0</td>
<td>R0, complete submucosal resection but no muscularis propria layer in the specimen; histology negative for residual disease</td>
<td>Endoscopy, EUS and CT negative at 6 and 12 months</td>
</tr>
</tbody>
</table>

P0216 UNTUTORED LEARNING CURVE ANALYSIS FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: PREDICTIVE FACTORS FOR COMPLEX TECHNIQUE

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4Facultad de Medicina. Universidad CEU San Pablo, Madrid/Span

Abstract No: P0216

SEX, n(%) Male (70) Female (30)
AGE, n(%) <70 years old (70) ≥70 years old (30)
SMOKER, n(%) No Yes Former smokers

CO2 insufflation, n(%) No Yes

LOCATION, n(%) Right Colon Left Colon Rectum

MORPHOLOGY, n(%) P7 (63) 5 (18.5) 5 (18.5) 55 (67.9) 17 (21) 9 (11.1) 0.932 0.342 1 1 1.05 (0.3-3.2) 0.56 (0.1-1.8)

LST-G LST-NG No LST SEVERE FIBROSIS, n(%) 16 (59.3) 9 (33.2) 2 (7.4) 36 (44.4) 43 (51.2) 2 (2.5) 0.108 0.587 1.212 (0.8-5.3) 0.44 (0.06-3.4)

NO Si

FATTY TISSUE, n(%) 14 (51.9) 13 (48.1) 75 (92.6) 6 (7.4) <0.001 11.61 (3.78-35.69) 0.039 7.42 (1.11-49.65)

Time dissection Mean, min (range) 180 (80-280) 131.9 (45-290) not applicable
was defined as that dissection that is not done en bloc and/or had complications.

Results: 112 lesions were selected, discarding 4 due to deep invasion. We evaluated in this study 108 DSE-CR, 27 (25%) of which were compatible with our definition of "complex" ESD. In Table 1 you can see the characteristics of each group. Univariate analysis showed that variables such as size over 35 mm (P <0.001), size over 45 mm (P = 0.017), 5.78 in the presence of fatty tissue in the submucosa (P = 0.035) and larger lesion size and intraprocedural bleeding requiring endoscopic control in a multivariate analysis with an odds ratio of 2.8 (95% confidence interval 1.3–6.3, p = 0.012) and 2.3 (95% confidence interval 1.0–5.2, p = 0.042 respectively (Table 1).

Conclusion: Pain after EMR occurs in 20% of patients and is associated with larger lesion size and intraprocedural bleeding requiring endoscopic control in a multivariate analysis. If pain subsides after parenteral acetaminophen and does not recur the patient can be safely and confidently discharged to the step down recovery area and after medical review allowed to leave hospital. PP despite parenteral acetaminophen heralds a more serious scenario and imaging should be considered when stronger analgesics do not relieve the pain.

Disclosure of Interest: All authors have declared no conflicts of interest.

POLYPS USING COLD POLYPECTOMY IN OUTPATIENT SETTING: RESULTS FROM CLINICAL PRACTICE DATA OF SINGLE CANCER CENTER HOSPITAL IN JAPAN
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Contact E-mail Address: k.hotta@scchr.jp

Introduction: Some high-quality, large-scale cohort studies proved removals of colorectal neoplasms achieved prevention of colorectal cancer incidence and deaths. We introduced a strategy of removing all neoplastic polyps in single session colonoscopic examinations using cold polypectomy was started.

Aims & Methods: The aim of this retrospective study was to investigate about achievement of colorectal polyp remove in our clinical practice setting. Scheduled colonoscopic examinations for 40–70 years outpatients who had at least one colorectal neoplasm between January 2015 and December 2016 were collected from our endoscopic data base. Exclusion criteria were as follows: patients who had colorectal neoplasm larger than 20 mm, pre-examination of colorectal surgery or endoscopic submucosal dissection, inflammatory bowel disease, familial adenomatous polyposis, uncontrolled malignancies, by trainee endoscopists (≤500 colonscopies), no agreements of polyp removal, and/or patients with continuation of anti-thrombotic agents. Outcome measurements were polyp removal rate (per-lesion analysis), complete polyp removal rate (per-patient analysis) and complications. Proportions of each endoscopic removal method according to size were also analyzed.

Results: A total of 2527 patients (mean age 66.8 ± 7.9 females) with 8203 colorectal neoplasms (CRNs) (7675 adenomas, 423 serrated polyps and 105 Tis and T1 cancers) who met inclusion and exclusion criteria were analyzed. Mean number of CRNs per patients was 3.2. Mean size was 4.7 (±2.9) mm. Polyp removal rate (per-lesion) and complete polyp removal rate (per-patient) were 97.0% (7955/8203) and 94.7% (2394/2527), respectively. Post-polypectomy bleeding requiring endoscopic hemostasis occurred in 7 patients (0.27%) and all origins of bleeding were mucosal bleeding (EMR) and hot snare polypectomy (HSP). Post electrocoagulation syndrome requiring admission was occurred in one patient (0.04%) after pre-cutting EMR. Mean procedure time was 27.4 (±13.3) minutes. Proportions of each endoscopic removal method according to size were presented in an attached table. In I–4 mm CRNs, both cold snare polypectomy (CSP) (51.8%) and cold forceps polypectomy (CFP) (45.8%) for 1–4 mm CRNs were main methods. In 5–9 mm CRNs, CSP was a leading method (73.8%) and EMR was the second one (24.1%). CRNs larger than 10 mm were almost removed by EMR (94.4%).
Conclusion: In our clinical practice setting, the polyp removal rates were satisfactory level in single session endoscopic examinations using cold polyectomy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. Weiland T, Fehlker M, Gottwald T, Schurr MO. Performance of the OTSC clip. Thus, even in this distal problematic site usage of a traumatic OTSC should be avoided as it carries some difficulties because of little space, tissue tension and fibrous or scarry tissue is around the nearby located to L. dentata and anal sphincter, it includes a localization with heterogeneity, because of the fistula location (rectocutaneous fistulae was found to be successful in 71% (0–100%), depending on the size of perforation, type and nature of lesion and the endoscopists’ experience1–3. However, recto-urogenital fistula may arise from a variety of etiologies and are mostly leaks or fistula of chronic nature, rarely acute perforations with vital wound tissue. They may occur in Crohn’s disease, but can also be a consequence of abdominal surgery, traumatic lesions or post-radiation damage.

Aims & Methods: To further explore the role of the OTSC in this particular type of fistula we analyzed own cases and 21 reports from the literature dealing with any type of recto-urogenital fistula. In total, 25 patients. were identified with closure of a recto-urogenital fistula using the OTSC, but there was considerable heterogeneity, because of the fistula location (rectocutaneous n = 2, rectovaginal n = 10, rectoanal n = 7, rectourethral n = 2, other rectal fistula n = 3).

Results: In most situations a previous interdisciplinary discussion was reported before an OTSC attempt, or patients refused to undergo re-operation. However, special characteristics of these leaks were reported to make more difficult the OTSC procedure compared with other GI locations, e.g. the site of the fistula is nearby located to L. dentata and anal sphincter, it includes a localization with little space for endoscopic manipulation, fibrous and scarry tissue is around the fistula in rectum or anostomosis and there may be sometimes suture material in situ. Thus, the tissue is often fixed and there is not so much tissue for grasping tissue into the OTSC.

The diagnosis of recto-urogenital fistula was usually made by endoscopic visualization and radiologically documented extravasation of contrast media into the vagina, urethra, bladder or into other adjacent tissue. For fistula closure traumatic OTSC was mostly used, but sometimes other adjuvant therapeutic modalities were also combined locally (e.g. histoacryl injection, fibrin glue, argon plasma coagulation, bruising etc) or systemically (e.g. aspirin 7.5 g i.v.) to stimulate wound healing. The procedural success of occluding various types of fistula was found to be successful in 71% (0–100%), while a durable clinical success was found in only 52% (0–100%) of all 25 patients. The success rate was lower in cases of highly heterogeneity, because of the fistula location.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Aims & Methods: To further explore the role of the OTSC in this particular type of fistula we analyzed own cases and 21 reports from the literature dealing with any type of recto-urogenital fistula. In total, 25 patients. were identified with closure of a recto-urogenital fistula using the OTSC, but there was considerable heterogeneity, because of the fistula location (rectocutaneous n = 2, rectovaginal n = 10, rectoanal n = 7, rectourethral n = 2, other rectal fistula n = 3).

Results: In most situations a previous interdisciplinary discussion was reported before an OTSC attempt, or patients refused to undergo re-operation. However, special characteristics of these leaks were reported to make more difficult the OTSC procedure compared with other GI locations, e.g. the site of the fistula is nearby located to L. dentata and anal sphincter, it includes a localization with little space for endoscopic manipulation, fibrous and scarry tissue is around the fistula in rectum or anostomosis and there may be sometimes suture material in situ. Thus, the tissue is often fixed and there is not so much tissue for grasping tissue into the OTSC.

The diagnosis of recto-urogenital fistula was usually made by endoscopic visualization and radiologically documented extravasation of contrast media into the vagina, urethra, bladder or into other adjacent tissue. For fistula closure traumatic OTSC was mostly used, but sometimes other adjuvant therapeutic modalities were also combined locally (e.g. histoacryl injection, fibrin glue, argon plasma coagulation, bruising etc) or systemically (e.g. aspirin 7.5 g i.v.) to stimulate wound healing. The procedural success of occluding various types of fistula was found to be successful in 71% (0–100%), while a durable clinical success was found in only 52% (0–100%) of all 25 patients. The success rate was lower in cases of highly heterogeneity, because of the fistula location.
Results: According to endoscopic or pathologic judgment resection was complete in 40 or 30 patients, respectively. During hospital follow-up (12–14; median 4 days) abdominal pain, fever or local peritonitis were noted in 6 and bleeding in 3 patients (hypotension in 1) with antibiotics/transfusions/surgery needed in 4/0 patients. There was no hospital mortality. Among those with histologic incomplete resection (n = 21), surgery or FTR was performed in 5 patients, endoscopic follow-up is pending in 7 and revealed no residual neoplasia in 9. Among those with cancelled ESD or endoscopic incomplete resection (n = 11), surgery or FTR was performed in 5, endoscopic follow-up is pending in 2 and revealed no residual neoplasia in 4.

Conclusion: After appropriate training, even in low volume European case series ESD in the colorectum appears to be safe and partially effective.

Disclosure of Interest: G. Kleber: Activity as tutor in ESD learning courses sponsored by Olympus Medical Systems, Hamburg, Germany
All other authors have declared no conflicts of interest.

Reference
Dessau A. et al. 2017; Virchows Arch 470:165

P0222 CLINICAL USABILITY QUANTIFICATION OF A REAL-TIME POLYP DETECTION METHOD IN VIDEOCOLONOSCOPY
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Introduction: Colorectal cancer is the second leading cause of cancer death in US [1]. Its incidence can be mitigated by detecting its precursor lesion, the polyp, before it develops into cancer. Colonoscopy is the gold standard for colon screening though some polyps are still missed. This can be explained by technical limitations of colonoscopes (camera orientation, field of view, etc.), but also by human factors (such as experience). Several computational systems, being the majority still-frame-based, have been proposed to assist clinicians in this task [2] but, to the best of our knowledge, none of them is being used in the exploration room due to not meeting real-time constraints (40 ms max per image). In this abstract, we present a methodology to adapt and evaluate a real-time still frame-based method [3] to video analysis.

Aims & Methods: The still frame detection system used as reference [3] was based on an active learning method. We base the adaptation to video analysis on two aspects: (i) influence of the type of information used for polyp candidate characterization, and (ii) introduction of spatio-temporal coherence. The former studies whether the combination of different types of information may lead to improve system performance whereas the latter fosters stability in the position and acuity in histological prediction. Despite promising results, acuity and confidence levels were lower than the thresholds recommended in guidelines (>90%). This results justify implementing additional training and monitoring.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. ACS2016 (2016) Key statistics for colorectal cancer. Online

P0223 RESECT AND DISCARD/DIAGNOSE AND DISREGARD STRATEGY FOR COLONIC POLyps: ARE WE READY TO START IT?
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Contact E-mail Address: richardazevedo13@gmail.com

Introduction: The use of Narrow Band Imaging (NBI) technology for in vivo histological prediction of colonic polyps presents high accuracy in Referral Centers, particularly for diminutive polyps, which could be managed by the “resect and discard” strategy and, for sigmoid and rectum polyps, the “diagnose and disregard” strategy. However, the applicability of this practice in Community Hospitals still needs to be determined.

Aims & Methods: We aimed to determine the accuracy of NBI in predicting histology, according to NICE and WASP classifications, in a Center without previous NBI experience. This was a prospective study including patients submitted to colonoscopy between June 2016 and July 2017. Polyps characteristics: location, size, morphology (Paris Classification), NICE/WASP classification (hyperplastic, sessile serrated, adenoma, invasive carcinoma) and degree of confidence (low: <90% vs. high ≥90%). Comparison between NBI classification and histology SPSS 23.

Results: 163 polyps included (71 patients); mean polyp dimension of 6.1 mm (61.3% ≤5 mm; 91.4% sessile polyps; 62.6% on the left colon. Polyps classification according to NICE/WASP vs. histology: hyperplastic 49.7% vs. 42.9%; sessile serrated polyps 4.9% vs. 9.8%; adenoma 44.2 vs. 43.6%; carcinoma 1.2 vs. 0%; inflammatory reaction on histology ~ 3.7%. Adenoma diagnosis using NICE/WASP classification presents an accuracy, sensitivity, specificity, positive predictive value and negative predictive value of 80.9%, 78.1%, 84.2%, 85% and 77.1%, respectively. For left colon ≤5 mm (n = 61) the accuracy and negative predictive value were of 81.2% and 82.3%, respectively, with 79.4% high confidence classifications. Multivariate analysis showed that high confidence predictions and ≥3 polyps/exam had a significant association with correct NBI classification (p < 0.05).

Conclusion: NBI utilization by inexperienced endoscopists presented moderate acuity in histological prediction. Despite promising results, acuity and confidence levels were lower than the thresholds recommended in guidelines (>90%). These results justify implementing additional training and monitoring.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Introduction: Cold forces polypectomy (CP) is commonly used to remove diminutive colorectal polyps (<5mm). In addition, jumbo biopsy forceps are superior to standard forceps for removing colorectal polyps. However, problems remain for CP with regard to residual adenomatous tissue on histological evaluation after a complete endoscopic cold forceps polyp resection.

Aims & Methods: The aim of this study was to evaluate the efficacy and safety of jumbo forceps biopsy using narrow-band imaging in patients with diminutive polyps. In addition, we evaluated the factors related to one-bite resection of lesions. The present prospective, single-institutional study was performed at 11 institutes of the National Hospital Organization between January 2015 and September 2016. Patients aged 20 to 75 years with diminutive polyps were enrolled in this study. When lesions were found, we used magnification endoscopy (narrow-band imaging (NBI)) in all the cases. CFP was performed until no polyps were visible under magnified endoscopy with NBI. We evaluated the patients’ characteristics, clinicopathological features of the polyps, adverse events, and complete resection rates of the lesions. Additionally, we studied the factors related to one-bite resection using CP's method.

Results: A total of 503 patients were prospectively assessed, and 1015 polyps were resected. The median age of the patients was 65 years. The patients comprised 329 men (65%) and 174 women (35%). The polyp morphologies were 0-Is lesions in 886 cases (87.7%) and lesions in 65 (6.4%); 0-IIp lesions in 63 (6.2%) and 0-Ip lesions in 1 (0.1%). Polyps were most often resected in the ascending colon (289 lesions) or transverse colon (262 lesions). Of all the polyps, 88% (896 lesions) were adenomas, 10% (100 lesions) were hyperplastic, and 0.3% were adenoscarcinomas. The mean procedure and treatment times were 26.5 and 20.4 min, respectively. The complete resection rate was 99.3%. The rate of one-bite polypectomy was 71.8%, which included rates of 100%, 91.5%, 81.8%, 56.9%, and 40.5% for lesions 1, 2, 3, 4, and 5 mm in diameter, respectively. Delayed bleeding that required endoscopic hemostasis occurred in only one case, but no other adverse events occurred. The most important factor related to one-bite polypectomy was polyp size (≤5 mm; OR: 5.58), followed by macroscopic type of polyps (non-Ha; OR: 3.95).

Conclusion: In this large-scale multicenter prospective study, 99.3% of all diminutive polyps were completely resected by using jumbo forceps biopsy and magnified endoscopy with NBI. In addition, we were able to do one-bite polypectomy for more smaller polyps (≤3 mm). Jumbo forceps biopsy appears to be adequate for resecting diminutive polyps if no residual tissue is visible by using magnified endoscopy with NBI.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Introduction: Colorectal cancers are generally recognized to develop from“poly- pse” of adenoma-carcinoma sequence theory has been in the mainstream of development of colorectal cancers. But recently the existence of many depressed-type cancers has been revealed, which are considered to emerge directly from normal epithelium, not through the adenomatous stage. This theory is called “de novo” pathway. Now, it is possible to presume the histology of colorectal lesions using magnifying endoscopy(pit pattern classification) and endocytoscopy(EC classification). We can observe not only the structural atypia but also the cellular atypia in living colorectal lesions.

Aims & Methods: The aim is to clarify the endoscopic characteristics of depressed-type colorectal neoplasms demonstrating the validity of pit pattern diagnosis and EC classification. A total of 29,030 colorectal neoplasms excluding advanced cancers were resected endoscopically or surgically in our unit from April 2011 to December 2017. Of these, 17,763 lesions were low-grade dysplasia, 2922 were high-grade dysplasia and 1077 were submucosal invasive (T1) carcinomas. According to the developmental morphology classification, they were divided into 3 types: depressed, flat and protruded-type. We investigated the rate of T1 carcinomas and the characteristics of depressed-type neoplasms concerning pit pattern and EC classification.

Results: The rate of T1 carcinomas in depressed-type lesions reached to 62.0%, meanwhile that in flat-type and protruded-type lesions was 3.3% and 2.8%, respectively. In addition, within 5 mm in diameter, that was 10.6%, 0% and 3.3% respectively. Most (93.0% and 93.1%) of the flat-type and protruded-type lesions were classified as EC2 corresponding to adenomas. In contrast, the depressed-type lesions were observed as EC3a (38.9%) and EC3b (58.0%) corresponding to invasive carcinomas.

Conclusion: This study revealed the diagnostic characteristics of depressed-type cancers. They show typically type IIS, VI or VN pit patterns in magnifying
endoscopy and type EC3a or EC3b in endoscopy. These lesions tend to involve the mucosal layer even when they are small. Therefore, it is important to consider deeply and examine the development morphology of colorectal neoplasms.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

### TABLE 1: DETECTION RATES BY INDICATION

<table>
<thead>
<tr>
<th>ADR</th>
<th>% (n)</th>
<th>OR (95% CI)</th>
<th>p-value</th>
<th>aOR? (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-polypotomy surveillance</td>
<td>49.3 (629/1275)</td>
<td>2.2 (2.2-2.9)</td>
<td>&lt;0.001</td>
<td>2.2 (1.9-2.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FIT+</td>
<td>54.0 (928/1718)</td>
<td>3.0 (2.7-3.4)</td>
<td>&lt;0.001</td>
<td>3.0 (2.6-3.4)</td>
<td>0.001</td>
</tr>
<tr>
<td>Direct screening</td>
<td>31.6 (174/550)</td>
<td>1.2 (1.0-1.5)</td>
<td>0.058</td>
<td>1.4 (1.1-1.7)</td>
<td>0.005</td>
</tr>
<tr>
<td>Digestive symptoms</td>
<td>28.0 (79/2832)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADR</td>
<td>5.4 (15/275)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
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<tr>
<td>Post-polypotomy surveillance</td>
<td>4.2 (53/1275)</td>
<td>3.5 (2.6-5.3)</td>
<td>&lt;0.001</td>
<td>3.4 (2.2-5.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FIT+</td>
<td>1.9 (32/1718)</td>
<td>1.5 (0.9-2.5)</td>
<td>0.091</td>
<td>1.5 (0.9-2.5)</td>
<td>0.094</td>
</tr>
<tr>
<td>Direct screening</td>
<td>3.3 (18/550)</td>
<td>2.7 (1.5-4.8)</td>
<td>&lt;0.001</td>
<td>2.8 (1.6-5.0)</td>
<td>0.001</td>
</tr>
<tr>
<td>Digestive symptoms</td>
<td>1.2 (35/2832)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AADR</td>
<td>23.1 (294/1275)</td>
<td>2.0 (1.7-2.4)</td>
<td>&lt;0.001</td>
<td>1.8 (1.5-2.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Post-polypotomy surveillance</td>
<td>36.8 (632/1718)</td>
<td>4.0 (3.4-4.6)</td>
<td>&lt;0.001</td>
<td>3.9 (3.3-4.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Direct screening</td>
<td>14.9 (82/550)</td>
<td>1.2 (0.9-1.5)</td>
<td>0.177</td>
<td>1.3 (1.1-1.8)</td>
<td>0.023</td>
</tr>
<tr>
<td>Digestive symptoms</td>
<td>12.8 (362/2832)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRCRD</td>
<td>5.8 (165/2832)</td>
<td>1.3 (1.5-2.9)</td>
<td>&lt;0.001</td>
<td>1.1 (1.5-2.8)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

(continued)

**TABLE 1 Continued**

<table>
<thead>
<tr>
<th>ADR</th>
<th>% (n)</th>
<th>OR (95% CI)</th>
<th>p-value</th>
<th>aOR? (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT+</td>
<td>4.8 (83/1718)</td>
<td>10.7 (4.7-24.7)</td>
<td>0.001</td>
<td>13.4 (5.4-33.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Direct screening</td>
<td>1.8 (10/550)</td>
<td>3.9 (1.4-10.3)</td>
<td>0.009</td>
<td>5.1 (1.1-16.5)</td>
<td>0.005</td>
</tr>
<tr>
<td>Post-polypotomy surveillance</td>
<td>0.5 (6/1275)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p-value:** significance level; **aOR:** adjusted Odds Ratio

**Conclusion:** The indication of colonoscopy has a very important influence on the different quality indicators such as detection rates of lesions.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

### P0228 THERAPEUTIC ERCP USING A SHORT SINGLE-BALLOON ENTEROSCOPE IN PATIENTS WITH SURGICALLY ALTERED ANATOMY

**K. Masu, K. Ito, T. Ohira, S. Koshita, Y. Kanno, T. Ogawa**

**Introduction:** Recently, we have performed therapeutic ERCP using a newly developed short single-balloon enteroscope (sSBE) (working length of 152 cm, working channel of 3.2 mm) in patients with surgically altered anatomy.

**Aims & Methods:** We aimed to evaluate the usefulness and safety of sSBE for therapeutic ERCP in patients with surgically altered anatomy, and to assess the characteristics of patients with surgically altered anatomy who underwent therapeutic ERCP using a sSBE before August 2011 and February 2017 were included in this study. Patient anatomy consisted of Roux-en-Y anastomosis (R-Y) (n = 82), heptacolo- liotasis (n = 46), total or partial gastrectomy (n = 11), subtotal filling defects, 31 (45.6%) with difficult bile stones, and 4 (5.9%) with cystic ductal filling defects, 31 (45.6%) with difficult bile stones, and 4 (5.9%) with cystic ductal filling defects.

**Results:** The success rate of reaching the target site was 91.5% (95/104), and the overall technical success rate was 79.0% (80/104). Biliary interventions included 64 stone extraction (R-Y 58, HJ 5, SSPPD 1), and 12 metallic biliary stent placement (R-Y 7, HJ 1, SSPPD 4). Of 17 unsuccessful cases, nine with choledocholithiasis underwent surgical operation (R-Y 6, HJ 2, SSPPD 3) and EUS-guided drainage was successfully performed in six with anastomotic stenosis (SSPPD 3, R-Y 2, HJ 2). The success rate of reaching the target site was 91.5% (95/104), and the adverse event rate was retrospectively evaluated.

**Results:** The success rate of reaching the target site was 91.5% (95/104), and the overall technical success rate was 79.0% (80/104). Biliary interventions included 64 stone extraction (R-Y 58, HJ 5, SSPPD 1), and 12 metallic biliary stent placement (R-Y 7, HJ 1, SSPPD 4). Of 17 unsuccessful cases, nine with choledocholithiasis underwent surgical operation (R-Y 6, HJ 2, SSPPD 3) and EUS-guided drainage was successfully performed in six with anastomotic stenosis (SSPPD 3, R-Y 2, HJ 2). The success rate of reaching the target site was 91.5% (95/104), and the adverse event rate was retrospectively evaluated.

**Conclusion:** The success rate of reaching the target site was 91.5% (95/104), and the overall technical success rate was 79.0% (80/104). Biliary interventions included 64 stone extraction (R-Y 58, HJ 5, SSPPD 1), and 12 metallic biliary stent placement (R-Y 7, HJ 1, SSPPD 4). Of 17 unsuccessful cases, nine with choledocholithiasis underwent surgical operation (R-Y 6, HJ 2, SSPPD 3) and EUS-guided drainage was successfully performed in six with anastomotic stenosis (SSPPD 3, R-Y 2, HJ 2). The success rate of reaching the target site was 91.5% (95/104), and the adverse event rate was retrospectively evaluated.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Aims & Methods: Langiopancreatography (ERCP) in patients with surgically altered gastrointestinally and in pediatric patients.
Aims & Methods: To evaluate the indications, success rate, diagnostic and therapeutic yields, and complications of ERCP performed in Chinese children. A retrospective study was conducted in an academic, tertiary care, medical center, in which all children undergoing ERCP between 2005 to 2016 were identified from endoscopy databases. Data on demographics, indication, ERCP findings, ERCP interventions performed, and complications were collected.

Results: A total of 288 children (mean age 9.3 years, range 1 month to 18 years) underwent 312 ERCP procedures. General anesthesia and sedation were performed in 48% and 52% of procedures, respectively. Indications for ERCP were common bile duct obstruction (n=153, 54.2%), recurrent or chronic pancreatitis (n=64, 22.2%) and others. ERCP was successfully performed in 267 of 288 cases (92.7%). The most common ERCP findings was choledocholithiasis (n=146, 50.7%). A therapeutic intervention was performed in 70.8% patients (n=204), including sphincterotomy (n=97), stone extraction (n=55), and stent insertion (n=52). Complications occurred for only 13 patients (4.5%), including 12 cases of post-ERCP pancreatitis and 1 case of bleeding. No severe pancreatitis, or perforation was noted.

Conclusion: Diagnostic and therapeutic ERCP is effective and safe in the children population, with the high rates of technical success and low rates of complication.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0323 IMPACT OF HIGH DEFINITION, NEAR FOCUS-IMAGING AND SYNDY RECURRER CE TOOL (SERT) AFTER COLORECTAL ENDOSCOPIC MUCOSAL RESECTION: A PROPENSITY SCORE ANALYSIS

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Contact E-mail Address: daniela.guerrero@mayo.edu

Introduction: Risk factors for colorectal adenoma recurrence after Endoscopic Mucosal Resection (EMR) such as size $\leq$20mm, high grade dysplasia, use of argon plasma coagulation (APC) and intraprocedural bleeding (IPB), have been well documented in literature. However, it is unknown if the latest generation dual-focus (DF) colonoscopes ability to visualize subtle residual neoplasia, has improved the rate of complete EMR.

Aims & Methods: We aimed to determine if the efficacy of the newer 190 colonoscopes versus standard 180 colonoscopes for complete resection of lateral spreading lesions (LSL) $\leq$20mm. A secondary aim was to identify risk factors for recurrence and the applicability of the Sydney EMR recurrence tool (SERT score) in our cohort.

This was a single-center retrospective study of patients who underwent EMR with 180 or 190 colonoscope series from 2010 to 2016. Lesions $\geq$20mm resected in a piecemeal fashion and patients with a surveillance colonoscopy after index EMR were included. A propensity score approach with inverse probability weighting (IPW) was used to control potential confounders affecting adenoma recurrence. Each lesion was graded according to SERT score and associations with recurrence were analyzed.

Results: 291 patients met inclusion criteria for the study. The rate of adenoma recurrence at the EMR site was 23.3% for the 180 colonoscope cases and 25.2% for the 190 colonoscope cases. Odds ratio (OR) for recurrence with 190 series was 1.06 (p = 0.85). Adenoma size (p = 0.002) and concomitant need for supplemental APC (p = 0.001) were risk factors for recurrence. SERT $>$0 lesions had a higher risk of recurrence during follow-up (OR 1.71; 95% CI 1.00–2.92; p = 0.048) and a higher cumulative incidence for recurrence. Conversely, SERT = 0 lesions reached a plateau for recurrence after 12 and 18 months in Kaplan Meier curves. Odds ratio estimates for 190 colonoscope effect on adenoma recurrence at different stages of adjustment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0231 EMERGENCY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAHY IN PATIENTS WITH SURGICALLY ALTERED GASTROINTESTINAL ANATOMY: 11 YEARS’ EXPERIENCE AT A LARGE CENTER IN CHINA

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Introduction: It is technically challenging to perform emergency endoscopic retrograde cholangiopancreatography (ERCP) in patients with surgically altered gastrointestinal anatomy.

Aims & Methods: The aims of this study were to investigate the yield, efficacy and safety of ERCP in surgically altered anatomy patients at a single tertiary-care center with a high volume of endoscopy. All patients with altered surgical anatomy were reviewed, and indication at our center from September 2005 to July 2016 were retrospectively reviewed. Data regarding to patients baseline characteristics, procedure-related details and adverse events were recorded and analyzed.

Results: A total of 304 procedures were performed in 236 patients, including 108 procedures with Billroth II gastrectomy, 45 cases (19.1%) with Billroth I gastrectomy, 52 cases (22.0%) with hepaticoduodenostomy, 18 cases (7.6%) with esophagogastrectomy and 13 cases (5.5%) with Roux-en-Y reconstruction.

Conclusion: ERCP can be performed in surgically altered anatomy patients with a high success rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0232 INCIDENCE AND RISK FACTORS FOR PANCREATITIS IN EMERGENCY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: A PROSPECTIVE MULTICENTER STUDY


Conclusion: In this study, recurrence was significantly associated with adenoma size and complementary use of APC for EMR. The use of the latest generation DF colonoscopes (CF-HQ190L/I) did not measurably affect adenoma recurrence at the EMR site during first surveillance colonoscopy (SC1). Lesions with SERT $>$0 were associated with higher recurrence rates. In our cohort, SERT $>$0 lesions that remain negative for recurrence at 18 months, may return to routine surveillance.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0230 DIAGNOSTIC AND THERAPEUTIC ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) IN INFANT AND CHILDREN: A LARGE RETROSPECTIVE STUDY

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Department Of Gastroenterology, Hangzhou First People’s Hospital, Nanjing Medical University, Hangzhou/China

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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is increasingly being used in the diagnosis and management of biliary and pancreatic ductal disorders in pediatric patients.

Aims & Methods: To evaluate the indications, success rate, diagnostic and therapeutic yields, and complications of ERCP performed in Chinese children. A retrospective study was conducted in an academic, tertiary care, medical center, in which all children undergoing ERCP between 2005 to 2016 were identified from endoscopy databases. Data on demographics, indication, ERCP findings, ERCP interventions performed, and complications were collected.

Results: A total of 288 children (mean age 9.3 years, range 1 month to 18 years) underwent 312 ERCP procedures. General anesthesia and sedation were performed in 48% and 52% of procedures, respectively. Indications for ERCP were common bile duct obstruction (n=153, 54.2%), recurrent or chronic pancreatitis (n=64, 22.2%) and others. ERCP was successfully performed in 267 of 288 cases (92.7%). The most common ERCP findings was choledocholithiasis (n=146, 50.7%). A therapeutic intervention was performed in 70.8% patients (n=204), including sphincterotomy (n=97), stone extraction (n=55), and stent insertion (n=52). Complications occurred for only 13 patients (4.5%), including 12 cases of post-ERCP pancreatitis and 1 case of bleeding. No severe pancreatitis, or perforation was noted.

Conclusion: Diagnostic and therapeutic ERCP is effective and safe in the children population, with the high rates of technical success and low rates of complication.

Disclosure of Interest: All authors have declared no conflicts of interest.

Model Odds Ratio Lower 95% CI Upper 95% CI P-value

<table>
<thead>
<tr>
<th>Model</th>
<th>Odds Ratio</th>
<th>Lower 95% CI</th>
<th>Upper 95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPW adjustment- piecemeal resection only</td>
<td>1.06</td>
<td>0.60</td>
<td>1.86</td>
<td>0.85</td>
</tr>
</tbody>
</table>

CI: Confidence intervals; IPW: Inverse probability weighting; SERT: Sydney Recurrence tool; SC1: First surveillance colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0222 A241
Disclosure of Interest: 

normal saline was used for intra-procedural irrigation and consequently underwent necrosectomy. The conventional technique using a diag- 

nostic and therapeutic ERCPT at five Japanese institutions between April 2015 and May 2016. Exclusion criteria were active pancreatitis, choledochal 

chojunenotum, inability to approach a papilla, and inspection aimed at only the 

pancreatic duct (PD). Emergency ERCPT indicated unscheduled inspections 

performed within and outside daily hours in this study. PEP was considered when 

two of the following three conditions were met: (1) serum amylase level more 

than three times the upper limit of the normal range in each institution, (2) 

continuous abdominal pain for over 24 hours, and (3) presence of pancreatitis 

findings on computed tomography. The first study involved comparison of the 

incidence of PEP and its characteristics between emergency and elective ERCPT. 

The second study involved determining the predictive risk factors for PEP in 

emergency ERCPT using univariate and multivariate analyses.

Results: A total of 1677 cases were enrolled in this study. Study 1: PEP 

developed in 20 of 429 cases (4.7%) from the emergency group and in 101 of 

1248 cases (8.1%) from the elective group. The incidence of PEP was significantly 

lower in the emergency group than in the elective group (odds ratio [OR]: 0.56, 

95% confidence interval [CI]: 0.32–0.92, P = 0.017). Endoscopic sphincterotomy, 

stone removal, papillary balloon dilation, and intra-ductal ultrasonography 

were performed significantly more often in the elective group than in the 

emergency group (P < 0.001). Placement of a biliary stent was significantly more 

common in the emergency group than in the elective group. In addition, the 

procedure time was significantly longer (P < 0.001) and the number of endosco- 
pists who had more than five years of experience was significantly higher 
(P = 0.04) in the elective group than in the emergency group. <Study 2> 
Carla C with no naive papilla (n = 183) were excluded from the analysis of risk 

factors for PEP because no PEP was observed in these cases. Only cases with 
native papilla (n = 248) were analyzed. Univariate analysis showed that contrast 

injection into the PD (OR: 4.20, 95% CI: 1.64–10.80, P = 0.0028) increased and place- 
ment of a biliary stent (OR: 0.028, 95% CI: 0.011–0.88, P = 0.028) decreased the 

risk of PEP in emergency ERCPT.

Conclusion: The incidence of PEP was lower in emergency ERCPT than in elec- 
tive ERCPT, and it was largely unaffected by the endoscopist’s experience and 
the procedure time. This may be associated with a tendency to avoid invasive pro-
cedures as early as possible to prevent it from developing CP. Unfortunately, to date, most 

PEP-related studies have been concentrated on adults. Researches of PEP in chil-

dren is rare.

Aims & Methods: To evaluate the safety and efficacy of endoscopic retrograde 
cholangiopancreatography (ERCPT) for the treatment of pancreas divisum 
(PD) associated with recurrent acute pancreatitis (RAP) in children. We retro-
spectively analyzed patients of PD associated with RAP who were younger 
than 18 years old from January 2011 to December 2015 in our center. All the 

patients were diagnosed and treated with ERCPT. Patients of complete PD 
association with RAP under the age of 18 years were identified. A total of 257 

pediatric ERCPs were performed for these cases. All procedures were successful with 
100% (21/21) of cannulation rate of the minor papilla. The mean interval of 

cannulation attempts (OR: 2.85, 95% CI: 1.00–8.09, P = 0.028) increased and place-
ment of a biliary stent (OR: 0.028, 95% CI: 0.011–0.88, P = 0.028) decreased the 

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cedures as early as possible to prevent it from developing CP. Unfortunately, to date, most 

PEP-related studies have been concentrated on adults. Researches of PEP in chil-
dren is rare.
1. The overall rate of biliary stent insertion was not significantly different: 384/392 excluded leaving 6 prospective studies (total of 711 patients).

2. The bleeding was significantly different in patients without EBS: 0/351 of patients in no-EBS group versus 15/298 (5%) in the EBS group (OR: 0.12; 95% CI: 0.03–0.68–2.59). The bleeding was significantly different in patients with EBS: 0/351 of patients in no-EBS group versus 15/298 (5%) in the EBS group (OR: 0.12; 95% CI: 0.03–0.45). The rate of duodenal perforation was not significantly different: 1/320 (0.3%) in no-EBS versus 4/260 (1.5%) in EBS (OR: 0.52; 95%CI: 0.03–0.45). Early cholangitis was significantly less frequent in patients who didn’t receive EBS: 13/392 (3.3%) patients in no-EBS group vs 25/339 (7.4%) subjects in the EBS group (OR: 0.38; 95% CI: 0.17–0.83). Early mortality rate was 0% in both groups. Late complications: No significantly difference occurred in the overall adverse events in the two groups: 50/251 patients (19.9%) in no-EBS group vs 38/201 subjects (18.9%) in the EBS group (OR: 0.93; 95% CI: 0.56–1.53). No significantly differences in stent occlusion (11.6% in no-EBS vs 11.1% in EBS group). The difference in the rate of late complications was more frequent in patients controls (82.3%) compared to PAD group (71.4%vs 33.1% (p = 0.05). PAD predominantly occurred in patients without EBS and was found in 7 pts (14.3%), Type ll (at edge/brim) in 34 pts (69.4%), Type lll (within the cyst wall) in 1 pt (2%), Type lV (bulging) in 2 pts (4.1%), and Type lVb (cystic duct) in 1 pt (2%). No significant differences in stone migration (4%) in no-EBS group vs 5.5% - (OR: 0.81; 95% CI: 0.29–2.25). No significantly differences in late cholangitis (2.6%) in no EBS vs 0% in EBS group - (OR: 1.83; 95% CI: 0.17–19.85). Long-term mortality was not significantly different between 1.5% in no-EBS group and 2.9% in the EBS group - (OR: 1.18; 95% CI: 0.23–6.29).

Conclusion: Our meta-analysis showed no significant differences in technical success and in PEP. In consideration of the significantly increase of the overall adverse events with biliary stenting, the EBS seems not be recommended in patients not suitable to surgery undergone biliary stenting.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
References

P0239 COMPARISON OF DIGITAL VS FIBEROPTIC CHOLANGIOSCOPY IN PATIENTS REQUIRING EVALUATION OF BILE DUCT OR TREATMENT OF BILIARY STONES
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Introduction: Since the emergence of the fiberoptic single-operator cholangioscopy, the sensitivity for detecting bile duct lesions has been increased and the management of difficult stones is facilitated, establishing its superiority over standard endoscopic retrograde choledangiopancreatography and often altering the clinical management. Digital cholangioscopes provide higher-resolution imaging of the pancreatobiliary tract compared with the fiberoptic instruments.
Aims & Methods: The aim of the present study was to assess the frequency of digital cholangioscopy (DC) to alter the diagnosis and clinical management of bile duct disease compared with fiberoptic cholangioscopy (FC). A retrospective review of 68 cases needing cholangioscopy, and which were performed in our department, were included. Patients enroled exhibited stenosis of the biliary tract (67.6%), stones (20.6%), primary sclerosing cholangitis (PSC 4.4%) or other rare cause for cholangioscopy (e.g. stent migration, guidewire passage). All patients underwent endoscopic retrograde cholangiography (ERC) before cholangioscopy. Aim of cholangioscopy was to confirm ERC diagnosis, obtain adequate biopsy specimens for histological evaluation and remove biliary stones. From 5/2009 to 8/2015 all cholangioscopies were performed with the fiberoptic scope. From 9/2015 to 3/2017 all cholangioscopies were performed with the digital scope.
Results: 30 women and 38 men with a mean age of 61 years underwent cholangioscopy. Fibreropic cholangioscope was used in 39 cases and digital cholangioscope was performed in 29 cases respectively. Cholangioscopy-guided biopsies for malignancy were obtained in 11 and 15 cases respectively. In only one case of FC (9.1%) biopsy confirmed the endoscopic diagnosis, in contrast with 10 cases of DC-guided biopsies (66.7%) confirming the diagnosis. In 13 patients who underwent DC (44.8%) the initial diagnosis and clinical management was altered after cholangioscopy (e.g. cancer diagnosis, successful EHL lithotripsy), in contrast with 11 cases of FC (28.2%). Moreover it was unanimously felt by our staff that DC was an easier procedure compared to FC.
Conclusion: Our data suggest that DC has the advantage of improving the fiberoptic technique, provides increased sensitivity and specificity for visual impression diagnosis of malignancy and successful therapy of biliary stones. Moreover DC has the ability to alter more often the initial ERC diagnosis or management compared to FC and produces a new sophisticated and easy to use equipment.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0240 EMERGENCY ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN SUPER-ELDERLY PATIENTS WITH SEVERE ACUTE CHOLANGITIS: CAN WE PERFORM THE PROCEDURE SAFELY?
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Introduction: Tokyo Guidelines 2013 (TG13) have been used worldwide to assess the diagnostic criteria and severity grading of acute cholangitis. Acute cholangitis is a life-threatening disease, and the emergency biliary drainage procedure is necessary for moderate or severe cases, according to TG13, with an aging society, necessity to perform endoscopic retrograde cholangiopancreatography (ERC) in elderly patients is increasing. However, few studies have examined the efficacy and safety of emergency ERC in super-elderly patients.
Aims & Methods: In this study, we examined the efficacy and safety of emergency ERC in super-elderly patients with moderate to severe acute cholangitis, according to TG13. We performed 178 emergency ERC procedures in 132 patients during 3 years (June 2014–December 2016). We determined patients >90 years as “super-elderly” and those <90 years as “non-super-elderly”.
Evaluation criteria included comorbidities, oral administration of anticoagulants, cause of cholangitis, ERC procedure (examination time, endoscopic biliary sphincterotomy (EST) pre-cut papillotomy, treatment success rate, presence or absence of peripapillary diverticula and papilla after EST, seditation dosage), ERC-related complications (bleeding, perforation, post-ERC pancreatitis, ERC pneumonia, death within 30 days after ERC procedure), anesthesiology-related complications (blood pressure decrease, pulse reduction, respiratory depression).
Results: We examined 69 males (52.3%) and 63 females (47.7%). Women accounted for a larger proportion in the super-elderly group (71% vs 40%). The average age was 92.5 years (range, 90–97) in the super-elderly group and 77.9 years (range, 50–89) in the non-super-elderly group. The super-elderly group comprised 54 ERC procedures (moderate, 32; severe, 22) against 124 ERC procedures (moderate, 104; severe, 20) in non-super-elderly group. In the super-elderly group, there were no differences observed in the super-elderly group (12% vs 5%), but no difference was found. In the super-elderly group (9% vs 12%) and benign stenosis (0% vs 5%), but no difference was found.
Regarding ERC procedure, the procedure time was longer in the super-elderly group (35.7 ± 28.1 min vs 29.2 ± 24.0 min, p = 0.044), but there was no difference in the procedure success rate (93% vs 97%, p = 0.249) and the presence of peripapillary diverticula. The patients were sedated using midazolam (MDZ) plus pentazocine (PTZ). The amount of antiplatelet improvement was less in the super-elderly group (MDZ 2.2 ± 3.3 mg, p < 0.001, PTZ: 3.1 ± 5.4 mg, p = 0.005). Regarding (i) ERC-related and (ii) anesthesiology-related complications, these were higher in the super-elderly group (i) 15% vs 9%, p = 0.293, (ii) 17% vs 7%, p = 0.004).
Disclosure of Interest: All authors have declared no conflicts of interest.

P0241 EFFICACY AND SAFETY OF ENDOBILIARY RADIOFREQUENCY ABLATION FOR THE ERADICATION OF RESIDUAL NEOPLASIA AFTER ENDOSCOPIC AMPULLECTOMY. RESULTS OF A MULTICENTER PROSPECTIVE STUDY
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Introduction: Dysplasia may persist at the termination of the common bile duct (CBD) after endoscopic ampullectomy. Radiofrequency ablation (RFA) could be an interesting alternative to surgery to reduce the risk of invasive cancer with less morbidity and mortality.
Aims & Methods: The aim of the study was to evaluate the efficacy and morbidity of endo-biliary RF for the treatment of residual endo-biliary dysplastic lesions after endoscopic ampullectomy. A prospective open-label multicenter study
included 20 patients with low-grade dysplasia (DBG) or high grade (DHG) lesions confirmed by a double blind endonaphathological lecture, in relation to a residual adenomatous bud after endoscopic ampullectomy for ampullary adenoma. The lesions should extend to a maximum length of 20 mm in the CBD. Endoscopic retrograde cholangio-pancreatectomy (ERCP) was performed with the HSt™ EndoHPB probe (EMcision, UK) (eff 8, power 10Watts, 30 s). Biliary + pancreatic stents were placed at the end of the procedure. The primary endpoint was the rate of residual neoplasia (eg, DBG, DHG or invasive carcinoma) at 1 year after treatment. Secondary endpoints were residual neoplasia at 6 months after treatment; 2) rate of surgery at 12 months; 3) adverse events.

Results: The mean age (±SD) was 67 years (±11), with 12 men and 8 women. RFA was performed on average (±SD) 1.9 years (±3.5) after ampullectomy. The mean resected ampullary adenoma size (±SD) was 24.9 mm (±10.2), and 7 patients had adjacent duodenal mucosectomy at the time of ampullectomy. The histology of the resected ampullary adenoma was DBG for 7 patients, DHG for 12 patients, and in situ carcinoma for 1 patient. Lateral margins were judged to be negative in 32 patients (80%). CBD recurrence was diagnosed predominantly on ERCP and/or endoscopic ultrasonography surveillance procedures with an estimated mean infiltration height (±SD) of 11.2 mm (±4.5). The passage of the RFA probe was judged to be easy in 100% of cases with visibility of the radio-paque markers judged satisfactory to very satisfactory in 80% of the cases. All patients included had RFA without any technical problems. All patients had biliary stent (4 SEMS 10 mm, 16 plastic stents 10 French) implanted following RFA and 5 (25%) had a pancreatic stent. The residual rate of DBG, DHG, invasive carcinoma at 6 months and at 12 months after treatment were 25% (5/20, DBG, carcinoma) and 45% (9/20, DBG, carcinoma) respectively. The adverse events were as follows: 4 benign pancreatitis all medically treated, 2 procedures had angioplasty requiring biliary stent replacement. 1 patient had an episode of unexplained spontaneously resolved abdominal pain (normal CT scan, colonoscopy and biological tests). At M12, one patient presented with a biliary stricture resolved by dilation and a calibration biliary stent.

Conclusions: Further studies are needed to evaluate the endo-biliary dysplastic buds after ampullectomy is an alternative to surgery, with a rate 55% dysplasia eradication at 12 months after a single RFA session. Regular monitoring of these patients is still necessary considering recurrence rate. Multiple RFA sessions may be proposed in case of incomplete results.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: There were cases of 1223 naive papilla out of 2226 cases in total. The success rate to access BD with naive papilla was 97.5% (1195/1223) and overall post-ERCP pancreatitis (PEP) was 1.3% (29/2226). The eligible patients were 908 (505 male and 403 female), among whom IAC was identified in 6.0% (54/908). The prevalence of IAC in the L/N, D and F types were 5.9% (48/842), 1.2% (4/330) and 0.7% (2/264) respectively. IAC was significantly higher in the L/N (p < 0.01) and F (p < 0.05) types than in the D type. The choledochocele shapes of Sh, Sh and Od were 59.3%, 13.0%, 27.8%, respectively. The average size was 8.1 mm (3.7–18.3) in diameter. The location of IAC in Ac and Ab were 60% and 40%. In Ac, IAC was found in LN shape only. Patients of 53.7% (29/54) required GW placement on PD to access BD. IAC was alternately seen on MRCP in 10%(3/30).

Conclusion: Choledochoele is rarely seen on even cERC, in addition the visually seen on MRCP in 10%(3/30).


Reference

P2045 ENDOTHERAPY FOR DUCT-TO-DUCT BILIARY ANASTOMOSTIC STRICTURE AFTER LIVER TRANSPLANTATION (BASALT STUDY GROUP): INTERIM ANALYSIS AND MEDIUM-TERM OUTCOMES OF A RETROSPECTIVE NATIONWIDE ITALIAN SURVEY

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Introduction: Most appropriate endotherapy of biliary anastomostic strictures (AS) remains to be defined.

Aims & Methods: Aim is to retrospectively report the endotherapy for duct-to-duct AS in 2013, procedure related complications and medium-term outcome results in Italy. A questionnaire was sent to the Endoscopy Units working with Italian Liver Transplantation Centers (BASALT study group).

Results: At present sixteen of the 19 Units (84%) returned the questionnaire. Complete endotherapy data and follow-up are available for 182 pts. One-hundred and two patients have been treated with plastic multistenting (PM), 27 with fully covered SEMS and 53 with single stenting (SS). Radiological success was achieved in 144 pts (79%), i.e. 86% of PM, 89% of fully covered SEMS and 60% of SS (p < 0.01 vs PM). Recurrence occurred in 31 pts, i.e. 21% of pts in whom radiological success was achieved: 11% of PM (p < 0.0001 vs SEMS and p < 0.05 vs SS), 41% of fully covered SEMS and 17% of SS. After failure of first-line endotherapy (36) or recurrence (31), patients were re-treated with endotherapy (75%), surgery (21%) or percutaneous balloon dilation (7%), one patient dropped out because of death unrelated to endotherapy. Second-line endotherapy was PM for 26%, fully covered SEMS for 52% and SS for 22% of pts and radiological success was achieved in 82% of them (in 86%, 89%, and 66% with PM, SEMS and SS respectively). Procedure-related complications occurred in 7.8% (51/66), i.e. 2.6% pancreatitis (1 severe leading to death), 4.1% cholangitis and 0.9% bleeding. Overall clinical success was achieved in 85% after a median f-up of 25 mos and no need of surgery in 92% of patients.

Conclusion: Endotherapy is confirmed as the preferred first-line and rescue option for AS. Progressive plastic multi-stenting is most frequently used. Single stenting has suboptimal results and should be abandoned. Use of SEMS is effective, but recurrences seem to be frequent, although a larger patients’ sample needs to be evaluated.

Disclosure of Interest: All authors have declared no conflicts of interest.

P2046 COMPARATIVE EVALUATION OF TWO PORCINE EX-VIVO MODELS FOR TRAINING IN ENDOSCOPIC ULTRASOUND-GUIDED DRAINAGE OF PANCREATIC FLUID COLLECTIONS

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Introduction: EUES-guided Cysto-Enterostomy (EUCE), technique indicated for drainage of symptomatic pancreatic pseudocysts and other peri-enteric fluid collections, requires specific skills for which dedicated models are needed. Based on a compact EASE model (Active Simulating for Interventional Endoscopy) we developed two ex-vivo porcine models of retrogastric cysts and evaluated learning performance within the frame of a structured training program.

Aims & Methods: The first model was made of porcine colon (i.e. “natural cyst”), and second one was made with an ostomy bag (i.e. “artificial cyst”). All procedures were achieved with EUES scope under fluoroscopy. Both models were evaluated prospectively over a 2 days session involving 14 students and 5 experts. Results: “Natural cyst” and “artificial cyst” were prepared respectively within 10 and 16.5 minutes (p = 0.78). More than 10 EUCE procedures were done in each model. Model grading (analytic scale) showed no significant difference for primary endpoint of global satisfaction (p = 0.66). In terms of secondary endpoints, difference was not significant for overall impression of realism (p = 0.75) whereas it was significant favoring “artificial cyst” in terms of ability to teach procedural steps (p = 0.01) and ease of puncture (p = 0.03) because of less elasticity. Moreover, experts considered ability to improve students’ proficiency superior with “artificial cyst” (p = 0.008)

Conclusion: Both “artificial and natural cysts” are efficient for EUCE training in terms of global satisfaction. However, the “artificial cyst” model appears to make procedure easier and to teach procedural steps improving students’ proficiency. Larger applications of this model are needed to validate as a standard of training.

Disclosure of Interest: All authors have declared no conflicts of interest.

P2047 A COMPARATIVE STUDY OF SUCTION METHODS DURING ENDOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION (CONVENTIONAL SUCTION VERSUS CAPILLARY SUCTION)

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Conclusion: EUS guided tissue acquisition using a 25G-gauge core biopsy needle (EUS-FNA) is an established procedure for obtaining a pathological specimen. However, the effectiveness of endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) for collecting specimens by EUS-FNA has been shown to be efficient for diagnosis of pancreatic masses. Only with the smear method, however, its diagnostic efficacy may vary greatly depending on the level of proficiency of the cytopathologist. On the other hand, in the cell block (CB) method allows cytological and/or histological evaluation with hematoxylin and eosin (HE) staining and with immunostaining for serial sections if necessary.

Aims & Methods: The aim of this study was to evaluate the diagnostic efficacy of EUS-FNA for a pancreatic mass using the CB method without rapid on-site cytology retrospectively. A total of 206 patients with pancreatic masses (head: 87; body: 86; tail: 33) who underwent EUS-FNA using a GF-UL240P or GF-UM240P (Olympus Medical Systems Ltd., Tokyo, Japan) between June 2005 and November 2016 were included in this study. The needles used were 22/25G needles. At least two passes were made during the procedure (mean 3.0 ± 0.9 passes). Adequate specimens were regarded to be those in which whitish flag fragments were macroscopically achieved. The samples were immediately fixed in 10% formalin and processed by the cell block method using sodium alginate.

Results: Rapid on-site cytology was not performed. All samples were stained by hematoxylin and eosin, periodic acid Schiff and Alcian-blue, and immunohistochemical staining using antibodies EV, V, and W were defined as malignant. The final diagnosis was based on histological findings of surgically resected specimen, image diagnosis and clinical course for more than six months.

Results: The final diagnosis was malignancy in 184 patients (pancreatic ductal cancer (PDC), 171; neuroendocrine tumor (NET); 9; malignant lymphoma, 2; metastasis of malignant melanoma, 1; solid pseudopapillary neoplasm, 1), and benignity in 23 patients (autoimmune pancreatitis (AIP), 11; chronic pancreatitis, 7; organizing pancreatic pseudocyst, 4; IPMN, 1). Tissue sampling was successfully achieved in 97% (199/206). Of 199 patients with successful tissue sampling, sensitivity, specificity and accuracy for malignancy were 98% (175/179), 95% (19/20) and 97% (194/199). The diagnostic accuracy of PEI-DCA using HE and PAN staining was 76% (129/170) (Class V 91; IV 36; III 2), but by adding immunohistochemical staining, the accuracy of PDC was 98% (167/170) (Class V 112; IV 30; IIb 5). In the cases of highly suspicious NET, all samples were stained by chromogranin A or synaptophysin and the final diagnostic accuracy of NET was 100% (6/6). No procedure-related complications occurred.

Conclusion: EUS-FNA of a pancreatic mass with the CB method without rapid on-site cytology showed high accuracy for definitive diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0249 A DIAGNOSTIC EFFICACY OF ENDOSCOPIC ULTRASOUND- GUIDED FINE-NEEDLE ASPIRATION FOR A Pancreatic MASS USING THE CELL BLOCK METHOD WITHOUT RAPID ON-SITE CYTOLOGY

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Introduction: Endoscopic ultrason-guided fine-needle aspiration (EUS-FNA) has been shown to be efficient for diagnosis of pancreatic masses. Only with the smear method, however, its diagnostic efficacy may vary greatly depending on the level of proficiency of the cytopathologist. On the other hand, in the cell block (CB) method allows cytological and/or histological evaluation with hematoxylin and eosin (HE) staining and with immunostaining for serial sections if necessary.

Aims & Methods: The aim of this study was to evaluate the diagnostic efficacy of EUS-FNA for a pancreatic mass using the CB method without rapid on-site cytology retrospectively. A total of 206 patients with pancreatic masses (head: 87; body: 86; tail: 33) who underwent EUS-FNA using a GF-UL240P or GF-UM240P (Olympus Medical Systems Ltd., Tokyo, Japan) between June 2005 and November 2016 were included in this study. The needles used were 22/25G needles. At least two passes were made during the procedure (mean 3.0 ± 0.9 passes). Adequate specimens were regarded to be those in which whitish flag fragments were macroscopically achieved. The samples were immediately fixed in 10% formalin and processed by the cell block method using sodium alginate.

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Conclusion: EUS-FNA of a pancreatic mass with the CB method without rapid on-site cytology showed high accuracy for definitive diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.
A PROSPECTIVE COMPARATIVE STUDY OF EFFICACY OF EUS GUIDED FNA VERSUS ERCP GUIDED BRUSH CYTOLOGY IN ATTAINMENT OF HISTOPATHOLOGY OF DISTAL CBD MASSES

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Introduction: Distal CBD masses have always been a diagnostic dilemma. They are difficult to diagnose with any modality used. Brush cytology under ERCP guidance was used until now and also intraductal biopsies were used. The yield was hardly around 60% using all together. We started doing EUS localization of these difficult to identify distal CBD masses and took FNA from them. We devised a protocol to see the results of EUS FNA and brush cytology in the diagnosis of these masses.

Aims & Methods: We aimed to study the efficacy of EUS guided FNA for attaining tissue from distal CBD masses and comparing it to ERCP guided brush cytology from the same masses. 56 cases with distal bile duct mass with obstructive jaundice in the last 3 years were taken for the study. The protocol we devised a protocol to see the results of EUS FNA and brush cytology in the diagnosis of these masses.

Results:
- Total Serum Bilirubin 90 mg/dl
- Results: FNA performed with a 25 G needle making 2 to 5 passes and material sent for obstructive jaundice in the last 3 years were taken for the study. The protocol we devised a protocol to see the results of EUS FNA and brush cytology in the diagnosis of these masses.

Diagnosis in Positive Cases

<table>
<thead>
<tr>
<th>Metal</th>
<th>Plastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNA (n=31)</td>
<td>p-value</td>
</tr>
<tr>
<td>Procedure duration (mins):</td>
<td>Median [IQR] 15 (8–25) 42.5 (21–55) &lt;0.001</td>
</tr>
<tr>
<td>Resolution of pre-intervention SIRS (%):</td>
<td>44.4 69.2 0.38</td>
</tr>
<tr>
<td>Length of hospital stay (days):</td>
<td>Median [IQR] 3 (0–5) 3.5 (2–11) 0.16</td>
</tr>
<tr>
<td>Treatment success (%):</td>
<td>96.3 88.0 0.34</td>
</tr>
<tr>
<td>Adverse events (%):</td>
<td>Overall 41.9 20.7 0.10</td>
</tr>
<tr>
<td>Stent-related 32.3 6.9 0.02</td>
<td></td>
</tr>
<tr>
<td>Other 9.7 13.8 0.70</td>
<td></td>
</tr>
<tr>
<td>No. of reinterventions (n):</td>
<td>Median [IQR] 1 (1–2) 1 (1–2) 0.78</td>
</tr>
<tr>
<td>Readmissions (%):</td>
<td>29.0 34.5 0.78</td>
</tr>
</tbody>
</table>

Conclusion: Except for shorter procedural duration, there was no significant difference in treatment outcomes between patients treated with LAMS or plastic stents. Given the faster resolution of WON, to minimize adverse events, patients undergoing LAMS placement should undergo post-intervention imaging at 3 weeks followed by stent removal if the WON has resolved.

Disclosure of Interest: R. Hawes: Consultant for Boston Scientific Corporation and Olympus America Inc.
S. Varadarajulu: Consultant for Boston Scientific Corporation and Olympus America Inc.
All other authors have declared no conflicts of interest.

Metal Plastic

(n=31) (n=29) p-value

With EUS the tumors were sometimes difficult to locate and identify. But giving some time and instilling water in duodenum were useful techniques to identify the masses. Only a 25 G needle was used as the FNA had to be taken almost always from the duodenum and with difficult angles. But we succeeded in taking FNA from all cases.

Conclusion: EUS FNA is a very effective method for diagnosis of distal bile duct masses with a certain diagnosis in almost 81% and a suspicious diagnosis in around 11% cases. Its efficacy is better than ERCP guided brush cytology. Even small masses are amenable to FNA using EUS guidance. Male over 57 years with jaundice and distal bile duct obstruction has a very likely hood of having a distal CBD cholangiocarcinoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Aims & Methods: We aimed to evaluate the feasibility, yield, and safety of EUS-guided fine-needle drainage of lung tumours with a new 20G biopsy needle. We undertook a retrospective case series of 12 consecutive patients with suspected lung cancer or tuberculosis who underwent transaortic FNA during a study period of 7 years. In all cases, the para-aortic lesion was the only site suspicious for malignancy (lesion/lymph node if present were negative). Based on CT/PE imaging, a transesophageal FNA performed through the aorta was considered as the only option to diagnose or stage these patients by means of a minimally invasive procedure. Seven patients had left-sided lesions, and four were right-sided. The mean lesion size was 18 mm (range 8–22 mm), suspicious for IASLC stations 5 (n=1), 6 (n=2), and 8 (n=5). One patient had anterior mediastinum mass. EUS was performed with a linear echoendoscope. All aspirations were obtained under real-time US guided FNA by using a 22/25-gauge needle. A single real-time FNA of the lung mass or lymph node was performed. The para-aortal area was observed on EUS for 5 minutes to assess for immediate procedure-related complications.

Results: The final diagnosis was known in 11 patients (5 non-small-cell lung carcinoma [NSCLC], 2 small-cell lung carcinoma [SCLC], 3 tuberculosis and 1 thymolipoma). EUS-FNA established diagnosis in 9 of 12 patients (75%) (4 NSCLC, 1 SCLC, 3 tuberculosis and 1 thymolipoma). One aspirate revealed reactive nodal tissue, and one demonstrated nonrepresentative material. One procedure was abandoned due to complication. Three patients in whom diagnosis was not established by transaortic FNA underwent subsequent surgical staging (1 thoracotomy, 1 mediastinoscopy, and 1 VATS), and malignancy was found in 2 of the 3 patients. Trans aortic FNA was found to be safe in one patient. EUS images after FNA were suspicious for a small para-aortic hemanoma. This patient recovered without any adverse event.

Conclusions: This study demonstrates the feasibility and probable safety of single EUS guided transaortic aspiration in para-aortic lesions. The diagnostic yield is 75 percent. Clearly, further study and very careful selection by expert EUS operators is needed before this procedure can be routinely recommended. Advantages of this procedure include day care procedure, less invasive than surgical procedures, low cost, good diagnostic yield and can be performed in poor surgical candidate. Limitations includes single centre study, require EUS expertise, more data is required. At present, Transaortic FNA should only be performed in the absence of alternative minimally invasive diagnostic procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0254 ULTRASOUND-GUIDED ENDOSCOPIC TRANSDOUCAL GLAND DRAINAGE OF PANCREATIC FLUID COLLECTIONS

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Introduction: Ultrasound-guided endoscopic transgastric drainage (EUSTD) of pancreatic fluid collections (PFCs) by using double-pigtail plastic stents (DPSS) represents an option of multiple stents and can be restricted by inadequate drainage and leak risk. Recently, the use of fully covered self-expanding metal stents (FCSEMSs) has been reported as an effective alternative.  

Aims & Methods: We aimed to evaluate the successful placement of stents, the complete resolution of PFCs at 6-months, adverse events, and recurrence of EUSTD of PFCs using DPSS and FCSEMSs. This was a single-centre retrospective study (2012–2016) on 67 patients with walled-off necrosis or pseudocysts. The mean lesion size was 43.1 ± 17.5 mm. The lesion locations were esophagus (n=1), stomach (n=37), distal duodenum (n=5), rectum (n=6), and colon (n=1). The procedure was technically feasible in all patients. Mean number of passes required to reach a diagnosis was 2.2 (range 1–4). A definitive diagnosis with full histological assessment including IHC was obtained in 88% (44/50) of the patients. Diagnosis of EUS-FNB showed 36 (72%) malignant SELs (32 GISTs, 1 metastasis from breast cancer, 1 leiomyosarcoma, 1 carcinoma, 5 SEL-like adenomas, 1 schwannoma) and 16 (32%) benign SELs (1 leiomymyoma, 4 schwannomas, and 1 lipoma), and 6 (12%) indeterminate SELs. Considering malignant vs. benign lesions, the sensitivity, specificity, PPV, and NPV were 85% (95% CI 70·2–94·3), 100% (95% CI 98·7–100·0), 100% (95% CI 98·5–100·0), and 62·5% (95% CI 27·7–84·4), respectively. No major complications requiring additional care were observed.

Conclusion: In this multicenter study, we found that EUS-FNB with the new 20G core needle is an effective and safe method for the diagnosis of SELs with a high rate of producing adequate histological material and high diagnostic accuracy even from difficult-to-approach anatomical locations. Comparative studies with different needle sizes are awaited.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0255 COMPARISON OF NATURAL COURSE VERSUS EUS-GUIDED ETHANOL ABLATION FOR PANCREATIC CYSTIC LESIONS


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Introduction: Endoscopic ultrasound(EUS)-guided ethanol ablation for cystic pancreatic lesions (PCLs) is a recently introduced treatment option for PCLs. The aim of this study was to compare the clinical outcomes of EUS-guided ethanol ablation with those of the natural course of PCLs.

Aims & Methods: We performed retrospective study of patients with PCLs divided in two groups: EUS-guided ethanol ablation group (n=118, performed between June 2006 to August 2015) and natural course group (n=458, diagnosed between January 1993 to August 2015). The propensity score-matching analysis
between the two groups was applied in order to minimize the effect of selection bias. The result of significant reduction in size (< 20% of initial size). The secondary outcomes were the rate of significant growth in size (> 10 mm), complete remission rate, and surgical resection rate.

**Results:** In a propensity matched analysis of 88 pairs, the mean initial cystic size of EUS-guided ethanol ablation group and natural course group was 23.72±10.99, 23.16±13.15 mm and the mean follow-up duration was 75.45±38.12, 82.12±59.06 months respectively. Significant reduction in size was detected in 53 (60.2%) of the EUS-guided ethanol ablation group and 17 (14%) of the natural course group (p = 0.022). Significant growth in size was detected in 6 (8.9%) of ablation group and 11 (12.5%) of natural course group. (p = 0.202). Seven patients (7.95%) underwent subsequent resection in the EUS-guided ethanol ablation group and 17 patients (19.3%) in the natural course group (p = 0.001).

**Conclusion:** DBERC facilitated cyanoacrylate injection of SBV. Retrospective review of DBE facilitated cyanoacrylate injection of SBV. This case series evaluated the usefulness of DBE facilitated cyanoacrylate injection therapy of SBV.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Reference**

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**P0259 EUS-GUIDED RADIOFREQUENCY ABLATION OF DIFFICULT SITES IN THE LIVER: A PRECLINICAL STUDY**

**Aims & Methods:** We examined whether a novel 19-gauge RFA needle can be introduced to ablate the liver in a porcine model under EUS guidance. Two pigs were used in this study. All procedures were carried out under general anesthesia. Ethanol was delivered with a 19-gauge needle and a VIF™ model generator (TaeWoong Medical, Gimpo city, Korea) were used for the procedures. Three kinds of RFA needles (10-, 15-mm, and 20-mm exposed tips) were used. After the echoendoscope was advanced to the stomach, the RFA needle was inserted into the surface of the left lobe. EUS-RFA was performed at 5–40 W for 2–6 min in general mode. In each pig, three RFA needles with 10-, 15-, or 20-mm exposed tips were serially used for insertion and ablation. Subsequently, the needle attached with the 10-mm exposed tip was used in the quadrant lobe of the gallbladder through the bulwark of the duodenum.

**Results:** All procedures were technically successful. After the procedure, the liver of the pig was removed, and visible RFA effect was evaluated macroscopically. Histology with hematoxylin and eosin (HE) staining showed coagulative necrosis in the ablated area, corresponding with the macroscopic ablated area.

**Conclusion:** In this experimental study, EUS-RFA could be performed technically not only in the surface of the left lobe, but also in the adjacent to the gallbladder of the porcine liver. Further studies are required to confirm the efficacy and safety.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Reference**

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**P0260 CYANOACRYLATE INJECTION THERAPY OF SMALL BOWEL VARICES BY DOUBLE-BALLOON ENTEROSCOPY (DBE): A TERTIARY CENTRE EXPERIENCE**

**Aims & Methods:** We review 346 patients with surgically altered anatomy who underwent DBERC from April, 2002 to December, 2016 (47 patients with bowel assisted liver transplantation (LDBT), 33 with LDBT with out BA, 45 with biliary resection and choledochojunostomy, 111 with gastric resection and Roux-en-Y bypass, 48 with gastric resection and Billroth-Ileumen, 18 with pylorus-preserving pancreato-duodenectomy, and 42 others). We evaluate the success rate according to the type of gastrointestinal anastomosis, age, and age at surgery.

**Results:** The success rate for reaching the biliary anastomosis (or papilla of Vater) in all 346 patients (66.0% (3–91)) was 83%. The rate in 47 patients with BA after LDLT (12.0y (3–39)) was 57%. In the remaining 299 patients the rate was 87%.

The success rate of reaching the biliary anastomosis in patients with BA after LDLT was significantly lower than other patients (p < 0.01). There was no significant difference between the success rate in the patients over or under 13 years at the time of ERCP (50% vs 56%, p = 0.70). The success rate was lower in patients who underwent initial surgery as an infant (Kasai hepatoportovenostomy) than in those past infancy (54% vs 88%, p < 0.01). When reaching the biliary anastomosis is successful, the success rate of cannulation in the patients after LDLT is high (92%).

The success rate for reaching the biliary anastomosis in patients with BA after LDLT is significantly lower than other patients. The age at the time of ERCP did not affect the success rate of reaching the biliary anastomosis, but the success rate was lower in patients who underwent their initial surgery as infants.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Reference**

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**P0285 THE SUCCESS RATE OF DOUBLE BALLOON ENDOSCOPIC CHOLANGIOGRAPHY IN PATIENTS WHO UNDERWENT THEIR INITIAL SURGERY AS INFANT IS SIGNIFICALLY LOWER THAN OTHER PATIENTS**

**Aims & Methods:** We aimed to compare tissue acquisition between the 22G Fransene and 22G Fork-tip needles in patients undergoing EUS-guided sampling of pancreatic masses.

**Results:** Patients with pancreatic masses were randomized to undergo EUS-guided sampling using the 22G Fransene and 22G Fork-tip needles. Two dedicated passes were first performed using both needles in individual patients for cell block. Subsequent passes were then performed for rapid onsite evaluation (ROSE) under both ROSE only until a diagnosis was established. The main outcome measures were to compare total tissue volume and presence of desmoplastic stroma in pancreatic cancer. Secondary outcome measures were to compare rates of diagnostic cell block and diagnostic adequacy at ROSE.

**Conclusion:** Both the Fransene and Fork-tip needles appear equally effective in yielding histological tissue. By virtue of their ability to yield a diagnostic cell block in greater than 90% of patients, the new generation FNB needles may be expected to achieve a certain level of complete remission for PCLs. It is also expected to achieve a certain level of complete remission for PCLs.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Reference**

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**P0257 RANDOMIZED TRIAL COMPARING THE FRANSEN AND FORK-TIP NEEDLES FOR EUS-GUIDED FINE NEEDLE BIOPSY**

**Aims & Methods:** We evaluated the success rate according to the type of gastrointestinal anastomosis in patients with BA after LDLT was significantly lower than other patients (p < 0.01). There was no significant difference between the success rate in the patients over or under 13 years at the time of ERCP (50% vs 56%, p = 0.70). The success rate was lower in patients who underwent initial surgery as an infant (Kasai hepatoportovenostomy) than in those past infancy (54% vs 88%, p < 0.01). When reaching the biliary anastomosis is successful, the success rate of cannulation in the patients after LDLT is high (92%).

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**Disclosure of Interest:** All authors have declared no conflicts of interest.

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The success rate for reaching the biliary anastomosis in patients with BA after LDLT is significantly lower than other patients. The age at the time of ERCP did not affect the success rate of reaching the biliary anastomosis, but the success rate was lower in patients who underwent their initial surgery as infants.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Reference**

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and injected with cyanoacrylate glue. There were no haemorrhagic or embolic complications. All patients developed an oral opening of a congenital perianal cyst, which was treated successfully with antibiotics. All patients underwent DBEs via the anterograde route and one patient required bi-directional DBE for treatment of both proximal and distal SBV and another patient required a 2nd anterograde DBE for treeting of further patent proximal SBV. At 30-day follow-up post-therapy, only 1 patient had experienced a mild recurrence of mid-gut bleeding.

Conclusion: Cyanoacrylate injection therapy of SBV at DBE appears to be a safe and effective management strategy for this condition when other first-line options are not feasible.

Disclosure of Interest: E. Vlachou: I have received a research & education grants from Fujifilm & Aquilant Medical.

E.J. Despott: I have received a research & education grants from Fujifilm & Aquilant Medical.

All other authors have declared no conflicts of interest.

P0261 MAGNIFYING NARROW-BAND IMAGING FINDINGS EFFICACY FOR INFLAMMATORY ACTIVITY EVALUATION IN SMALL INTESTINAL CROHN'S DISEASE WHEN USING NEWLY DEVELOPED MAGNIFYING ENTEROSCOPY: A PILOT STUDY

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Introduction: The development of balloon endoscopy and capsule endoscopy has made observation of the small intestine possible in clinical practice. The usefulness of magnifying endoscopy has already been reported in observing the pharynx, esophagus, stomach and colon. A single-balloon enteroscopy (SBE) with the usefulness of magnifying endoscopy has already been reported in observing the pharynx, esophagus, stomach and colon. A single-balloon enteroscopy (SBE) with 80x magnification has been recently developed. Aim & Methods: The aim of this pilot study was to assess the efficacy of narrow-band imaging (NBI) magnifying findings for evaluating the severity of inflammation in small intestinal crohn's disease (CD). The study was conducted in Showa University Northern Yokohama Hospital. We included CD patients who underwent enteroscopy with magnification from September 2013 to February 2015. NBI images and a biopsy specimen were obtained from small intestinal mucosa for CD patients with use of SBE (Y-0007, Olympus, Tokyo). Magnifying NBI was performed, and the images were evaluated by assessing visibility, increased vascularization, and the increased caliber of capillaries into three grades as follows: Normal, Visible and Irregular. Normal was indicative of inactive disease, while Visible and Irregular were indicative of acute inflammation in our study. The outcome measures included the diagnostic ability of magnifying NBI findings to distinguish active CD from inactive CD on the basis of histological activity.

Results: Twenty-four patients were enrolled. There was a correlation between magnifying NBI findings and the histological assessment (Spearman’s r = 0.540). Magnifying NBI findings showed a correlation with histological inflammation and could help in distinguishing CD from inactive CD on the basis of histological activity.

Conclusion: Magnifying NBI magnifying NBI findings in the small intestinal mucosa had a correlation with histological inflammation and could help in distinguishing between active and inactive CD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0262 SINGLE-INCISION LAPAROSCOPIC-ASSISTED DOUBLE BALLOON ENTEROSCOPY: A NOVEL TECHNIQUE TO MANAGE SMALL BOWEL PATHOLOGY

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Introduction: Double balloon enteroscopy (DBE) has revolutionised the diagnosis and treatment of small intestinal conditions. However, even in expert hands, deep small bowel (SB) insertion can be challenging, especially in patients with a history of abdominal/pelvic surgery. Moreover, if the findings at DBE are not amenable to endoscopic therapy, a further surgical procedure is usually required to provide definite treatment. Laparoscopic-assisted DBE (LA-DBE) using a standard multi-port technique has previously only been reported in a small series of 3 patients with Peutz-Jeghers Syndrome (PJS). Aim & Methods: This case series reports the development of LA-DBE using single-incision laparoscopic surgery (SILS) applied to a wide range of clinical indications. Retrospective review of LA-DBE procedures performed in a single tertiary centre over a 6 year period. Demographics, indication, findings, diagnostic and therapeutic interventions were recorded. Completion, complication rates and hospital length of stay were also captured.

Results: 17 procedures were performed over 6 years in 17 patients who had failed standard DBE. Mean (range) age was 40 (17-73) and 41% of patients were male. The enteroscopic approach was oral in 13/17 patients and rectal in 4/17. Laparoscopic approach was standard (multipor) in the 4 first cases. SILS was then used in all subsequent patients (13/17). The mean (range) procedure time was 147 (84–210) mins. Indications were PJS (n = 10), suspected submucosal/ subserosal mass lesion at small bowel imaging (n = 5) and obscure gastrointestinal bleed (OGBB) with vascular abnormalities seen at capsule endoscopy (n = 2). In 15/17 procedures the target pathology was reached using laparoscopic assistance only and 1/17 was converted to intraoperative enteroscopy (IOE). In 1/17 the suggested pathology at magnetic resonance enterography (MRE) was not identified. Therapy was applied in 15/17 (88%) cases. 7 underwent endoscopic therapy which of 6 polypectomy and 1 ablation with argon plasma coagulation (APC). 4 required limited SB resection and 4 underwent both endoscopic polypectomy and small bowel resection for a second polyp that could not be removed endoscopically. A total number of 57 polyps were removed with the largest measuring 40 mm. The range of length of surgically resected SB was 4–17 cm. Diagnoses were PJS polyps (n = 9), neuroendocrine tumour (NET) (n = 2), PJS polyps and NET (n = 1), tropical arteriovenous malformation (n = 1), angioectasia (n = 1), inflammatory polyp (n = 1), leiomyoma (n = 1), Mcekel’s diverticulum (n = 1). Median length of stay post procedure was 2 (1–19) days. 8/17 patients were discharged at 24 hours. 3/17 patients developed complications: 1 intra-abdominal bleed, 1 pelvis collection that was managed with antibiotics and 1 patient that was readmitted 8 days post procedure with subacute OB obstruction which resolved with conservative management.

Conclusion: LA-DBE appears to be a safe, effective and minimally invasive procedure that can be applied for the management of a wide range of small bowel pathology. A SILS approach allows all therapeutic modalities to be available as needed during the procedure, including conversion to IOE, laparoscopic small bowel resection and laparotomy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0263 GASTRIC EMPTYING IN CROHN'S DISEASE – EVALUATION BY SMALL BOWEL CAPSULE ENDOSCOPY

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Introduction: The complex relationship between inflammatory bowel disease (IBD) and motility disorders of the digestive tract is a complex area of study, so far incompletely elucidated. The association between Crohn's disease and gastric emptying time modification has been relatively less studied. However, there is no single standardized method to study gastric emptying, one particular investigation that could bring direct information in this field being the small bowel capsule endoscopy (SBCE).

Aims & Methods: We aimed to study gastric emptying by small bowel capsule endoscopy in patients with suspected and confirmed Crohn's disease. We evaluated gastric passage time showed by SBCE in patients with small bowel Crohn's disease, compared to patients without IBD, investigated by SBCE (PillCam), following recognized indications, in the Institute of Gastroenterology and Hepatology of Iasi, tertiary center in North-East of Romania.

Results: 144 SBCE studies were included, 24 were cases of suspected and confirmed Crohn’s disease. The mean time of gastric passage in patients with Crohn’s disease was 51 ± 2.1 minutes, longer than in patients without inflammatory bowel disease, in which the mean gastric passage time was 24 ±16.6 minutes.

Conclusion: Gastric passage time, evaluated by SBCE, is prolonged in patients with small bowel disease compared to patients without IBD, suggesting a relationship between chronic inflammation and gastric motor disorders. Globally, the values correlated with those considered as physiological by other exploration methods. SBCE studies may provide additional data on gastric motility (and in general gut motor disorders), with special usefulness in some individual cases, as particular symptoms or variations in the bioavailability of small bowel-released drugs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0264 META-ANALYSIS SHOWS THAT PURGATIVE PREPARATION INCREASES SMALL BOWEL VIDEO CAPSULE ENDOSCOPY DIAGNOSTIC YIELD AND IMPROVES THE QUALITY OF SMALL BOWEL MUCOSA VISUALIZATION

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Introduction: The value of purgative preparation (PBP) before small bowel video capsule endoscopy (VCE) remains controversial and it has been recently challenged. Aims & Methods: The aim of this meta-analysis was to examine the effect of PBP on small bowel VCE outcomes. We performed literature searches in MEDLINE and Cochrane Library to identify randomized-controlled trials (RCTs) evaluating the effect of small bowel preparation –purgative (PEG, sodium phosphate,
In comparison to clear liquids diet, PBP significantly increased small bowel VCE DY. They were low risk of bias trials and no publication bias was detected. As assessed using the Jadad criteria.

**Results:** Five clear images of SB pathology were obtained using MiroCam® (Intromedic, South Korea), image resolution 320×320 pixels(px). P1 and P2 angioectasias, ulcer, aphtha and polyp. Each image was processed using GIMP2 image editing software (www.gimp.org) for 3 parameters: (1) opacity (opacity filter matched in colour to commonly-seen SB contents, 10–90% in 10% increments), (2) blur (Gaussian blur, radius 1–10px), (3) contrast (±50% to 50% in 10% increments). Gaussian blur was used to simulate the effects of rapid capsule movement as well as to affect image definition. A set of 5 original and 190 edited images was obtained. A web-based survey was created using Google Forms and 9 expert CE readers were asked to indicate whether each image was adequate or not for diagnosis. The order of images was randomised for each reader. For each type of pathology, we determined the threshold of image quality that was deemed adequate for diagnosis.

**Results:** For image opacity, both PBP and the polyoid lesion were adequately visualised below 40% opacity whereas the threshold was lower for both the ulcer and aphtha (10% opacity). Increasing blur radius significantly impacted the acceptability of images for reaching a diagnosis with confidence; for most images, blur radius 3px was the threshold for adequate visualisation but even 1px of blur radius decreased the visualisation quality of the aphtha image. The aphtha image was also affected the most by decreased contrast; conversely the ulcer was deemed more inadequately visualised with higher contrast. The other images were generally adequately visualised at ±10% contrast. Results are detailed in the table below.

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**Conclusion:** This pilot study shows that image quality is a defining factor in accurate diagnosis in CE. Image quality is commonly affected by the opacity of luminal fluid/residue, and the quality of imaging delivered by the CE system. More subtle mucosal lesions such as aphthae are affected more by decreased contrast. Interestingly, a relatively high level of image opacity can be tolerated by CE readers whereas blurriness seems to have a greater effect on visualisation quality and reviewer confidence in the diagnosis. The effects of these aspects in combination merit further investigation.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Inflammatory bowel disease (IBD) is a chronic inflammatory disease that may affect the whole gastrointestinal (GI) tract, mainly the small bowel and colon. Endoscopic examination of these parts is essential to assess disease extent and severity. The small bowel capsule endoscopy (SBC-CE) system is a new system composed of a two-headed capsule with a panoramic field of view and adaptive frame rate, customized for complete coverage of IBD lesions in the entire bowel, data recorder and new disease specific software, allowing assessment and follow-up over time of disease severity and extent.

**Aims & Methods:** The aim was to evaluate SBC-CE system functionality in suspected or established IBD (Crohn’s disease [CD] and ULCeraive Colitis [UC]) patients. This was a prospective 5 center feasibility study assessing the performance of capsule and software. Subjects enrolled in the study ingested the new capsule after standard bowel preparation plus boosts. Contraindications for its use included obstruction, dysphagia or swallowing disorders, pacemakers etc. GI patency was assured using the patency capsule. The patient's capsule was successful procedure in terms of video creation and read generation in accordance to the video reading methodology. Secondary endpoints were subjective coverage of SBC, subjective duration of total and segmental reading time, over all video quality and occurrence/severity of adverse events.

**Results:** of which 54 were enrolled and 49 ingested the capsule (14 patency failure, 5 withdrew consent). Mean age was 40.1 years, 51% were females. 69% of patients had established CD, 10% UC and 21% suspected CD. The disease was active in 62% of known IBD patients. One patient who undergoing extensive colon resection was excluded from all colon analyses. Overall cleansing was regarded good or excellent in 96% of patients. All 49 videos met the primary endpoint, i.e. video was created and report generated under reading time, over all video quality and occurrence/severity of adverse events.

**Conclusions:** The new SBC capsule is a friendly, minimally invasive capsule allowing complete evaluation of the entire gut of IBD patients. The system may be used to assess disease severity and extent and for follow up of IBD patients.

**Disclosure of Interest:**

- E. Eliakim: I have received consulting fee from Medtronic; I am in the advisory committee for PhotoPill, Tarus medical
- C. Spada: consultant and speaker fees for Medtronic
- C. Fernandez: no conflict of interest
- H. Yanai: I received consulting, advisory, lectures and speaker's fees from: Abbvie, Janssen, and Takeda
- I. Eyal: Employee at Medtronic
- A. Kanyam: Employee at Medtronic
- S.N. Adler: Received consulting fee from Medtronic
- All other authors have declared no conflicts of interest.

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**P0267** EVALUATION OF A NEW PAN ENTERIC CAPSULE SYSTEM IN PATIENTS WITH SUSPECTED OR ESTABLISHED INFLAMMATORY BOWEL DISEASE - ASSESSING THE SYSTEM FUNCTIONALITY TO VISUALIZE AND ASSESS THE SMALL AND LARGE BOWELS

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Inflammatory bowel diseases (IBDs) are chronic inflammatory diseases that may affect the whole gastrointestinal (GI) tract, mainly the small bowel and colon. Endoscopic examination of these parts is essential to assess disease extent and severity. The small bowel capsule endoscopy (SBC-CE) system is a new system composed of a two-headed capsule with a panoramic field of view and adaptive frame rate, customized for complete coverage of IBD lesions in the entire bowel, data recorder and new disease specific software, allowing assessment and follow-up over time of disease severity and extent.

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- I. Eyal: Employee at Medtronic
- A. Kanyam: Employee at Medtronic
- S.N. Adler: Received consulting fee from Medtronic
- All other authors have declared no conflicts of interest.

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**P0268** THE UTILITY OF A NOVEL TRANSPORTABLE DILATION TECHNIQUE WITH A DIATHERMIC CATHER FOR SEVERE MAIN PANCREATIC DUCT STRICTURE DUE TO CHRONIC PANCREATITIS

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**Introduction:** Transpanpillary biliary drainage for severe main pancreatic duct (MPD) stricture is sometimes difficult and diathermic dilation is now getting attention as a salvage technique for severe stricture; however its efficacy and safety remains unclear.

**Aims & Methods:** To evaluate the efficacy and safety of a novel transportable dilation technique with a diathermic catheter for severe MD pancreatic stenosis due to chronic pancreatitis. Between April 2011 and March 2017, 143 patients with chronic pancreatitis underwent endoscopic transpanpillary stent placement for MPD. MPD dilation was indicated in 18 patients, and diathermic dilation was required in nine patients. We evaluated (1) the patients’ characteristics, (2) procedure characteristics, (3) clinical outcomes, (4) adverse events. 

**Results:** (1) Six patients were men and three were women (mean age, 50.1 years). Alcohol use was unknown. 1. The strictures were in the head of pancreas: 8, body: 1.

The mean length of stricture was 20.2 mm (range, 10.0–30.8). The mean MPD diameter at the stricture was 6.2 mm (range, 4.0–5.7). A total of 13 patients (55.6%) among them had no former procedure for MPD including stenting. (2) A wire-guided 6Fr diathermic catheter with 30 W power was used for all cases. All cases underwent diathermic dilation as salvage procedure subsequent to conventional dilation. One to 7 diathermy procedures (mean 2.9) were performed in all cases. Passage of the diathermic catheter and stent placement was successful in all patients (100%). After diathermy and stent placement, 8 (88.9%) showed improvement of clinical symptoms (abdominal pain). Recurrence of stricture was observed in 2 patients (22.2%). One of them needed diathermic dilation again. (4) Two adverse events (22.2%) were observed and both of them were mild pancreatitis. Multiple diathermy procedures (6 times and 4 times, respectively) and relatively long duration total diathermy procedures (39 sec. and 25 sec. respectively) were observed in cases with pancreatitis.

**Conclusion:** Transpanpillary diathermic dilation is a relatively safe and effective salvage procedure for severe MPD stricture due to chronic pancreatitis. Care should be taken in cases that require multiple times and long duration diathermy procedures because of a risk of pancreatitis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**References:**

P0270 OUTCOME OF ENDOSCOPIC REINTERVENTION FOR MALIGNANT OBSTRUCTION TREATED BY STENT-IN-STENT DEPLOYMENT
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Introduction: Endoscopic biliary decompression is widely used for advanced hilar cholangiocarcinoma. Bilateral stenting has become more feasible with more experienced endoscopists and the development of new devices. However, stent dysfunction develops in 3% to 45% because of tumor ingrowth, overgrowth, or debris as disease progresses. Endoscopic reintervention is difficult and complex with worsening bile duct strictures. The present study aimed to evaluate a suitable re-intervention procedure for stent malfunction after stent-in-stent (SIS) deployment for malignant hilar obstruction.

Aims & Methods: From September 2009 to June 2016, a total of 52 patients who underwent bilateral stenting at Pusan National University Yangsan Hospital were enrolled in this study. Among them, 20 patients who underwent reintervention due to stent malfunction were analyzed. Reintervention was performed endoscopically or percutaneously. Technical and functional success rates were evaluated retrospectively.

Results: Technical and functional success rates of endoscopic reintervention were 83% (10/12) and 80% (8/10), respectively. Endoscopic bilateral and unilateral reintervention success rates were 75% (6/8) and 100% (4/4), respectively. Functional success was observed in 8 out of 10 patients (80%) who achieved technical success. For bilateral reintervention, either plastic or metal and metal stents were used. PTBD was performed in 8 patients because of duodenal stenosis (2 patients) and other conditions.

Conclusion: Endoscopic reintervention could be considered in the case of stent malfunction and fair patient conditions after SIS placement for malignant hilar obstruction. Decisions regarding bilateral or unilateral drainage and types of stents should depend on the conditions of the disease and the patient.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0271 LONG-TERM OUTCOMES OF ENDOSCOPIC ULTRASOUND-GUIDED TRANSMURAL RIGHT INTRAHEPATIC BILE DRAINAGE WITH TRANSMURAL COVERED METAL STENT
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Introduction: Endoscopic ultrasound-guided biliary drainage (EUS-BD) has been regarded as an effective alternative in cases of endoscopic retrograde cholangiopancreatography (ERCP) failure or inaccessible papilla. However, EUS-BD for right intrahepatic duct obstruction (EUS-BDR) remains challenging, although recent studies showed promising result. The aim of current study was to evaluate the feasibility and long-term outcomes of EUS-BD with transmural covered metal stents for right intrahepatic duct obstruction.

Aims & Methods: Retrospective study, a total of 24 consecutive patients who underwent EUS-BDR after failed ERCP were enrolled. The patients were consisted of 12 cases of benign strictures and 12 cases of malignant strictures. The biliary stents used in this study was covered metal stent with anchoring flaps (fully covered metal stent with anchoring flaps or partially covered metal stent with anchoring flaps). The technical success rate, clinical success rate and adverse events were evaluated.

Results: The target bile duct was right anterior in 6 patients and right posterior segmental duct in 18 patients. Among them, percutaneous transhepatic biliary drainage assisted EUS-BDR was performed in 3 patients. The technical and clinical success rate was 95.8% (23/24) and 95.6% (22/23). Mean diameter of right intrahepatic duct before deployment was 6.5 (4–30) mm. A fully covered metal stent was used in 22 patients and partial covered stent in 2 patients. Early adverse events developed after EUS-BDR in 2 patients (1 case of cholangitis and 1 case of liver abscess in patients with malignant biliary stricture). Late adverse event that stent occlusion was observed in 5 patients. Neither proximal nor distal tumor stent migration or spontaneous distal stent migration was observed during follow-up periods. The stent patency duration was 275.2 (147.8–402.7) days. During follow-up period, stent revision via fistula tract was successful and additional percutaneous biliary drainage for right intrahepatic duct obstruction was not required in all patients who achieved clinical success.

Conclusion: EUS-BD using transmural covered metal stent with antimigration properties for right intrahepatic duct obstruction may be technically feasible, effective and relatively safe for both biliary strictures by expert hands. Furthermore, the route of hepatocoduodenostomy created by covered metal stent was durable and endoscopically easily managed.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0272 UTILITY OF EUS-GUIDED HEPATICOGASTROSCOPY WITH ANTEGRADE STENTING FOR MALIGNANT BILIARY OBSTRUCTION OF ERCP INABILITY
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Introduction: Recently, EUS-guided biliary drainage (EUS-BD) techniques such as antegrade cholecodochoscopy (AGS) and rendezvous stenting (RVS) are useful for biliary drainage methods after unsuccessful ERCP. Among these procedures, CDS and RVS require the echoendoscope reaching duodenum. Therefore, HGS and AGS are accurate in cases with difficult duodenal access. However, HGS and AGS are associated with a higher risk of adverse events, compared with the other methods. When the stent dysfunction occurs, re-intervention is more difficult after AGS alone than after HGS or CDS. Thus, we started to add AGS during HGS in a single session from January 2011.

Aims & Methods: The aim of this study to assess the efficacy and safety of HGS combined with AGS for malignant biliary strictures-induced obstructive jaundice. Between Jan. 2006 and Dec. 2014, ERCP was attempted in patients with obstructive jaundice, which was successful in 641 patients and impossible in 154 patients (101cases due to post-surgical altered anatomy or duodenal stenosis, 53 cases due to difficult cannulation). A total of 145 patients received EUS-BD, HGS and AGS with were attempted in 42 (Group A; from Jan 2006 to Aug 2011) and 103 patients (Group B; from Aug 2011 to Dec 2014). The outcomes were evaluated during a median follow-up time of 157 days in Group A and 150 days in Group B. The two groups were comparable for the functional success rate.

Results: The technical success rate of Group A was significantly higher than Group B (97.6 vs 83.8%, p = 0.03). The two groups were comparable for the functional success rate (98.2% vs 95.8%, p = 0.3). The rate of adverse events tended to be higher in Group A than in Group B (26.1% vs 13.5%, p = 0.10). The re-intervention rate tended to be higher in Group A than in Group B (16.7% vs 8.1%, p = 0.25). Groups A and B did not differ significantly in terms of median overall patient survival (75 days vs. 81 days, p = 0.70), and median time to stent dysfunction or patient death (68 vs 63 days, p = 0.08). In patients who underwent chemotherapy, there were no difference in the overall patient survival time (121 vs 137 days, p = 0.08) between the two groups although the time to stent dysfunction in Group B was significantly shorter in Group A than in Group B (71 vs 95 days, p = 0.02).

Conclusion: Technical success rate of HGS with AGS was lower than HGS, although HGS with AGS is superior to HGS in terms of stent patency in patients who underwent chemotherapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0273 EUS-GUIDED GALLBLADDER DRAINAGE REDUCES LATE ADVERSE EVENT AND NEED FOR RE-INTERVENTION COMPARED WITH PERCUTANEOUS CHOLECYSTOSTOMY IN PATIENTS WHO ARE NOT ELIGIBLE FOR SURGERY
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Introduction: Endoscopic ultrasound guided transmural gall-bladder drainage (EUS-GBD) with covered metal stent has become increasingly used to treat patients with acute cholecystitis who are not a candidate for surgical treatment. However, there are limited data comparing long-term outcomes of EUS-GBD with covered metal stent and conventional percutaneous cholecystostomy.

Aims & Methods: Retrospective study, the long-term outcomes of EUS-GBD and percutaneous cholecystostomy in patients who are not suitable for cholecystectomy. Data about the patient who underwent EUS-GBD for acute cholecystitis is obtained from prospective collected EUS database at Pusan National University Yangsan Hospital, and the clinical record of patients who underwent percutaneous cholecystostomy was reviewed and analyzed. Demographics and procedure related outcomes including early, late adverse events and need for re-intervention in each group was compared.

Results: A total of 181 patients (74 in EUS-GBD group and 107 in percutaneous cholecystostomy group) were enrolled in this study. The cause of cholecystitis and ASA class were similar in both groups. The technical/clinical success rate was 100%/98.6% in EUS-GBD group and 99.1%/97.2% in percutaneous cholecystostomy group (P = 0.591). However, adverse events such as migration of stent or dislodgement of drainage tube, stent or tube occlusion, tract inflammation around percutaneous tube, bile leakage and recurrence of cholecystitis were more frequently observed in percutaneous cholecystostomy group (5.74% in EUS-GBD group and 21.07% in percutaneous cholecystostomy group, P = 0.017). Percutaneous cholecystostomy tube was indwelled for

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Introduction: The “fully covered self-expandable metallic stents” (FcSEMSs) were found to be non-inferior to multiple plastic stents (MPSs) for the treatment of anastomotic biliary strictures after orthotopic liver transplantation (OLT). However, there is scarce data about their efficacy in the treatment of anastomotic biliary strictures following LDLT. We aimed to compare the efficacy of FcSEMSs and MPSs for the treatment of anastomotic biliary strictures after LDLT.

Aims & Methods: We retrospectively analyzed the data of LDLT patients with duct-to-duct anastomotic biliary strictures who underwent endoscopic treatment at our center within the last 3 years. FcSEMSs were inserted in 23 patients (13 male, 10 female; mean age 51 ± 11 years) with MPSs insertion (Group-2). In Group-1, secondary branch ducts were prophylactically drained with the insertion of plastic stents in order to prevent the development of cholangitis due to occlusion. FcSEMSs and plastic stents were left in place for 2 months. In Group-2, maximum number of plastic stents were inserted and replaced every 3 months. Patients with a follow-up duration of at least 3 months after stenting were included in the study. Primary endpoints were the number of endoscopic procedures and the time required for strictures resolution. The secondary endpoint was the recurrence rate of the stricture.

Results: FcSEMSs were successfully deployed in all cases. The diameter of the FcSEMSs was 10 mm in 22 patients and 8 mm in 1 patient. The length of the FcSEMSs was 8 cm in 13 patients, 10 cm in 9, and 12 cm in 2 patients. Secondary branch ducts were prophylactically drained with a single plastic stent in 12 patients, 2 plastic stents in 8 patients, and 3 plastic stents in 3 patients. The median number of endoscopic procedures was 2 (2-4) in Group-1 and 4 (2-9) in Group-2 (p = 0.001). The time required for stricture resolution was shorter in Group-1 (65.7 ± 18.2 days) than in Group-2 (240.1 ± 183.4 days) (p < 0.001). The recurrence rates were similar in Group-1 (17.4%) and Group-2 (15.6%) (p = 0.87) after a follow-up period of 315.2 ± 290 and 378.6 ± 86 days, respectively.

Conclusion: FcSEMSs is an effective method for the treatment of anastomotic biliary strictures after LDLT, with a lesser number of endoscopic sessions and a shorter stenting duration required for the resolution compared to MPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: Colorectal stenting is a minimally invasive, reliable and effective intervention in patients with malignant colorectal obstruction, associated with a low complications rate compared to traditional surgical treatments. One of the actual problems associated with colorectal stenting is the recurrence of symptoms of obstruction. The most common cause is migration of covered stents and ingrowth of uncovered stents 1–3. The aim of our study was to compare the results of the use of stents of a new design, the development of which was aimed at preventing these complications.

Aims & Methods: We aimed to evaluate the results of the use of stents of the new design (double uncovered and dual coated colorectal stents). Between December 2012 and April 2017, 77 patients with colorectal malignant obstruction were implanted 78 stents (39 bare, 39 covered EGIS Colorectal stent, S&G Biotech Inc., South Korea). A double uncovered stent has a two-layer structure created by crossing two stents, resulting in a smaller cell size. Such a design theoretically can prevent the ingrowth of the tumor, localization and uncovred edges prevent the migration of the stent. All interventions are performed by one operator using endoscopic and radiological control. Groups of patients using coated and uncovered stents were comparable in terms of sex, age, duration of symptoms of obstruction, and stenosis localization. The reasons for the obstruction were primary tumors of the colorectum 97.4%. The localization of the tumor is most common in the sigmoid colon - 54%. The average follow-up period was provided to 43(55.8%) patients, «bridge to surgery» – 34 (44.7%) patients.

Results: Clinical success was achieved in 74 (96.1%) patients. In two cases, when using covered stents, the symptoms of obstruction could not be reduced, the patients were operated. In one case, 18 hours after stenting with an uncovered stent, was diagnosed perforation due to obstructive colitis. The average stay in hospital after the intervention was 3 days; the difference between the groups was statistically insignificant. 30 day mortality was 5.2%, the difference was statistically insignificant.

Conclusion: Double bare and double covered colorectal stents are feasibility and efficacy for relieving malignant colorectal obstruction. Reobstruction was rare complication and not different in both groups stent groups. Necessary to continue to research for the accumulation of material from other centers.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: Endoscopic therapy has been emerged as alternative treatment to bariatric surgery for reducing weight. We developed a new endoscopic gastrointestinal (GI) bypass stent and designed a preclinical study to assess the safety in a porcine model.

Aims & Methods: The aim of this study is to investigate the feasibility of our GI bypass device in animal. Before animal study, we performed an experimental study for durability test under simulated intestinal fluid flow. And next, we performed an animal study with 10 Yorkshire pigs. The stents were placed on pylorus with fixration by clippings or on duodenal bulb without fixation. Follow up endoscopy was done per one week after implantation. After they were sacrificed, gastric, duodenal, and jejunal tissues were harvested and examined for histologic assessment of any device or procedure-related effects.

Results: Our new GI bypass stent showed a good durability in simulated solution flow. No breakage or migration of stent occurred under continuous water flow in simulation system setting. In animal study, the mean starting weight was 30.1 ± 1.5 kg. Delivery of the implant took an average of 19.8 min (range, 11–33 min). pyloric stent group and 11.2 min (range, 6–18 min) in duodenal bulb stent group. It required an average clipping time of 10.8 min (range, 8–14 min). Followed for stent migration after implantation, the mean latency duration was 1.5 ± 0.7 weeks. One pig was died due to small bowel perforation and peritonitis after stenting. In histologic finding, there were moderate degree of mucosal erosions, but no definite ulceration on pylorus and duodenum.

Conclusion: Our new GI bypass stent has a good physiocompatible properties in simulated intestinal system. In animal, all stents were successfully deployed but migration of stent was found in this study. Future study is needed for comparison with current endoscopic bypass devices, such as endoscopic suture machine and modification of stent would be required. Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0277 LONG-TERM EFFICACY OF AN ENDOSCOPIC DILATION PROGRAM FOR POST-RADIATION AND ANASTOMOTIC FARINGO-ESOPHAGIC STRICTURES

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Introduction: Dysphagia may occur due to benign pharingo-esophageal strictures, orastradiation-induced complications. The aim of the study was to access long-term efficacy of pharingo-esophageal dilations due to anastomotic or post-radiation strictures.

Aims & Methods: Retrospective study of patients suffering of dysphagia due to radiation or anastomotic stenosis. Patients with previous dilations. The aim of the study was to access long-term efficacy of pharingo-esophageal dilations due to anastomotic or post-radiation strictures.

Results: Forty-eight patients (96 dilations) were evaluated (median of 4 dilations/patient). 85% were male, mean age of 62 years-old, 60% belonging in CaF1 group; between control dilations median interval of 5 weeks. Initial dysphagia Mellow-Pinkowsky score and luminal calibre were 3 ± 1 and 7 ± 2; 8,2 mm, respectively. Twenty-eight patients (out of 30 live patients non-submitted to additional therapies) answered to the interview: 96% had improved. 60% had no symptoms at all, 75% didn ´ t need further dilations, 8% PEG, with a combined efficacy of 58, 3%. Nine patients required additional therapy (6 PEGs, 2 prosthesis, 1 electroincision). Overall, 17 (out 21 with previous PEG) were able to resume feeding per os. Fifteen and 29% presented Kochen criteria for satisfactory and recurrence strictures, respectively. There were two post-procedure complications (< 1%): one deep laceration and one pharingo-esophageal fistula. Overall mortality was of 20% (10 patients died of non related procedure causes). Mean follow-up was 29, 2 ± 11, 2 months. Number of dilations and initial lumen calibre were significant predictors of combined efficacy in the univariate analysis; radic strictures predicted a greater final dysphagia in the uni- and multivariate analysis.

Conclusion: Our dilatation programme relevant benefit to these patients and a low rate of complications. Patients with post-radiation strictures presented a worse prognosis. Even though retrospective we present the longest follow-up and focusing not only in objective measures but also in patient perception of therapy (6 PEGs, 2 prothesis, 1 eletroincision). Overall, 17 (out 21 with previous PEG) were able to resume feeding per os. Fifteen and 29% presented Kochen criteria for satisfactory and recurrence strictures, respectively. There were two post-procedure complications (< 1%): one deep laceration and one pharingo-esophageal fistula. Overall mortality was of 20% (10 patients died of non related procedure causes). Mean follow-up was 29, 2 ± 11, 2 months. Number of dilations and initial lumen calibre were significant predictors of combined efficacy in the univariate analysis; radic strictures predicted a greater final dysphagia in the uni- and multivariate analysis; recurrent/refractory stenosis didn ´ t significantly predict global efficacy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Dig Dis Sci


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Introduction: Benign anastomotic strictures are common adverse events of gastrointestinal tract surgery. And, they are difficult to be managed conservatively. The first choices of treatment of anastomotic strictures are balloon dilatation and bougination. But, they are requiring repeated sessions. Self-expandable metallic stent (SEMS) placement has continuous expanding effect for a long period. But, it is problematic to inhibit stent migration. Therefore, the new method to inhibit stent migration is needed for more successful management of anastomotic stenosis.

Aims & Methods: The aim of this study was to evaluate the clinical feasibility of new method to inhibit stent migration in postoperative anastomotic stricture. From May 2013 until February 2015, patients with benign anastomotic stricture after subtotal gastrectomy were enrolled at a single tertiary referral hospital, prospectively. The Niti-S ComVi pyloric stents (Taewoong Medical, Korea), were used. The Danis-Stent was placed in the first week after surgery. The stent was replaced at weekly intervals until the dysphagia improved. If the stent was stable, the stent was removed after 2 weeks.

Results: Among 35 patients, 13 patients had an unsuccessful endoscopic balloon dilatation (EAD) prior to Danis-Stent for massive/refractory EVB at 4 tertiary care centers in Vienna (Medical University of Vienna, Krankenanstalt Rudolfstiftung, Wilhelminenspital and Krankenhaus Hietzing). Rates of bleeding control (5 days), bleeding-related mortality (6 weeks) and overall mortality were assessed.

Conclusion: The new method with fastening the stent with loop and clip can reduce the risk of stent migration.

References


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Introduction: Benign anastomotic strictures are common adverse events of gastrointestinal tract surgery. And, they are difficult to be managed conservatively. The first choices of treatment of anastomotic strictures are balloon dilatation and bougination. But, they are requiring repeated sessions. Self-expandable metallic stent (SEMS) placement has continuous expanding effect for a long period. But, it has problem of frequent stent migration, because of slow stent expanding, 2–3 days. Therefore the new modified method to inhibit stent migration is needed for more successful management of anastomotic stenosis.

Aims & Methods: The aim of this study was to evaluate the clinical feasibility of new method to inhibit stent migration in postoperative anastomotic stricture.

From May 2013 until February 2015, patients with benign anastomotic stricture after subtotal gastrectomy were enrolled at a single tertiary referral hospital, prospectively. The Niti-S ComVi pyloric stents (Taewoong Medical, Korea), double-layered, covered, were inserted. We made two nylon thread loops at the proximal bared section of the stents. After stent placement, stent fastening with loop and clip method was performed. Patients’ symptoms and oral intake were assessed once or twice a week with a clinical check-up or telephone interview. After two weeks, the loop and stent removals were done.

Results: Among the patients, 30 patients had successfully inserted and patency were confirmed (technical success rate, 100%). The obstructive symptoms were subdued in 12 of 35 patients (clinical success rate, 92.3%). Stent migration was found in a follow-up endoscopy on 14 days (1 of 13, 7.7%). Anastomotic restenosis occurred in two patients 14 and 20 days after stent removal. However, obstructive symptoms were relieved by stent reinsertion.

Conclusion: The new method with fastening the stent with loop and clip can reduce the risk of stent migration.
Our fastening method can be feasible and useful technique for postoperative anal sphincter and subcutaneous plication, with some studies estimating the rate at around 20%.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Severity of intrathoracic and intrabdominal lymphadenopathy: mediastinal lymph nodes ≥1 at 19 (12.2%) and ≥20 (33.9%) patients, combined of 38 (64.4%) and 35 (59.3%). At pre-operated staging mostly met advanced form of cancer: T4N1 at 16 (27.1%), T4N2 at 23 (38.9%). Sensitivity in staging of tumor 89.8%. Long-term results: 1-year survival at I group 96.1%, 3-year is 42.3%, 5-year 19.6% II group 1-year survival 6.45%.

Conclusion: The use of 3D-modeling performed using MRI, spiral CT and EUS, allows to planning the optimal surgery and lymph node for locally common form of esophageal cancer, and improve the results of survival. The scope of surgery and lymph node is advised to plan taking into account the constructed 3D-models, which helps to solve the problem of the possibility of surgical intervention in esophageal cancer.

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P0287 PHARYNGEAL COLECTOMY WITH EXTENDED INDICATION OF RECTAL PRESERVATION IN RELATED ACP FAMILY ADENOMATOUS POLYPOSIS SYNDROME: SYSTEMATIC REVIEW. ADENOMA DISEASE TREATMENT NATUALLY CHANGES THE NATURAL HISTORY OF POLYPOSIS
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Introduction: Pharyngeal surgery of familial adenomatous polyposis (FAP) ranges from total colectomy with ileorectal anastomosis (IRA) to proctocolectomy with ileoanal anastomosis and J pouch (IAA). Rectal preservation is based on studies that did not include systematic endoscopic treatment that we perform. The objective was to compare IRA to IAA in terms of oncological safety and quality-of-life.

Aims & Methods: Between January 1965 and November 2015, all consecutive patients with non-inflammatory polyposis (NIP), on grey literature analysis, were searched with screening endoscopic follow up in our unit: systemic unitary endoscopic treatment of adenomas (organ, mucosectomy), were prospectively included. MYH-related polyposis and patients who underwent abdominoperineal resection were excluded from analysis.

Results: 296 patients were included: 92 proctocolectomy with IAA (31.1%), 197 total colectomies with IRA (66.5%), and 7 abdominoperineal resections (2.4%). Mean (SD) number of preoperative rectal adenomas was 24.7 (33.9) in the IRA group and 15.3 (26.9) in the IAA group (p = 0.06). Mean (SD) number of rectal cancer recurrence was 3.1% (n = 9). Mean (SD) follow-up was 16.6 (11.9) years, during which the mean (SD) number of lower endoscopies was 3.4 (2.5) in the IRA group vs. 3.4 (2.5) in the IAA group (p = 0.91); mean (SD) number of treated adenomas was 17.8 (20.8) and 12.9 (18.8), respectively (p = 0.06); secondary cancer incidence was 6.1% vs. 1.1% (p = 0.06). The 15-year recurrence-free and overall survival (IR vs. IAA) were respectively 99.5% vs. 100% (p = 0.09) and 98.9% vs. 98.8% (p = 0.82).

Conclusion: Combination of aggressive endoscopic treatment and extended rectal preservation appears to be a safe alternative to ileoanal anastomosis and J pouch.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0288 ANAL PROBLEMS DURING PREGNANCY AND POSTPARTUM: A PROSPECTIVE COHORT STUDY
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Introduction: Many pregnant women have anal symptoms during pregnancy and postpartum. The most common proctological problems reported are haemorrhoids, anal fissures and anal incontinence. Literature about this problem is scarce.

Aims & Methods: The aim of this study is to determine the prevalence of anal problems and constipation during the second and third trimester of pregnancy, in the immediate postpartum and up to three months after childbirth. We want to identify the risk factors for the development of anal symptoms. This is a prospective cohort study. Women between their 19th and 25th week of pregnancy are included. High-risk pregnancy and non-Dutch speaking are exclusion criteria. Nineteen women were followed up using a symptom questionnaire in the second and third trimester, in the immediate postpartum (within 3 days) and three months postpartum. Descriptive data were obtained from the patient files. A specific proctological diagnosis was presumed on the basis of combined symptoms (rectal bleeding, anal pain and swelling). Constipation was defined by the Rome III criteria. Statistical analysis was performed with SPSS and risk factors were identified using multivariate analysis with binary logistic regression.

Results: Sixty-eight percent of the women developed anal symptoms during the whole study period. Anal symptoms occurred in 50% of the women during the whole study period. The most prevalent symptom was anal pain. Constipation was reported by 60.7% during the whole study period. Most prevalent hemorrhoidal lesion was hemorrhoidal thrombosis (immediate postpartum to hemorrhoidal prolapse (3rd trimester and immediate postpartum) and anal fissure (not episode-related). Anal incontinence was only reported in 2% during the postpartum. Multivariate analysis identified constipation and a history of anal problems as significant risk factors for the development of anal complaints postpartum.

Conclusion: Two-thirds of pregnant women deal with anal symptoms during pregnancy or postpartum, especially hemorrhoidal complications and anal fissure. This high prevalence emphasises the clinical importance of this problem. The most important risk factor is constipation. Therefore, prevention of constipation in pregnant women is recommended.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0289 SURGICAL TREATMENT OF DIVERTICULITIS AND ITS COMPLICATIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROL TRIALS
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Introduction: Diverticulitis is a common gastrointestinal disease in developed countries, especially among elders. It is classified into five stages according to the severity of the inflammation with stage 5 involving perforation as a consequence. Perforation and abscess formation occur with 30%–50% and lead to mortality reaching 32%. This indicates that acute diverticulitis is an emergency case requiring rapid management. However, the surgical interventions of diverticulitis vary according to its grade and severity, there is a controversy about the preferable surgical approach of these different complications and procedures.

Aims & Methods: We aimed to systematically review and meta-analyse randomized controlled trials (RCTs) comparing outcomes and complications between different surgical approaches for acute diverticulitis and its complications. Nine electronic databases, including PubMed, Scopus, Google Scholar, ISI Web of science, WHO Global health library (GHL), POPLINE, Virtual health library (VHL), NYAM (New York Academy of Medicine), and SIGLE (System for Information on Grey Literature in Europe), were searched for RCTs comparing different surgical procedures for different grades of diverticulitis. Out of 1738 articles, we included 14 studies with 1076 patients. The primarily assessed outcomes were post-surgical mortality rate besides short- and long-term post-surgical complications and costs. The risk of bias was assessed using the Cochrane Collaboration tool. The pooled risk ratio (RR) and 95% confidence interval (CI) were calculated in the meta-analysis using the RevMan platform. The protocol was registered in PROSPERO (CRD42015032290).

Conclusion: There has been enormous progress in diagnosing and treatment of diverticulitis and its complications (RR = 0.29, 95% CI [0.12–0.67]; P = 0.00) and all minor postoperative complications (RR = 0.29, 95% CI [0.12–0.67]; P = 0.00) were non-significant in both short-term and long-term precense of intra-abdominal abscesses were significantly higher in the LL group (RR = 1.55, 95% CI [0.79–3.04]; P = 0.32) and mortality (RR = 0.95, 95% CI [0.46–1.31], P = 0.34), and mortality (RR = 0.95, 95% CI [0.10–2.50]; P = 0.80), and all minor postoperative complications (RR = 0.98, 95% CI [0.62–1.57]; P = 0.94). Similarly, there was no difference between the two procedures regarding the long-term postoperative complications (RR = 0.92, 95% CI [0.37–2.47], P = 0.92) and long-term mortality (RR = 0.87, 95% CI [0.54–0.96], P = 0.07) follow up. Furthermore, the short-term reoperation rate and long-term precense of intra-abdominal abscesses were significantly higher in the LL group (RR = 1.55, 95% CI [0.79–3.04]; P = 0.32) and mortality (RR = 0.95, 95% CI [0.12–2.50]; P = 0.32) follow up. The remaining five RCTs compared laparoscopic lavage with resection (sigmoidectomy) for treatment of perforated diverticulitis with peritonitis, the postoperative mortality rate was non-significant in both short-term (RR = 1.55, 95% CI [0.79–3.04]; P = 0.21) and long-term (RR = 0.67, 95% CI [0.29–1.58]; P = 0.36) follow up. Hence, LL is feasible and can act as definitive treatment. Further RCTs are still needed to make a decision regarding these and other procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0290 NLR AND PLR IN DIAGNOSING SYNCHRONOUS LIVER AND LYMPH NODE METASTASES IN PATIENTS WITH CRC
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Introduction: There has been enormous progress in diagnosing and treatment of colorectal cancer (CRC), however a great number of patients is nevertheless diagnosed at an advanced disease stage. It is of great importance to develop affordable, inexpensive, prognostic, diagnostic, and treatment predicting biomarkers in early diagnostics of CRC considering its incidence worldwide. There are studies suggesting that the systemic inflammation play an important role in CRC tumor stage development, which can be reflected by the levels of neutrophil to lymphocyte ratio (NLR) and platelet to lymphocyte ratio (PLR).

Aims & Methods: This study was designed to investigate the efficiency of preoperative NLR, PLR as a tool for the assessment of synchronous lymph nodes
and liver metastases in newly diagnosed patients with CRC. Three hundred patients with CRC undergoing conforming resection were included in this cross-sectional study. Complete blood counts with automated differential counts were performed preoperatively. The NLR was calculated by dividing the absolute neutrophil count by the absolute lymphocyte count; also PLR was calculated by dividing the absolute platelet count by the absolute lymphocyte count. The diagnostic performance of NLR and PLR was estimated by ROC curve.

**Results:** Our results suggest that there was high statistically significant difference between NLR (p = 0.003), PLR (p = 0.002) and tumor stages (I to IV). ROC curve analysis showed high diagnostic efficiency of NLR (AUC 0.774, 95%CI = 0.683–0.790) and PLR (AUC 0.698, 95%CI = 0.663–0.742) for synchronic lymph node and liver metastases. Also combination of NLR and PLR improved diagnostic efficacy (AUC 0.841, 95%CI = 0.811–0.863) for synchronic liver and lymph node metastases.

**Conclusion:** Our results suggest that NLR and PLR could be useful diagnostic CRC biomarkers, and could have potential use in early recognition of different stages of CRC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Conclusion:** Our data suggest that haemorrhoidectomy may be performed safely in UC patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**Introduction:** Haemorrhoidectomy in ulcerative colitis (UC) have been considered to be potentially dangerous, but the evidence is poor.

**Aims & Methods:** A study was conducted to ascertain the safety of haemorrhoidectomy in ulcerative colitis. 320 consecutive patients with UC were recruited from the year 2004 to 2014. Patients demographics and clinical characteristics (anorectal symptoms, prior non operative haemorrhoidal therapy, whether proven UC preoperatively (BD) and unproven preoperatively (AD), whether to use azathioprine, presence of other perianal disease, and activity, anatomic location of UC) were recorded. Postoperative complications, and differences between BD and AD were analysed.

**Results:** The patients were 29 males (65.9%), median age 44 (range, 19–72) years. Predominant symptoms were bleeding and prolapse (n = 24; 54.5%), prolapse only (n = 6; 13.6%), bleeding only (n = 14; 31.8%). 17 patients (38.6%) were diagnosed with UC prior to surgery. 4 patients (9.1%) had haithrohoid therapy before surgery. There was no perianal disease. Disease was limited to the rectum (n = 13; 75%), left-sided (n = 9; 20.5%), and extended to right-sided (n = 2; 4.5%). During follow-up, there were no complications such as sepsis, anal stenosis, abscess and fistula formation, and recurrence. There was no difference in complications and other clinical characteristics between BD and AD. There was no difference in complications according to disease extent (p = 0.158).

**Conclusion:** Our data suggest that haemorrhoidectomy may be performed safely in UC patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**Introduction:** Temporary loop ileostomies are commonly performed to protect a colorectal anastomosis. Although they have been shown to reduce the number of leaks requiring surgery, they remain a source of complications and have an adverse effect on the quality of life. A few non-randomized studies have shown the feasibility of early stoma closure.

**Aims & Methods:** To compare the outcomes of early and delayed closure of temporary loop ileostomy in terms of operative parameters, morbidity, mortality, and quality of life. The study was conducted from May 2014 to September 2015. Following creation of loop ileostomy after colorectal surgeries, distal loop conti- stent closure was done on POD 7. Patients who had no leak were randomized to either early closure (8–13 days) or delayed closure (after 6 weeks) group. Patient demographics, operative parameters, morbidity, mortality and quality of life data were recorded in both groups.

**Results:** There were 24 patients in each group. Both groups were comparable in terms of demographic data except for age, which was significantly higher in the early closure group (p = 0.012) in the early closure group. Incidence of stoma related complications (p = 0.01) and Pitot stoma complication severity index (p = 0.01) were significantly higher in the delayed group. Operative time (p = 0.033) and Surveys assessment score (p = 0.0012) for the stoma closure surgery were significantly lower for the early closure group. There was no significant difference in the duration of hospital stay and the incidence of postoperative complications in the two groups. Quality of life as calculated by the Ostomy Adjustment Index score (OAI 23) was better in the early closure group (p = 0.014).

**Conclusion:** Early closure of a temporary loop ileostomy is feasible with the advantages of decreased stoma related morbidity, operative difficulties without increased morbidity and mortality when compared with conventional delayed ileostomy closure.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
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Introduction: Ger reported the first laparoscopic hernia repair in 1982 by approximating the tissue with stainless-steel sutures. The laparoscopic transabdominal preperitoneal (TAPP) repair was a revolutionary concept in hernia surgery and was introduced by Arregui and Dion in the early 1990s. Institutions performing radical laparoscopic surgery for inguinal hernia have been rapidly increasing since the NHI point was amended in Japan. However, in the 12th JAPAN SOCIETY FOR ENDOSCOPIC SURGERY questionnaire survey, the recurrence rate after surgery employing the TAPP method was reported to be 4%, posing a problem regarding the thoughtless introduction of the TAPP method. Our hospital, with surgery employing the TAPP method only from June 2014 onwards until April 2015, but treatment of inguinal hernia was integrated, the indication was established in May 2015, and laparoscopic surgery employing the TAPP method has been performed for the indicated cases. In this study, we investigated the current state of inguinal hernia in our department as follows. Symptomatic inguinal hernia is treated using the TAPP method when there is only one POSSUM score-based risk factor. When 2 or more risk factors are present or the patient has undergone surgery of the prostate, the anterior approach is employed (the UHS and Mesh Plug methods for internal and external inguinal hernia, respectively). Treatment under local anesthesia is prioritized for patients aged 90 years or older and patients with PS2 or higher. Arrangement in operating room is that the operator and assistant stand on the left and right sides of the patient, respectively, an anesthesiologist stands at the patient’s head, and a nurse stands caudal to the assistant.

Aims & Methods: In this study, we investigated the current state of inguinal hernia treatment at our hospital. The subjects were 120 patients who underwent radical surgery for inguinal hernia before and after the full-scale introduction of the TAPP method (early period: October 2014-April 2015 (7 months), late period: May 2015-November 2015 (7 months), 47 and 73 patients were treated in the early and late periods, respectively). Changes in the surgical procedure, complications, and duration of hospital stay were investigated in 120 patients.

Results: The median age was 70 years (19-91 years). There were 114 male and 6 female patients, with a total of 132 lesions (unilateral in 108 (right: 60, left: 48) and bilateral in 12). The hernia classification (Japanese Hernia Society) was 1, 2, 3, 4, rec in 91, 37, 0, 3, and 1 lesions. Surgery was performed under local anesthesia in 43, lumbar anesthesia in 1, and general anesthesia in 76. A laparoscopic scope was used in 70, and not used in 50. TAPP, mesh plug, and UHS and others were used in 58, 54, 17, 3 lesions. There was no change for both the Early period and the Late Period about the median operative time (Early period: 93 minutes, Late Period: 102 minutes). Early Period was 4 days (4–24), Late Period was 3 days (1–18), and the Late Period was 3 days (2–18). The most frequent one was temporary urination disorder in 2 (20%) patients. The median number of harvested lateral lymph node was 20 (14–23). So far there are no recurrent cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

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Introduction: Total mesorectal excision (TME) with lateral pelvic lymph node dissection (LLND) is a standard procedure for low rectal cancer in Japan. However, ME alone is the international standard surgical procedure for rectal cancer. The complete LLND is indicated because of the pelvic cavity and the complicated anatomical structure and invasive procedure which needs longer operative time and greater blood loss. Herein we introduce laparoscopic LLND as our new procedure securing equivalent range of lymph nodes.

Aims & Methods: After laparoscopic ME, the external iliac artery was exposed and the external iliac nodes were completely removed from inguinal ligament. Obturator nodes were completely dissected while preserving the obturator nerve, resecting the obturator artery and vein, and confirming lateral pelvic wall, bladder wall and sacic vein. Subsequently, proximal internal iliac nodes were removed and superior vesical artery was separated. Distal internal iliac nodes from the coccygeal muscle (Akcock’s canal) were completely dissected while preserving the superior vesical artery and the pelvic plexus, and transecting several inferior vesical arteries. Finally, bilateral hypogastric nerves were separated to be preserved. Common iliac nodes were dissected; aortic bifurcation nodes and presacral nodes were also dissected by exposing the aortic bifurcation and the pelvic surface of the sacrum.

Results: Between 2015 and 2016, we performed laparoscopic ME with LLND for 10 patients with cT2 or deeper low rectal cancer. The median operative time was 502 min (429–679 min), and the median blood loss was 90 ml (5–500 ml). Postoperative complications developed in 4 (40%) patients, and the most frequent one was temporary urinary incontinence disorder in 2 (20%) patients. The median number of harvested lateral lymph node was 20 (14–23). So far there are no recurrent cases.

Disclosure of Interest: Our laparoscopic LLND provides good visual field and reduces an amount of operative bleeding and results in favorable clinical outcomes.

Aims & Methods: After laparoscopic ME, the external iliac artery was exposed and the external iliac nodes were completely removed from inguinal ligament. Obturator nodes were completely dissected while preserving the obturator nerve, resecting the obturator artery and vein, and confirming lateral pelvic wall, bladder wall and sacic vein. Subsequently, proximal internal iliac nodes were removed and superior vesical artery was separated. Distal internal iliac nodes from the coccygeal muscle (Akcock’s canal) were completely dissected while preserving the superior vesical artery and the pelvic plexus, and transecting several inferior vesical arteries. Finally, bilateral hypogastric nerves were separated to be preserved. Common iliac nodes were dissected; aortic bifurcation nodes and presacral nodes were also dissected by exposing the aortic bifurcation and the pelvic surface of the sacrum.
lower abdomen. The bowel extraction was performed by invagination transrectal. The mesenteric distal linear stapling of the sigmoid, the colorectal anastomosis was completed by applying a circular stapling device transrectally, assisted by a transcutaneous inserted grasper. Function testing was performed by the colonoscope. Gastric access closure was performed by OTSC clips.

**Results:** The procedure was successful in all animals with operation time ranging from 4.5 to 6 hours. After weight gain in all cases, the animals were sacrificed after postoperative day 42 and the workup showed competent anastomotic healing with a stenosis and consecutive prestenotic dilatation in one case. These anastomotic peripheral abscesses beside the anastomosis. Gastric closure was healed and the OTSC clip still in situ in all animals. In one case we used two OTSC clips for gastric closure, there were severe adhesions with two peri gastric abscesses.

**Conclusion:** The use of an operating platform like the Anubisscope has the advantage of flexible preparation in opposite position of the instruments. The disadvantages are the only two degrees of freedom of the flexible instruments and the rotation-like movements. Flexible colonoscopy provided a fixed reference frame that enabled preparation and dissection. For resection and anastomosis, an additional transcutaneous access was necessary.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**PD028**

**ASCITES, COMPLEX ADENAL MASSES AND RAISED CA-125 IN POST-MENOPAUSAL WOMEN: OVARIAN CANCER OR TUBERCULOSIS?**

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**Introduction:** In patients with pelvic tuberculosis (TB) advanced ovarian cancer, two conditions with different management and prognosis, have many similarities: ascites, complex adenal mass, peritoneal deposits, and raised CA-125 level. Symptoms such as weight loss, reduced appetite, and dull abdominal pain are also seen in both entities.

**Aims & Methods:** The aim of this study was to analyze patients’ characteristics, laboratory investigations, radiological and surgical findings in post-menopausal women with pelvic TB who were diagnosed after laparotomy or laparoscopy for suspected ovarian cancer. We report twenty-one cases of pelvic-peritoneal TB in post-menopausal women who presented with features mimicking ovarian malignancy from 2004 to 2014 in a Tunisian center.

**Results:** The mean age was 59.8 (46–87 years). Three patients have personal or family history of tuberculosis. Two women presented with abdominal pain and distension of varying duration of 1 month to 6 months. Eleven patients had reduced appetite and weight loss, and four women gave a history of low-grade fever. A CT scan showed the presence of solid-ectopic adenal masses ranging 3 cm to 12 cm in diameter in 100% and ascites in 90.4%. Ascitic fluid analysis was done in 19 patients which showed a lymphocytic predominant pattern, and absence of malignant cells. The volume of the ascitic fluid was up to 12 cm in 100% and ascites in 90.4%. Ascitic fluid analysis was done in 19 patients which showed a lymphocytic predominant pattern, and absence of malignant cells. Ascitic fluid cultures was negative in all. CA-125 was elevated in all and ranged between 183 and 13001U/mL. CA-125 > 600U/L was found in three women. Quantiferon-TB Gold (QFT-G) performed in 3 patients was positive in two. A laparoscopic evaluation with biopsies was performed in 16 patients and an exploratory laparotomy in 4 women for suspected ovarian cancer. Intraoperative findings of tubercles on the pelvic organs and peritoneal surfaces strongly support the diagnosis. In two, TB was not suspected intraoperatively. The diagnosis of TB was confirmed by histopathology in 95.2%. Response to therapeutic trial of anti-tubercular drugs was the basis of diagnosis in one case because of clinical risk.

**Conclusion:** It is a diagnostic challenge to differentiate pelvic-peritoneal TB from ovarian cancer which has entirely different management and prognosis. Ascitic fluid showing lymphocytic predominance and no malignant cells and CA-125 in the blood plasma showed (15.1±1.35 mmol/l (p<0.05 to control)), while spontaneous production of IL-8 chemokine in rectal biopsy samples went up (300.0±60 ng/ml, P<0.005). In case of the LPS stimulation the production of IL-8 chemokine in the CM went up markedly (750.0±60 ng/ml, P<0.005). There was significant inverse correlation (r) detected between the CA-125 levels in the blood plasma, on one hand, and indicators of the UC clinical, endoscopic activity and the intensity of the inflammatory infiltrate in the CM, on the other. Direct relationship was found between peritoneal abscesses and estimulanted production of the IL-8 chemokine and the density of the inflammatory infiltrate in the CM of patients with active UC. Through the period of the clinical remission development (an average of 8 weeks) the CA-125 levels increased up to 94.25±4.28 mmol/l (P<0.05), yet have not reached the control value (P<0.05 to control). Induction of the clinical remission was associated with a decrease to the level of the control values for spontaneous and LPS-induced IL-8 production, regardless of UC activity.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Conclusion: (1) *H. pylori* infection can alleviate the acute and chronic colitis induced by DSS. (2) *C. difficile* Mmp9 in preventing and accelerating colitis. (3) CD19*°* IL-10° Breg cells expanded significantly in *H. pylori*/DSS co-treated acute colitis mice. (3) CD19*°* IL-10° Breg cells expanded while CD4°CD25°Foxp3° Treg cells reduced significantly in H pylori/DSS co-treated chronic colitis mice. The potential protective effect on acute and chronic colitis induced by DSS may pass through the expansion and function of CD19° IL-10° Breg cells.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0301 Fungal Composition and Fungi-Bacteria Correlation in IBD Patients with Different Treatment Strategies

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Introduction: The microbial dysbiosis plays a pivotal role in the pathogenesis of inflammatory bowel disease (IBD), however, the role of fungal microbiota in IBD was unclear. The aim of our study was to clarify the gut fungal composition in IBD patients with different treatment strategies.

Aims & Methods: 73 IBD patients were divided into three groups, Untreatment (n = 21), Antiinflammation (n = 43) and Immunosuppression (n = 9). Antiinflammation was defined as treatment with 5-aminosalicylic acid (5-ASA), salazosulfapyridine (SASP) and Immunosuppression as treatment with Glucocorticoid (GC), azathioprine (AZA), biologics and thalidomide. Noninflamed and inflamed mucose were acquired for 16S and ITS sequencing, respectively. Inflamed mucosa infected with fungi for RNA extraction and real-time PCR to detect the expression of IBD-associated biomarkers, such as TNF-alpha, IL-17A, MCP-1, etc. Analysis of Spearman’s correlation was performed to estimate the fungi-bacteria and microbiota-biomecorrelation.

Results: Compared with noninflamed mucosa, lower diversity and evenness were observed in inflamed mucosa in all IBD patients, but no significance in noninflamed (or inflamed) mucosa of different treatment strategies. Beta diversity between noninflamed and inflamed treated patients significantly altered fungi-bacteria correlation patterns in noninflamed mucosa of different treatment strategies. Beta diversity between untreated and inflamed treated patients significantly altered fungi-bacteria correlation patterns in inflamed mucosa.

Conclusion: Fungal microbiota may alter the gut inflammatory environment in IBD patients with different treatment strategies. Further study is needed to elucidate the underlying mechanisms.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0303 UCSAL CYTOKINE PROFILE IN INFAMMATORY BOWEL DISEASE PATIENTS: A LASER CAPTURE MICRODISSECTION APPROACH

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Introduction: Crohn’s Disease (CD) and Ulcerative Colitis (UC) are inflammatory Bowel Diseases associated with a complex ecology, including an immune responsive against microbial and autologous antigens and an imbalance between pro-inflammatory and anti-inflammatory mediators. Different approaches have been used to study the pattern of cytokines in IBD and few data are available on cytokines production in different intestinal compartments.

Laser Capture Microdissection (LCM) is a powerful tool for the isolation of specific tissue compartments.

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3. Hu, J., et al., Matrix metalloproteinase inhibitors as therapy for inflamma-
Aims & Methods: This work was designed to investigate the pattern of cytokines that regulate the mucosal immune response occurring in different intestinal compartments of IBD patients, using LCM technology (1). Frozen sections of colonic biopsies were obtained from 5 patients with active CD, 5 patients with active UC and 5 controls. None of the patients with CD or UC had been ever undergone mucosal inflammation and pathogenesis of UC. Although the etiology of ulcerative colitis (UC) has yet to be characterized, it is increasingly accepted that the cause of UC might well be related to mucosal inflammation and pathogenesis of UC. Further studies were needed to define the fungal composition in detail and to identify the role of different fungi in the gut, and determine the mechanism of the host-fungal interaction underlying the development of UC.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Aims & Methods: We aim to characterize here the functional relevance of the macrophage phenotype in fibrosis development. WT or STAT6 (-/-) mice were given TNBS (0.5, 0.5, 0.75, 0.75, 1, and 1 mg, intrarectally) or saline weekly and they were sacrificed 3, 5 or 7 weeks after the first TNBs administration. The percentage of CD206, CD16, and CD86 positive cells was analyzed by flow cytometry in F4/80+ macrophages isolated from the intestinal mucosa. The mRNA expression of Cd16 ligands was evaluated in F4/80+ CD16+ macrophages isolated from the mucosa, 7 weeks after the first TNBS administration and results are expressed as fold induction vs vehicle-treated mice. The mRNA expression of Cd16 and fibrosis markers were evaluated in the colonic mucosa.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Reference
before treatment in the active stage to possibly be associated with increased proliferation of Bacteroides, Parabacteroides, Rikenella, Clostridium, Flavonifractor, Pelagibacter, Bordetella, Massilia and Piscivectris species. In responders after treatment, populations of Bifidobacterium and Lactobacillus species were significantly increased. In this study, there was an especially strong negative correlation between Bacteroides and Bifidobacterium both before and after treatment.

**Conclusion:** These results suggested metagenomic analysis results to be associated with a remarkable change in gut microbiota after antibiotic combination treatment. In responders, the change in composition is associated with changes in Bifidobacterium and Lactobacillus species and a decrease in Bacteroides.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**P0307 GLP-1 EXPRESSING ENTEROENDOCRINE CELL NUMBERS ARE REDUCED AT THE SITE OF ACTIVE DISEASE IN VARIOUS MOUSE MODELS OF INTESTINAL INFLAMMATION**


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**Aims & Methods:** To our knowledge, this work provides the first comprehensive study of GLP-1 expressing Enteroendocrine cell numbers before treatment in active stage to possibly be associated with increased proliferation of Bacteroides, Parabacteroides, Rikenella, Clostridium, Flavonifractor, Pelagibacter, Bordetella, Massilia and Piscivectris species. In responders after treatment, populations of Bifidobacterium and Lactobacillus species were significantly increased. In this study, there was an especially strong negative correlation between Bacteroides and Bifidobacterium both before and after treatment.

**Conclusion:** These results suggested metagenomic analysis results to be associated with a remarkable change in gut microbiota after antibiotic combination treatment. In responders, the change in composition is associated with changes in Bifidobacterium and Lactobacillus species and a decrease in Bacteroides.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**Introduction:** Classically, endoenteric cells (EEC) are regulated for metabolizing gastrointestinal motility, secretion, and insulin levels by release of peptide hormones like GLP-1. Via receptors and transporters, GLP-1 are capable of sensing the lamina propria and luminal environment, including the microbiota, and also mediate immune-related signals. In particular, the L-cell-derived incretin hormone glucagon-like peptide 1 (GLP-1) is increasingly recognized to exert direct effects on immune cells and to orchestrate a metabolic-inflammatory response. In inflammatory bowel disease (IBD), a role for EEC in disease pathogenesis is indicated by a risk-associated SNP and autoantibodies affecting EEC function. Ex-vivo findings regarding peripheral blood neutrophils and colon tissue specimens were verified using appropriate in-vitro stimulations of control neutrophils with corresponding sera and intestinal tissue-conditioned media, respectively. Identification and quantification of NETs were performed with immunofluorescence confocal microscopy (ICM), flow cytometry and MPO/DNA complex ELISA. The expression of TF on neutrophils/NETS was determined using ICM, qRT-PCR and western blot analysis. The bioactivity of TF on NETs was assessed by measuring thrombin-antithrombin complex levels with ELISA.

**Results:** Neutrophils from patients with active UC are characterized by increased NET formation in both the peripheral blood and affected colonic mucosa, compared to CD. Furthermore, NETs in UC are decorated with functional tissue factor (TF) and the amount of TF-bearing NETs was reduced from the inflamed to normal colon. In-vitro stimulations of controls neutrophils with sera or intestinal tissue-conditioned media corroborated the findings obtained ex-vivo.

**Conclusion:** NETs expressing bioactive TF may be involved in the induction of intestinal inflammation and systemic thrombosis in UC probably constituting a novel candidate diagnostic and/or therapeutic target.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Concomitantly, these cells were positive for the WNT ligand WNT10A and autophagy/mitophagy-associated LC3, suggesting autoregulatory mechanisms. Mitochondrial function not only reflects the maintenance of the stem cell niche and mitochondria-associated functional alterations, respectively.

Conclusion: Our results indicate that mitochondrial function not only reflects differences in disease phenotype of UC. For the UC cohort, robust models were obtained by OPLS-DA between SAs and Caucasians (R²Y 0.832, Q²Y 0.395, p < 0.0001). Combined analysis revealed 1611 significant features (faecal HILIC 60, urine HILIC 189, serum BA 489 and faecal BA 873). The assigned features are shown in Table 1. Faecal HILIC showed significantly higher essential amino acids (Adenine, L-phenylalanine, L-tryptophan) levels on UV and higher L-cytochrome and creatinine levels on MV analysis for SAs. Urine HILIC showed lower creatine, L-phenylalanine and hippuric acid levels. Serum primary (Cholic and chenodeoxycholic acid) and secondary bile acids (BA modified by the gut) were significantly reduced in SAs. Table 1: Significant metabolites in OPLS-DA model between South Asian (SA) and Caucasians with UC. *compound is increased or decreased in SA compared with Caucasians respectively.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0310** METABONOMIC PROFILING OF ULCERATIVE COLITIS PATIENTS; RESULTS FROM AN INCEPTION COHORT TIME SERIES ANALYSIS

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**Introduction:** Previous studies have shown differences in disease phenotype of ulcerative colitis (UC) in South Asian (SA) migrants compared to Caucasians with pan-colonic phenotype predominant.1 The gut microbiota differs in Caucasian and SA patients with UC2 however, there is limited evidence on how this translates to the metabolome.

**Aims & Methods:** We aimed to examine the metabolic profile in a newly diagnosed cohort of UC patients recruited from St. Marks Hospital, London, UK. Patients were stratified by ethnicity (SA, Caucasian, Other), treatment (None, 5-ASA, Azathioprine and Steroids) and disease duration. Healthy controls (HC) were recruited locally among the staff at St. Marks Hospital. Biofluids (urine, faeces and serum) were collected at diagnosis (time point 1; months 0–3) and 1 further time points over one year (time point 2: months 4–8, time point 3: months 9–12). Metabonomics approach was applied using two different UPLC-MS profiling methods; for small metabolites (hydrophilic liquid chromatography, HILIC) and for bile acids (BA) platforms. Univariate (UV) and multivariate (MV) data analysis was implemented to build models using principle component analysis (PCA) and orthogonal partial least squares -discriminant analysis (OPLS-DA) to find metabolites that were expressed in significantly different amounts between the two populations, time points (1 vs 3) and treatment groups.

**Results:** Fifty patients with UC of SA and Caucasian backgrounds were recruited. A total of 309 samples were collected. Sample collection was completed for all time points for 18 SA (11 UC and 7 HC) and 21 Caucasians (9 UC and 12 HC). There was no significant difference between SA and Caucasian at time points 1, 2 and 3 and treatment groups. Significant differences were observed between HC vs. disease, SA HC vs. Caucasian HC and SA UC vs Caucasian UC. For the UC cohort, robust models were obtained by OPLS-DA between SAs and Caucasians; Faecal HILIC (R²Y 0.896, Q²Y 0.451, p < 0.0003) and urine HILIC (R²Y 0.783, Q²Y 0.526, p < 0.0001) and serum BA (R²Y 0.702, Q²Y 0.517, p < 0.0001) and faecal BA (R²Y 0.832, Q²Y 0.395, p < 0.0001). Combined analysis revealed 1611 significant features (faecal HILIC 60, urine HILIC 189, serum BA 489 and faecal BA 873). The assigned features are shown in Table 1. Faecal HILIC showed significantly higher essential amino acids (Adenine, L-phenylalanine, L-tryptophan) levels on UV and higher L-cytochrome and creatinine levels on MV analysis for SAs. Urine HILIC showed lower creatine, L-phenylalanine and hippuric acid levels. Serum primary (Cholic and chenodeoxycholic acid) and secondary bile acids (BA modified by the gut) were significantly reduced in SAs. Table 1: Significant metabolites in OPLS-DA model between South Asian (SA) and Caucasians with UC. *compound is increased or decreased in SA compared with Caucasians respectively.

**Conclusion:** This study highlights the promise of UPLC-MS profiling to differentiate between SA and Caucasian groups. There are several possible reasons but two important factors are differing microbial metabolism and diet between the two groups. We are conducting further studies incorporating dietary data and 16S microbial analysis in this cohort. In combination with matching disease extent (left-sided vs colonic disease) may help to identify possible explanations for the different disease phenotype in this group.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0311** BASELINE CLINICAL AND ENDOSCOPIC FEATURES OF ULCERATIVE COLITIS PATIENTS ARE RELEVANT GUIDE FOR SELECTING RESPONDERS TO SELECTIVE DEPLETION OF MYELOID LINEAGE LEUCOCYTES AS REMISSION INDUCTION THERAPY

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**Introduction:** Patients with active inflammatory bowel disease have elevated myeloid lineage leucocytes1 including the CD14+ CD16- DR+ e phenotype known as proinflammatory monocytes, and a major source of tumour necrosis factor-α.2 Accordingly selective depletion of myeloid leucocytes by granulocyte/monocyte apheresis (GMA) is expected to promote remission or enhance drug efficacy. However, studies in ulcerative colitis (UC) patients have reported contrasting efficacy outcomes, ranging from an 85%3 to statistically insignificant level.4 Patients’ baseline demographic features may guide to selecting responder patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Aims & Methods: In a retrospective and single-centre setting we aimed to under- stand if patients’ baseline clinical and endoscopic features were relevant guide for identifying likely responders and non-responders to adsorptive GMA. The sub- jects were 145 consecutive UC patients who had undergone GMA with the Adacolumn as remission induction therapy between 2012 and 2016. Seventy- five patients were steroid naïve, 70 were steroid dependent, and 2 patients were steroid refractory. Patients had received up to an 11 GMA sessions over 10 weeks. At entry and week 12, patients were clinically and endoscopically evaluated, allowing each patient to serve as her or his own control. Clinical activity index was defined as remission. Biopsies from endoscopically detectable inflamed large intestinal mucosa were processed to see the impact of GMA on leukocytes within the mucosal tissue.

Results: At entry, the average CAI was 12.8, range 10–17. Ninety-three patients (66%) had the ability to induce regulatory T cells (Treg) play an important role in maintaining immune tolerance and have been proposed for treatment of inflammatory bowel disease (IBD). Among SCFA, butyrate has been described as a potent communicator to the immune system eliciting an anti-inflammatory response and other positive effects to human health. A reduction of faecal butyrate levels has been reported in IBD but results have been conflicting or discrepant because of small study numbers and failure to distinguish disease type, activity or other variables such as diet. Microbiota is receiving increasing attention as a key environmental factor influencing IBD and butyryl-CoA:acetate CoA-transferase (BcoAT) is considered the main enzyme involved in butyrate synthesis by gut microbiota.

Conclusions: Reduced butyrate-synthetic capacity was found in patients with active and in active UC (p < 0.001 and p < 0.01, respectively), but only in active UC (p < 0.05). In patients with CD, low BcoAT gene content (below 9.5 log10 copies BcoAT/g) was associated with active disease, increased inflammation, lower microbial diversity, greater microbiota compositional change and decreased butyrogenic taxa, while no major changes were observed between patients with UC/grouped according to BcoAT gene levels. Reduced BcoAT gene content in patients with CD was, in part, linked with lower intake of certain foods containing fibre (vegetables, fruits, high-fibre cereals, brown/wholemeal bread) which may identify GMA responder patients should guide to stop futile use of medical resources.

Disclosure of Interest: A.R. Sanibadi: Dr. Sanibadi has a non-regular employment position at JIMRO. All other authors have declared no conflicts of interest.

References

P0312 THE EFFECTS OF GLIAL-DERIVED NEUROTROPHIC FACTOR PRODUCED BY ENTERIC GLIAL CELLS ON DENDRITIC CELL AND ITS ROLES IN DEXTAN SULPHATE SODIUM INDUCED COLITIS
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Introduction: Much research has demonstrated that enteric glial cell (DC) play an important role in maintaining immune tolerance and have been proposed for treatment of inflammatory bowel disease (IBD). In this study, we report on the use of glial-derived neurotrophic factor (GDNF) produced by Enteric glial cells (EGCs) as a novel approach to induce tolerogenic DCs with capacity to induce Treg, to restore immune tolerance in vivo, and to ameliorated experimental colitis.

Aims & Methods: DCs were generated from rat bone marrow (BMDC) in the absence or presence of GDNF (DCGDNF) and additionally stimulated with LPS to induce maturation (mDC). The expression of major histocompatibility complex II (MHC-II), CD40, CD80, and CD86 was determined by flow cytometry. Levels of IFN-γ, interleukin-4 (IL-4), and IL-10 in the culture supernatants were determined by ELISA. The expression of GDNF receptor-α1 (GFRα1) in DCs was detected by immune-fluorescence staining. The expression of GFRα1 and ERK1/ERK2 in DCs was tested by Western Blot. SD rats were fed with 5% Dextran Sulphate Sodium (DSS) to induce experimental colitis, the thymus were removed for further use. The severe clinical signs of the disease including weight loss, diarrhoea, colitis, histopathology were evaluated, and the mechanisms involved in the potential therapeutic effect of DCGDNF, such as inflammatory cytokines and chemokines (IL-4, IFN-γ, TNF-α, IL-1β, IL-17), the expression of IL-10, -12, 71, 17), the generation of IL-10, and the secreting Treg (Treg1), and the level of Treg1/Th2, Treg1/Th17 were investigated.

Results: GFRα1 was expressed in BMDC, and the expression of ERK1/ERK2 were significantly up-regulated after treatment with GDNF. DCGDNF did not up-regulate the expression of MHC-II, CD40, CD80, CD86, and induced very low levels of proinflammatory cytokines (IFN-γ, IL-6) but secreted significant levels of the anti-inflammatory cytokine IL-10 after LPS stimulation, as compared with DCcontrol. CD4 cells primed with DCGDNF resulted in weak proliferation and exhibited a Treg1-like phenotype, which characterized by IL-10, whereas DCcontrol induced a strong proliferation, exhibited a phenotype characterized by IFN-γ, IL-4. DCGDNF injection significantly ameliorated body weight loss, diarrhoea, and colonic histopathology injury in rat, and DCGDNF injection strikingly reduced the production of inflammatory factors such as IL-6, TNF-α, IL-1β, IL-17, generated Treg1 with suppressive capacity on autoreactive T cells, and demonstrated a higher level of Treg1/Th2, Treg1/Th17.

Conclusion: GDNF could induce tolerogenic DCs through ERK1/ERK2 signal pathway, and DCGDNF could alleviate the severity of DSS induced colitis in rats. The mechanism may be related to down-regulation of inflammatory and immune response, generating Treg1 and restoring immune tolerance.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Alternations in short chain fatty acid (SCFA) metabolism have been reported in inflammatory bowel disease (IBD). Among SCFA, butyrate has been described as a potent communicator to the immune system eliciting an anti-inflammatory response and other positive effects to human health. A reduction of faecal butyrate levels has been reported in IBD but results have been conflicting or discrepant because of small study numbers and failure to distinguish disease type, activity or other variables such as diet. Microbiota is receiving increasing attention as key environmental factor influencing IBD and butyryl-CoA:acetate transferase (BcoAT) is considered the main enzyme involved in butyrate synthesis by gut microbiota.

Conclusions: Reduced butyrate-synthetic capacity was found in patients with active and in active UC (p < 0.001 and p < 0.01, respectively), but only in active UC (p < 0.05). In patients with CD, low BcoAT gene content (below 9.5 log10 copies BcoAT/g) was associated with active disease, increased inflammation, lower microbial diversity, greater microbiota compositional change and decreased butyrogenic taxa, while no major changes were observed between patients with UC/grouped according to BcoAT gene levels. Reduced BcoAT gene content in patients with CD was, in part, linked with lower intake of certain foods containing fibre (vegetables, fruits, high-fibre cereals, brown/wholemeal bread) which may identify GMA responder patients should guide to stop futile use of medical resources.

Disclosure of Interest: C. Hill: Prof Colin Hill has received research funding from Janssen and Artugen Therapeutics. F. Shanahan: Prof Forugh Shanahan has been a collaborator and has received research funding from Janssen, Abbvie, Alimentary Health Ltd, Sigmond, 4dPharma and Second Genome. M.J. Claesson: Dr Marcus Claesson has received research funding from Second Genome.

All other authors have declared no conflicts of interest.

References

Aims & Methods: In a retrospective and single-centre setting we aimed to under- stand if patients’ baseline clinical and endoscopic features were relevant guide for identifying likely responders and non-responders to adsorptive GMA. The sub- jects were 145 consecutive UC patients who had undergone GMA with the Adacolumn as remission induction therapy between 2012 and 2016. Seventy- five patients were steroid naïve, 70 were steroid dependent, and 2 patients were steroid refractory. Patients had received up to an 11 GMA sessions over 10 weeks. At entry and week 12, patients were clinically and endoscopically evaluated, allowing each patient to serve as her or his own control. Clinical activity index was defined as remission. Biopsies from endoscopically detectable inflamed large intestinal mucosa were processed to see the impact of GMA on leukocytes within the mucosal tissue.

Results: At entry, the average CAI was 12.8, range 10–17. Ninety-three patients (66%) had the ability to induce regulatory T cells (Treg) play an important role in maintaining immune tolerance and have been proposed for treatment of inflammatory bowel disease (IBD). Among SCFA, butyrate has been described as a potent communicator to the immune system eliciting an anti-inflammatory response and other positive effects to human health. A reduction of faecal butyrate levels has been reported in IBD but results have been conflicting or discrepant because of small study numbers and failure to distinguish disease type, activity or other variables such as diet. Microbiota is receiving increasing attention as a key environmental factor influencing IBD and butyryl-CoA:acetate transferase (BcoAT) is considered the main enzyme involved in butyrate synthesis by gut microbiota.

Conclusions: Reduced butyrate-synthetic capacity was found in patients with active and in active UC (p < 0.001 and p < 0.01, respectively), but only in active UC (p < 0.05). In patients with CD, low BcoAT gene content (below 9.5 log10 copies BcoAT/g) was associated with active disease, increased inflammation, lower microbial diversity, greater microbiota compositional change and decreased butyrogenic taxa, while no major changes were observed between patients with UC/grouped according to BcoAT gene levels. Reduced BcoAT gene content in patients with CD was, in part, linked with lower intake of certain foods containing fibre (vegetables, fruits, high-fibre cereals, brown/wholemeal bread) which may identify GMA responder patients should guide to stop futile use of medical resources.

Disclosure of Interest: A.R. Saniabadi: Dr. Saniabadi has a non-regular employ- ment position at JIMRO. All other authors have declared no conflicts of interest.
Aims & Methods: We aimed to clarify how antibiotics affect the gut microbiota and the pathology of colitis. Mice were gavaged with ampicillin (ABPC), vancomycin (VCM), metronidazole, neomycin, or a combination of ABPC and VCM (AV) for three consecutive days. Colitis was assessed by fecal occult blood test (FOBT) and mRNA level of cytokines. Metabolites and short chain fatty acid (SCFA) in the feces were measured by a chromatography-tandem mass spectrometry. Fecal microbiota was determined by 16S rDNA sequencing. In the gluta mine (Gln) treatment exam, the mice were given 30 mg/mL of Gln in drinking water ad lib for six days, and additionally gavaged A-V for the last three days. In vitro experiments: mouse colon carcinoma cell line CMT93 and macrophage cell line RAW264.7 were stimulated by butyric acid.

Results: ABPC and VCM, but not other antibiotics, resulted in FOBT-positive in some cases. All A-V treated mice were FOBT-positive and IL-6, IL-12p40 and MIP-2 were increased. The colon were enlarged in the A-V mice. Moreover, Gln metabolites and SCFA including butyric acid were decreased and faecal S24-7 and order Clostridiales, which might disturb Gln and SCFA metabolisms.

Conclusion: A-V treatment induced mild colitis with reduced abundance of family Clostridiales, which might disturb Gln and SCFA metabolisms.

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: Of 104 ileoocceal resections, 30 (29%) and 15 (14%) had inflammation at the proximal resection margin, respectively. AIEC strains, regardless of the surgical technique, were isolated from 17 (16%) of the 104 patients. After a mean follow-up of 8.6 years, clinical recurrence was seen in 57%, and surgical recurrence in 26%. A significantly increased recurrence rate was seen in patients with active inflammation at the distal resection margin whereas recurrence rates were comparable for inflammation at the proximal site and radical resections (87%, 61%, and 50% resp., p < 0.001). Active inflammation at the distal resection margin (HR: 3.189 (1.635–6.220); p = 0.001) and smoking (HR: 2.502 (1.331–4.703); p = 0.004) were the only independent predictors for clinical recurrence. The incidence of surgical necrosis was small to none in AIEC screening.

Conclusion: Inflammation at the distal (colon) resection margin, and not the proximal ileum, after ileocecal resection was associated with significantly increased risk of clinical recurrence. This unexpected finding suggests that radical ileocolic play a role in correctly diagnosed terminal ileitis (L1 disease), while it is of crucial importance to exclude colonic activity (L3 disease). As this different phenotype is unlikely to benefit from more extensive surgery, pathological finding of positive distal resection margin should be regarded as a risk factor, warranting prophylactic drugs or close monitoring.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
5. Mowat C, Arnott I, Cahill A, et al. Mercaptopurine versus placebo to pre-
vent recurrence of Crohn's disease after surgical resection (TOPPIC): a mul-
Incidence rate of microscopic colitis appeared to increase with time (Table). The incidence of colitis in 2016 was twice that observed in 2009 (incidence rate ratio 1.86; 95% CI 1.41, 2.46). There was a strong, independent graded association between the incidence of microscopic colitis and the number of lower GI endoscopy procedures undertaken (p = 0.03).

Conclusion: Microscopic colitis diagnosis is becoming more common. It is unclear whether microscopic colitis itself is increasing or greater numbers of lower GI endoscopy are being undertaken causing an ascertainment bias. Further work is required to explore environmental exposures such as drugs associated with microscopic colitis and to observe its natural history.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0321 EXTRA-INTESTINAL MANIFESTATIONS AT DIAGNOSIS IN PAEDIATRIC- AND ELDERLY-ONSET UC: A POPULATION-BASED STUDY

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Aims & Methods: The aims of this population-based study were to assess 1) the occurrence of EIM in paediatric- and elderly-onset UC; and 2) their impact on long-term disease outcome. Paediatric-onset (<17 years at diagnosis) and elderly-onset UC patients (>60 years) from a French prospective population-based Registry (EPIMAD) were included. Data on EIM and other clinical factors at diagnosis and at maximal follow-up were collected.

Results: 158 paediatric- and 470 elderly-onset patients were included (median age at diagnosis 14.5 and 68.8 years; median follow-up 11.2 and 6.2 years, respectively). EIM occurred in 8.9% of childhood- and 3% of elderly-onset patients at diagnosis and in 16.7% and 2.2% of individuals during follow-up (p < 0.01). The most frequent EIM was joint involvement (15.8% of paediatric-onset and 2.6% of elderly-onset). Presence of EIM at diagnosis was associated with more severe disease course (need for immunosuppressive or biologic therapy or colectomy) in both paediatric- and elderly-onset UC (HR = 2.0, 95%CI: 1.0-4.2 and HR = 2.8, 0.9-7.9). Extensive colitis was another independent risk factor in both age groups.

P0322 LONG-TERM NATURAL HISTORY OF MICROSCOPIC COLITIS: A POPULATION-BASED STUDY

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Aims & Methods: All new cases of UC diagnosed in the Somme area, France between January 1st, 2005 and December 31th, 2007 were prospectively included. Colonic biopsies from all patients were reviewed by a group of 4 expert gastroenterological pathologists to assess the diagnosis of CC or LC. Demographic and clinical data were retrospectively collected from diagnosis to February 31th, 2017.

Results: One hundred and thirty cases of MC, 87 CC and 43 LC were included (median age at diagnosis 70 and 48 years, respectively). The median follow-up was 9.6 years (Q1 = 7.6, Q3 = 10.6), By the end of follow-up, 37 patients (28%) relapsed after a median time of 3.9 years (1.2; 5) since diagnosis, without significant difference between CC and LC (30% vs 26%, p = 0.47). Twenty patients (15%) were hospitalized for a disease flare and 32 (25%) presented with another autoimmune disease. Budesonide was the most widely used treatment (n = 74, 59%), followed by 5-aminosalicylic acid (n = 31, 25%). Median duration of budesonide treatment was 92 days (70, 168) and no adverse event to budesonide were reported. Sixteen patients (22%) developed steroid-dependency and 4 (5%) were corticoreistant. Only one patient was treated by immunosuppressants (azathioprine). No colorectal cancer was reported during follow-up. Any of the death (n = 25) observed during follow-up were linked to MC. In multivariate analysis, age at diagnosis (HR 1.03; 95%CI, 1.00–1.06; p = 0.02) and budesonide exposure (HR 0.40; 95%CI, 0.18–0.90; p = 0.03) were significantly associated with relapse.

Conclusion: This population-based study showed that after diagnosis, two third of patients with MC observed long term clinical remission. Age at diagnosis and budesonide exposure were associated with a risk of relapse.

Disclosure of Interest: M. Fumery: Lecture fees or consultant fees: Abbiev, Ferring, MSD, Takeda All other authors have declared no conflicts of interest.

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P0323 IBD-INFO QUESTIONNAIRE: A MULTICENTER FRENCH UP-TO-DATE SURVEY OF PATIENT KNOWLEDGE IN INFLAMMATORY BOWEL DISEASE

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Aims & Methods: The IBD-INFO included 3 parts: an original part (Q1), and 2 parts from the translation of the pre-existing questionnaires Crohns’ and Colitis Knowledge score (CCKNOW) (Q2) and Crohns and Colitis Pregnancy Knowledge score (CCPKNOW) (Q3). The reliability and discriminatory ability of the questionnaire were validated with 3 groups of non-IBD volunteers with various theoretical knowledge levels. The final questionnaire (64 validated questions) was then tested on 364 in- and out- IBD patients from 4 French university hospitals. The score for each part of the questionnaire was calculated and factors associated with low scores were identified by uni- and multivariate logistic regression analyses.

Results: The scores obtained by the 3 non-IBD volunteer groups differed significantly (p < 0.0001) and the IBD-INFO questionnaire showed excellent internal reliability and consistency (α = 0.98). The median total score obtained by the IBD patients was 27/64 [0–59], and scores for Q1, Q2 and Q3 were, respectively, 10/23
Within the first 10 years after UC onset. Furthermore, biological therapy
Investigation of the average disease activity in 5-year-intervals in UC patients

Disclosure of Interest: All authors have declared no conflicts of interest.

PO324 IMPACT OF PRIMARY SCLEROSING CHOLANGITIS ON THE DISEASE COURSE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE – EVIDENCE FROM A LARGE RETROSPECTIVE STUDY WITH MATCHED COHORTS

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Introduction: Primary sclerosing cholangitis (PSC) is a chronic, progressive, cholestatic disease characterized by inflammation of the bile ducts and liver. Aims & Methods: To investigate differences in disease activity and treatment in patients with primary sclerosing cholangitis (PSC) and in a matched cohort of UC patients. Results: Of 1,122 UC patients and 168 PSC patients a total of 1,008 UC patients and 162 PSC patients were included. The median age of diagnosis was 37 years and 38 years, respectively. In the PSC population, median age at diagnosis was 31 years (range 11–79 years) and in the UC population median age at diagnosis was 37 years (range 11–84 years). The cumulative probability of CD patients receiving treatment with 5-ASA was 100% in Eastern Europe and 91% in Western Europe, 60% in Eastern Europe and 30% in Western Europe, respectively. Clinical data on surgery, hospitalizations and medical treatment in UC-PSC patients were available in 92% of the patient cohort.

Conclusion: Patients with PSC showed a different disease course with less relapse, lower disease activity, but earlier disease onset and higher risk for extensive disease manifestation as well as increased risk for colorectal dysplasia development.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0325 UNCHANGED SURGERY AND HOSPITALIZATION RATES IN AN EAST-WEST EUROPEAN INCLUSION COHORT DESPITE DIFFERENCES IN USE OF BIOLOGICALS – 5-YEAR FOLLOW-UP OF THE EPCO-CLINIC COHORT


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Introduction: The EpiCom-cohort is a European prospective population-based cohort of uniformly diagnosed patients with inflammatory bowel disease (IBD) diagnosed in 2010 in centres from Western and Eastern European countries. The cohort aims at describing differences in occurrence, treatment strategies, disease course and prognosis within Europe.

Aims & Methods: Patients were followed each 3rd month for the first year after diagnosis and then according to the treating physician for the 2-5th year of follow-up. Clinical data on surgery, hospitalizations and medical treatment in IBD patients were collected prospectively throughout the follow-up period and entered in a validated web-based database.

Results: Of a total of 1289 patients aged 15 years or older from 29 centres in 13 Western and 8 Eastern European countries were included. Results of all patients with PSC had ulcerative colitis in UC, 488 (38%) had Crohn’s disease in CD, and 426 (64%) had UC. Of note, in IBD-PSC patients, HGJEN/CRC occurred significantly earlier than in CD-PSC patients with 20-year-risk: 9.6% vs. 5.6%; p = 0.003.

Conclusion: In a large cohort study, IBD patients with coincident PSC showed a different disease course with less relapse, lower disease activity, but earlier disease onset and higher risk for extensive disease manifestation as well as increased risk for colorectal dysplasia development. The cumulative probability of CD patients receiving treatment with 5-ASA was 100% in Eastern Europe and 91% in Western Europe, while hospitalization rates were higher in Western Europe (p < 0.05). Cox regression analysis showed that in CD structuring (B2) or penetrating disease (B3) and progressing from luminal disease to B2/B3 increased while early (<6 months from diagnosis) treatment with immunosuppressives reduced the risk of surgery and hospitalization. In UC, progressing to extensive colitis increased the risk of colorectal while females, extensive disease, need for prednisolone at diagnosis, and progressing to severe colitis carried the highest risk for hospitalization. The cumulative probability of CD patients receiving treatment with 5-ASA was 90% in Eastern Europe and 56% in Western Europe, 69% and 75% for prednisolone, 54% and 66% for immunomodulators, respectively. For UC patients the cumulative probability of receiving treatment with 5-ASA within the first year of disease was 100% in Eastern Europe and 91% in Western Europe, 44% and 52% for prednisolone, 27% and 30% for immunomodulators, respectively.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0326 OPIATE USE IN INFLAMMATORY BOWEL DISEASE. PRESCRIPTION TRENDS AND MORTALITY IN AN ENGLISH PRIMARY CARE COHORT FROM 1990–2014

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Introduction: Chronic abdominal pain is a common symptom in inflammatory bowel disease (IBD). Pain management is complicated by clinically important gastrointestinal side effects of many of the available analgesics, particularly opiates. Opiate prescribing for cancer and non-cancer pain has increased dramatically in recent years but there is a paucity of data on prescription trends for individuals with IBD. The only population-based study is from Canada where 5% of subjects with IBD became heavy opiate users after 10 years of diagnosis and there was a strong association between heavy opiate use and mortality (OR 2.91, 95% CI 1.58–5.02). In this study we explore trends in the prescription of opiate medications and assess the association between opiate prescription and mortality in English primary care cohort of patients with IBD.

Aims & Methods: We used the English primary care database ResearchOne for this study which holds records from approximately 6 million individuals (>10% of the total population). We extracted relevant clinical codes and prescription data on all patients with IBD, and separated out those with ulcerative colitis (UC) and Crohn’s disease (CD). We created 4 categories of opiate medication use, namely; any opiate medication, codeine only, tramadol, and strong opiates. We defined 3 groups of prescription density as none/infrequent users, moderate and heavy users as <1, 1–3 and >3 prescriptions per calendar year respectively. We examined the trend in opiate prescriptions for all IBD patients in 4 year blocks from 1990–2014 using chi² for trend as a significance. Separate trends were produced for each of our opiate classes. We calculated a propensity score estimating the conditional probability of being prescribed an opiate medication based on pre-defined characteristics which may influence the prescription of opiates. All-cause mortality in opiate users and non-users was compared in a propensity score matched, Cox proportional hazards regression analysis to produce hazard ratios (HR) and 95% confidence intervals (CI). All analyses were performed for each opiate medication class in CD and UC patients.

Results: We included 3517 patients with CD and 5349 with UC. Opiate prescriptions increased from 10% in 1990 to 30% in 2014 (ch2 for trend p < 0.005). There was a similar, significant increase for codeine (ch² for trend, p = 0.008), tramadol (p < 0.005) and strong opiates (p < 0.005) when analyzed separately. Table 1 shows the association between opiate use and all-cause mortality in patients with IBD. Any opiate use in patients with UC was associated with increased mortality ((HR 1.67, 95% CI 1.25–2.23). The strongest associations were for heavy users of strong opiates in patients with CD (HR 2.18, 95% CI 1.20–3.95) and UC (HR 3.30, 95% CI 1.77–6.18). There was no association for prescriptions of tramadol at any prescription density in CD or UC.

Table 1: – The association between opiate prescription and all-cause mortality in patients with inflammatory bowel disease in the English primary care database Research One. Propensity score matched, Cox proportional hazards regression analysis.

<table>
<thead>
<tr>
<th>Biological therapy</th>
<th>Surgery</th>
<th>Hospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 year</td>
<td>3 years</td>
</tr>
<tr>
<td>Crohn’s disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>4 (5%)</td>
<td>6 (7%)</td>
</tr>
<tr>
<td>Western Europe</td>
<td>80 (20%)</td>
<td>110 (27%)</td>
</tr>
<tr>
<td>Ulcerative colitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>1 (1%)</td>
<td>6 (5%)</td>
</tr>
<tr>
<td>Western Europe</td>
<td>28 (5%)</td>
<td>53 (9%)</td>
</tr>
</tbody>
</table>

P0327 PATIENTS WITH INFLAMMATORY BOWEL DISEASE HAVE AN INCREASE RISK OF PERIODONTITIS CORRELATED WITH DISEASE ACTIVITY

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Introduction: We aimed to: (1) evaluate the prevalence of periodontitis in patients with inflammatory bowel disease (IBD), (2) assess the impact of IBD activity and IBD therapy on parodontal outcomes.

Table 1 Continued

<table>
<thead>
<tr>
<th>Biological therapy</th>
<th>Crohn’s disease Hazard ratio (95% CI)</th>
<th>Ulcerative colitis Hazard ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 prescription per year</td>
<td>1 prescription per year</td>
</tr>
<tr>
<td>None/infrequent</td>
<td>Moderate use (1–3 prescriptions per year)</td>
<td>Moderate use (1–3 prescriptions per year)</td>
</tr>
<tr>
<td>Hazard ratio</td>
<td>1.66 (0.89–3.09)</td>
<td>0.70 (0.35–1.39)</td>
</tr>
<tr>
<td>Crohn’s disease</td>
<td>1.13 (0.69–2.69)</td>
<td>1.34 (0.67–2.70)</td>
</tr>
<tr>
<td>Hazard ratio</td>
<td>2.18 (1.20–3.95)</td>
<td>2.18 (1.20–3.95)</td>
</tr>
<tr>
<td>UC</td>
<td>0.79 (0.35–1.81)</td>
<td>1.39 (0.66–2.94)</td>
</tr>
<tr>
<td>None/infrequent use</td>
<td>Strong opiates</td>
<td>Strong opiates</td>
</tr>
<tr>
<td>past year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazard ratio</td>
<td></td>
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<tr>
<td>Crohn’s disease</td>
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<tr>
<td>Hazard ratio</td>
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<tr>
<td>UC</td>
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<tr>
<td>None/infrequent use</td>
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<td>past year</td>
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<tr>
<td>Hazard ratio</td>
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<tr>
<td>Crohn’s disease</td>
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<tr>
<td>Hazard ratio</td>
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<tr>
<td>UC</td>
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<tr>
<td>None/infrequent use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazard ratio</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: Our study is the largest population based study of opiate use in patients with IBD. We have shown a significant increase in the prescription of opiates since 1990, with 30% being prescribed an opiate medication between 2010 and 2014. Prescriptions of codeine in UC and strong opiates in both CD and UC were associated with increased all-cause mortality. There appears to be a dose association as heavy users of strong opiates had the largest association with mortality. Observational studies are not proof of causality and there may be residual confounding. A dose response is a strong indicator that opiates could be responsible for the associations seen, which is consistent with other studies investigating opiates used for non-cancer pain in chronic disease. Randomised controlled trials would be unethical and not feasible to investigate this potential effect so population-based observational studies may provide the best estimate. Opiate prescriptions are increasing worldwide for chronic non-cancer pain, and individuals with IBD can now be included. Clinicians managing pain in individuals with IBD should consider the potential implications of prescribing, or continuing with opiate prescriptions as they are a marker for increased mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In a prospective 6-months study, dental examination was performed on IBD and in 19 healthy matching controls. IBD related variables were prospectively collected, as well as markers for periodontitis including gingival bleeding (BOP index, marker of periodontal inflammation), gingival recession (REC index, marker of cumulative periodontal destructions) and probing depth. The severity of periodontal disease was measured for all patients. Additional dental examination was proposed 3 months after to all patients diagnosed with periodontitis.

Results: Among the 54 included patients, 44 had Crohn disease (81%) and 31 were women (55%). At the time of dental examination, median age was 33 years (Q1 = 26; Q3 = 41), 20 (36%) were smokers and the median IBD duration was 8.4 years (3.4–16.3). Eleven (20%) were treated by corticosteroids, 27 (49%) by anti-TNF, 5 (9.2%) by other biologics and 8 had no IBD treatment. IBD was significantly associated with periodontitis (81% vs 27%; Odds Ratio 2.9, 95%CI:3.6-2.3). Mild, moderate and severe periodontitis were respectively observed in 34 (63%), 8 (15%) and 3 (5%) IBD patients. As compared to healthy controls, IBD patients had significant increase of BOP index (p = 0.008), probing death (p = 0.03), and REC index (p = 0.01). Patients with active IBD (Harvey Bradshaw index > 2) or Mayo Score > 1) had a significant increase of BOP index (p = 0.007) compared to patients with inactive disease. A significant correlation between BOP and Harvey-Bradshaw index was observed (r = 0.44, p = 0.0018). Anti-TNF therapy was significantly associated with lower BOP index (p = 0.02). All patients with diagnosis of periodontitis were treated by periodontal debridement and subgingival irrigation with povidone-iodine which led to a significant decrease of BOP index three months after diagnosis.

Conclusion: Inflammatory bowel diseases were associated with an increased risk of periodontitis. Gingival inflammation was correlated to disease activity and anti-TNF therapy was associated with a lower risk of active parodental disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

Aim: To investigate if there is an association between genetic variations and periodontal disease (PPD) in patients with IBD.

Methods: A case-control study was conducted in four major gastroenterology centers in Sri Lanka. There is limited data on genetics of inflammatory bowel disease (IBD) in populations where the condition is emerging, especially from South Asia. Using a case-control study design, a total of 103 patients suffering from Crohn’s disease in Kuwait. The patients were matched with 100 healthy controls for age, gender, and smoking habits. The genomic DNA was isolated from peripheral blood samples obtained from patients and controls. The DNA was genotyped for 16 selected variants with known IBD disease associations in Western and East Asian populations [IL12B:rs1045431, IL23R:rs11805303, ARPC2:rs21621347, IRGM:rs13166189, IL26:rs1558784, CDH1:rs1728785, IL10:rs3024505, IL12B:rs11127240, PTGER4:rs4613763, IL17REL/PIM3:rs5771069. HNF4a:rs6017342, STAT3:rs744466, SMURF1:rs7897997, LABM1:rs866774, HLA DRB5, DQA1, DRB1, DRA:rs2068853, MCM1, UBA7, APEH:rs9822268] with maintained remission (p = 0.005); IL17REL/PIM3:rs5771069 with treatment-refractory IBD (all cases) (p = 0.005). To account for multiple hypothesis testing associations that had a p-value of <0.003 were considered significant.

Results: There were 411 (males = 46.9%) cases [UC-258 (62.8%), males=47.7%, CD-153 (37.2%), males=50.3%] and 465 (males=50.5%) controls. The following variants were associated with corresponding phenotypes: IL12R:rs1805303 with IBD (all cases) (p = 0.001); IL12B:rs1045431 with upper gastrointestinal (UGI) CD (p = 0.001); IL17REL/PIM3:rs5771069 with relapsing IBD (p = 0.003); IL17REL/PIM3:rs5771069 with treatment-refractory IBD (all cases) (p = 0.005). Two variants showed a non-significant trend towards association with Crohn disease (CD) of > 1 year duration) [unrelated, healthy, gender matched] study was conducted at four major gastroenterology centres in Sri Lanka. Phenotypic data (type, location, severity, treatment types, response to treatment and complications) of cases were obtained. Cases and controls were genotyped for 16 selected variants with known IBD disease associations in Western and East Asian populations [IL12B:rs1045431, IL23R:rs11805303, ARPC2:rs21621347, IRGM:rs13166189, IL26:rs1558784, CDH1:rs1728785, IL10:rs3024505, IL12B:rs11127240, PTGER4:rs4613763, IL17REL/PIM3:rs5771069. HNF4a:rs6017342, STAT3:rs744466, SMURF1:rs7897997, LABM1:rs866774, HLA DRB5, DQA1, DRB1, DRA:rs2068853, MCM1, UBA7, APEH:rs9822268] with maintained remission (p = 0.005); IL17REL/PIM3:rs5771069 with treatment-refractory IBD (all cases) (p = 0.005). To account for multiple hypothesis testing associations that had a p-value of <0.003 were considered significant.

Conclusion: This first study, confirms the association of genetic variants of IBD with treatment-responsive IBD (all cases) (p = 0.001); IL12B:rs1045431 with upper gastrointestinal (UGI) CD (p = 0.001); IL17REL/PIM3:rs5771069 with relapsing IBD (p = 0.003); IL17REL/PIM3:rs5771069 with treatment-refractory IBD (all cases) (p = 0.005).

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Among the numerous genetic factors associated with ulcerative colitis (UC), an increasing attention has been paid to the polymorphisms of the vitamin D receptor gene (VDR) associated with disorders of innate and adaptive immunity as well as the barrier function of the intestinal epithelium. However, the results of studies on the prevalence, clinical, diagnostic and prognostic significance of polymorphisms of the VDR gene in different populations are ambiguous and contradictory. In particular, associations of Bsm I polymorphism with UC in the Chinese population and in the Jewish Ashkenazi has been found, while in the Irish population, with a sufficient prevalence of Bsm I polymorphism, this association is absent [1–3]. In the Russian Federation, there is no data on the prevalence, clinical, diagnostic and prognostic significance of Bsm I polymorphism of the VDR gene with UC. These circumstances determined the purpose and objectives of this study.

Aims & Methods: The purpose is to assess the clinical, diagnostic and prognostic significance of the Bsm I polymorphism of the VDR gene (rs1544410) among the residents of the Kemerovo region of the Russian Federation. The study included 76 patients with UC and 85 controls. Genotyping was performed by PCR method (“SNP-express” reagents, Lytech Co., Ltd., Russia) with electrophoresis on an agarose gel. Statistical analysis was performed using the X^2 and Mann-Whitney tests. In the presence of statistically significant differences (p < 0.05), odds ratios (OR) with 95% confidence interval (CI) were calculated.

Results: It was found that the frequency of the allele B polymorphism of the VDR Bsm I gene was higher among patients with UC than in the control group (44% vs. 26%, p = 0.02), which increases the risk of this pathology by 2.2% (95% CI: 1.2–4.1). In the case of carriers of the B/B genotype, the risk of developing UC increased up to 3.5 times in comparison with the control group (21% vs. 7%, p = 0.02, 95% CI: 1.4–8.6), whereas in b/b genotype the risk of UC decreased (33% and 54%, respectively, p = 0.02, OR = 0.4, 95% CI: 0.2–0.7). Significant differences between carriers of the B allele Bsm I polymorphism and the features of the clinical course of the UC have not been established. However, it has been shown that in carriers of allele B, the clinical implementation of UC develops significantly later than in patients with b allele (43 and 28.5 years, respectively, p = 0.04).

Conclusion: For carriers of the B allele Bsm I polymorphism of the VDR gene is a predictor of a high risk of ulcerative colitis with an increase in the age of diagnosis. Genotype b/B Bsm I polymorphism of the VDR gene has a protective effect in the development of ulcerative colitis among the residents of the Kemerovo region of the Russian Federation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
(IRE1), double-stranded RNA–dependent protein kinase (PKR)-like ER kinase (IRE1 and PKR-like ER kinase, respectively). Deletions or gain of function response have been shown to predispose to chronic inflammatory bowel disease (IBD). Genome-wide association studies identified disease susceptibility loci in or adjacent to several IPR-related genes including XBPI and ORMDL3. Additionally, a role of ORMDL3 in UPR signaling has emerged from studies showing that ORMDL3 colocalizes and directly interacts with ATF6/C11 and CHOP protein levels. In contrast, we observed an increase in fibrillarin expression by ORMDL3-deficient mice showing an increased susceptibility to acute DSS-induced colitis compared to their wild-type littermates. ORMDL3-deficient mice showed less body weight loss and improved survival rate.

**Results:** In vitro studies demonstrated that ORMDL3 facilitates ER stress-induced ATF6/C11 activation. Overexpression of ORMDL3 resulted in increased cleavage of ATF6 and augmented ERSE promoter activity. Mechanistically, we show that ORMDL3 colocalizes and directly interacts with ATF6/C11. Furthermore, ORMDL3 overexpression induced the PERK pathway by elevating IRE1 and CHOP protein levels. In contrast, we observed an inhibition of IRE1 signaling exorted by ORMDL3 proteins as shown by reduced XBPI splicing and decreased UPR promoter activity. ORMDL3-deficient mice showed an increased susceptibility to acute DSS-induced colitis compared to their wild-type littermates. ORMDL3 mice showed less body weight loss and an improved survival rate.

**Conclusion:** This study demonstrates for the first time the modulatory functions of ORMDL proteins as regulators of all three UPR signaling pathways. Altogether, these results suggest that ORMDL proteins constitute a precise fine-tuning mechanism of the UPR determining cell fate decisions in response to ER stress.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0334 THE USE OF LEMANN SCORE TO EVALUATE THE DAMAGE TO THE DIGESTIVE TRACT CAUSED BY CROHN'S DISEASE IN AN EGYPTIAN COHORT**

H. M. Saad1, O. E. Salem2, M. A. Salem3, M. E. Ibrahim4, S. M. El Kady1

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**Introduction:** Crohn's Disease (CD) according to disease activity using clinical, laboratory & radiological activity indexes; but few have analyzed the damage the disease bring about the GI tract. Lema'nn score was designed to develop a comprehensive assessment of the structural bowel damage, including strictureing lesions, penetrating lesions (fistulas and abscesses), and surgical resection.

**Aims & Methods:** To calculate Lema'nn score in a cohort of Egyptian patients to determine its ability to assess the structural damage caused by CD in Egyptian patients.

**Result:** In the present study, we aimed to prospectively evaluate the immunogenicity profile of the biosimilar infliximab and predictors of TDM in IB in the first year of therapy in a nationwide, multicentre cohort. Demographic data were collected and a harmonized monitoring strategy was applied. Clinical and biochemical activity were evaluated at weeks 14, 30 and 54. Routine therapeutic drug monitoring (TDM) was applied. Trough level (TL) and anti-drug antibody (ADA) concentration were measured by ELISA (LT-005, Theradiag (France) at baseline, week 2, 6, 14, 30 and 54 weeks right before anti-TNF administration during the induction treatment.

**Results:** 353 consecutive IB patients (209 CD patients and 144 UC patients) were included in the present cohort. 23.4% of CD patients and 19.4% of UC patients had received previous anti-TNF therapy. None of the patients had received infliximab within 12 months prior to initiation of the biosimilar infliximab. 60.51% of CD/UC patients received concomitant immunosuppressives at baseline. Mean TLs were 18.9, 17.3, 7.4, 4.3 and 5.3 μg/ml at weeks 2, 6, 14, 30 and 54 in CD and 19.1, 11.8, 5.0, 3.9 and 4.5 μg/ml in UC. Previous anti-TNF therapy was associated with lower early TLs in both CD (week 2, 14, and 30, p < 0.05) and UC (week 2 and 6, p = 0.03). ADA positivity rates were 4.3%, 12.0%, 20.9% and 28.6% in naive patients at weeks 0, 14, 30, and 54 in CD (m266, 321, 290 and 210). ADA positivity at week 14 was associated with lower TLs in all CD (week 2, 14 and 30, p < 0.007 for all) and UC (week 6, 14 and 30, p < 0.001 for all). Concomitant IS use prevented ADA formation in anti-TNF-naive patients. UC patients who were exposed to infliximab before initiation of anti-TNFs had lower early TL coupled with ADA positivity and were more likely to develop infusion reactions. Concomitant IS use prevented ADA development in anti-TNF naive patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Performance OMP IgA was equal to ASCA IgA, however sIgA not. Anti-perianal penetration (PP) with IgG type ASCA (p LogRank
development of internal penetrating and/or stenosing (IP/S) complications and absence of IgA type anti-microbial antibodies. Contrary, ratio of IgA2/A1 in CD p
ASCA IgA/IgG and anti-OMP antibodies. Both ASCA types occurred cytometry test system was established for characterisation of IgA type ASCA of various complications and subsequent surgical interventions. A novel flow to assess possible associations between serologic antibodies and the development
traditional anti-microbial antibodies (ASCA IgA/IgG, anti-OMP IgA).

Aims & Methods: Sera of 266 well-characterized CD patients (m/f:112/154, median age: 25 years, Bi80.1%, PI:18.0%) and 155 controls were assayed for serological markers (ASCA IgG, Omp IgA, Endotoxin core IgA (EndoCaB) and a panel of non-specific immunoglobulin A (IgA) antibodies (IgA1, IgA2 and sIgA) in healthy individuals. Both ASCA IgA and anti-OMP antibodies were increased in CD compared to controls. They were also associated with presence of IgA type anti-microbial antibodies. Contrary, ratio of IgA2/A1 in CD corresponded with the value of the controls. In Kaplan-Meier analysis, development of perianal disease and/or stenosing (IPS) complications and its achievement was significantly associated with IgA type (p=0.001 and p LogRank<0.001 respectively), while development of perianal penetration (PP) with IgG type ASCA (p LogRank=0.005). Performance OMP IgA was equal to ASCA IgA, however sIgA not. Anti-microbial antibodies remained independent predictors in multivariate Cox-regression analysis comprising relevant clinical factors.

Conclusion: Consideration of antibody classes is an important novel parameter in serologic assessment in CD. The absence of ASCA IgA subtyping assays revealed marked increase in the proportion of IgA2 subtypes and presence of the secretory component (60% of total ASCA IgA) concurrently.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: Aims were to examine deep small bowel either oral or anal it could be of great utility in the management of Crohn’s disease patients.

Conclusion: The diagnostic yield and therapeutic impact of DBE on small bowel CD. The medical records of 180 CD patients, from December 2009 to April 2014, were retrospectively reviewed. Patients were included if they had known CD based on clinical, colonoscopic and histological findings and had been subjected to DBE. If one patient underwent more than one DBE examination only the first examination was considered. The primary end point of our study was to evaluate small bowel involvement that is beyond the reach of conventional colonoscopy. The secondary endpoints were to determine the impact of DBE findings on management strategy of CD. The diagnostic yield of DBE in small bowel CD was determined. In addition, the changes in medical treatment, endoscopic intervention and surgical procedures, within three months after DBE, were analysed.

Results: Among 180 patients with CD, 90 patients underwent 168 DBE examinations and were included. The mean age of included patients was 40 ± 13.6 years. They were 63 males and 27 females. Eighty (91%) patients with established CD underwent DBE for evaluation of small bowel involvement and 8 (9%) patients underwent DBE because of suspicion of CD and had been newly diagnosed. The overall diagnostic yield of DBE was 69% DBE revealed small bowel involvement proximal to the terminal ileum in 40 (64.5%) patients; of them 17 (42.5%) patients had isolated small bowel CD. Within 3 months after DBE examination the management strategy of CD changed in 47 (52.2%) patients, based on DBE findings. The medical treatment escalated in 20 (32%) patients, and decreased in 7 (11%). Fourteen (24%) patients underwent DBE-assisted balloon dilatation, and 6 (9.6%) patients underwent CD-related surgery.

Conclusion: DBE is able to detect small bowel involvement in a significant proportion of CD patients. The DBE findings modified the management strategy in at least one half of CD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0340 IS THE CDMRIS USEFUL TO MONITOR PATIENTS WITH CROHN’S DISEASE BY MAGNETIC RESONANCE IMAGING?

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Introduction: Magnetic resonance enterography is now recognized by the European Crohn’s and Colitis Organization (ECCO) as a reference procedure to assess the small enterocollimation of Crohn’s disease (CD), including extra mural complications, as well as to monitor patients under treatment. A new MRI index of severity was developed in 2015 by the GETAID consortium, specifically to evaluate lesions located in the small intestine. This score, labeled CDMRIS considers, for each 20-cm small bowel segment, the intensity of relative contrast enhancement (mild–moderate or severe), deep ulceration without fistula, “comb sign”, any fistula, and abscess. Although well standardized, this index has not yet been validated, either for the initial assessment of CD at diagnosis, or for monitoring patients under treatment. Its feasibility in routine practice has never been tested.

Aims & Methods: The aims of this study were to evaluate the feasibility of applying the CDMRIS score in clinical practice, to evaluate its variability after the initiation or optimization of an anti-TNF treatment, and to measure its correlation with an evaluation of clinical activity. Patients with known small bowel disease who underwent two consecutive examinations at least 3 months were included between 2010 and 2015. Each exam was interpreted twice and the CDMRIS score was calculated on both exams in addition to classical criteria. All patients had a clinical evaluation over time, separating them in two groups: “active” and “inactive” disease.

Results: Seventy-two patients were included, with a mean CDMRIS of 3.4 at baseline, decreasing to 2.6 (p = 0.052) independently of clinical disease activity. The mean interval between the two MRIs was 15.4 months, and there was a significant larger decrease in the CDMRIS score when the interval was above 12 months. Two other radiological parameters decreased significantly: the rate of patients with a mural T2-hyperintensity (36.1% to 20.8% p = 0.042), with a good clinicoradiological correlation, and mean wall thickness (5.5 to 4.4 mm, p = 0.014).

Conclusion: This study demonstrated the feasibility of applying the CDMRIS in clinical practice, but sensitivity was too low to detect early changes. Accuracy for a long-term monitoring needs to be evaluated. Wall thickening and mural T2-hyperintensity emerged as two additional radiological factors, significantly associated with the disease activity, allowing monitoring of the short-term efficacy of biotherapies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Correlation of components of the CDAI with SES-CD

- Weight (kg) 3.2 (6.1)
- HCT 21.1 (21.3) 0.09 0.355
- Stool frequency* 47.1 (35.2) 0.46
- Diarrhea/pain medications 3.2 (9.3) 0.01 0.927
- Extra-intestinal manifestations 14.0 (16.3) 0.22 0.017
- General well-being 63.3 (50.2) 0.16 0.073
- AP, extra-intestinal manifestations, and SF

The correlation of SES-CD with SF was similar regardless of whether the patient had ileal disease (r = 0.31 [P < 0.001]) and at week 52 (r = 0.31 [P = 0.005]). Similar results were observed for correlations between mean changes from baseline in CDAI and SES-CD at weeks 12 (r = 0.35 [P < 0.001]) and 52 (r = 0.31 [P = 0.005]).

Table: Correlation of components of the CDAI with SES-CD

<table>
<thead>
<tr>
<th>Variable</th>
<th>Week 12 n=121</th>
<th>Mean (SD)</th>
<th>r-value</th>
<th>P-value</th>
<th>Week 52 n=80</th>
<th>Mean (SD)</th>
<th>r-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stool frequency*</td>
<td>47.1 (35.2)</td>
<td>0.46</td>
<td>&lt;0.001</td>
<td>0.33 (21.7)</td>
<td>0.35</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>41.0 (29.6)</td>
<td>0.21</td>
<td>0.029</td>
<td>21.8 (25.6)</td>
<td>0.06</td>
<td>0.597</td>
<td></td>
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<tr>
<td>General well-being</td>
<td>63.3 (50.2)</td>
<td>0.16</td>
<td>0.073</td>
<td>42.2 (46.7)</td>
<td>0.17</td>
<td>0.123</td>
<td></td>
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</tr>
<tr>
<td>Extra-intestinal manifestations</td>
<td>14.0 (16.3)</td>
<td>0.22</td>
<td>0.017</td>
<td>11.5 (13.8)</td>
<td>0.11</td>
<td>0.317</td>
<td></td>
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</tr>
<tr>
<td>Diarrhea/pain medications</td>
<td>3.2 (9.3)</td>
<td>0.01</td>
<td>0.927</td>
<td>1.9 (7.3)</td>
<td>0.08</td>
<td>0.465</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal mass (kg)</td>
<td>0.49</td>
<td>0.50</td>
<td>0.000</td>
<td>0.58</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCT</td>
<td>21.1 (20.3)</td>
<td>0.35</td>
<td>0.000</td>
<td>17.7 (20.6)</td>
<td>0.48</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stool frequency + Abdominal pain</td>
<td>88.1 (56.6)</td>
<td>0.35</td>
<td>0.002</td>
<td>3.8 (7.0)</td>
<td>0.36</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*the number of liquid or very soft stools per day. SES-CD, Simple Endoscopic Score for Crohn's Disease. HCT, hematocrit. NA, not applicable.

References:

PB042 DECREASED CD8+CD28−/CD8+CD28− T CELLS’ RATIO CAN ACURATELY PREDICT THE POOR OUTCOME SENSITIVELY FOR PATIENTS WITH COMPLICATED CROHN’S DISEASE

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Introduction: Crohn’s disease (CD) with complications such as penetrating, strictureting and perforation is a serious and frequent inflammatory disease called complicated CD. However, no validated, inexpensive, or sensitive models for prediction of risk are available in complicated CD. We have found that a novel immunological balance, the CD8+CD28−/CD8+CD28− , consisting of CD8+CD28− and CD8+CD28− T cells, can predict the prognosis for patients with inflammatory bowel disease (IBD). Thus, we hypothesize that the CD8+CD28−/CD8+CD28− balance (ratio) can predict the poor outcome for patients with complicated CD.

Aims & Methods: To test the efficiency of CD8+CD28−/CD8+CD28− balance to predict the subsequent active stage, and to explore the correlation between the balance and the risk factors, for the newly diagnosed complicated CD. Seventeen patients with complicated CD were enrolled as the observation group, while the other 48 CD patients with no complications were enrolled as the control group. Peripheral blood samples were drawn from all the 65 newly diagnosed CD patients for CD8+ T cells testing through flow cytometry (FCM) when enrolling. The potential risk factors, including demographic, pathophysiological, and therapeutic factors were compared between the two groups. A 30-week follow-up period was performed, and the CD8+ T cells testing were repeated. The sensitivity and specificity of the CD8+ T cells’ level and balance in predicting were analyzed through receiver operator characteristic (ROC) curves. The cumulative remission lasting rates (CRLRs) under the different risk factors were analyzed using the Kaplan-Meier method.

Results: I. Risk factors: compared with the control CD group, patients with complicated CD had a larger proportion in male (P = 0.001), younger in age (P = 0.019), lower body mass index (BMI) (P < 0.001), higher prescription rates in immunosuppressants (P = 0.029) and steroids (P = 0.015), as well as a significant higher surgical rate (P = 0.001). Pearson and Spearman correlation analysis showed that CD8+CD28−/CD8+CD28− was associated with BMI, CD8, and surgery (P = 0.005). II. Follow-up and dynamic changes of the balance was associated with BMI, CDAI, steroids, and surgery (P < 0.005). II. Follow-up and dynamic changes of the balance was associated with BMI, CDAI, steroids, and surgery (P < 0.005). A 30-week follow-up period was performed, and the CD8+ T cells testing were repeated. The ratios of CD8+CD28−/CD8+CD28− reached the bottom at the 30th week and were significantly lower at the 6th, 22nd, and 30th week during follow-up, in the complicated CD patients when compared to the control ones (P < 0.05). A shorter lasting time of remission (LTR) was found in complicated CD patients (P = 0.044). ROC curve showed that CD8+CD28−/CD8+CD28− ratio could accurately predict the active stage for the complicated CD patients [area under curve (AUC) of 0.890, and 95% CI of 0.822 to 0.938], and the best sensitivity of 89.2% and specificity of 85.3% were found when the ratio was 1.03. III. Kaplan–Meier analysis: Undergoing of steroids and surgery was closely related to worse outcome for the complicated CD patients, and patients who underwent steroids and surgery had the significantly lower CD8+CD28−/CD8+CD28− ratio and lower CRLRs (all P < 0.05).

Conclusion: Depending on steroids and surgery stands for a more severe disease activity and thus disqualify the immunological balance, which could be the main reason for lower CD8+CD28−/CD8+CD28− ratio, and this ratio can predict the active stage sensitively for patients with complicated CD. More strategies should be taken when the ratio is to be lower than 1.03.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

A.M. Robinson: Abbvie employee; may own AbbVie stock and/or options


References
1 Bischos R et al. Gastroenterology 2016; 150(4):S1269–70. Abstract Tu2804
P0344 BOWEL PREPARATION QUALITY OF NER1006 VERSUS ORAL TRISULFATE SOLUTION AS ASSESSED BY COLONOSCOPISTS AT SITE: A POST HOC ANALYSIS FROM A RANDOMISED CONTROLLED TRIAL

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Introduction: The success of colonoscopy is dependent on efficient bowel cleansing. Inadequate bowel cleansing may decrease diagnostic sensitivity, necessitate repeat procedures and potentially delay appropriate treatment. The increasing frequency of the incidence of colorectal cancer arising in the ascending colon necessitates effective cleansing of this area; additionally these cancers are often associated with poorer prognoses. Data suggest that detection in the ascending colon is more dependent on higher grades of cleansing, perhaps due to the nature of polyps present, which may be more likely to be sessile or serrated. NER1006 is the first 1L polyethylene glycol (PEG)-based bowel preparation, a patented combination optimised for effective bowel cleansing. The NOCT study (a multicentre randomised Phase 3 clinical trial investigating bowel cleansing efficacy of NER1006 vs trisulfate solution) reported bowel preparation quality assessed by central readers. This post hoc analysis shows the cleansing assessment by site colonoscopists, who typically guide clinical decision making; hence this study may be more relevant for clinical practice than previous studies.

Aims & Methods: In the NOCT study 621 patients (males and females, aged 18–85) were randomly assigned in a 1:1 ratio to receive either NER1006 or trisulfate solution, each administered as an overnight split-dose. Data from the 523 patients achieving high-quality cleansing success in the right colon.

Table 1: Successful colon cleansing rates when treated with NER1006 or trisulfate solution.

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>N</th>
<th>Patients with successful cleansing n (%)</th>
<th>Difference (%)</th>
<th>P-value</th>
<th>95% CI (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall colon</td>
<td>NER1006 N2D 263</td>
<td>239 (91)</td>
<td>270</td>
<td>6</td>
<td>−5.1–4.6</td>
</tr>
<tr>
<td></td>
<td>NER1006 N1D 263</td>
<td>239 (91)</td>
<td>239 (91)</td>
<td>0</td>
<td>−5.1–4.6</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>NER1006 263</td>
<td>208 (80)</td>
<td>201 (75)</td>
<td>0.097</td>
<td>−0.7–13.6</td>
</tr>
<tr>
<td></td>
<td>Trisulfate 264</td>
<td>193 (74)</td>
<td>156 (59)</td>
<td>0.924</td>
<td>−6.4–3.3</td>
</tr>
</tbody>
</table>

Conclusion: For both preparations, site colonoscopist findings demonstrated similar very high rates of cleansing success for the overall colon (>93%) and high rates of high-quality cleansing of the ascending colon (>73%), however, statistical significance was not met in either comparison. The rates of cleansing success in the ascending colon reported by the site colonoscopists are notably higher than those previously reported by central readers.

Disclosure of Interest: R. Ng Kwet Shing: Employee of Norgine
All other authors have declared no conflicts of interest.

References

P0345 BOWEL PREPARATION QUALITY OF NER1006 VERSUS SODIUM PICOSULFATE + MAGNESIUM CITRATE AS ASSESSED BY COLONOSCOPISTS AT SITE: A POST HOC ANALYSIS FROM A RANDOMISED CONTROLLED TRIAL

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Introduction: The efficacy of colonoscopy is dependent on the quality of bowel cleaning. NER1006 is the first 1L polyethylene glycol (PEG)-based bowel cleansing solution and is a patented combination optimised for effective bowel cleansing. The DAYB study was a European multicentre, randomised trial that tested the hypothesis that NER1006 would be non-inferior to sodium picosulfate and magnesium citrate (NaPsc + MgCit) in terms of overall bowel cleansing and high-quality cleansing of the ascending colon plus caecum [1]. Bowel cleansing was assessed using the Harefield Cleansing Scale (HCS) [2]. The primary endpoints of the study were assessed by video review by a central reader. Bowel cleansing on the HCS was also assessed by the site colonoscopist and this post hoc analysis assessed the cleansing grades as determined by the site colonoscopists.

Aims & Methods: In the DAYB study, 515 patients (aged 18–85, median age: 55.0 years) underwent screening, surveillance, or diagnostic colonoscopy and were randomly assigned in a 1:1 ratio to receive either NER1006 or NaPsc + MgCit, each on the day before colonoscopy. In this analysis, data from 479 patients who underwent a colonoscopy and had a completed assessment by the site colonoscopist were included. Colonoscopists were blinded to the preparation administered. Colonoscopy was assessed according to the HCS; cleansing of each segment of the colon was scored from 0 to 4. Grades 3 and 4 were judged as high-quality cleansing. For the overall colon, cleansing grades A to D; grades A (all segments scored 3 or 4) and B (≥2 segments scored 3 or 4) were judged as successful cleansing.

Results: As indicated in Table 1, in the overall colon, successful cleansing was achieved in 72% of patients who received NER1006 than who received NaPsc + MgCit (73.3% vs 61.3%, P = 0.003, 95% CI: 4.0–20.7). In the ascending colon, high-quality cleansing was achieved in 20% more patients who received NER1006 than those who received NaPsc + MgCit.
**P0346 LOW VITAMIN D LEVELS ARE RELATED TO CLINICAL ACTIVITY, MUCOSAL INFLAMMATION, AND INTESTINAL FIBROSTENOSIS IN CROHN’S DISEASE.**

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**Introduction:** Several recent studies have revealed new roles for vitamin D. For example, vitamin D plays a role in regulating skeletal muscle, as well as in cardiovascular and renal physiology, producing anticonvulsant effects, suppressing fibrosis, and as a regulator of the immune system. In light of these new roles, especially as a regulator of the immune system and suppressor of fibrosis—vitamin D deficiency is considered to be related to disease activity and intestinal fibrosis, including that seen in Crohn’s disease (CD). Several reports have demonstrated a relationship between vitamin D deficiency and CD activity according to clinical parameters such as Crohn’s disease activity index (CDAI) and quality of life (QoL). However, no reports have demonstrated this relationship by using endoscopic parameters such as endoscopic activity, mucosal inflammation, and intestinal fibrosis.

**Aims & Methods:** The aim of this study was to clarify the relationship between vitamin D deficiency and CD activity by using endoscopic parameters, as well as clinical parameters. Of the CD patients visiting Nagoya University Hospital from May 2011 to February 2016, 82 patients were enrolled in this study. Serum 25-hydroxyvitamin D (25(OH)D), disease activity, and clinical factors of the subject were investigated retrospectively. Endoscopic findings of 52 of the 82 total patients were investigated retrospectively from endoscopic records. This study design was approved by the ethics committee of Nagoya University Hospital. The aim of this study was to investigate the relationship between vitamin D level and disease activity in CD patients. The disease pathology of CD consists of repetitive intestinal inflammation and intestinal fibrostenosis formed during healing of inflammation. We consider it important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

**Conclusion:** The results from this study demonstrated the relationship between vitamin D level and disease activity in CD patients. The disease pathology of CD consists of repetitive intestinal inflammation and intestinal fibrostenosis formed during healing of inflammation. We consider it important to demonstrate this relationship not only using clinical parameters, but also using endoscopic parameters such as mucosal inflammation and intestinal fibrostenosis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**P0347 PATIENT SATISFACTION WITH HOME MONITORING OF DISEASE ACTIVITY AND FECAL CALPROTECTIN IN ADULT PATIENTS WITH INFLAMMATORY BOWEL DISEASE: INTERIM ANALYSIS OF 68 PATIENTS.**

P. Weimers, D. Marker, D. V. Andersen, J. Burisch, P. Munkholm

**Introduction:** Inflammatory Bowel Disease (IBD), mainly represented by Crohn’s Disease (CD) and Ulcerative Colitis (UC), is a chronic, relapsing and remitting disease impairing patients’ quality of life (QoL). To maintain a high QoL and to decrease the inflammation burden, it is important to tightly monitor the disease and promptly treat relapses when they occur. The quality of care perceived by IBD patients play an important role in the management of IBD. An eHealth web application consisting of a validated Fecal Calprotectin (FC) home testing set (Calpro Smart™), questionnaires regarding disease activity and QOL has been developed to improve disease monitoring, patient empowerment and patient-caregiver communication.

**Aims & Methods:** The aim of this study was to evaluate patient satisfaction with an eHealth home monitoring solution during the participation in a one year trial. The trial includes 120 adult IBD patients which have been randomized into two groups; one performing a disease activity screening procedure every 3 months (3M) and one screening only at the patient’s discretion, on demand (OD). Both groups used the web-program where they were requested to fill out a disease activity questionnaire, Harvey-Bradshaw Index (HBI) for CD or Simple Clinical Colitis Activity Index (SCCAI) for UC, and perform a home testing of FC. The results of the disease activity questionnaire and FC were used to calculate a Total Inflammation Burden Scoring (TIBS) which is visualized to the patient in a traffic light manner for instant recommendation of individualized treatment strategies. At baseline and upon completion of the trial the patients were requested to fill out a QOL questionnaire (Short-Inflammatory Bowel Disease Questionnaire (s-IBDQ)) as well as a questionnaire regarding their overall satisfaction with the trial and the home monitoring solution.

**Results:** To date, 83 patients have been included, 15 patients have dropped out (7 in OD-group and 8 in 3M-group) and 68 (3M-group: n = 32, 47%; OD-group: n = 36, 53%) patients have fulfilled the first year of follow-up and were included in the analysis. The trial lived up to the expectations in n = 63, 93% (3M-group: n = 29, 91%; OD-group: n = 34, 94%) of the patients and the support given to the patients was estimated to be sufficient by n = 67, 99% (3M-group: n = 31, 97%; OD-group: n = 36, 100%). Only n = 14, 21% (3M-group: n = 6, 19%; OD-group: n = 8, 22%) of the patients experienced difficulties with the application or the home testing kit and n = 64, 94% (3M-group: n = 29, 91%; OD-group: n = 35, 97%) wanted to continue to be monitored in an eHealth setting in the future. The mean s-IBDQ scores at baseline were 58 (95% CL: 55–61) in the 3M-group and 54 (95% CL: 59–58) in the OD-group as well as 58 (95% CL: 54–62) in the 3M-group and 61 (95% CL: 58–64) in the OD group at one year follow up. No difference in s-IBDQ measured QOL was found between the two groups. However, patients in the OD group had a significant increase in mean s-IBDQ score at follow up (p = 0.04).

**Conclusion:** Patients in both groups were generally satisfied by the home monitoring setup. Patients in the on-demand group also presented a significant increase in quality of life over time.

**Disclosure of Interest:**

P. Weimers: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in this study.

D. Marker: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in this study.

D. V. Andersen: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in this study.

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**References**


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**Table 1: A comparison of bowel cleansing efficacy as assessed by site colonoscopy**

<table>
<thead>
<tr>
<th>Bowel preparation</th>
<th>N. successful cleansing</th>
<th>p-value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M</td>
<td>236 173 (73)</td>
<td>0.003</td>
<td>4.0–20.7</td>
</tr>
<tr>
<td>OD</td>
<td>243 148 (61)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ascending colon</td>
<td>236 82 (34)</td>
<td>&lt;0.001</td>
<td>12.7–27.8</td>
</tr>
<tr>
<td>Overall colon</td>
<td>236 35 (14)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** NER1006 was shown to provide significantly better cleansing of the overall colon and high-quality cleansing of the ascending colon compared to NaPic + MgtCit, when both treatments were administered the day before colonoscopy. The cleansing efficacy rate of the comparator was within its previously reported cleansing rates for day before administration, suggesting the improvement seen with NER1006 is of clinical relevance.

**Disclosure of Interest:** J.P.H. Drenth: DAYB investigator; no other conflicts of interest.

C. Pediconi: Employee of Norgine

B. Amnani: Employee of Norgine

**All other authors have declared no conflicts of interest.**
P0348 SKELETAL MUSCLE ATRPHY IS A PREDICTIVE FACTOR FOR INTESTINAL RESECTION IN PATIENTS WITH CROHN'S DISEASE

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Introduction: Inflammatory bowel diseases (IBD), such as ulcerative colitis (UC) and Crohn’s disease (CD), are chronic gastrointestinal diseases that are associated with protein-energy malnutrition (PEM). Although the frequency of altered body composition, such as reduced fat-free mass or skeletal muscle volume, has been shown to be high in patients with IBD, the relationships between skeletal muscle volume and the prognosis are yet to be elucidated.

Aims & Methods: We have conducted a retrospective study on 61 IBD patients who have admitted due to exacerbation of the disease. We have enrolled IBD patients who have had abdominal computed tomography and assessed the nutritional indices, such as the Onodera’s prognostic nutritional index (O-PNI) and controlling nutritional status (CONUT). O-PNI was calculated based on the serum albumin and total lymphocyte count, using the following equation: O-PNI = 10 × [serum albumin (g/dl) + 0.005] × total lymphocyte count (×10⁶/ml). The L3 skeletal muscle index (SMI) which is the cross-sectional area of the skeletal muscle at the level of the third lumbar (L3) vertebral normalized by the height squared is used to identify sarcopenia.

Results: Sarcopenia defined as low SMI were observed in 44% of all IBD patients (29% in CD, 54% in UC). In UC patients, the O-PNI, CONUT, height and L3 skeletal muscle index (SMI) which is the cross-sectional area of the skeletal muscle volume and the prognosis are yet to be elucidated.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0349 A PROSPECTIVE STUDY TO PREDICT A MILD COURSE OF CROHN’S DISEASE: AN INTERIM ANALYSIS OF THE PROGNOSIS STUDY

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Introduction: Crohn’s Disease (CD) spans a wide spectrum of severity, from mild to severe, and may avoid under- as well as overtreatment. The patients are treated according to guidelines. 5 year follow up is planned for all patients. If initial therapy fails, treatment is escalated. Source data verification is performed by external monitors. Primary aims of the study is to confirm the previously identified score and to test its power to predict a mild disease course as indicated by the need of not more than mesalamin therapy. Additional analyses include the percentage of patients with a score indicating a severe disease and their characteristics at diagnosis. This interim analysis presents preliminary data.

Results: Currently, 78 patients (33 male, 45 female; age 16-72, mean 35 years) with newly diagnosed CD are enrolled. 56 CD-patients with follow up 2-8 weeks (mean 8.5 months), mean age 35 years, female 21, male CRP 12.2 mg/l were included into the interim analysis. In 28 patients a score from 0-2 step-up treatment occurred in 7%, whereas in 28 patients with a score ≥3, step-up rate was 43% (p = 0.0043). Differences between patients with a score 0-2 and ≥3 were (age 41 vs. 28 years, p = 0.0011), CRP < 2 mg/l (17/28 patients vs. 0/28, p < 0.0001), endoscopic score 1.4 vs. 2.7, p = 0.0011, perianal lesions 12/28 vs. 4/28, stenosis 1/28 vs. 6/28. There were no differences in terms of sex, fistula, extraintestinal manifestations and lever. Conclusion: In this early analysis of a prospective study planned with a 5-year follow up, a significant proportion of patients with mild CD and simple mesalamin therapy can be identified. These initial results encourage to continue and expand this prospective long-term study on the predictability of a mild CD course.

Disclosure of Interest:
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B. Reimers: employee of Ferring Arzneimittel GmbH
B. Bokemeyer: Consultancy: Setalia, Abbott, MSD, Shire, Ferring, UCB, Hospira, Takeda, Movetis, Shiff, Janssen, Hexal, Boehringer, Biogen, Merckle, Falk, HLR, Mundipharma, Celltrion
All other authors have declared no conflicts of interest.

P0350 USEFULNESS OF REPEATING TESTING FOR LATENT TUBERCULOSIS INFECTION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD): CORRELATION BETWEEN TUBERCULOSIS SKIN TEST (TST)/BOOSTER AND QUANTIFERON-TB (QFT)

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Introduction: The Spanish Working Group on Crohn’s Disease and Ulcerative Colitis (GETECCU) and other international guidelines recommend testing of latent tuberculosis infection (LTI) before anti TNF therapy by screening with tuberculin skin test (TST) and, in a potential state of anergy, double screening by TST and interferon-gamma release assays (IGRAs) or two-time tuberculin test (TST/booster). Routine repetition is not recommended.

Aims & Methods: We aimed to assess the correlation between (TST/booster) and IGRA using QUANTIFERON-TB (QFT) and the usefulness of repeating periodic (annual or biannual) screening in a population of IBD patients of Zamora (Spain). In a single cohort of IBD patients attended in the department of gastroenterology of Zamora Hospital, we implemented a questionnaire and collected TST,booster performed previously to February 2015. Afterwards, prospectively, between February 2015 to February 2017, TST and QFT were performed at the same day, and the TST/booster 7 days after. Finally we compared the results of the LTI screening performed prospectively with the screening of the retrospective cohort.

Results: A total of 404 patients were included with a mean age of 51.5 (SD 16.6, 225 (55.7%) male and 179 (44.3%) female. 227 patients (56.2%) were ulcerative colitis, 167 (41.3%) were Crohn disease and 10 (2.5%) were diagnosed of indeterminate colitis. 160 patients live in rural areas (40.6%), 60/355 (16.9%) were smokers. The prevalence of LTI and the correlation between TST/booster and QFT is shown in table 1.

Table 1: Prevalence of LTI and correlation between TST/booster and QFT.

<table>
<thead>
<tr>
<th>TST/booster</th>
<th>Prevalence of LTI in patients on immunomodulator therapy</th>
<th>Prevalence of LTI in patients on anti-TNF therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST/booster</td>
<td>130/399 (32.6%)</td>
<td>47/239 (28.5%)</td>
</tr>
<tr>
<td>booster positives</td>
<td>116/371 (31.3%)</td>
<td>40/163 (24.5%)</td>
</tr>
<tr>
<td>– /booster</td>
<td>28/272 (10.3%)</td>
<td>12/135 (8.9%)</td>
</tr>
<tr>
<td>QFT positives</td>
<td>40/264 (15.5%)</td>
<td>6/105 (5.7%)</td>
</tr>
<tr>
<td>– /booster QFT</td>
<td>12/264 (4.5%)</td>
<td>3/89 (0.8%)</td>
</tr>
<tr>
<td>booster s/booster QFT</td>
<td>24/370 (6.4%)</td>
<td>4/162 (2.4%)</td>
</tr>
</tbody>
</table>
Prevalence of LTI in retrospective testing was of 54/246 (22.0%). Prospective testing was of 26/246 (10.5%); among the follow up, 30/191 (15.7%) patients who were negative for screening before 2015 were converted in positive for LTI (95% CI [10.2–21.1]).

**Conclusion:** The prevalence of LTI in our area is high (32.6%). The simultaneous presence of the capsule endoscopy and QFT/QFT-L1 improves the detection of LTI. The QFT increases the detection of LTI even when is performed in patients without immunosuppressive treatments, in whom is not routinely recommended. The QFT is more useful in patients without immunosuppressive therapy. The results of QFT in every two years is useful in this population with high prevalence of LTI, since it may detect LTI in patients with previous negative tests (15.7%). The QFT is essential due to the possible false negatives of QFT when screening patients on anti-TNF therapy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0351 MAGNETIC RESONANCE ENTEROGRAPHY GLOBAL SCORE ALLOWS FOR ACCURATE QUANTIFICATION OF SMALL BOWEL INFLAMMATION IN CROHN’S DISEASE: A COMPARISON WITH CAPSULE ENDOSCOPY**

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**Introduction:** Magnetic resonance enterography (MRE) and capsule endoscopy (CE) are prime modalities for evaluation of small bowel in patients with Crohn’s disease (CD). However, detection of proximal (jejunum and proximal ileum) small bowel inflammation by MRE is challenging. Current quantitative scores such as Magnetic Resonance Index of Activity (MaRIA) do not incorporate proximal small bowel data and were validated against ileocolonoscopy. Magnetic resonance enterography global score (MEGS) was designed for quantitative evaluation of the entire digestive tract; however, it was only validated against ileocolonoscopy and its accuracy in the proximal small bowel was not assessed. CE allows for accurate assessment of the entire small bowel and is the modality of choice for evaluation of the proximal small bowel.

**Aims & Methods:** We aimed to compare the quantitative evaluation of the small bowel inflammation by MEGS score and the Lewis capsule endoscopy score. Patients with known quiescent small bowel (CD) for at least 3 months (CDAI < 150) were prospectively recruited and underwent magnetic resonance enterography (MRE) and capsule endoscopy (CE). MEGS score was calculated for each bowel segment and the entire small bowel. MEGS is based on the involved segment length, wall thickness, mural enhancement, mural and per-mural edema and extra-intestinal findings. In addition, MARIA score was calculated for the terminal ileum. Small bowel inflammation on CE was quantified using the Lewis score (LS) (LS < 150 = mucosal healing; LS ≥ 790 = severe to severe inflammation). Proximal small bowel was defined as jejunum and duode-num on MRE and as 14th and 22nd tertiles LS on CE. Distal small bowel was defined as terminal ileum on MRE and 3rd tertile LS on CE. Fecal calprotectin (FCP) levels were measured and correlated with all scores.

**Results:** Fifty-two patients were included in the study. There was a strong correlation between MEGS and Lewis score (Pearson correlation = r = 0.61, p = 0.001) for the entire bowel. In the proximal small bowel, the correlation was moderate (for duodenum vs LS 1st tertile and proximal ileum vs 2nd tertile LS - both r = 0.54, p = 0.001). In the terminal ileum, there was a strong correlation between MEGS and MaRIA score (r = 0.74, p = 0.001) while both MRE based scores were moderately correlated with 3rd tertile LS (r = 0.5, p = 0.001 for both). The correlation with FC was stronger for MEGS (r = 0.68 p = 0.001) than for MaRIA (p = 0.40 p = 0.01) or for LS (r = 0.38, p = 0.02).

**Conclusion:** MEGS score provides accurate evaluation of the small bowel in CD. Lewis capsule endoscopy score allows for accurate quantification of small bowel disease.

**Disclosure of Interest:** U. kopylov: The study was supported by a generous grant from the Helmsley Charitable Trust

All other authors have declared no conflicts of interest.

**P0352 WHICH ONE IS BETTER FOR ASSESSMENT OF ESTABLISHED CROHN’S DISEASE BY CAPSULE ENDOSCOPY: THE LEWIS SCORE OR THE CAPSULE ENDOSCOPY CROHN’S DISEASE ACTIVITY INDEX?**

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**Introduction:** Small-bowel capsule endoscopy (CE) is a prime modality for evaluation of the small bowel. The Lewis score (LS) and the Capsule Endoscopy Crohn’s Disease Activity Index (CECDAI) are validated endoscopic indices for quantification of small bowel inflammation on CE. It is unclear whether these indices are interchangeable for evaluation of mucosal inflammation in established Crohn’s disease (CD).

**Aims & Methods:** We aimed to prospectively compare the quantitative evaluation of the small bowel inflammation by both scores. Patients with known quiescent small bowel (CD) for at least 3 months (CDAI < 150) were prospectively recruited and underwent CE. LS was calculated using the capsule reading software (RAPID 8) and CECDAI was calculated manually, by 2 independent experienced gastroenterologists (one for each score) unaware of each other’s results. Mucosal healing was defined as LS < 135; LS ≥ 790 signified moderate to severe inflammation. Fecal calprotectin (FCP) and C-reactive protein (CRP) levels were measured and correlated with the scores.

**Results:** Fifty patients were included in the study. There was a strong correlation between LS and CECDAI (Pearson’s r = 0.67, p = 0.001). CECDAI < 7.2 corresponded to mucosal healing (LS < 135), while CECDAI > 11.1 corresponded to moderate to severe inflammation (LS ≥ 790) by linear regression. There was a moderate correlation between both scores and FCP levels that was somewhat stronger for CECDAI (r = 0.39, p = 0.002 vs r = 0.53, p = 0.001 for both). There was a weak correlation between LS and CRP levels (r = 0.27, p = 0.04) and none for CECDAI and CRP (r = 0.2, p = 0.1).

**Conclusion:** In our prospective study, CECDAI and LS strongly correlated and performed similarly for quantitative assessment of mucosal inflammation in established CD.

**Disclosure of Interest:** U. kopylov: The study was supported by a generous grant by the Helmsley Charitable fund

All other authors have declared no conflicts of interest.
P0354 THIOPURINE MAINTENANCE THERAPY FOR IBD: WHICH IS THE BEST METHOD TO MEASURE MEDICATION ADHERENCE? A. Ochieng, V. George, C. Selinger Gastroenterology, St James Hospital, Leeds/United Kingdom Contact E-mail Address: oduori.ochieng@nhs.net

Introduction: For the majority of patients with IBD long-term therapy is required to maintain remission, yet 30–45% of patients do not adhere to their IBD medication. Medication adherence can be assessed with prescription refill rates, biological markers (medication levels), trough levels, self-reported patient adherence in the IBD clinic and to correlate the results with thioguanine-nucleotide (TGN) levels. Aims & Methods: Consecutive outpatients on thiopurine maintenance therapy for IBD for >3 months were recruited from clinic. Patients self-reported adherence using two different self-report tools and the validated Health Assessment Questionnaire (HAQ). HAQ scores were recorded at the visit. For the majority of patients TGN levels were available for 69. These included 38 women. Diagnoses were Crohn’s disease in 27, ulcerative colitis in 41 and IBD-U in 3 cases. Concomitant therapy included 5/ASA (25 cases), anti-TNF (13 cases) and Vedolizumab (2 cases). The proportion of adherent patients was according to the relevant report tool 71% (TGN), 87% (VAS), 87% (Morisky) and 77% (MARS). VAS (Pearson 0.315; p = 0.005) and Morisky (Pearson −0.363; p = 0.001) correlated moderately with TGN, but MARS (Pearson 0.09; p = 0.39) did not. The patients, who were non-adherent by TGN were detected by VAS in 3, Morisky in 6 and MARS in 3 cases. However, patients showing non-adherence according to self-report tools had a TGN level in 6 of 10 cases for VAS, 10 of 26 for Morisky and 4 of 15 for MARS.

Conclusion: Self-report tools provided a patient-friendly and inexpensive way of assessing adherence, but the correlation with TGN levels was only moderate. While providing a more objective assessment TGN levels are problematic for routine use in all patients. TGN require a more invasive and expensive approach. Furthermore, TGN cannot detect “white coat adherence” (patients take medication only around appointments), which is the most likely explanation for normal TGN levels in 6 of 10 cases for VAS, 10 of 26 for Morisky and 4 of 15 for MARS.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0357 DIAGNOSTIC DELAY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE - A STUDY OF THE AUSTRIAN IBD STUDY GROUP (ATISG)


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Introduction: Diagnostic delay seems to be common in inflammatory bowel disease (IBD), especially in Crohn’s disease. We sought to investigate the diagnostic delay in Austrian IBD patients and to identify associated risk factors as well as the impact of delayed diagnosis on the risk of intestinal surgery in CD.

Aims & Methods: In a multicentre cohort study adult patients with IBD (CD, ulcerative colitis UC, inflammatory bowel disease unclassified IBDU) attending all the patients requiring ileocoloscopy, regardless the indication, were consecutively included between September 2015 and September 2016. Clinical and endoscopic findings alone were appropriate in the vast majority of CD patients. US is a convenient alternative.

Results: 1217 patients (CD 779, UC 400, IBD 21, missing 17; females 615) with a median age of 40 years (interquartile range (IQR) 31–52 years) and a median disease duration of 10 years (IQR 4–18 years) were analysed. The median diagnostic delay was 0.53 years (IQR 0.29–1.92 years) in CD and 0.28 years (IQR 0.11–0.80 years) in UC, respectively (p < 0.001). In the multivariable regression analysis patients with CD had a significantly longer diagnostic delay than patients with UC (HR 1.56; 95% CI 1.34–1.82; p < 0.0001) and a quadratic effect of age leading to higher risk of delayed diagnosis in older patients (p < 0.0001) was found. Diagnostic delay did not differ significantly between patients with intestinal CD-related surgery (53% of all CD patients) and those without surgery. However, in the Kaplan-Meier curve for the probability of being diagnosed after symptom onset a trend of a difference between both groups was seen after 10 months (p = 0.15).

Conclusion: The median diagnostic delay was longer in CD (6 months) than in UC patients (3 months) and was associated with older age at diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0358 IDENTIFICATION OF NON-INVASIVE BIOMARKERS TO DETECT ILEAL CEACAM-6 OVEREXPRESSION AND ADHERENCE OF NON-INVASIVE E. COLI (AIEC) INFECTION IN CROHN’S DISEASE PATIENTS: RESULTS FROM THE CEALIVE MULTICENTER STUDY


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Introduction: Enterobacteria, especially adherent and invasive E. coli (AIEC), are suspected to play a key role in Crohn’s disease (CD). These bacteria are able to highly adhere to the ileal mucosa of CD patients through the CEACAM6 receptor (Carcinoembryonic antigen-related cell adhesion molecule 6). It has been shown that therapies targeting enterobacteria and/or AIEC could be more effective in mice overexpressing CEACAM6. In this line, the overexpression of CEACAM6 in the ileum as well as the presence of AIEC in the ileum could be potential biomarkers to select the patients who could benefit from drugs targeting the host-pathogen interaction. Unfortunately, the identification of these biomarkers is time-consuming and invasive highlighting the need for more convenient alternative.

Aims & Methods: We aimed to assess the correlation between the level of ileal mucosa of CD patients through the CEACAM6 receptor (Carcinoembryonic antigen-related cell adhesion molecule 6). It has been shown that therapies targeting enterobacteria and/or AIEC could be more effective in mice overexpressing CEACAM6. In this line, the overexpression of CEACAM6 in the ileum as well as the presence of AIEC in the ileum could be potential biomarkers to select the patients who could benefit from drugs targeting the host-pathogen interaction. Unfortunately, the identification of these biomarkers is time-consuming and invasive highlighting the need for more convenient alternative.

Results: Overall, 102 patients were enrolled in the study (Table 1).

Table 1: Baseline characteristics of the 102 CD patients included in the study.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female gender n, %</td>
<td>56 (56.8%)</td>
</tr>
<tr>
<td>Active smokers n, %</td>
<td>34 (34.3%)</td>
</tr>
<tr>
<td>Montreal classification</td>
<td></td>
</tr>
<tr>
<td>Disease location</td>
<td></td>
</tr>
<tr>
<td>L1</td>
<td>27 (28.4%)</td>
</tr>
<tr>
<td>L2</td>
<td>12 (12.6%)</td>
</tr>
<tr>
<td>L3</td>
<td>58 (61.1%)</td>
</tr>
<tr>
<td>L4</td>
<td>7 (7.4%)</td>
</tr>
<tr>
<td>Disease behaviour</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>51 (54.3%)</td>
</tr>
<tr>
<td>B2</td>
<td>26 (27.7%)</td>
</tr>
</tbody>
</table>

Table 1: Baseline characteristics of the 102 CD patients included in the study.
Ileal CEACAM6 level did not depend on disease severity or the site of biopsies as the median level of ileal CEACAM6 was 854 pg/mg [570.3; 1646] and there was no difference in healthy or ulcerated zones (756 pg/mg [487; 1617] vs 947 pg/mg [604; 1820], p = 0.08). The median level of CEACAM6 from saliva was 3837 pg/mg [1889; 7338]. There was a positive correlation between the levels of CEACAM6 in saliva and CEACAM6 in the ileum (r = 0.47; p < 0.0001) in both macroscopically healthy areas (r = 0.53, p < 0.0001) and ulcerated areas (r = 0.39, p = 0.0082). Using a ROC curve, we determined the best threshold of CEACAM6 in saliva for detecting ileal CEACAM6 bacteria. Using a ROC curve (area under the curve (AUROC) = 0.73), the cut-off value of 3800 pg/mg demonstrated the best performance to detect ileal CEACAM6 overexpression with substantial specificity (76.0% [54.9; 90.6]) and positive predictive value (67.5% [74.8; 95.3]). The number of enterobacteria was increased in CD patients with prior intestinal resection (562 [20;1674] vs. 116 [0;752] pg/mg, p = 0.004). Interestingly, the number of enterobacteria was also increased in AIEC positive-patients (640 [0;1329] vs. 116 [0;752] pg/mg, p = 0.004). Using a ROC curve, we determined the best threshold of enterobacteria in the ileum to detect the presence of ileal AIEC bacteria. We found an area under the curve (AUROC) of 0.70 ([0.61; 0.77]). The cut-off value of 60 cfu/biopsy demonstrated the best performances to detect the presence of ileal AIEC bacteria with high specificity (96.8% [94.2; 99.3]) and sensitivity (92.9% [73.8; 99.7]).

Conclusion: CEACAM6 measurement in the saliva is feasible, non time-bombing and non-invasive. It could be a reliable test to detect the overexpression of CEACAM6 in the ileum from CD patients and could then be proposed as a non-invasive biomarker to select patients who might benefit from anti-adhesive therapies. In addition, we identify the number of enterobacteria associated to the ileum is a convenient and reliable test to screen CD patients for AIEC bacteria.

Disclosures: The study was funded by LESAFFRE company. I declare lecture fees for Abbvie, Takeda, Hospira, MSD, Vifor Pharma, SANofi-Aventis and Ferring. I declare consulting fees for Abbvie, Takeda, Hospira.

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References

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Introduction:
Fibroblast growth factor 19 (FGF19) is the ileal hormone providing bile acid synthesis feedback inhibition of bile acid (BA) synthesis and reduction of excess colonic BAs.

Concentration: The increased FGF19 level in UC patients in remission, compared to patients with active UC, may be influenced by the treatment, in particular corticosteroids used to induce remission. Steroid-induced increase in FGF19 synthesis may be associated with anti-inflammatory effect. The stimulation of FGF19 release during UC remission may also have beneficial effect by the inhibition of BA synthesis and reduction of excess colonic BAs.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Increasingly, immunosuppressive medications such as azathioprine and cyclosporine are used in order to prevent or control inflammatory bowel disease (IBD) patients. It has been reported that such treatments increase the risk of developing all types of skin cancer. Education of these patients is key in order to promote their awareness of their increased risk and it is vital for gastroenterologists to counsel patients on sun protection strategies on initiating therapy. We recently performed a pilot study in this group which highlighted gaps in their knowledge of the increased risk and prevention strategies. We speculate clinician’s lack of knowledge was partly to blame.

Aims & Methods: Our aim was to determine Irish IBD clinicians’ knowledge of the skin cancer risk and advised photoproteective behaviours in this cohort. Cross-sectional descriptive study. We invited IBD clinicians via email to fill in an anonymous online survey designed to assess knowledge of skin cancer risk and photoprotection. The survey comprised of 5 questions, each question asked on a 5-point Likert scale based on the “SunSmart” guidelines, as currently gastroenterology based guidelines are lacking. In addition their grade of training and clinical experience was noted.

Results: To date, 45 Irish Gastroenterology clinicians completed the online questionnaire. Of these, fifteen (33%) were consultants, fourteen (31%) gastroenterology trainees, four (9%) general medical trainees and twelve (27%) IBD nurse specialists. Overall, clinician’s knowledge of general factors associated with increased risk of skin cancer was reassuring; with all 45 (100%) knowing sun beds increased skin cancer risk and almost 100% (44, 98%) knew working outdoors increased cancer risk. 42 (93%) knew a personal history of skin cancer and 42 (93%) knew a personal history of skin cancer.

Conclusion: Our study highlights IBD clinicians’ suboptimal knowledge of immuno-suppression and their lack of emphasis on preventative measures and skin examination in clinics. A targeted educational and awareness programme may address this.

Disclosure of Interest: All authors have declared no conflicts of interest.

Disclosure of Interest: D. V. Ankersen: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

D. Marker: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

P. Weimers: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

J. Burisch: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

P. Munkholm: Calpro Inc. Norway has provided all fecal Calprotectin home testing kits used in the study.

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Introduction: Home monitoring of disease activity and fecal calprotectin in adult patients with inflammatory bowel disease (IBD) is of significant importance to detect and treat a relapse as soon as possible in order to decrease the total inflammation burden and avoid progression of intestinal damage, and possibly improve the disease course. An validated Fecal Calprotectin (FC) home testing kit and smart phone application CalproSmartTM have been added to an existing eHealth web-application, enabling patients to control their disease activity using clinical scores and FC from home with results shown on their smart phone. eHealth allows for tight monitoring of disease activity, however, the frequency of an optimal screening procedure for adult IBD patients has not yet been determined.

Methods: Our study highlights IBD clinicians’ suboptimal knowledge of immunosuppression risk and their lack of emphasis on preventative measures and skin examination in clinics. A targeted educational and awareness programme may address this.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Ulcerative colitis (UC) and Crohn’s disease (CD) represent a serious medical, socio-economic problem worldwide. The family of S100 proteins represents a total of at least 25 relatively small calcium binding proteins. S100 A4 represents a total of at least 25 relatively small calcium binding proteins. S100 A4 is a two-domain as its profibrotic effect has been confirmed in the myocardium, liver parenchyma and in the intestine. Fibroblasts represent the key cell type in the pathogenesis of fibrostenosing/stricturing CD.

Patients and Methods: The aim of this prospective study was to assess serum concentration of S100A4 protein in UC and CD. We included 118 subjects: 93 patients with CD (44 men, 49 women, aged 22–79, mean 44 ±14), 16 patients with UC (8 men, 8 women, aged 20–74, mean 39 ± 15) and 9 controls (average risk population with normal findings on colonoscopy and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 2 men, 7 women, mean 32 ± 17). CD group was divided according to the Montreal classification: 20/93 (22%) patients had B1 phenotype, 19/93 (20%) B2, 20/93 (21%) B3 and 34/93 (37%) B2+ B3. Perianal involvement was present in 27/93 (29%). L1 involvement was present in 15/93 (16%), L2 in 14/93 (15%) and L3 in 11/93 (12%). Serum concentration of S100A4 protein was investigated by means of Human Protein S100-A4 ELISA kit, the quantitative sandwich enzyme immunoassay technique (purchased from My Biosource, San Diego, California, USA).

Results: Serum concentration of S100A4 protein was significantly higher in UC (52.1 ± 56.2 μg/L) compared to controls (mean 104.8 ± 40.5 μg/L), p = 0.019 and in CD (mean 154.4 ± 52.1 μg/L) compared to controls, p = 0.007. In CD, no difference in S100A4 was revealed between UC and CD, p > 0.05. In CD group, serum concentration of S100A4 in each subgroup (divided according to bowel involvement) was higher compared to controls, p < 0.005. No differences in S100A4 were documented between each CD phenotypes. Serum concentration of S100A4 was significantly higher in L2 (mean 144.6 ± 44.2 μg/L) compared to controls, p = 0.041 and in L3 (mean 163.0 ± 52.8 μg/L) compared to controls, p = 0.002. Serum concentration of S100A4 was significantly higher in L3 (mean 163.0 ± 52.8 μg/L) compared to L1 (mean 126.9 ± 47.6 μg/L), p = 0.017. No difference in S100A4 was observed between patients with and without perianal involvement, p > 0.05.

Disclosure of Interest: P. Moravkova: no conflict of interest.

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Conclusion: Association of serum S100A4 protein with UC and CD was con-
firmed. In CD, disease behaviour did not have impact on serum concentration of S100A4 protein. In CD, higher levels of serum S100A4 were observed in patients with ileo-colic and colonic involvement compared to those with isolated small bowel involvement.

Acknowledgments: The study was supported by the Research Project PROGRES Q40–15 from Charles University.

P0364 SEVERE VITAMIN D DEFICIT IN ACTIVE INFLAMMATORY BOWEL DISEASE
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Introduction: Hypovitaminosis D is common in Inflammatory Bowel Disease (IBD) patients. Some studies suggest that the finding may relate to severity of the disease.1

Aims & Methods: The aim of the study was to determine the vitamin D (VitD) status in an Italian IBD cohort in relation to disease activity. Serum vitamin D5 was measured in 260 IBD outpatients, not supplemented with VitD (110 Crohn’s Disease (CD) and 150 Ulcerative Colitis (UC); 145 males and 115 females, mean age 50.7 ± 15 years), and compared to those of 205 healthy blood donors, matched by sex, age (+/-2 years) and month in which the blood sample was collected. VitD levels were correlated to C-reactive protein (CRP), erythro-
cyte sedimentation rate (ESR), Harvey Bradshaw Index (HBI) and Crohn’s Disease Activity Index (CDAI) for CD and Mayo partial score for UC. Chi square, T test and linear correlation were used when appropriate.

Results: IBD patients were at higher risk of VitD deficiency (defined as <20 ng/ ml) than controls (OR 4.5, 95% CI 2.9–6.9, p < 0.0001). Of 260 IBD patients, 156 (60%) had VitD deficiency, more often in CD than in UC (72.7% vs 48% respectively, p < 0.0001). Age <40 and ≥60 years, winter/spring season, CRP >0.5 mg/dl, ESR ≥20 mm/h, previous intestinal surgery and HBI ≥5 were sign-
ificant risk factors for VitD deficiency. No differences were observed in relation to sex, smoking status, BMI, age at diagnosis, localization and behavior of dis-
case, and need of steroids. There was a weak negative correlation between CRP and VitD deficiency. No differences were observed in relation to presence of ileo-colic involvement and colonic involvement respectively, p = 0.5 were sig-
ificant. Patients with active disease were more likely to have VitD deficiency compared to controls, more so in CD. Patients with active disease are more likely to have VitD deficiency (defined as

Disease Activity Index (CDAI) for CD and Mayo partial score for UC. Chi square, T test and linear correlation were used when appropriate.

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P0365 MAGNETIC RESONANCE OF THE SMALL BOWEL WITH EARLY (70 MIN) VS LATE (7 MIN) PHASE POST GADOLINIUM IMAGING TO IDENTIFY FIBROSIS IN STRICTURING SMALL BOWEL CROHN’S DISEASE
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Introduction: Small bowel (SB) Crohn’s disease (CD) strictures can comprise of both inflammatory and fibrotic elements. An accurate tool to discriminate fibro-
sis and inflammation would be clinically useful to guide therapy and predict response. While the magnetic resonance index of activity (MaRIA) is a validated means to assess activity, to date, no specific tool has been developed to identify fibrosis from inflammatory disease. Lesions with a dense fibrotic matrix exhibit delayed gadolinium enhancement on MRI. The role of delayed enhancement in assessment of SB CD strictures is unclear. Recent evidence suggests relative contras-
tive enhancement (REC) of >24% on delayed MRI sequences may accu-
ately detect fibrosis.

Aims & Methods: To determine the feasibility of MRE SB stricture assessment with early (70s) and late (7min) phase post gadolinium imaging comparing MaRIA, RCE and biochemical activity in patients with ideal CD. We performed a retrospective review of 208 consecutive MREs with known and suspected SBCD. MRE was performed as standard with additional coronal T1 sequences 7 minutes post gadolinium administration. Demographics, MRE findings and biochemical markers were recorded. Patients with stricture disease were further assessed. Two independent blinded Radiologists calculated RCE and MaRIA’s at 70 sec and 7 min.

Results: Median age 40.5 years; male n = 83(39.9%); 117, 72 and 19 patients had known CD, suspected CD and indeterminate IBD, respectively. In total, 119(57.2%) MREs were normal. Ileitis, strictures and fistulas were found in 40(19.2%), 49(23.6%) and 10(5.0%) patients, respectively. While there was no difference in Hb between patient groups (Normal, Inflammatory and Stricture disease); Albumin and CRP were statistically different between normal subjects and those with disease; albumin 42.4±L v 38.9±L in normal v stricture disease (p <0.0181 95% CI -0.23–0.02). CRP 8.8±mg/L v 18.3±mg/L (p <0.003 95% CI -0.46 –0.10) and v 29.4±mg/L (p <0.002 95% CI -0.43–0.11) amongst normal v inflammatory and stricture subjects respectively. Neither parameter could detect fibrosis in inflammatory and stricture disease. 26 MREs performed with ileal CD have been further assessed; median age =41yrs, male =10(38%). RCE >24% and high T2 signal intensity (SI); 6/26 (23%) and 11/26 (42%). MaRIAs did not occur in only 1/10 with a visible stenosis. Average MaRIA 2.6–7.7 (7 mild; 3/26 (11.5%) 7–11 moderate; 21/26 (80.7%) >11 severe. MaRIAs did not change significantly between 70 sec and 7 min. As expected T2 SI increased with MaRIAs >11, 26 ±1 (p <0.001, 95% CI 7.7–17.27). RCE and HBI correlate with MaRIAs suggesting it has a predictive factor for fibrosis. Consistent with MRE findings, CRP was higher in patients with MaRIAs >11 [13.3 ± 5.2] and lower in patients with RCE >24% [1.9 ± 4].

Conclusion: Unlike biochemical markers, MRE may be a useful means to differ-
entiate between inflammatory and structuring disease. Further study is required to assess the long-term predictive value. RCE may be a useful adjunct to current MRE and help detect fibrosis in small bowel lesions and warrants further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**Results:** A total of 520 patients who underwent CT enterography were identified, with 44% being male and 56% being female. The median age was 43 (32-53) years and 53% were women. The main indication for CT enterography was CD staging (81%). A total of 531 incidental findings were detected (median of 2 [1-3] per patient). The main findings identified were hepatic nodules (n = 59), hepatic cysts (n = 55) and sacroiliitis (n = 46). The findings implicated orientation to another medical specialty in 80 patients (29%), the main ones being Urology (n = 14) and Gynecology (n = 11). The findings implied additional exams in 59 patients (21%). Five (2%) underwent subsequent surgical intervention. Clinically relevant findings were found in 38 patients (14%), including 2 renal tumors, 2 ovarian teratomas and 3 cases of primary sclerosing cholangitis. The detection of incidental findings implied a change in CD therapy in 9 patients (3%); 1 suspended biologic therapy, 2 suspended immunomodulator therapy and 6 initiated biologic therapy.

**Conclusion:** Incidental findings are relatively common in patients with CD who undergo CT enterography. A significant proportion is clinically relevant and may involve change CD therapy. A risk stratification may be important to avoid morbidity associated with unnecessary examinations to assess benign situations.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


**PO368 CLINICAL SIGNIFICANCE OF ASYMPTOMATIC CLOSTRIDIUM DIFFICILE CARRIAGE IN PATIENTS ON IMMUNOMODULATOR FOR INFLAMMATORY BOWEL DISEASE**

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**Introduction:** Clinical significance of asymptomatic Clostridium difficile (C. difficile) carriage in patients on immunomodulator for inflammatory bowel disease (IBD) is largely unknown. [1, 2]

**Aims & Methods:** The aim of this study was to investigate the clinical implication of asymptomatic carriage of C. diff in IBD patients. Consecutive IBD patients on immunomodulators in clinical remission for the past six months were prospectively recruited from the IBD clinic since 2013. Those cases were excluded if they had past history of total colectomy, the dosage of their immunomodulators were titrated according to their disease activity in the past six months or the types of their immunomodulators were other than azathioprine, mercaptopurine or methotrexate. Stool specimen for C. difficile cytotoxin real-time polymerase chain reaction (RT-PCR) assay was obtained to all eligible patients at the time of enrollment and every follow-up during the study period. Patients were monitored for any IBD flare-up in which if happened, an additional stool specimen for C. difficile cytotoxin RT-PCR assay was obtained.

The primary outcomes were the disease activity which was graded by Crohn Disease Activity Index (CDAI) in Crohn disease (CD) (graded as follows: \[ \text{CDAI} < 150: \text{remission}; 150 < \text{CD} < 450: \text{moderate/severe}; >450: \text{severe} \]) and Ulcerative colitis Disease Activity Index (UCDAI) in ulcerative colitis (UC) (graded as follows: the total index score ranges from 0-12; 0-2: remission; 3-6: mild; 7-10: moderate; >10: severe UC). The secondary outcome was proportion with C. difficile carriage which was defined in the patients with active lower gastrointestinal symptoms accompanying with positive RT-PCR assay of C. difficile at that instant.

**Statistical inference:** The primary outcome was the disease activity which was graded by Crohn Disease Activity Index (CDAI) in Crohn disease (CD) (graded as follows: \[ \text{CDAI} < 150: \text{remission}; 150 < \text{CD} < 450: \text{moderate/severe}; >450: \text{severe} \]) and Ulcerative colitis Disease Activity Index (UCDAI) in ulcerative colitis (UC) (graded as follows: the total index score ranges from 0-12; 0-2: remission; 3-6: mild; 7-10: moderate; >10: severe UC). The secondary outcome was proportion with C. difficile carriage which was defined in the patients with active lower gastrointestinal symptoms accompanying with positive RT-PCR assay of C. difficile at that instant.

**Data:** Data were expressed as median (interquartile range) *p*; all are UC cases and 3 for maintenance therapy with indications as follows: refractory colitis, spondyloarthropathy, rectovaginal fistula.

**Conclusion:** The incidence of asymptomatic carriage of C. difficile in the IBD patients on immunomodulators was not common. It did not associate with the disease flare-up but a significant portion of them could evolve subsequently into clinical infection.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**PO369 BOWEL ULTRASOUND IS USEFUL IN DISEASE MONITORING OF ULCERATIVE COLITIS PATIENTS; FIRST ANALYSIS FROM THE TRUST&UC STUDY IN GERMANY**


**Introduction:** The purpose of this study is that transabdominal US is an easy and non-invasive tool for the assessment of bowel wall thickness.

**Aims & Methods:** The aim of this study was to investigate the clinical implication of asymptomatic carriage of C. diff in IBD patients. Consecutive IBD patients on immunomodulators in clinical remission for the past six months were prospectively recruited from the IBD clinic since 2013. Those cases were excluded if they had past history of total colectomy, the dosage of their immunomodulators were titrated according to their disease activity in the past six months or the types of their immunomodulators were other than azathioprine, mercaptopurine or methotrexate. Stool specimen for C. difficile cytotoxin real-time polymerase chain reaction (RT-PCR) assay was obtained to all eligible patients at the time of enrollment and every follow-up during the study period. Patients were monitored for any IBD flare-up in which if happened, an additional stool specimen for C. difficile cytotoxin RT-PCR assay was obtained.

The primary outcomes were the disease activity which was graded by Crohn Disease Activity Index (CDAI) in Crohn disease (CD) (graded as follows: \[ \text{CDAI} < 150: \text{remission}; 150 < \text{CD} < 450: \text{moderate/severe}; >450: \text{severe} \]) and Ulcerative colitis Disease Activity Index (UCDAI) in ulcerative colitis (UC) (graded as follows: the total index score ranges from 0-12; 0-2: remission; 3-6: mild; 7-10: moderate; >10: severe UC). The secondary outcome was proportion with C. difficile carriage which was defined in the patients with active lower gastrointestinal symptoms accompanying with positive RT-PCR assay of C. difficile at that instant.

**Statistical inference:** The primary outcome was the disease activity which was graded by Crohn Disease Activity Index (CDAI) in Crohn disease (CD) (graded as follows: \[ \text{CDAI} < 150: \text{remission}; 150 < \text{CD} < 450: \text{moderate/severe}; >450: \text{severe} \]) and Ulcerative colitis Disease Activity Index (UCDAI) in ulcerative colitis (UC) (graded as follows: the total index score ranges from 0-12; 0-2: remission; 3-6: mild; 7-10: moderate; >10: severe UC). The secondary outcome was proportion with C. difficile carriage which was defined in the patients with active lower gastrointestinal symptoms accompanying with positive RT-PCR assay of C. difficile at that instant.

**Data:** Data were expressed as median (interquartile range) *p*; all are UC cases and 3 for maintenance therapy with indications as follows: refractory colitis, spondyloarthropathy, rectovaginal fistula.

**Conclusion:** The incidence of asymptomatic carriage of C. difficile in the IBD patients on immunomodulators was not common. It did not associate with the disease flare-up but a significant portion of them could evolve subsequently into clinical infection.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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The etiology of the disorder comprises a permanent activation of immune cascades and imbalanced cytokine networks. Evidence has been put forward that alteration of the human gut microbiome may play a critical role in the pathogenesis of IBD. The influence of the self-monitoring to the course of the disease will also be evaluated. Between April 2015 and December 2016, 180 patients with colonic IBD (126 with UC, 47 with CD, and 7 with IBD unclassified) were included in the study and randomized in a study group and control group. Patients in the study group were instructed to perform the FC home test and fill in a symptom questionnaire every other month and with increasing of the symptoms, and sent the results to the study/IBD nurse by e-mail. The control group patients filled in the symptom questionnaire at baseline and at 12 months and with the appointment to the outpatient clinic according to normal practice. The patients were not reminded of performing the stool tests or filling in the questionnaires. The study period was 12 months, and it is still ongoing.

**Results:** By the end of February 2017, 134 of the 180 included patients had completed the 12 months' follow-up. In the study group, 20/91 (22%) patients had performed the stool tests and filled in the symptom scores according to the study protocol for 6 months, and 14/91 (15%) patients for 12 months. In the control group, 44/89 (49%) patients had filled in the symptom score at baseline and 12 months. There was a significant difference of the adherence between patients stratified for IBD-diagnosis, age, or sex. The satisfaction of the patients with the program was able to clearly show the improvements of the study and the influence of self-monitoring in the number of relapses, phone calls, e-mails, and appointments to the outpatient clinic in both groups will be evaluated. The satisfaction of the patients with the program was able to clearly show the improvements of the study and the influence of self-monitoring in the number of relapses, phone calls, e-mails, and appointments to the outpatient clinic in both groups. The self-monitoring of IBD activity with a rapid FC home test provides an option for individualized treatment for increasing amount of IBD patients. However, in this study the adherence to the self-monitoring program was rather low. The patients need to be reminded of performing the stool tests and filling in the questionnaires in time. Also, the selection and education of the patients, as well as the easy accessibility of the monitoring program are crucial and need further consideration.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0371 SELF-MONITORING OF THE COLONIC INFLAMMATORY BOWEL DISEASE BY A RAPID HOME BASED FEACAL CALPROTEIN TEST AND A SYMPTOM QUESTIONNAIRE**

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**Introduction:** Fecal calprotectin (FC) is a most reliable noninvasive means to distinguish remission from active inflammation in inflammatory bowel disease (IBD). Different commercially available FC tests are time-consuming, and consequently new rapid tests have been validated. As the incidence of IBD is increasing, self-monitoring and eHealth technologies have been evaluated in managing patients with this lifelong disease.

**Aims & Methods:** The aim of this prospective study was to evaluate the feasibility and cost-effectiveness of a semi-quantitative rapid FC home test and a validated symptom questionnaire, in patients with colonic IBD. The influence of the self-monitoring to the course of the disease will also be evaluated. Between April 2015 and December 2016, 180 patients with colonic IBD (126 with UC, 47 with CD, and 7 with IBD unclassified) were included in the study and randomized in a study group and control group. Patients in the study group were instructed to perform the FC home test and fill in a symptom questionnaire every other month and with increasing of the symptoms, and sent the results to the study/IBD nurse by e-mail. The control group patients filled in the symptom questionnaire at baseline and at 12 months and with the appointment to the outpatient clinic according to normal practice. The patients were not reminded of performing the stool tests or filling in the questionnaires. The study period was 12 months, and it is still ongoing.

**Results:** By the end of February 2017, 134 of the 180 included patients had completed the 12 months’ follow-up. In the study group, 20/91 (22%) patients had performed the stool tests and filled in the symptom scores according to the study protocol for 6 months, and 14/91 (15%) patients for 12 months. In the control group, 44/89 (49%) patients had filled in the symptom score at baseline and 12 months. There was a significant difference of the adherence between patients stratified for IBD-diagnosis, age, or sex. The satisfaction of the patients with the program as well as the reasons for the discontinuation of the study and the influence of self-monitoring in the number of relapses, phone calls, e-mails, and appointments to the outpatient clinic in both groups will be evaluated. The satisfaction of the patients with the program as well as the reasons for the discontinuation of the study and the influence of self-monitoring in the number of relapses, phone calls, e-mails, and appointments to the outpatient clinic in both groups will be evaluated.

**Conclusion:** The self-monitoring of IBD activity with a rapid FC home test provides an option for individualized treatment for increasing amount of IBD patients. However, in this study the adherence to the self-monitoring program was rather low. The patients need to be reminded of performing the stool tests and filling in the questionnaires in time. Also, the selection and education of the patients, as well as the easy accessibility of the monitoring program are crucial and need further consideration.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


this study, the clinical and endoscopic features of CAC and ST, treatment method, and prognosis are compared.

**Aims & Methods:** Among 261 UC patients who underwent colonoscopy (CS) and had neoplastic lesions, the clinical features, treatment and prognosis were compared between 71 patients (88 lesions) with CAC (including HGD; CAC group) and 47 patients (63 lesions) who underwent local excision (surgical or endoscopic resection) within the presence of the past/present infection of UC (ST group). Definition of CAC and ST was performed by conventional pathological and immunohistochemical findings.

**Results:** The age of UC onset (29.8 vs. 39.0) and tumor detection (45.5 vs. 57.3) in the CAC group were significantly higher than those in ST group (p < 0.01). The CAC (47.1%) has a higher percentage of chronic persistent type than the ST group (2.3%), and the Mayo endoscopic score is also significantly higher (p < 0.001) in the CAC group (1.43) than the ST group (0.38). The percentage of advanced cancer (35.2% vs. 7.9%) was higher in CAC group than ST group. In patients with intraepithelial neoplasia (IEN) or submucosal lesions, flat lesion was found in 15 lesions of CAC group and whereas no flat lesion was observed in ST group. One lesion in ST group could not distinguish the lesions from the surrounding mucosa without magnifying colonoscopy. In ST group who received resections, 4 patients after resections observed ectopic CAC or low-grade dysplasia during follow-up. In CAC group, 50, 5, 4 patients received total colectomy, local colectomy, ESD, respectively, whereas in ST group, 1, 7, 40, 15 patients received total colectomy, local colectomy, EMR and polypectomy, ESD, respectively. Although mortality from cancer was 11.4% (8/70 cases) in CAC group, no death due to cancer observed in patients whose lesions were found as IEN. On the other hand mortality from cancer was 2.1% (1/47 cases) in ST group.

**Conclusion:** Most sporadic lesions were endoscopically distinct and local resection was the sole treatment method. After follow-up CAC patients diagnosed with IEN or submucosal lesions were resected in remitting UC patients, regular surveillance colonoscopy is necessary because 8.5% (4/47) of patients was found CAC/dysplasia. Even in CAC group, prognosis is well in patients with IEN.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0373 CAN WE PREDICT THE LACK OF RESPONSE TO CYCLOSPORINE AS SECOND LINE THERAPY IN PATIENTS WITH ACUTE SEVERE COLITIS REFRACTORY TO CORTICOSTEROIDS?**


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**Introduction:** Acute severe colitis (ASC) is a dangerous clinical condition that requires intensive intravenous (iv) corticosteroids treatment. Nevertheless, about 30-40% of patients fail to respond. Intravenous cyclosporine is an effective rescue therapy in steroid-refractory patients.

**Aims & Methods:** The aim of our study was to identify the clinical and biological predictive factors of lack of response to cyclosporine as second-line therapy in patients with ASC refractory to iv corticosteroids.

**Results:** Our study included 52 females and 30 males, with a mean age of 35 years (14-70 years). There were 34 patients with Crohn’s disease and 56 diagnosed with ulcerative colitis. Among the 90 patients enrolled, 68 patients (75.5%) had a good response to cyclosporine. Eleven patients were non responders and underwent colonoscopy for histologic analysis, more than 6 bloody stools per day before initiation of cyclosporine therapy, a C-Reactive Protein (CRP) greater than 45 mg/l prior to treatment, and at day 3 and 7 of treatment by ciclosporine initiation of cyclosporine therapy, a C-Reactive Protein (CRP) greater than 45 mg/l prior to treatment, and at day 3 and 7 of treatment by ciclosporine (p = 0.007; 0.002 and 0.001 respectively), ESR greater than 30 mm at day 3 of treatment (p = 0.05), thrombocytosis at day 3 of treatment (p = 0.05), a Lichtenberg colitis activity index scoring greater than 10 at day 3 of treatment (p = 0.001) and the need for blood transfusion (p = 0.0001) were significantly correlated with the lack of response to cyclosporine therapy. In a multiple linear regression analysis, only a CRP greater than 45 mg/l on day 7 of treatment, and the necessity of transfusion were predictive factors of no-response to cyclosporine (p = 0.0008).

**Conclusion:** Cyclosporine therapy is rapidly effective in preventing surgery in patients with ASC with a response rate of 75.5%. A high CRP on day 7 of treatment with cyclosporine and the need for transfusion, predispose to poor response to intravenous cyclosporine.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0374 CHANGES IN THERAPEUTIC STRATEGY AND OUTCOMES IN NEWLY DIAGNOSED PATIENT WITH CROHN’S DISEASE IN THE BIOLOGICAL ERA IN HUNGARY: A NATIONWIDE STUDY BASED ON THE NATIONAL HEALTH INSURANCE FUND DATABASE**


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**Introduction:** Accelerated treatment strategy, including tight disease control and early aggressive therapy with immunomodulators (IM) and biological agents have become increasingly common in IBD.

**Aims & Methods:** The aim of the present study was to estimate the early treatment strategy and outcomes in newly diagnosed patients with Crohn’s disease (CD) diagnosed between 2004-2015 in Hungary based on the administrative database of the National Health Insurance Fund (OEP). We used the administrative database of the National Health Insurance Fund (OEP), the only nationwide state-owned health insurance provider in Hungary. Newly diagnosed CD patients were identified through prospectively reported algorithms in disease codes for Crohn’s disease in the out-, inpatient (medical, surgical) non-primary care records and drug prescription databases between 2004-2015. Patients were stratified according to the year of diagnosis and maximum treatment step during the first 3 years after the diagnosis.

**Results:** A total of 6173 (male/female: 46.12%/53.87%) newly diagnosed CD patients were identified during the observational period. Maximum treatment steps did not differ in patients diagnosed before and after 2009 (5-ASA: 11.7% vs. 11.4%, anti-TNF: 73.3% vs. 73.7%, p = 0.896). Distribution of maximal treatment steps and surgery rates were not different according to the maximum treatment steps at (36 ± 30-day period: overall 16.0% vs. 15.5% (p = 0.672) anti-TNF 26.7% vs. 27.2% (p = 0.809), 5-ASA 21.4% vs. 22.2% (p = 0.565), steroid 8.1% vs. 7.9% (p = 0.896), 5-ASA 10% vs. 11% (p = 0.816)).

**Conclusion:** Distribution of maximal treatment steps and surgery rates was not significantly different in patients diagnosed before and after 2009, although immunomodulator and biological treatment was more common after 2009.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0375 RELATIVE FREQUENCY OF RELAPSES IN PATIENTS WITH ULCERATIVE COLITIS AND CROHN’S DISEASE TREATED WITH MESENCHYMAL STROMAL CELLS - 5 YEARS OF FOLLOW-UP**

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**Introduction:** Numerous studies have shown that mesenchymal stromal cells (MSCs) have a high potential for differentiation and immunosuppressive properties. Currently under phase I-III clinical trials evaluating the efficacy and safety of MSCs in the treatment of patients with inflammatory bowel disease - ulcerative colitis and Crohn’s disease.

**Aims & Methods:** We aimed to compare the frequency of relapses and duration of remission for 5 years of follow up in patients with luminal Crohn’s disease (CD) and the total defeat of ulcerative colitis (UC) receiving therapy with mesenchymal stromal cells (MSCs), bone marrow. We compared the frequency of relapses in patients with luminal form CD and luminal form UC treated with UC (total lesion) receiving MSCs. A group of patients (CD) aged 22 to 56 years (Me-28) (n = 24) received MSC culture scheme (0-1-2 weeks, then every 26 days) and safety of MSCs transplantation longer contributes to clinical remission in patients with Crohn’s disease.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P0377 DYNAMICS OF PROINFLAMMATORY CYTOKINES IN PATIENTS WITH CROHNS DISEASE TREATED WITH MESENCHYMAL STROMAL CELLS OF BONE MARROW AND AZATHIOPRINE

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Introduction: Mesenchymal stromal cells (MSCs) are used for the treatment of chronic inflammatory and autoimmune diseases in recent years, including rheumatoid arthritis (RA) and inflammatory bowel disease (IBD). In most cases, treatment of the patient requires concurrent immunosuppressive therapy. It is found that immunomodulatory drugs (azathioprine (AZA), methotrexate, 6-mercaptopurine, infliximab (IFP)), regardless of the concentration, do not affect the viability, differentiation, phenotype, and ability to inhibit proliferation of MSCs’s pericellular matrix and DNA [1]. Moreover, studies conducted by Huang HR et al. demonstrate that IFP rendered minimal impact on the MSC proliferation, apoptosis and cell cycle, while azathioprine inhibited cell proliferation and induced apoptosis of MSCs in vitro [2].

Aims & Methods: We aimed to compare the efficacy of combined therapy (local and systemic) mesenchymal stromal cells (MSCs) of bone marrow, infliximab (IFX) and antioxidants/inmunosuppression (IS) on the rate of healing of simple perianal fistulas in Crohn’s disease. 36 patients with Crohn’s disease with perianal lesions were divided into three groups depending on the method of therapy. The first group of patients aged from 19 to 58 years (Me-29) (n = 12) received culture of MSCS systemically via the scheme and locally; on the perimeter of the fistulas introduced 40 million MSCs - 4 point of inject and 1 ml of saline containing 10 million MSCs. Then after 4 and 8 weeks repeated 40 million MSCs in the area of the fistula. The second group of patients with CD (n = 10) aged 20 to 68 years (Me-36) were receiving anti-cytokine therapy of IFX. The 3rd group of patients with CD (n = 14) aged 20 to 62 years (Me-28) received antibiotics and is. In the dynamics evaluated the closure of the fistula in patients of the first group. After 36 months among the patients of the 1st group, healing of simple fistulas persisted in 8/12 (66.6%) with the 2nd group - 7/10 (70.0%) (OR - 1.11; 95% CI 0.32–3.84; p = 0.76). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2–1.11; p = 0.12 in comparison with the 1-st group).

Results: After 12 weeks among patients of the 1st group simple healing of fistulas was observed in 10/12 patients (83.3%), in the 2nd group healing simple fistulas have a 8/10 (80.0%) (OR-0.83; 95% CI 0.14–4.9; p = 0.04) in comparison with the 1st group. After 6 months in the 1st group patients receiving MSCs, healing of simple fistulas persisted in 8/12 (66.6%) with the 2nd group - 7/9 (70.0%) (OR - 8.10; 95% CI 0.82–3.20; p = 0.77). In the 3rd group – patients 4/14 (28.6%) (OR - 0.47; 95% CI 0.2–1.11; p = 0.12 in comparison with the 1-st group).

Conclusion: Combined stem cell and anti-cytokine therapy of CD with perianal lesions can significantly contribute to more frequently and prolonged closure of simple fistula, compared with antibiotics/inmunosuppressant. Disclosure of Interest: All authors have declared no conflicts of interest.

References
V565, an oral domain antibody (Vorabody) to TNF engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorabodies) are delivered via enteric coated mini-tablets (MTs) designed to release active drug at pH 6.5.

Aims & Methods: Following prior placebo-controlled demonstration of the safety and tolerability of high single and multiple doses of V565, this open label assessment was performed to confirm the delivery of active domain antibody to the terminal ileum of human subjects. Four subjects with a terminal ileostomy were given a single oral dose of V565 and ileostomy bags were collected hourly for the first 6 h, post dose with further collections 12, 20 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition serial blood samples were taken for determination of V565 serum concentrations over 24 h.

Results: Four subjects with an ileostomy (3 with UC; 1 with a prior history of Crohn’s disease (CD)), it is important to deliver drug there if treatment is to be effective. This is the first report of a domain antibody to TNF, V563, engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in the ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorabodies) are delivered via enteric coated mini-tablets (MTs) designed to release active drug at pH 6.5.

Aims & Methods: The study included 162 patients with UC who were assessed for at least 12 months after the last dose, using the Mayo Score. The study group was dominated by women (94%).

Introduction: The oral delivery of therapeutic concentrations of anti-TNF to affected mucosa of patients with inflammatory bowel disease (IBD) has remained challenging despite advances in protein engineering, the attractions of oral dosing for chronic therapies, and the acknowledged benefit of anti-TNF monoclonal antibodies in the management of IBD. As the ileum is commonly involved in Crohn’s disease (CD), it is important to deliver drug there if treatment is to be effective. This is the first report of a domain antibody to TNF, V563, engineered to be resistant to intestinal proteases, delivering high concentrations of active compound in the ileal fluid following oral administration to human volunteers. The oral domain antibodies (Vorabodies) are delivered via enteric coated mini-tablets (MTs) designed to release active drug at pH 6.5.

Aims & Methods: Following prior placebo-controlled demonstration of the safety and tolerability of high single and multiple doses of V565, this open label assessment was performed to confirm the delivery of active domain antibody to the terminal ileum of human subjects. Four subjects with a terminal ileostomy were given a single oral dose of V563 and ileostomy bags were collected hourly for the first 6 h, post dose with further collections 12, 20 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition serial blood samples were taken for determination of V565 serum concentrations over 24 h.

Results: Four subjects with an ileostomy (3 with UC; 1 with a prior history of Crohn’s disease (CD)) were given a single oral dose of V565 and ileostomy bags were collected hourly for the first 6 h, post dose with further collections 12, 20 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition serial blood samples were taken for determination of V565 serum concentrations over 24 h.

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Results: Four subjects with an ileostomy (3 with UC; 1 with a prior history of Crohn’s disease (CD)) were given a single oral dose of V565 and ileostomy bags were collected hourly for the first 6 h, post dose with further collections 12, 20 and 24 h post dose. Contents were analysed for V565 concentrations by competitive ELISA. In addition serial blood samples were taken for determination of V565 serum concentrations over 24 h.

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obviously evaluated by the IBD validated Functional Assessment of Chronic Illness Therapy-Fatigue Scale (FACT-F).

Aims & Methods: The main objective was to assess the efficacy of electroacupuncture (EAc) vs. sham EAc and no treatment for treating fatigue in patients with quiescent IBD in a single-blind randomized trial. Secondary objectives were to assess changes in quality of life, depression, anxiety and sleepiness after treatment with EAc.

Methods: Fifty-two patients with quiescent IBD and severe fatigue (FACT-F < 40) (65.3% female, mean age 42 years) were randomized to EAc vs sham acupuncture group. Patients in both EAc groups performed a total of 9 acupuncture sessions during eight weeks (2 sessions/first week and one session per week during and after the treatment periods).

Results: Both EAc and Sham group improved the FACT-F score post-treatment (EAP = 9.53 points, 95% CI [12.3 to 6.75], Basal Vs 9th session p = 0.001); Sham group (−9.7 to −2.06, Basal Vs 9th session p = 0.003); depression (8.9, points, 95% CI [4.3 to 13.8], Basal Vs 9th session p = 0.002), anxiety (10.6 points, 95% CI [3.6 to 17.6], Basal Vs 9th session p = 0.006) and sleepiness scales (1.46 points, 95% CI [0.096 to 2.83, Basal Vs 9th session p = 0.038). However, the differences in between EAc and sham and control groups were not significant (p > 0.05).

Conclusion: Both targeted and sham electroacupuncture are effective in managing fatigue in patients with quiescent IBD. NCT02733276.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0382 EFFICACY AND SAFETY OF GOLIMUMAB IN CROHN’S DISEASE: A FRENCH NATIONAL RETROSPECTIVE STUDY

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Introduction: Anti-TNF, such as adalimumab (ADA) and infliximab (IFX), have improved the therapeutic care of Crohn’s disease (CD). However their use may be associated with loss of efficacy, adverse events and sometimes primary failure. A frequent cause of discontinuation, it is possible to switch to another anti-TNF. In France, three anti TNF are available in ulcerative colitis (IFX, ADA and golimumab), but only the first two are approved in CD, because golimumab has not been studied in this indication. The aim of this study was to report golimumab efficacy and safety in CD.

Aims & Methods: This national multicenter retrospective study included patients with CD from 12 French tertiary centers who received golimumab and analyzed: clinical response, duration of treatment, tolerance, reasons for discontinuation of treatment. Presence of phenotype, and treatments preceding and associated with golimumab. The main endpoint was the efficacy of golimumab defined by the duration of treatment before failure (need for therapeutic optimization or cessation).

Predictive factors of therapeutic response were determined (log rank and Cox model), and the tolerance was evaluated.

Results: One hundred and fifteen patients with a mean duration of the disease of 13.5 years received on average golimumab in 3, 6, 9 th line of therapy. The overall clinical response assessed by the physician was 55.8% at the time of the re-evaluation (on average, at 3.8 months [0.6–24] after initiation of therapy). The mean duration of treatment was 6 months (0.55 to 48.7%) patients were still treated with golimumab at the end of the follow-up. At 12 months, 34.9% of patients still received golimumab without optimization. At 24 months, this figure was 16.5%. In univariate analysis, the factors associated with a longer golimumab treatment duration without stopping or optimizing were the active smoking status (p = 0.043), the absence of aponeural lesions (p = 0.012), the presence of extra-intestinal symptoms (p = 0.035), the presence of a co-immunosuppression of more than 6 months (p < 0.001) and discontinuation of the first anti-TNFα for intolerance (p = 0.022). In multivariate analysis, discontinuation of the first anti-TNFα for intolerance and the presence of co-immunosuppression with thio-purine derivatives or methotrexate over 6 months were independently associated were golimumab efficacy (OR 2.16, 95% CI [1.25–3.66], p = 0.005 and OR 3.9895% CI [2.3–7.1], p < 0.001, respectively). Side effects led to discontinuation of treatment in 6% of patients. These were paradoxical psoriasis in three patients, paresthesia (n = 1), lower extremity edema (n = 1), injection site reaction (n = 1) and not reported reason for one patient.

Conclusion: After failure of the other anti-TNF agents, golimumab is well tolerated and results in sustained clinical response in one in two patients with Crohn’s disease, particularly when associated with a co-immunosuppression, and if the reason for the discontinuation of the first anti-TNFα was an intolerance.

Disclosure of Interest: H. Sokol: consulting fee: Tillotts, Abbvix, MSD, Enterome, Maat
All other authors have declared no conflicts of interest.

P0383 BIOLOGICS AND BIOSIMILARS: WHAT MATTERS TO PHYSICIANS?

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Aims & Methods: The purpose of this survey was to determine physicians’ familiarity and comfort level with prescribing biosimilars to patients. The survey was sent to physicians residing in the European Union and specializing in the following clinical fields: dermatology, endocrinology, gastroenterology, oncology, and rheumatology.

Introduction: Biologic medicines and their biosimilar counterparts are effective therapies for many conditions, including inflammatory bowel disease, Crohn’s disease, and ulcerative colitis. The European Medicines Agency (EMA) has approved twenty-two biosimilar medicines, which are derivatives of eight original biologics, and four more biosimilar are scheduled to be reviewed this year. As the number of approved biosimilars rises, regulatory agencies must closely monitor their safety and efficacy.

Results: The majority of survey respondents specialized in endocrinology (19%) and gastroenterology (19%). Respondents were recruited almost equally from the five countries, with France being the most represented country (22%) and the UK being the least represented (18%). The majority of respondents (55%) indicated that safety and efficacy is the most important factor in determining whether a patient should be switched from a prescribed biologic therapy to its approved biosimilar. Thirty percent of respondents indicated that clinical trials related to the biosimilar’s condition being treated were the most important factor in switching. Only 12% of respondents indicated that cost to the government or insurance companies is a primary concern, and only 3% were primarily concerned with immunogenicity.

Conclusion: This survey suggests that the safety and efficacy of biosimilar medicines is of paramount importance to physicians and that physicians highly value clinical trial data for biosimilars. Given that biosimilars are structurally distinct from their original innovator biologics, the EMA should consider requiring more stringent clinical trials data for biosimilars seeking approval. Specifically, the EMA should require clinical trials for each proposed indication and should provide physicians with this data so that physicians can make informed prescribing choices for the safety of their patients.

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This data was generated from a SERMO Poll. SERMO is the largest global social network exclusively for doctors. All other authors have declared no conflicts of interest.

P0384 ARE STEROIDS STILL USEFUL IN THOSE INFLAMMATORY BOWEL DISEASE PATIENTS UNDER IMMUNOSUPPRESSION? A RETROSPECTIVE POPULATION-BASED STUDY

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Introduction: Oral steroids are effective in inducing remission of moderate flares of patients with either ulcerative colitis (UC) or Crohn’s disease (CD). However, we know little about their efficacy in immunosuppressed patients or their possible role in reducing biologics and/or surgical needs in these patients.
Aims & Methods: We aimed to determine the efficacy of systemic or low bioavailability biologic (ADA) treatment for moderate flares of patients with at least 6 months of immunosuppressive treatment, and describe long-term follow-up inflammatory bowel disease (IBD) immunosuppressed patients (thiopurines or methotrexate) from our population-data registry were analyzed. For statistical analysis, Chi-square test, U Mann-Whitney test and Kaplan Meier survival analysis were used.

Results: 392 IBD patients with a median of 86 (6-271) months of immunosuppressive (IMM) treatment were identified (table 1). 89 patients (23%) (33% UC and 67% CD) needed at least one steroid treatment during follow-up (63% systemic steroid and 37% low bioavailability oral steroid) with a median time of steroid treatment of 4 (1-168) months. Average time from IMM to steroid treatment was 26 (6-207) months. In IMM patients there were no differences regarding sex, age, disease, location, perianal disease, extra intestinal manifestations, appendectomy, smoke habit, need for steroids at diagnosis and previous abdominal surgery between patients with no need of steroids and patients with steroid treatment during follow-up. In CD patients, biological treatment for perianal disease prior to IMM (p=0.0039) and fistulizing (B3) or fistulizing (B3) behavior (p=0.005; OR 2.284) were risk factors for using steroids after IMM treatment. In UC patients, no statistically significant variables were identified. 49 of these 89 steroid treatment patients (55%) needed biological treatment or surgery after a median of 13 months (0-178); 19 (21%) needed more than one steroid treatment (2-5) and just 31 patients (35%) did not need any other treatment. CD patients had higher risk (p=0.007; OR: 3.529) to receive biological treatment or surgery versus UC patients. Otherwise, the more months using steroids in UC patients, the greater risk for biological or surgery treatment (p=0.009). During follow-up, though it’s not statistically significant (p=0.078), we observe that 75% probability of rescue treatment for UC patients in 62 months versus 36 months for CD patients.

Conclusion: 23% of IBD immunosuppressed patients needed at least one steroid treatment after 6 months of IMM. Previous biological treatment and B2-B3 behavior predicted steroid treatment in CD patients, who had 3.5 times more risk to receive biological treatment or surgery after steroid treatment using it earlier than UC patients. Just 1/3 of patients who needed steroid treatment after IMM did not need any other rescue treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO385 ADALIMUMAB LONG-TERM EFFECTIVENESS IN ADALIMUMAB-NAIVE PATIENTS WITH CROHN’S DISEASE: FINAL DATA FROM PYRAMID REGISTRY


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Introduction: PYRAMID was an international multi-center non-interventional postmarketing registry assessing long-term safety and effectiveness of adalimumab (Humira® [ADA]) as used in routine clinical practice. Patients with and without prior ADA experience were allowed to enroll. The final long-term effectiveness of ADA is reported in adult ADA-naive patients (those who had not received ADA before registry enrollment) with moderate to severe Crohn’s disease (CD) who were treated according to the local product label.

Aims & Methods: All patients entering the registry were followed for up to 6 years. Effectiveness of ADA was measured using Physician’s Global Assessment (PGA; [a composite of Harvey Bradshaw Index and rectal bleeding score]), Short Inflammatory Bowel Disease Questionnaire (SIBDQ), and 4 components of the Work Productivity and Activity Impairment (WPAI) questionnaire, including absenteeism, presenteeism, overall work impairment, and activity impairment. Effectiveness measures, captured in all patients who received at least 1 dose of ADA in the registry and had at least 1 post-enrollment measurement, were summarized descriptively by the number of observations that were not missing at each registry visit; data were reported as observed. Values at enrollment are considered as baseline values.

Results: Among 5025 patients evaluated in the registry, 2057 (40.9%) were ADA-naive. Of these, 1199 patients (58.3%) were female; mean age 37.1 years at enrollment. Mean ±SD ADA exposure for the ADA-naive subgroup during the registry was 1118.5 ±842.3 days. A total of 1082 patients (52.6%) had prior exposure to at least 1 anti-TNF/biologic; 583 (41.5%) and 831 patients (40.4%) used immunomodulators and corticosteroids, respectively, at enrollment. Mean change from baseline in effectiveness measures for patients with CD is shown in the table. Mean PGA score and SIBDQ as well as WPAI domains improved in ADA-naive patients from enrollment to 1 year and were maintained for up to 6 years (table). No new safety signals were identified in the registry.

Conclusion: At 1 year after entering the international postmarketing registry of ADA use in routine clinical practice, clinically meaningful improvements in disease activity, work productivity, and activity impairment were achieved in ADA-naive patients with moderately to severely active CD. These improvements were maintained for up to 6 years of the registry among the patients who remained in the study.

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**P0386** EFFECT OF ADALUMAB ON CLINICAL AND HEALTH-RELATED QUALITY OF LIFE OUTCOMES BY DISEASE SEVERITY AND PRIOR TUMOUR NECROSIS FACTOR INHIBITOR USE IN PATIENTS WITH ULCERATIVE COLITIS IN A CLINICAL PRACTICE SETTING: SUBGROUP ANALYSES FROM INSPIRADA


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Introduction: Adalumab (ADA) has been shown to improve clinical outcomes and health-related quality of life (HRQoL) significantly in patients (pts) with ulcerative colitis (UC) in a clinical practice setting. Evidence is limited about benefits of ADA among UC pts with different characteristics.

Aims & Methods: The aim was to examine clinical and HRQoL effects of ADA in pts with UC based on disease severity and prior use of tumour necrosis factor inhibitor (TNFi). InspiraDA details have been presented. Pts received ADA 160 mg at week (wk) 0 followed by ADA 40 mg every 4 weeks through 26. Pts who did not respond to ADA by wk 8 were to discontinue. Pts who lost response at or after wk 8 could escalate to ADA 40 mg weekly. UC pts were categorized into subgroups based on physician global assessment (PGA) of disease severity (moderate [baseline PGA = 2] vs severe [baseline PGA = 3]) and previous TNFi use (naïve vs experienced). Proportions of pts with Simple Clinical Colitis Activity Index (SCCAI) response (defined as a decrease of ≥ 2 points vs baseline) and remission (defined as an SCCAI ≤ 2) were calculated for each cohort at wks 2, 8, 12, and 26. Change from baseline in HRQoL outcomes was calculated, including Short Inflammatory Bowel Disease Questionnaire (SIBDQ), European Quality of Life-5 Dimensions-5 Level (EQ-5D-5L), Treatment Satisfaction Questionnaire for Medication (TSQM) and Work Productivity and Activity Impairment (WPAI). Missing data were imputed using nonresponsive imputation for response/remission and last observation carried forward for all other outcomes.

Comparisons of remission rate (using logistic regression) and HRQoL outcomes (using linear regression) were performed in moderate vs severe UC and in TNFi naïve vs experienced cohorts.

Results: Among pts with moderate UC (n = 386) and severe UC (n = 74), SCCAI response rates were 74.6% vs 74.5%, 80.1% vs 71.6%, and 67.1% vs 64.9% at wk 2, 8, 26, respectively. Although remission rates were similar between moderate and severe pts at wk 26 (49.5% vs 40.5%, p = 0.16), ADA provided greater disease control for moderate pts at wk 2 (29.8% vs 9.5%, odds ratio [OR] 4.195, confidence interval [CI] 1.8-9.1; p < 0.0001) and wk 8 (52.3% vs 31.1%, OR 2.4, 95% CI 1.4-4.4; p = 0.01) compared to severe pts (Table). The rate of dose escalation (ADA 40 mg weekly) was 28.0% in moderate and 28.4% in severe UC pts. HRQoL outcomes were similar between the moderate and severe cohorts. Among pts who were naïve (n = 389) and those experienced to TNFi, response rates were 74.0% vs 76.4%, 79.2% vs 75.0%, and 66.3% vs 68.1% at wk 2, 8, 26, respectively. No significant difference was observed in remission rates for naïve vs experienced pts at wk 2 (28.0% vs 19.4%, p = 0.43) and wk 26 (49.4% vs 41.7%, p = 0.39), but naïve pts showed a significantly higher remission rate than experienced pts at wk 8 (52.2% vs 31.9%, OR 2.1, 95% CI 1.2-3.7; p < 0.001). The rate of dose escalation was 26.5% in naïve pts vs 36.1% in experienced pts (p = 0.09). In general, HRQoL outcomes were similar between naïve and experienced TNFi pts.

Table: Remission rate by disease severity and previous use of TNFIs

<table>
<thead>
<tr>
<th>Remission rate, n (%)</th>
<th>Moderate UC (n = 386)</th>
<th>Severe UC (n = 74)</th>
<th>Odds ratio (95%CI)*</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 2</td>
<td>115 (29.8%)</td>
<td>7 (9.5%)</td>
<td>4.06 (1.81-9.12)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Wk 8</td>
<td>202 (52.3%)</td>
<td>23 (31.3%)</td>
<td>2.43 (1.43-4.40)</td>
<td>0.001</td>
</tr>
<tr>
<td>Wk 26</td>
<td>191 (49.5%)</td>
<td>30 (40.5%)</td>
<td>1.44 (0.87-2.38)</td>
<td>0.16</td>
</tr>
</tbody>
</table>

*Comparison between naïve and experienced groups was adjusted for baseline SCCAI. Because baseline SCCAI is highly correlated with PGA, adjustment for baseline SCCAI in moderate and severe UC pts defined by PGA was not performed.

Conclusion: ADA treatment achieved clinically relevant rates of SCCAI response and remission even in pts who had severe UC and those who were more treatment-refractory (experienced to TNFIs), in clinical practice. In addition, ADA was associated with greater disease control in the induction period for pts with moderate than severe UC and for naïve pts than those experienced to TNFIs.

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Reference
Cmax ranged from 5016.4 to 14253.6 h*ug/mL and 10.0 to 23.1 ug/mL, respectively, after a single SC injection of CT-P13. SC CT-P13 formulation was absorbed slower into the systemic circulation (median Tmax ranging from 7.0 to 12.2 days) between SC and IV formulations, and both have resolved without any treatment. Mean AUC0-last and Cmax,T max and T1/2 were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects received either SC injection or IV infusion of CT-P13 on Day 0 and Day 1, respectively, after a single SC injection or IV infusion of CT-P13 on Day 0 and Day 1 were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects in 2 different dosages of IV). After reviewing safety data observed for 48 hours, the next cohort was conducted subsequently from low dose to high dose. The PK profiles after a single SC injection were linear by dose levels. SC administration of CT-P13 is feasible in terms of bioavailability and safety profiles.

Aims & Methods: This phase I and open label study, conducted at a single site in Korea, was designed to evaluate safety and pharmacokinetics (PK) of SC administration of CT-P13 in healthy subjects. In a single dose escalation study, 38 subjects received either SC injection or IV infusion of CT-P13 on Day 0 and were followed for 12 weeks (20 subjects in 3 different dosages of SC; 18 subjects in 2 different dosages of IV). After reviewing safety data observed for 48 hours, the next cohort was conducted subsequently from low dose to high dose. The PK profiles of SC and IV formulation were evaluated by measuring the AUC_{0-8}, C_{max}, T_{max} and T_{1/2}.

Results: A total of 38 male subjects with median age of 23 years (range 19, 30 years) were treated with a treatment-emergent serious adverse events or systemic hypersensitivity reaction. In SC cohort, two subjects experienced mild injection site reactions, and both have resolved without any treatment. Mean AUC_{0-8}, C_{max} and C_{mean} ranged from 5016.4 to 14253.6 h*ug/mL and 10.0 to 23.1 ug/mL, respectively, after a single SC injection of CT-P13. SC CT-P13 formulation was absorbed slower into the systemic circulation (median T_{max} ranging from 7.0 to 7.1 days) in comparison with IV formulation (median T_{max} ranging from 2.2 to 3.2 hours) but the drug elimination measured by half-life (T_{1/2}) was similar (mean range 11.3 to 13.7 days vs. 11.7 to 12.2 days) between SC and IV formulations, respectively. Bioavailability of CT-P13 SC was approximately 60.6%, when comparing across all CT-P13 SC cohorts to CT-P13 IV cohorts.

Conclusion: PK profiles after a single SC injection were linear by dose levels. SC administration of CT-P13 is feasible in terms of bioavailability and safety profiles.

Disclosure of Interest: R. Westhoven: Grant: BMS, Roche Other: Advisory Board Galapagos/Gilead as well as CELLTRION, Inc and Janssen; D.H. Yoo: Consulting fee: CELLTRION, Inc (for consulting of study design) Support for travel to meetings for the study or other purposes: CELLTRION, Inc (Payment for travel and hotel to attend investigator’s meetings) W. Reinish: fees for consultation and lecturing from CELLTRION, Inc S. Ben-Horin: Grant: CELLTRION, Inc, Takeda, Abbvie, Janssen Consulting fee or honorarium: MSD, Ferring, CELLTRION, Inc, Takeda, Abbvie, Novartis, Pfizer, Janssen B.D. Ye: Lecture fees: Abbvie Korea, Janssen Korea, CELTRION, Inc Consultancy: Shire Korea, Abbvie Korea, Kuhnhi Pharm., CELLTRION, Inc, Takeda Korea, Kangsien Biotech, Robarts Clinical Trials Inc., Quintiles J.W. Kim: Grant: CELLTRION, Inc Consulting fee: CELLTRION, Inc Support for travel to meetings for the study or other purposes: CELLTRION, Inc S.J. Lee: Employee of CELLTRION, Inc Y.J. Jung: Employee of CELLTRION, Inc I.H. Su: Employee of CELLTRION, Inc S. Kim: Employee of CELLTRION, Inc D.H. Kwak: Employee of CELLTRION, Inc All other authors have declared no conflicts of interest.

Reference

of tumour necrosis factor antagonists (anti-TNF) treatment in this populations is ill-defined.

**Aims & Methods:** To assess the main adverse events (AE) of this therapy in the elderly population in comparison with the younger patients, we performed a retrospective cohort study of patients with IBD that initiated treatment with anti-TNF therapy at UCLH from October 2003 and 2014, with a follow-up until December 2013. Demographic, clinical and medication data were collected. AE (including opportunistic infection, malignancy, dermatologic, neurologic, cardiologic and vascular, hepatic, infusion reactions and others) occurring during anti-TNF treatment in elderly and younger patients were analysed and both groups were compared. The severe AE definitions from Food and Drug Administration (FDA) and European Medicines Agency (EMA) were used.

**Results:** Of the 219 patients (55.3% women; average disease duration 13.60 +/-7.74 years) 25 were more than 65 years-old (elderly group, mean age 70.0 years vs. younger group, mean age 41.77 years). Infliximab was used in 174 patients (on average 1585 days) and adalimumab in 93 (on average 1379 days), with a total 1106 years of anti-TNF exposure. In the elderly, azathioprine was used less frequently (68.0 vs. 95.4%, p<0.008). There were 14 severe AE overall, including 18 cancers and 16 opportunistic infections (5 tuberculosis). Malignancy (20.0% vs. 6.7%, p=0.039) and cardiovascular events (16.0 vs. 4.1%, p=0.036) occurred more frequently in the elderly, whereas dermatologic AE were more common in the younger group (4.0 vs. 0.0%, p=0.044). The elderly AE were more frequent (24.0 vs. 20.1%, p=0.794) including death (4.0 vs. 2.6%, p=0.521) was not significantly different between groups.

**Conclusion:** Despite being at higher risk of malignancy and cardiovascular events, the total number of severe adverse events was not significantly increased in elderly patients. Particular attention to malignancy surveillance and treatment of cardiovascular comorbidities is advised in this population.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0390 SWITCHING FROM REFERENCE INFILXIMAB TO CT-P13 IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: 12 MONTHS RESULTS**

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**Introduction:** Over the past twenty years, the introduction of biological agents into clinical practice has radically improved outcomes in patients with inflammatory bowel disease (IBD), Crohn's disease (CD) and ulcerative colitis (UC). Tumor necrosis factor (TNF) antagonists, such as infliximab, act by preventing TNF-α binding to its receptor, neutralizing its activity and alleviating mucosal inflammation. However, biological agents are much more expensive than traditional treatments, and the high cost of these drugs in the treatment of IBD imposes a considerable burden on the national healthcare system. As a result, physicians have grown accustomed to switching agents and prioritizing quality of life terms of quality, efficacy, and safety to already licensed biologics but are associated with lower development costs. CT-P13 (Remsima® and Inflectra®) is a biosimilar of infliximab (Remicade®), which is its reference product (RP). Both CT-P13 and infliximab RP are chimeric IgG1 monoclonal antibodies produced in cell lines derived from the same cell type of murine hybridoma. CT-P13 was authorized by the EMA in 2013 for several indications, including IBD, UC and rheumatoid arthritis (RA) and ankylosing spondylitis (AS). However, a number of observational studies of CT-P13 in clinical practice in both anti-TNF naïve patients and those who have been switched from infliximab RP have been published with good results.

**Aims & Methods:** We aimed to assess the effectiveness and safety of switching to CT-P13 from infliximab reference product (RP) in patients with inflammatory bowel disease. This was a prospective single-center observational study in patients with moderate to severe Crohn’s disease (CD) and ulcerative colitis (UC). All patients were switched from infliximab RP (Remicade®) to CT-P13 treatment and followed for up to 12 months. The efficacy endpoint was the change in clinical response assessed at 3-monthly intervals, according to the Harvey-Bradshaw (HB) score and partial Mayo score for patients with CD and UC, respectively. Safety endpoints were the only factor which was importantly associated with a higher response rate. Overall there were no serious adverse events.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**P0391 CLINICAL RESPONSE TO VEDOLIZUMAB IN IBD PATIENTS IS ASSOCIATED WITH THE CONCOMITANT USE OF IMMUNOMODULATORS**

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**Introduction:** The role of biologics in medical management of inflammatory bowel disease (IBD) has been established since anti-TNF agents invaded the market several years ago. Vedolizumab, an anti-integrin gut-selective molecule, is a more recent biologic treatment which has been approved for the management of both Crohn’s disease and ulcerative colitis. Its efficacy in inducing and maintaining remission was shown in GEMINI studies, although a good percentage of the trial participants had previously failed anti-TNFs. We conducted this study in order to describe outcomes in a real-life cohort of IBD patients who were treated with Vedolizumab, consisting both of previously anti-TNF exposed but also anti-TNF naïve patients. Multivariate analysis searched for factors associated with response to treatment.

**Aims & Methods:** Patients with IBD who received at least three doses of Vedolizumab in UCLH since the drug was officially licensed in the UK were included in the study. Demographics, clinical and endoscopic response rates were recorded and analysis was conducted in the whole cohort and in the subgroups of Crohn’s and UC patients separately. Univariate analysis and logistic regression were conducted in order to identify important associations with clinical response.

**Results:** 59 patients with IBD were treated with vedolizumab from May 2015 to October 2016. 28 (47%) had Crohn’s disease and the majority (n = 43, 73%) had mainly colonic inflammation (12 colonic Crohn’s, 29 UC, 2 IBDU). Median time from diagnosis to Vedolizumab initiation was 8 years. 17 (29%) were anti-TNF naïve (all UC) and 28 (47%) had previously failed both Infliximab and Adalimumab. 36 (61%) were on a concomitant immunomodulator (IM), either methotrexate (28%) or azathioprine (7%). 28 (47%) patients had a clinical response to Vedolizumab based on a reduction of Harvey-Bradshaw index (HBI) from baseline >3 points for Crohn’s patients or a reduction of partial Mayo score ≥2 points for UC patients. The rates of response were similar in Crohn’s and UC patients while there was no difference in response according to gender, previous anti-TNF exposure, disease duration or location of inflammation. Patients on no concomitant IM were less likely to respond to Vedolizumab (Odds ratio 0.26, 95%CI 0.07-0.91, p=0.036). 11(18.6%) patients experienced adverse events while treated with Vedolizumab, five of which related to active IBD. There were two minor allergic reactions and two mild infections.

**Conclusion:** Clinical response to Vedolizumab was observed in two-thirds of our IBD patients, similarly in Crohn’s disease and ulcerative colitis. Concomitant IM were the only factor which was importantly associated with a higher response rate. Overall there were no serious adverse events.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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P0392 CORRELATION OF RELATIONSHIP BETWEEN INFliximab trough and Antibody Levels With Clinical Response Rates at Completion of Induction Therapy

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Introduction: Anti-TNFα therapies have helped improved response rates, reduced complication rates, and quality of life for patients with inflammatory bowel disease (IBD). However primary loss of response (LOR) is still a big concern. Therapeutic drug monitoring (TDM) potentiates the opportunity of adjusting doses of anti-TNFα in a treat to target fashion. The end of anti-TNFα induction therapy is a key time point in the management of IBD. TDM is a useful method to help explore an immune basis behind LOR. In addition anti-TNFα trough levels, are a significant predictor of future likelihood of clinical response and mucosal healing.

Aims & Methods: The aim of this study was to explore the relationship between infliximab (IFX) and adalimumab (ADA) trough and antibody levels with clinical response rates, at the end of anti-TNFα induction therapy. This was a prospective, single-centre study. Patients were recruited from the gastroenterology department at our centre, from July 2015 to August 2016. Inclusion criteria were all patients older than 17 years old with IBD who started treatment with anti-TNFα drugs, either infliximab or adalimumab, during the study period. Patient demographics, medication and clinical history were collected from the electronic hospital information system. Baseline clinical disease activity indexes were performed. Haematoxylin and Eosin Index for Crohn’s disease (CD), and partial Mayo scores for Ulcerative colitis (UC). Clinical response was defined as reduction in TNFa trough and antibody levels were measured using standard ELISA technique. The proportion of patients with histological remission at week 8 was significantly higher in the budesonide group than in the placebo group (intention-to-treat (ITT) 79% vs 42%; p = 0.001).

Conclusion: Oral budesonide 9 mg once daily is highly effective and safe for induction of clinical and histological remission in lymphocytic colitis, while oral mesalazine 3 g once daily was only numerically, but not statistically significant, better than placebo.

Disclosure of Interest: S. Miehle: Prof. Miehle receives lecture fees and travel costs
T. Naac: I am employee at Dr. Falk Pharma GmbH.
F. Greinwald: Dr. Greinwald is employee at Dr. Falk Pharma GmbH
All other authors have declared no conflicts of interest.

Reference
1. Hjortswang H, Tyys K, Bohr J, Benoni C, Kilander A, Larsson L, et al. Clinical response was defined as reduction in partial Mayo score for Ulcerative colitis (UC). Clinical response was defined as reduction in TNFa trough and antibody levels were measured using standard ELISA technique. The proportion of patients with histological remission at week 8 was significantly higher in the budesonide group than in the placebo group (intention-to-treat (ITT) 79% vs 42%; p = 0.001). The proportion of patients with histological remission at week 8 was higher with budesonide (68%) than with mesalazine (26%: p = 0.02) and placebo (21%; p = 0.008). The rate of adverse events did not differ among groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Lymphocytic colitis (LC) is a common cause of chronic, non-bloody diarrhea. Budesonide has been reported to be effective in other colitis studies. Mesoralazine has been proposed as a treatment option but no placebo-controlled trials have been reported. Thus, we performed a placebo-controlled, multicenter study to evaluate budesonide and mesoralazine as induction treatments for lymphocytic colitis.

Aims & Methods: Patients with active lymphocytic colitis were randomly assigned to either budesonide 9 mg once daily or mesoralazine 3 g once daily, or placebo for 8 weeks in a double-blind, double dummy design. The primary endpoint was clinical remission defined by the Hjortswang-Criteria (1). Secondary endpoints included histopathology and safety.

Results: Based on an interim analysis the trial was stopped in accordance with the pre-specified adaptation design. The final analysis included 57 patients (19 per treatment group). Most patients were of female gender (72%) and mean age was 59 years. The proportion of patients in clinical remission at week 8 was significantly higher in the budesonide group than in the placebo group (intention-to-treat (ITT) 79% vs 42%; p = 0.001). The difference in clinical remission at week 8 between mesoralazine (63%) and placebo failed statistical significance (p = 0.09). The proportion of patients with histological remission at week 8 was higher with budesonide (68%) than with mesoralazine (26%: p = 0.02) and placebo (21%; p = 0.008). The rate of adverse events did not differ among groups.

Conclusion: Oral budesonide 9 mg once daily is highly effective and safe for induction of clinical and histological remission in lymphocytic colitis, while oral mesalazine 3 g once daily was only numerically, but not statistically significant, better than placebo.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0394 PREGNANCY OUTCOMES IN THE TOFACITINIB ULCERATIVE COLITIS OCTAVE STUDIES

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6Krankenhaus der Barmherzigen Brüder, Salzburg/Austria

Introduction: A pregnant woman with ulcerative colitis (UC), compared with age-matched controls, is at higher risk of adverse outcomes including spontaneous abortion, stillbirth and low birth weight. 1, 2 Tofacitinib is an oral, small molecule Janus kinase inhibitor that is being investigated for UC. Tofacitinib has been shown to be foetotoxic and teratogenic in both rats and rabbits at exposures 146 times and 13 times, respectively, the human dose of 5 mg twice daily (BID). There is no adequate and well-controlled studies of tofacitinib in pregnant women.

Aims & Methods: We report the pregnancy outcomes from three randomised, placebo-controlled studies (OCTAVE Induction 1, NCT01465763; OCTAVE Induction 2, NCT0145955; OCTAVE Sustain, NCT01458575) and one ongoing open-label extension study (OCTAVE-long term study, NCT01470612) of tofacitinib monotherapy in patients (pts) with moderate to severe UC. 3, 4 Pregnancy outcomes following maternal or paternal exposure to tofacitinib 5 or 10 mg BID were identified from Pfizer’s internal safety database up to 23 March, 2017, and categorised as: healthy newborn, medical termination, foetal death, congenital malformation, spontaneous abortion or pending/lost to follow-up. Trial protocols required use of highly effective contraception for females of childbearing potential, and study drug to be discontinued in any female pts who became pregnant.

Results: A total of 1139 unique pts (incl. placebo) enrolled in the UC OCTAVE trials, of whom 296 were females of childbearing age. There were a total of 25 pregnancies reported with exposure to tofacitinib. Of these, 11 were cases of maternal exposure, all in the 1st trimester, including: 2 (18.2%) spontaneous abortions (5 mg BID, n = 1; 10 mg BID, n = 1), 2 (18.2%) medical terminations (both 10 mg BID), 4 (36.4%) healthy newborns (all on 10 mg BID) and 3 (27.3%) lost to follow up (all on 10 mg BID). Of the 14 cases of paternal exposure, 11 (78.6%) were healthy newborns (5 mg BID, n = 2; 10 mg BID, n = 9) and 3 (21.4%) were pending/lost to follow-up (5 mg BID, n = 1; 10 mg BID, n = 2). Overall, there were no cases of foetal death or congenital malformation.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0393 BUDESONIDE IS SUPERIOR TO MESALAZINE AND PLACEBO FOR INDUCTION OF REMISSION IN LYMPHOCYTIC COLITIS

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Introduction: Lymphocytic colitis (LC) is a common cause of chronic, non-bloody diarrhea. Budesonide has been reported to be effective in other colitis studies. Mesoralazine has been proposed as a treatment option but no placebo-controlled trials have been reported. Thus, we performed a placebo-controlled, multicenter study to evaluate budesonide and mesoralazine as induction treatments for lymphocytic colitis.

Aims & Methods: Patients with active lymphocytic colitis were randomly assigned to either budesonide 9 mg once daily or mesalazine 3 g once daily, or placebo for 8 weeks in a double-blind, double dummy design. The primary endpoint was clinical remission defined by the Hjortswang-Criteria (1). Secondary endpoints included histopathology and safety.

Results: Based on an interim analysis the trial was stopped in accordance with the pre-specified adaptation design. The final analysis included 57 patients (19 per treatment group). Most patients were of female gender (72%) and mean age was 59 years. The proportion of patients in clinical remission at week 8 was significantly higher in the budesonide group than in the placebo group (intention-to-treat (ITT) 79% vs 42%; p = 0.001). The proportion of patients with histological remission at week 8 was higher with budesonide (68%) than with mesalazine (26%: p = 0.02) and placebo (21%; p = 0.008). The rate of adverse events did not differ among groups.

Conclusion: Oral budesonide 9 mg once daily is highly effective and safe for induction of clinical and histological remission in lymphocytic colitis, while oral mesalazine 3 g once daily was only numerically, but not statistically significant, better than placebo.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Table: Summary of pregnancy outcomes in the OCTAVE programme

<table>
<thead>
<tr>
<th>Maternal exposure (n=11)</th>
<th>Tofacitinib 5 mg BID</th>
<th>0</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tofacitinib 10 mg BID</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Tofacitinib 5 mg BID</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Tofacitinib 10 mg BID</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Case 1: the subject decided to terminate pregnancy based on potential risks of tofacitinib; Case 2: reason unknown;

BID, twice daily.

Conclusion: Based on the limited data and follow up available, pregnancy and newborn outcomes among pts with UC with prenatial (maternal/patalm) exposure to tofacitinib appear to be similar to those reported for the UC population, as well as those previously reported in pts with RA and P0. Larger, long-term follow-up studies are needed to examine safety of tofacitinib during pregnancy.

Disclosure of Interest: U. Mahadevan: Consultant: Pfizer, Janssen, AbbVie, Takeda, Celgene
D.C. Baeten: Grants/personal fees/non-fin supp: Shire, AbbVie, MSD, Takeda, Biogen, Foreward, Dr. Falk, Ferring, Recordati, Genentech, Janssen, TiGenix, Shield, Pfizer, BMS. Activities conform to FSA-Kodex Fachkreise, checked by legal Dpt Charite´ Universita¨ tsmedizin TiGenix, Shield, Pfizer, BMS. Activities conform to FSA-Kodex Fachkreise, checked by legal Dpt Charite´ Universita¨ tsmedizin
M.C. Dubinsky: Consultant for, Pfizer, AbbVie, Takeda, Janssen, UCB, Celgene, BMS, Gilead
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G. Friedman: Employee and shareholder of Pfizer Inc
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C. Su: Employee and shareholder of Pfizer Inc
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References

P0395 SAFETY AND EFFICACY OF GRANUCLOXYTE AND MONOCYTE ADSORPTIVE APERHESIS IN 363 PATIENTS WITH INFLAMMATORY BOWEL DISEASE WHO HAVE SPECIAL SITUATIONS: AN INTERIM ANALYSIS OF A POST-MARKETING SURVEILLANCE STUDY

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Introduction: Granulocyte and monocyte adsorptive apheresis (GMA) has been shown to be effective and safe in patients with inflammatory bowel disease (IBD). We report an interim analysis of a post-marketing surveillance study of granuloce and monocyte adsorptive apheresis using Adacolumn® for patients with inflammatory bowel disease who have special situations (PARTICULAR).

Aims & Methods: The aim of the PARTICULAR study was to assess the safety and efficacy of GMA treatment in patients with IBD who have special situations. This study was an interim analysis of the multi-centre observational study conducted at 80 institutions in Japan. Data were collected from patients with ulcerative colitis (UC) or Crohn’s disease (CD) who received GMA between November 2013 and September 2016. Patients who had at least one special situation were included in the study. GMA was performed using Adacolumn® (JIMRO, Takasaki, Japan). Each patient received up to a maximum of 11 GMA sessions. Safety assessments were performed on all patients in this study. All adverse events (AEs) during the study period were recorded. AEs for which the causality of the AEs could not be ruled out were defined as side effects (SEs). Feasibility problems (FPs) included blood withdrawal difficulty, venous pressure elevation, coagulation in the apheresis system and venous access difficulty. The safety of GMA was investigated in the following six special situation subgroups: the elderly ( 65 years), concomitant treatment with multiple immunosuppressants, retreatment with GMA, anaemia (haemoglobin <10 g/dl), paediatric (<18 years) and other groups. We also compared AEs, SEs and FPs between the subgroups with/without each special situation by univariate analysis. The efficacy of GMA was also assessed in patients with UC. Patients with a partial UC disease activity index score (pUC-DAI) of < 3, those with missing pUC-DAI scores and those receiving concomitant treatment with infliximab, adalimumab, tacrolimus or cyclosporine were excluded from efficacy analysis. pUC-DAI scores were calculated at the baseline and at the end of each GMA session or when GMA therapy had to be discontinued because of AEs or FPs. Remission was defined as a pUC-DAI score of ≤2 with no individual sub-score exceeding 1 point. Patients who received additional treatment by the final GMA session, including infliximab, adalimumab, tacrolimus or cyclosporine, were considered non-responders to GMA.

Results: This study included 363 patients (304 UC, 59 CD). Among these patients, SEs and FPs were observed in 3.0%, 10.7% and 16.3% of the patients, respectively. There were 105, 112, 103, 89, 43 and 39 patients in the elderly, concomitant treatment with multiple immunosuppressants, retreatment with GMA, anaemia, paediatric and other groups, respectively. The incidence of AEs was significantly higher in patients on multiple concomitant immunosuppressants compared with those not receiving them. Likewise, the incidence of AEs was significantly higher in patients in the anaemia group compared with patients with haemoglobin of ≥10 g/dl. The incidence of FPs was significantly lower in patients of the retreatment group with GMA than in those who received GMA for the first time (Table 1). The efficacy of GMA was assessed in 209 UC patients. The numbers of patients administered prednisolone, infliximab, adalimumab, tacrolimus and cyclosporine were 24, 6, 3 and 1, respectively, among these patients who were considered non-responders to GMA. The pUC-DAI score significantly decreased from 6.2 at baseline to 3.4 after the final GMA session (P < 0.001) and the remission rate at the final GMA session was 43.5%.

Conclusion: This multi-centre observational study showed that GMA has an acceptable safety profile in IBD patients and sufficient effectiveness in UC patients who have special situations. However, care should be taken when GMA is used in patients with anaemia or those who have received concomitant treatment with multiple immunosuppressants.

Disclosure of Interest: H. Tanaka: Lecture fee(s) from JIMRO Co., Ltd.
T. Shibuya: Unrestricted grant from JIMRO Co., Ltd.
T. Osuda: Unrestricted grant from JIMRO Co., Ltd.
A. Sakuraba: Unrestricted grant from JIMRO Co., Ltd.
S. Kokuma: Employee of JIMRO Co., Ltd.
E. Hosoi: Employee of JIMRO Co., Ltd.
All other authors have declared no conflicts of interest.

P0396 INTEGRATING PSYCHOLOGICAL SUPPORT INTO ROUTINE CARE FOR PEOPLE WITH INFLAMMATORY BOWEL DISEASE

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Introduction: People with Inflammatory Bowel Disease (IBD) commonly experience a range of health issues (MHI) such as anxiety and depression. MHI’s reduce quality of life and are associated with poor medication adherence and worse disease course. However, psychological support is not routinely provided to people with IBD. There are scant prospective, systematically gathered data on MHIs in IBD, despite solid evidence of the value of psychological input for people with other chronic diseases.

Aims & Methods: The current study is investigating: the prevalence of MHIs in an IBD cohort; the acceptability and uptake of psychological support; the acceptability and uptake of psychological support and treatment; whether MHIs correlate with higher healthcare utilisation; and potential benefits of integrated psychological care to patients’ mental health, physical health, and/or healthcare utilisation. Potential participants were prospectively recruited from the IBD service of a large tertiary hospital in South Australia via post and in-person at scheduled/routine outpatient appointments. Data were collected at two time points – at baseline screening and at 12 month follow-up. Mental health, medication adherence, and quality of life were measured by questionnaires: the Hospital Anxiety and Depression Scale (HADS), the Kessler 6 Scale of General Psychological Distress (K6), the Morisky Medication Adherence Scale (MMAS-8), and the Assessment of Quality of Life measure (AQLoL-SD). Demographic and healthcare utilisation data were collected by electronic,
Table1: Safety profile of GMA in each group

<table>
<thead>
<tr>
<th>Group</th>
<th>AE (%) (No. of patients)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All subjects (n=363)</td>
<td>10.7% (n=39)</td>
<td></td>
</tr>
<tr>
<td>Elderly (n=105)</td>
<td>9.5% (n=10) p=0.6284*</td>
<td></td>
</tr>
<tr>
<td>Multiple immunomappers (n=112)</td>
<td>17.0% (n=19) p=0.0134*</td>
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</tr>
<tr>
<td>Retirement (n=163)</td>
<td>9.7% (n=10) p=0.6859*</td>
<td></td>
</tr>
<tr>
<td>Anemia (n=89)</td>
<td>18.0% (n=16) p=0.0158*</td>
<td></td>
</tr>
<tr>
<td>Paediatric (n=43)</td>
<td>18.6% (n=8) p=0.1096*</td>
<td></td>
</tr>
<tr>
<td>Others (n=39)</td>
<td>2.6% (n=1) p=0.1001*</td>
<td></td>
</tr>
</tbody>
</table>

**Table1**: Outcomes of psychological support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Screening (Mean)</th>
<th>SD</th>
<th>Follow-Up (Mean)</th>
<th>SD</th>
<th>t value</th>
<th>p value</th>
<th>Eta²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>12.36 ± 9</td>
<td></td>
<td>4.1 ± 4.87</td>
<td>.000***</td>
<td>0.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>8.8 ± 3.9</td>
<td>6.4</td>
<td>5.0 ± 4.34</td>
<td>.000***</td>
<td>0.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distress</td>
<td>18.2 ± 4.8</td>
<td>13.9</td>
<td>5.1 ± 7.47</td>
<td>.000***</td>
<td>0.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental QoL</td>
<td>51.5 ± 15.9</td>
<td>60.6</td>
<td>18.5 ± 4.91</td>
<td>.000***</td>
<td>0.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical QoL</td>
<td>75.2 ± 14.9</td>
<td>75.0</td>
<td>17.7 ± 1.50</td>
<td>0.042</td>
<td>0.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total QoL</td>
<td>57.6 ± 14.6</td>
<td>65.1</td>
<td>17.4 ± 4.39</td>
<td>.000***</td>
<td>0.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication adherence</td>
<td>5.1 ± 2.0</td>
<td>5.7</td>
<td>2.2 ± 0.23</td>
<td>.049*</td>
<td>0.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001

**Conclusion**: Psychological issues are prevalent in patients with IBD and association of depression with IBD severity and medication adherence may be more likely to participate in psychological screening, and in general the screening approach was widely accepted. In addition, high proportions of patients reported clinical levels of distress (irrespective of their IBD activity) and went on to accept psychological intervention. All of which demonstrates a widespread need for support in this cohort. Furthermore, preliminary data of treatment outcomes are promising. At study completion we will be better able to clarify the extent to which patients with IBD benefit from this new integrated approach.

**Disclosure of Interest**: All authors have declared no conflicts of interest.

**P0397 LONG-TERM EFFICACY, SAFETY, AND IMMUNOREACTIVITY DATA FROM A PHASE III CONFIRMATORY STUDY COMPARING GP2017, A PROPOSED BIOSIMILAR, WITH REFERENCE ADALIMUMAB**

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**Introduction**: Demonstration of biosimilarity is based on the evaluation of physicochemical, biological, preclinical, and clinical data. Based on this totality of evidence, a biosimilar may be approved for use in the same indications for which the reference medicine is approved without conducting a clinical trial in each indication. A prerequisite for this extrapolation is clinical confirmation of biosimilarity in a patient population sensitive enough to detect potential differences in efficacy, safety, or immunogenicity between the proposed biosimilar and the reference medicine. GP2017, a proposed biosimilar to adalimumab, was compared with adalimumab in a long-term, double-blind, randomized study that involved patients with moderate-to-severe rheumatoid arthritis (RA) and/or psoriatic arthritis (PsA) who had previously received ankylosing spondylitis (AS) or psoriasis (Ps). The study included a 50-week treatment period with a subsequent 1-year follow-up period during which patients continued on treatment or were switched to a new medicine. Aims & Methods: To evaluate long-term efficacy, safety, and immunogenicity in patients continuously treated with either GP2017 or reference adalimumab from initial randomization to Week 51. Eligible patients with moderate-to-severe chronic plaque psoriasis were randomized to receive an initial dose of 30 mg subcutaneous GP2017 or reference adalimumab, followed by 40 mg every other week, starting one week after the initial dose, up to Week 17. At Week 17, patients with ≥50% improvement in Psoriasis Area and Severity Index (PASI 50) at Week 16 were re-randomized in a 2:1 ratio to either remain on their initial study treatment or undergo a sequence of three treatment switches between GP2017 and reference adalimumab until Week 35. Thereafter, patients were returned to their originally randomized treatment up to Week 51.

**Results**: From randomization to Week 51, 168 and 171 patients continued treatment with GP2017 or reference adalimumab, respectively. In the per-protocol analysis set, PASI 75 response rates for continual GP2017/reference adalimumab at Week 17 were 75.2%/67.8% (p = 0.015), and appointment cancellations (r = 1.11, p = 0.030), and appointment cancellations (r = 0.026). Anxiety was not related to overall healthcare utilisation, but was positively correlated with numbers of analgesic use (r = 0.119, p = 0.045), general distress was related to overall healthcare utilisation (depression r = -.787, p = 0.000; anxiety r = -0.43, p = 0.001) and quality of life (anxiety r = 0.2136*, p = 0.042). At baseline, anxiety and depression were both negatively correlated with medication adherence (anxiety r = -0.323, p = 0.000, depression r = -0.200, p = 0.000) and overall quality of life (anxiety r = -0.708, p = 0.000; depression r = -0.787, p = 0.000). Depression and general distress were related to overall healthcare utilisation (depression r = -0.131, p = 0.018, general distress r = -0.124, p = 0.026). Anxiety was not related to overall healthcare utilisation, but was positively correlated with numbers of emergency department presentations (r = 0.124, p = 0.042), outpatient appointments (r = 0.119, p = 0.050), and appointment cancellations (r = 0.155, p = 0.005). Currently, approximately half of the twelve month follow-up data has been collected. Preliminary analysis shows improvements for patients’ mental health, quality of life and medication adherence (see table below).

**Conclusion**: Efficacy was similar and sustained in patients with psoriasis continuously treated with GP2017 or reference adalimumab for up to 51 weeks. Safety profiles and immunogenicity were generally similar in both groups. Clinical data add to the totality of evidence suggesting GP2017 could be used as a biosimilar for the treatment of the same indications for which reference adalimumab is approved, including inflammatory bowel disease.

**Disclosure of Interest**: A. Blauvelt: Investigator for Sandoz

J. Lacour: Investigator for AbbVie, Amgen, BMS, BI, Celgene, Galdema, Janssen, LEO Pharma, Lilly, MSD, Novartis, Pfizer, Regeneron, Roche, Sandzox, Consultant for AbbVie, BMS, Galdema, Celgene, LEO Pharma, Lilly, Novartis, Regeneron, Roche and Sanofi

J.F. Fowler: Investigator for Sandzox

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A. Balfour: Paid employee of Hexal AG, a Sandoz company

C.L. Leonardi: Consultant for Abbvie, Amgen, BI, Dermira, Janssen, Eli-Lilly, Leo, Sandzox, UCB, Pfizer and Viatum and member of the Speaker bureau for Abbvie, Celgene, Novartis and Eli Lilly.

**P0398 PREDICTIVE FACTORS OF RESPONSE TO GRANULOCYTE-MONOCYTE APHERESIS IN INFLAMMATORY BOWEL DISEASE**

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**Introduction**: Granulocyte-monocyte apheresis (GMA) can be employed for the treatment of inflammatory bowel disease (IBD), especially for ulcerative colitis (UC). The usual treatment schedule is a weekly session for 5 weeks processing 1800 ml in 60 minutes. It has been described that different factors of the disease and the technique can improve the response to this treatment.
Aims & Methods: We performed a retrospective study of all patients treated with GMA (Ada-column) in 3 IBD Units in Spain. The clinical and analytical data were assessed before and 1 month after the end of the GMA. The Ethics Committee of Euskadi approved the study protocol. The aim of our study was to evaluate the presence of clinical, analytical of technique–related factors associated to a better response to GMA.

Results: A total of 105 patients were included [51 female (49%), age 35.7 (SD 16.5)]. Ninety-three had UC (50% extensive, 45% left-sided), 10 Crohn’s disease (90% ileocolonic) and 2 IBD-U. Mayo score at baseline was 3.5 (SD 4.6) and Harvey-Bradshaw was 10.1 (SD 3.8). The Mayo endoscopic subscore was 1 (16%), 2 (56%) or 3 (27%). Almost all patients (97%) have been previously treated with steroids and 42% were exposed to biologics. At baseline, 85% were on steroids, 38% thiopurines and 18% biologics. None of the previous or concomitant treatments were associated with a better response to GMA. Fifty-six subjects received weekly sessions for 5 weeks processing 1800 ml/session in 60 minutes. Forty patients received an intensive GMA regime: biweekly sessions with a mean of 8 sessions (SD 2.6), processing 3880 ml/session (SD 1729) and laboratory 1 sessions (SD 24). The intensive group showed a slightly higher response rate to GMA as compared with those in the standard regimen (response rate 67% vs 55%, p = 0.28). Those subjects treated with > 5 sessions showed higher remission (24% vs 13%) and response rates (47% vs 24%) as compared to < 5 sessions (p = 0.004). A mean duration of > 60 min/session also showed better results in terms of remission (22% vs 16%) and response (45% vs 27%) when compared to ≤ 60 min/session (p = 0.04). There was also a trend towards higher remission rates in those with higher processed blood volume. Thirty-nine percent were able to wean off steroids completely one month after GMA. We observed a decrease in the mean platelet volume and the platelet to lymphocyte ratio after GMA in those cases who did not respond. Considering its clinical efficacy in this clinical practice study. Increasing the number of sessions or its length were associated with a better response to GMA. The mean platelet volume and the platelet to lymphocyte ratio could help to predict the response.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

The frequency of adverse events (AEs) was similar in the andecaliximab Q2W, andecaliximab QW and placebo groups: 53.7%, 58.9% and 60%, respectively. Common AEs included anemia, abdominal pain and nausea. Three AEs led to discontinuation in the andecaliximab QW group compared to one each in the andecaliximab Q2W and placebo groups. Two serious AEs occurred in the andecaliximab QW group (anemia and angiitis pectoris) compared to one in placebo.


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Introduction: Elevated levels of matrix-metalloproteinase-9 (MMP-9) and its degradation products are detected in patients with active Crohn’s disease (CD). Selective inhibition of MMP-9 reduced fibrosis in a murine model of intestinal fibrosis, suggesting that MMP-9 may contribute to intestinal complications in CD. Accordingly, MMP-9 has been proposed as a therapeutic target for CD. Andecaliximab (GS-5745) is a monoclonal antibody that selectively binds and inhibits MMP-9. It was found to be safe in a phase 1 dose-ranging study in UC patients, demonstrating clinical response and remission compared to placebo. The aim of this phase 2 study was to evaluate the safety and efficacy of andecaliximab in subjects with active CD.

Aims & Methods: This was a double-blind, randomized, placebo-controlled 8-week induction study in adult CD subjects with moderate to severe disease activity (defined as: CDAI total score 220–450, weighted PRO2 score ≥ 1 [standard CDAI weights: abdominal pain 0–3 ×7 plus mean number of daily stools x2] and SES-CD total score ≥ 6 [or ≥ 4 score if disease limited to ileum and/or right colon or ulcer presence and size score ≥2]). Subjects were required to have an inadequate response, or loss of response or intolerance to at least 1 of the following treatments in the last 5 years: corticosteroids, immunomodulators, TNF-alpha antagonist or vedolizumab. Subjects were randomized 1:2:2 to receive subcutaneous (SC) injections of: placebo, 150 mg andecaliximab every 2 weeks (Q2W), 150 mg andecaliximab weekly (QW) or 300 mg andecaliximab QW. Centrally-read colonoscopy/endoscopy scores were performed at baseline and week 8. Co-primary outcomes were clinical response (PRO2 score of ≥8 at week 8) and placebo response (SES-CD decrease of ≥ 50% from baseline at week 8).

Results: A total of 187 subjects were enrolled from 13 countries. No concerning baseline imbalances occurred between the treatment groups, overall. 17.6% of subjects had evidence of fistula at screening, mean (SD) disease duration was 12 (9.5) years. 84.5% of subjects had previous exposure to TNF-alpha antagonist and 44.4% of subjects were taking oral corticosteroids at baseline. The
The frequency of adverse events (AEs) was similar between the treatment groups: placebo (67.9%), 150 mg Q2W (60.4%), 150 mg QW (62.3%), 300 mg QW (69.8%). Common AEs included abdominal pain, nausea, fatigue, anemia and pyrexia. One AE led to study discontinuation in the placebo group (1.6%) compared to 2 in the 150 mg QW group (3.8%) and 4 in the 300 mg QW group (7.5%). Three serious AEs occurred in the placebo group (10.7%) compared to 1 in the 150 mg QW group (1.9%), 6 in the 150 mg QW group (11.3%) and 8 in the 300 mg QW group (15.1%). Frequency of arthralgia and musculoskeletal pain was similar or lower in adalimumab groups compared to placebo.

Aims & Methods: Our aim was to assess trends in adalimumab and AAA levels over time and their clinical implications. CD patients starting adalimumab therapy were followed prospectively in three participating medical centers in Israel, by establishing a program for home-visits by physicians at induction and every 3 months, or in case of relapse. At each home visit, patients’ clinical activity score were determined and blood tests obtained for CRP, drug and AAA trough levels. AAA levels were determined by a drug-tolerant assay. A comparison with temporal evolution of inflammasome immunogenicity in a previously reported cohort using the same assay and methodology was additionally performed.

Results: 102 CD patients starting adalimumab were prospectively followed. Fourteen (14%) experienced primary non-response and 20 (20%) lost response to adalimumab therapy during maintenance. Thirty-three (32%) developed AAA, which were more common among those previously exposed to adalimumab (p = 0.002) but were not affected by co-treatment with immunomodulators or not (p = 0.28). AAA developed as early as week 2 in 18/55 (33%) of AAA positive patients (7/18 with history of interrupted therapy), and in 26/33 (79%) within week 2. None of the 2 AAA had 34% of primary non-response compared to 9% in patients without early AAA (OR = 4.8, p = 0.009). In 92.6% of cases, AAA preceded loss-of-response or occurred simultaneously (median interval - 4 weeks). As compared to antibodies-to-infliximab (ATI), AAA formation over time was significantly lower (p = 0.01, log rank test), and some patients developed AAA even after one year of therapy. Transient AAA were much less common than transient ATI (7% vs 32%, p < 0.0001) and 85% of AAA events were associated with loss of response compared with 58% rate for ATI (p = 0.01).

Conclusion: AAA formation often occurs earlier than anticipated, and associates with primary non-response to adalimumab induction. Overall rate of immunogenicity is lower for adalimumab compared to infliximab. However, once they occur, AAA are more specific than ATI.

Disclosure of Interest: B. Ungar: This study was supported in part by a grant from "AbbVie". In addition, BU received consultation fees from "AbbVie" and "Janssen".

U. Kopylov: Speaker fees - abbvie Research support, speaker and advisory fees janssen
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S. Ben-Horin: SBH has received consultancy and/or advisory board fees from Schering-Plough, AbbVie, Celltrion, Pfizer, Janssen and Takeda; and has received research support from Celltrion, AbbVie & Takeda
All other authors have declared no conflicts of interest.
of GLB with 47.4–49% of patients maintaining the effect after one year. Due to its relatively short half-life, it is still few studies on clinical efficacy of patients receiving golimumab in the routinely activities. In our region GLB became available starting July 2015.

Aims & Methods: Aim of this study has been to prospectively evaluate the efficacy of golimumab for the treatment of ulcerative colitis in the real-life setting of our referral centre. 13 patients (7 male, 4 female) with moderate to severe UC were enrolled in the study from June 2015 to December 2016. Patients received an induction dose of GLB 200 mg s.c. at baseline, 100 mg at week 2 and then a maintenance dose of 100 mg for a body weight < or ≥ 80 kg, respectively, with no optimization allowed. Partial Mayo score was computed at baseline and every 2 weeks for the first 6 weeks of therapy, then every 4 weeks throughout the maintenance period. Follow-up is still ongoing. Primary end point has been the clinical response at the end of the induction phase (intended as the reduction of Partial Mayo score >30% and >3 points vs baseline) and in the maintenance period, the secondary end point being the steroid-free clinical remission (Partial Mayo score <2 with all subscores <1) at the end of the induction phase and throughout the maintenance phase. Complete follow-up is available for all patients at week 30, with 4 patients reaching the week 54 of monitoring.

Results: At the time of GLB starting, localization of the disease according to Montreal classification was left-sides colitis (EC2) in 70%, pancolitis (EC3) in 23% and proctitis (EC1) in 7% of patients. Ten patients (77%) were anti-TNF naïve, 3 patients (23%) had already received one anti-TNF in the past. Clinical response was obtained in 6/13 (46%) at week 6 and in 2 further patients at week 10, for a total of 8/13 (62%). Three patients resulted in complete clinical steroid-free remission after 6 weeks. At week 30, 5 patients still showed a clinical response (38%), one of them (7%) resulted in complete steroid-free remission. Among the 4 patients reaching week 54, 2 experienced a flare of disease whereas 2 were still in remission. One patient is in remission at week 42, potentially accounting for a total of 3/13 patients in remission after one year (23%). No differences were found between naïve and non-naïve patients. No significant adverse events were reported in the study period.

Conclusions: Our data seem to suggest that Golimumab, as compared to regenerative trials, is able to induce a better initial clinical response but shows a higher secondary loss of response in the long term. Whether this really reflects a lower efficacy of GLB or could depend on the unavailability of dose optimization is still to be defined. Our patient prescription of GLB, needs to be evaluated.

Disclosure of Interest: All authors have declared no conflicts of interest.

PM048 FIVE-YEAR SAFETY DATA FROM THE OBSERVATIONAL POSTMARKETING ULCERATIVE COLITIS STUDY, A EUROPEAN POSTMARKETING ULTRACOLITIS STUDY, A EUROPEAN REGISTRY FOR ADULTS WITH ULCERATIVE COLITIS TREATED WITH ORIGINATOR INFlixIMAB OR STANDARD THERAPY

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Introduction: The Observational Postmarketing Ulcerative colitis Study (OPUS) registry was conducted to collect long-term (5 years) real-world clinical and safety data in patients with moderate to severe ulcerative colitis (UC) treated with originator infliximab and to compare this safety profile to that of UC patients treated with standard therapies.

Aims & Methods: The OPUS registry was a prospective, non-randomized, observational study that followed patients with UC (in routine practice in 14 European countries) who were enrolled to receive treatment with either originator infliximab or standard therapy (defined as initiation or dose-increase of corticosteroid or infliximab) for the treatment of UC, as determined by their treating physician. Adverse events (AEs) were recorded during the 5-year follow-up period; at any time during the 5 years of observation, the patient’s therapy could be changed to any other UC therapy, based on the physician's clinical judgment. Frequency of events was evaluated in nine pre-specified categories (serious infection, infusion-related reaction, fatality, worsening or new case of congestive heart failure (CHF), central and peripheral demyelinating neurological disorder, hematologic condition, malignancy/lymphoproliferative disorder, hepatobiliary event, CHF, demyelinating disorder, or fatality). No new safety concerns were observed with originator infliximab in the OPUS registry.

Disclosure of Interest: J. Panes: J.P. has received consultant or speaker fees from Merck & Co., Inc.
N. Teich: N.T. is a scientific advisor for and has received speaker fees from Merck & Co., Inc.
S. Lindgren: S.L. has received consultant and lecture fees from Merck & Co., Inc.
J. Colombel: J.L. has received consultant and speaker fees from Merck & Co., Inc.
F. Cornillie: F.C. is an employee of MSD Belgium, the sponsor of the study.
H.A. Flynn: H.A. is an employee of Merck & Co., Inc., the sponsor of the study.
P. Stryszak: P.S. is an employee of Merck & Co., Inc., the sponsor of the study.
R. Yao: R.Y. is an employee of Merck & Co., Inc., the sponsor of the study.
G. Philip: G.P. is an employee of Merck & Co., Inc., the sponsor of the study.
W. Reinisch: W.R. has served as a consultant and advisory board member for Merck & Co., Inc.

PM049 DIRECT INTESTINAL PH-TRANSIT ASSESSMENT IN PATIENTS WITH ULCERATIVE COLITIS AS A STRATEGY FOR PREDICTING SUCCESS OF REGIONAL DELIVERY OF TOPICALLY-ACTING DRUGS

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Introduction: Several oral mesalazine utilise pH-dependent release coating to optimise local delivery of mesalazine. Little data exists on clinical outcomes of intestinal pH and transit times in patients with UC to predict likely efficacy-based delivery profiles. No studies have accounted for acute variations in dietary fibre intake, which might affect regional transit and pH profiles.

Aims & Methods: This study: (1) Investigates the small intestinal luminal pH and transit after acute changes in fibre intake in quiescent UC patients; and (2) deduce delivery of topically-acting drugs using published pharmacokinetic (PK) data. In this randomised, double-blind study, patients with UC in clinical remission (partial Mayo Score ≤ 1 + faecal calprotectin < 150 μg/g) without recent antibiotic (including sulfasalazine), probiotic or fibre use were recruited. After a 7-day run-in, subjects were supplied with study meals containing high (13 g oligosaccharides and resistant starch) (HF) or low (<1g) fermentable fibre (LF) diets. After an 12-h period prior to the ingestion of a pH-motility capsule (Smart Pill). Telemetric recordings were made for 5 days or until the capsule had been excreted. After a ≥3-day washout period, they crossed-over to the other dietary arm and pH-motility test. Small and large intestinal pH profiles were defined as the length in time (h) of different intraluminal pH ranges – pH ≤ 5.6 to < 7.0 and ≥ 7.0 and compared between diets. Using published PK of pH-dependent coated mesalazine preparations, the patterns of dissolution in UC patients were estimated.

Results: 15 patients (aged 24-72; 9 males – 5 extensive, 5 distal and 5 proctitis), acute HF intake significantly increased median (IQR) time for colonic pH ≤ 5.6 [HF: 4.5 (2.4–10.2) vs LF: 0.9 (0.2–3.1) h; p = 0.004, Wilcoxon], tended to increase colonic pH ≤ 6 to <7 [HF: 7.5 (6.3–13.5) vs LF: 7.1 (4.5–15.2) h] and had no effect on colonic pH ≥ 7 [HF: 2.8 (1.1–5.6) vs LF: 2.0 (1.2–4.1) h; p = 0.17]. Table 1 summarises hypothetical dissolution profiles for pH-coated mesalazine in patients with UC. Considerable variations across release mechanisms were evident, but, despite alterations in pH and transit, the patterns were not affected by diet for Entudril L alone or with slow release mechanisms. Only minor differences were found for Eudragit S and MMX.

Conclusion: Current delivery mechanisms for mesalazine lead to a proportion of quiescent UC patients having incomplete release and suboptimal regional
P0406  HIGHER  EXPOSURE  TO  GOLIMUMAB  IS  ASSOCIATED  WITH  ENDOSCOPIC  RESPONSE  IN  PATIENTS  WITH  ULCERATIVE  COLITIS:  RESULTS  FROM  THE  GO-KINETIC  TRIAL
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Introduction: Golimumab (GLM) is a subcutaneously administered anti-tumor necrosis factor (anti-TNF) antibody that is approved for the treatment of moderate to severe ulcerative colitis (UC). We investigated the association between systemic exposure (area under the curve (AUC)) of GLM during induction therapy and endoscopic response in moderate-severe UC.

Aims & Methods: In this prospective observational trial, patients with moderate to severe UC (Mayo endoscopy score ≥2) received induction treatment with GLM 200 mg SQ at week 0 and 100 mg at week 2 followed by 50 or 100 mg at week 6, in patients with a bodyweight of less or more than 80 kg, respectively. Serum GLM concentrations were measured at day 0, 4, 7, 14, 18, 28, 42 and 56, as well as anti-GLM antibody levels, C-reactive protein (CRP) and albumin serum concentrations. Serum GLM concentrations were measured with an enzyme-linked immunosassay and anti-GLM antibody levels were measured with a drug-sensitive antigen binding test, both developed by Sanquin laboratories. Endoscopic response was defined as ≥1 point reduction in endoscopic Mayo score at week 8–10 compared to baseline. AUCs were calculated using nonlinear mixed effect modelling (NONMEM®) and were compared using the non-parametric Mann-Whitney U test. Correlation analysis was performed using Pearson’s correlation coefficient. A receiver-operating characteristic (ROC) curve reported the predictive performance of GLM serum trough levels at week 2 and 6 for endoscopic response.

Results: A total of 20 patients were enrolled of which 19 patients underwent an endoscopy at baseline and 8–10 weeks after start of treatment. Median age [interquartile range] was 46 years [36–57], median baseline CRP serum concentration was 4.5 mg/L [1.1–13.7] and median baseline albumin serum concentration was 44 g/L [40–45]. None of the patients developed antibodies against GLM during induction treatment. After the induction phase, 12 out of 19 patients (63%) achieved an endoscopic response. Median AUC at week 2 and 6 was higher in endoscopic responders compared to non-responders (Table 1). Correlations between GLM trough concentrations and AUCs at week 2 (Pearson correlation coefficient: 0.86, P < .0001) and week 6 (Pearson correlation coefficient: 0.81, P < .0001) were statistically significant. Despite a low area under the ROC-curve (AUROC), a GLM serum trough concentration ≥3.3 mg/L at week 2 (AUROC: 0.75, 95% CI: 0.526–0.974, sensitivity: 67%, specificity: 71%) was associated with endoscopic response after the induction phase.

Conclusion: Serum trough concentrations of GLM and AUCs at week 2 and 6 were higher in endoscopic responders compared to patients without an endoscopic response. A significant correlation was found between GLM trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 was associated with improved endoscopic outcomes.

Disclosure of Interest: S. Berends: Has received lecture fees from Johnson and Johnson, and Merck Sharp & Dohme.
A. Strik: Has received lecture fees from Biogen, Johnson and Johnson, Merck Sharp & Dohme, Mundipharma, Takeda, and Tillotts. R. Mathijs: Has received consulting fees from MSD and research grants from Bayer, UCB Pharma, Shire and Roche.
G. R. D’Haens: Has received speaker fees from Abbvie, Ferring, Johnson and Johnson, Merck Sharp & Dohme, Mundipharma, Norgine, Pfizer, Shire, Millenium/Takeda, Tillotts and Vifor.
M. Lowenberg: Has received speaking fees from Abvvie, Covidien, Dr. Falk, Ferring Pharmaceuticals, Merck Sharp & Dohme, Receptos, Takeda, Tillotts and Tramedico. He has received research grants from AbbVie, Merck Sharp & Dohme, Achmea healthcare and ZonMW.

Table 1: Median golimumab trough concentrations and AUCs at week 2 and 6

<table>
<thead>
<tr>
<th>Endoscopic responders</th>
<th>Median [IQR]</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUC (mg/L, day)</td>
<td>3.3 mg/L</td>
<td>0.21</td>
</tr>
<tr>
<td>AUC (mg/L, day)</td>
<td>3.6 mg/L</td>
<td>0.63 (0.26, 1.56)</td>
</tr>
</tbody>
</table>

P0407  COMPARATIVE EFFICACY AND SAFETY OF TOFACITINIB AND BIOLOGICS AS INDUCTION THERAPY FOR MODERATELY TO SEVERELY ACTIVE ULCERATIVE COLITIS: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS
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Introduction: Tofacitinib is an oral, small molecule Janus kinase inhibitor being investigated for moderately to severely active ulcerative colitis (UC). We performed a systematic literature review (SLR) and network meta-analysis (NMA) to compare the efficacy and safety of tofacitinib to available tumour necrosis factor inhibitors (TNFi) and integrin receptor antagonists for induction therapy of adults with moderately to severely active UC.

Aims & Methods: Using indexing and free-text terms, searches were conducted in the EMBASE, MEDLINE, CENTRAL, DARE and CINAHL databases to identify RCTs published as of January 2015. Proceedings of relevant conferences from 2012–2014 were also reviewed. Comparators of interest were infliximab, golimumab, adalimumab and vedolizumab. Two reviewers independently assessed studies for inclusion, and extracted and validated the study/patient data. Fixed- and random-effects Bayesian NMA were conducted to compare efficacy outcomes and rates of adverse events (AEs) at 6–12 weeks in the overall population (TNFi-naïve or exposed) and by prior TNFi exposure.

Conclusion: Serum trough concentrations of GLM and AUCs at week 2 and 6 were higher in endoscopic responders compared to patients without an endoscopic response. A significant correlation was found between GLM trough concentrations and AUC. A GLM trough level ≥3.3 mg/L at week 6 was associated with improved endoscopic outcomes.

Disclosure of Interest: S. Berends: Has received lecture fees from Johnson and Johnson, and Merck Sharp & Dohme.
A. Strik: Has received lecture fees from Biogen, Johnson and Johnson, Merck Sharp & Dohme, Mundipharma, Takeda, and Tillotts. R. Mathiots: Has received consulting fees from MSD and research grants from Bayer, UCB Pharma, Shire and Roche.
G. R. D’Haens: Has received speaker fees from Abbvie, Ferring, Johnson and Johnson, Merck Sharp & Dohme, Mundipharma, Norgine, Pfizer, Shire, Millenium/Takeda, Tillotts and Vifor.
M. Lowenberg: Has received speaking fees from Abbvie, Covidien, Dr. Falk, Ferring Pharmaceuticals, Merck Sharp & Dohme, Receptos, Takeda, Tillotts and Tramedico. He has received research grants from AbbVie, Merck Sharp & Dohme, Achmea healthcare and ZonMW.
**Table 1: Hypothetical dissolution profiles UC patients (n = 15)**

<table>
<thead>
<tr>
<th>Dissolution characteristics</th>
<th>Eudragit L</th>
<th>Eudragit L with slow release</th>
<th>Multi-matrix (MMX)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothetical complete dissolution</strong></td>
<td>pH ≥ 6 for 1 h</td>
<td>pH ≥ 6 for 4-5 h</td>
<td>pH ≥ 7 for 2 h</td>
</tr>
<tr>
<td>Complete dissolution in stomach</td>
<td>67%</td>
<td>100%</td>
<td>HF 25%; LF 19%</td>
</tr>
<tr>
<td>Complete dissolution in small intestine</td>
<td>100%</td>
<td>100%</td>
<td>HF 97%; LF 100%</td>
</tr>
<tr>
<td><strong>Complete dissolution in large intestine</strong></td>
<td>67%</td>
<td>100%</td>
<td>HF 97%; LF 100%</td>
</tr>
</tbody>
</table>

**Results:** Twelve induction trials were identified from the SRL (ACT 1 & 2, EUCALYPHTUS, GEMINI-I, POURSIT SC, TOFACTINIB PHASE 2, Feugen 2003, 2005, UC-SUCCESS, ULTRA 1, ULTRA 2, Suzuki 2014) and included in the NMA. Unpublished data from tofacitinib Phase 3 induction trials (OCTAVE 1 & 2) were also used in the analysis. Fixed-effects NMA showed that tofacitinib 10 mg twice daily (BID) is associated with a higher rate of mucosal healing 80/90/100 in the overall population (odds ratio [OR] 1.90 [95% confidence interval (CI) 1.63, 2.21]). In TNFi-exposed patients, a higher rate of clinical remission was seen with tofacitinib 10 mg BID vs adalimumab in TNFi-exposed patients (OR 11.93 [95% CI 1.84, 154.78]). AE rates were similar between tofacitinib 10 mg BID and comparators in the overall population and TNFα-naïve populations when analysed individually, but tofacitinib 10 mg BID was found to be associated with a higher rate of disaggregated AEs (“any AE”) than etrolizumab 300 mg in the overall population (OR 2.78 [95% CI 1.08, 7.41]). There were no statistically conclusive differences in the rates of specific AEs between tofacitinib 10 mg BID and comparators.

**Conclusion:** This NMA suggests that tofacitinib may be more effective as induction therapy in moderately to severely active UC than adalimumab and vedolizumab in TNFα-naïve patients, and is associated with a higher rate of mucosal healing than adalimumab in the overall population. Rates of specific safety events were similar between tofacitinib and TNFα inhibitors.

**Disclosure of Interest:** C. Kelly: travel support and fees for serving on advisory boards from Seres Therapeutics, Summit Pharmaceuticals, and Synthetic Biologics, lecture fees from Seres Therapeutics, and grant support from Institut Mérieux, ntera Health, and Mercik.

**References:**

**P0408 CHARACTERISTICS AND OUTCOMES IN PATIENTS WITH C. DIFFICILE INFECTION AND INFLAMMATORY BOWEL DISEASE: BEZLOTOXUMAB Versus PLACEBO**

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**Introduction:** Patients with inflammatory bowel disease (IBD) experience higher rates of *C. difficile* infection (CDI) than the overall population, often lack typical risk factors, and frequently experience severe and recurrent episodes. MODIFY I/II were global trials of the efficacy and safety of bezlotoxumab (bezlo: a human monoclonal antibody against *C. difficile* toxin B), in which bezlo was superior to placebo at preventing CDI recurrence (rCDI) in participants with primary or recurrent CDI given antibacterial drug treatment for CDI. Participants with IBD could be enrolled if, in the opinion of the investigator, symptoms were more likely due to CDI than IBD.

**Aims & Methods:** The objective of this post-hoc subgroup analysis was to summarize CDI-related outcomes, including initial clinical cure and rCDI, through 12 weeks in participants with IBD enrolled in the MODIFY trials. CDI-related outcomes through 12 weeks in the subset of IBD participants enrolled in the MODIFY trials included: initial clinical cure (no diarrhea during the 2 consecutive days following completion of ≤14 days of an antibiotic drug treatment for CDI); and rCDI (new episode of diarrhea associated with a positive stool test for toxigenic *C. difficile* in participants who had achieved initial clinical cure). For this post-hoc analysis, participants randomized to bezlo or actoxumab + bezlo were pooled and are referred to as the “bezlo” group and participants randomized to placebo or actoxumab were pooled and are referred to as the “no bezlo” group.

**Results:** Overall, 2559 participants were included in the mITT population; 1554 participants were randomized to a bezlo group and 1005 were randomized to a no bezlo group. There were 44 participants with IBD; 23 (52.3%) had ulcerative colitis; 18 (40.9%) had Crohn’s disease; and 3 (6.8%) had non-characterized IBD. Compared with participants without IBD, participants with IBD tended to be younger, were more often treated as outpatients, were more often immunocompromised, and a smaller percentage had severe CDI. Among IBD participants, a higher proportion had initial clinical cure in the no bezlo group compared with the bezlo group and there was a higher proportion of participants with rCDI in the no bezlo group compared with the bezlo group. In IBD participants who did not receive bezlo, most of the recurrences (5 of 7) occurred within 4 weeks after study infusion, while most of the recurrences among participants who received bezlo occurred after week 4 (3 of 4).

**Conclusion:** Participants with IBD and CDI enrolled in the MODIFY trials were younger, more likely to be diagnosed with CDI as an outpatient, to be immunocompromised, and to develop rCDI compared with non-IBD participants. Bezlo yielded a 27.2% absolute reduction (50% relative reduction) in the incidence of rCDI in participants with IBD. The efficacy of bezlo in preventing rCDI may extend to patients with IBD, but additional data are needed due to the limited cohort size.

**Disclosure of Interest:** C. Kelly: travel support and fees for serving on advisory boards from Seres Therapeutics, Summit Pharmaceuticals, and Synthetic Biologics, lecture fees from Seres Therapeutics, and grant support from Institut Mérieux, ntera Health, and Mercik.


D. Mary Beth: MB Dorr - an employee of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA, who may own stock and/or hold stock options in the Company.

All other authors have declared no conflicts of interest.
AIMS & METHODS: We randomized patients with CD or UC in clinical and biochemical remission to either switch to IFX-biosimilar or to continue using IFX-biological. Randomization was performed by a computer (65% to IFX-biosimilar). Patients in both arms received 4 to 6 doses of 5 mg/kg to 10 mg/kg during the 30-week study period. Patients eligible for inclusion had to be in clinical remission (HBI < 5 and MAYO ≤ 2) and have a fecal calprotectin < 250 μg/g. The primary endpoint of patients in remission at week 30. We measured C-reactive protein [CRP], fecal calprotectin [FCP], infliximab trough level [TL] and pharmacokinetics.

RESULTS: From 1005 mg/kg (529–1579) to 1450 mg/kg (1221–1778). Microbiota analysis

Conclusion: Fecal microbiota transfer in patients with chronic pouchitis is a promising therapeutic option and donor microbiomes could successfully be transferred via capsules or via jejunoscopy delivering fresh stool filtrate. However, a simple increase in microbial diversity and successful establishment of members of the butyrate producing Lachnospiraceae and Ruminococcaceae families is not sufficient for a successful outcome of FMT.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Disclosure of Interest: All authors have declared no conflicts of interest.
C. Yun: employee of Gilead Sciences Inc
A. Van der Aa: employee of Galapagos NV
J. Zhang: employee of Gilead Sciences Inc
C. Tasset: employee of Galapagos NV

References
1. Neurath MF. *Mucosal immunology* 2014; 7: 6–19

**P0413 RESPONSE AND REMISSION AFTER 16 WEEKS OF USTEKINUMAB- AN ALL PATIENTS ANALYSIS FROM THE UNITI CROHN'S STUDIES**

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**Introduction**: Ustekinumab (UST) has been shown to induce and maintain clinical response and remission in moderate to severe Crohn's disease (CD) in 2 induction ([UNITI-1 (anti-TNF failures) and UNITI-2 (anti-TNF non-failures) and 1 maintenance [IM-UNITI]) randomized, placebo controlled Phase 3 trials. We evaluated the efficacy (response and remission) for all patients who received an intravenous (IV) induction dose of approximately 6 mg/kg, including responders (CDAI decrease ≥100) and non-responders, 8 weeks after the first UST maintenance dose of 90 mg subcutaneous (SC), i.e. 16 weeks from the IV induction dose.

**Aims & Methods**: Patients achieving clinical response 8 ws after a single IV induction dose were randomized to SC placebo (PBO), UST 90 mg every 12 weeks (q12w) or every 8 weeks (q8w). UST patients not in clinical response 8 weeks after the IV induction dose were given UST 90 mg SC and if in clinical response 8 weeks later were continued on 90 mg SC q8w. A total of 458 patients were exposed to an IV induction dose of 6 mg/kg (UNITI-1, N = 249 and in UNITI-2, N = 209) with a response rate at week 8 of 37.8% and 57.9% vs. PBO response rate of 20.2% and 32.1% respectively. The remission rate at week 8 in UNITI-1 and UNITI-2 was 20.9% and 40.7% vs. PBO of 7.3% and 19.6% respectively. For this evaluation, the response and remission status of the entire population exposed to an IV induction dose of 6 mg/kg of UST was evaluated 8 weeks after the first subcutaneous maintenance dose of UST. All patients who received 6 mg/kg IV UST induction were included, including responders randomized to SC PBO (who did not receive SC UST at week 8).

**Results**: Of the 219 patients not in clinical response in UNITI 1&2, 37.6% and 60.5% respectively were in clinical response 8 weeks after the first maintenance UST dose (90 mg SC). Evaluating all patients exposed to 6 mg/kg IV UST induction, response rates 8 weeks after the first subcutaneous injection were 37.6% and 57.9% respectively in UNITI-1 and UNITI-2 (N = 480) and non-responders, 8 weeks after the first maintenance dose of UST. All patients who received 6 mg/kg IV UST induction were included, including responders randomized to SC PBO (who did not receive SC UST at week 8).

**Conclusion**: These numbers at week 16 are expected to reflect real-world experience in patients who receive the induction dose and one additional maintenance dose 8 weeks later. The resulting rates of response and remission are higher than previously reported in the induction studies across all populations (anti-TNF non-failures and anti-TNF failures). About 73% of anti-TNF non-failures attain clinical response and over half are in remission. The data support the clinical rationale for providing at least one SC maintenance dose of ustekinumab irrespective of clinical response 8 weeks after IV induction.

**Disclosure of Interest**: J. Colombel: Investigator for Janssen Scientific Affairs, LLC

**Response rates and Remission rates for all patients 16 weeks after induction of 6 mg/kg IV UST**

<table>
<thead>
<tr>
<th>Study</th>
<th>IV UST (n)</th>
<th>% Clinical Response</th>
<th>% Clinical Remission</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITI-1</td>
<td>249</td>
<td>47.4</td>
<td>24.1</td>
</tr>
<tr>
<td>UNITI-2</td>
<td>209</td>
<td>73.7</td>
<td>55.5</td>
</tr>
<tr>
<td>UNITI-2 TNF Naive</td>
<td>144</td>
<td>72.9</td>
<td>60.4</td>
</tr>
</tbody>
</table>

**Only subjects with non-missing data for all segments at BL and W10 were included in the calculation; *Subscore for GHAS data is activity subscore and for SES-CD data is ulcer subscore; bolded texts indicate p-value < 0.05 from t-test**

Corr = 0.43, p < 0.001:BL and W10 respectively) (CGHAS v CSES-CD: Corr = 0.38, p < 0.001; Corr = 0.77, p < 0.001:BL and W10 respectively) (aCGHAS v uCSES-CD: Corr = 0.77, p < 0.001; Corr = 0.79, p < 0.001:BL and W10 respectively).

**Conclusion**: Improvements in endoscopic severity induced by fitcoltinib are parallelized by reductions of histologic scores. In line with previous findings from anti-TNF therapies colonic mucosa is more prone to improve than ileal disease. Spontaneous reductions of histologic activity under placebo were not observed.


G. De Hertog: has received fees for central pathology review from Genentech, Centocor, and Galapagos.

W. Reinisch: AbbVie, Amgen, AstraZeneca, Biodinica, Biogen IDEC, Boehringer-Ing., BMS, Celgene, Celgene, Cervion, Covance, Galapagos, Genentech, Gilead, Grünenthal, JNJ, LipidTher., MedImmune, MSD, Novartis, Otsuka, Pfizer, P&G, Robert, Sandoz, SP, Takeda, Tigenix, UCB, a.o.

A. Van der Aa: employee of Galapagos NV
J. Zhang: employee of Gilead Sciences Inc
C. Tasset: employee of Galapagos NV
C. Yun: employee of Gilead Sciences Inc
A. Serone: employee of Gilead Sciences Inc


S. Vermeire: research funding from AbbVie, Galapagos, MSD, and Takeda; speaker fees from Abbie; and consultancy fees from Abbvie, MSD, Takeda, Ferring, Genentech Roche, Shire, Pfizer, Galapagos, Mundipharma, Hospira, Celgene, Second Genome, and Janssen.

**Corr**: 0.80, p < 0.001; Corr = 0.77, p < 0.001:BL and W10 respectively) (aCGHAS v uCSES-CD: Corr = 0.77, p < 0.001; Corr = 0.79, p < 0.001:BL and W10 respectively).
REAL-WORLD PATTERNS OF TREATMENT DISCONTINUATION, FLARES, AND HOSPITALISATIONS AMONG INFLAMMATORY BOWEL DISEASE PATIENTS WITHIN 12 MONTHS OF INITIATION OF VEDOLIZUMAB OR INFLIXIMAB

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2Evidera, London/United Kingdom
3Evidera, Waltham/United States of America

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Introduction: Biologics such as infliximab (IFX) (an anti-TNF) and vedolizumab (VDZ) (anti-integrin) are treatment options for patients with moderate-to-severely active inflammatory bowel disease (IBD), who have failed conventional therapy.

Aims & Methods: Our aim was to compare time to treatment discontinuation, flares, and hospitalisations among patients with IBD initiating VDZ versus IFX who were biologic-naïve. All patients with IBD (ulcerative colitis or Crohn's disease [CD]) who initiated biologic treatment with VDZ or IFX between 01/05/2014 and 22/02/2016 were identified in the US Explorys Universe database; the first infusion was deemed the index date. Analyses focused on patients who: (1) successfully completed induction therapy (≥3 infusions within 98 days of index date); (2) were ≥18 years of age at index; (3) had ≥365 days of medical history prior to index (“baseline”); and (4) had 365 days of follow-up after the index date. VDZ initiators were matched to IFX initiators (1:3) using propensity scores. Kaplan-Meier Method was used to compare median time to discontinuation of VDZ and IFX during follow-up, defined as the first of either: no receipt of biologic ≤90 days of previous infusion, or switch to another biologic. Similar method was also used to compare median time to IBD-related hospitalisations, surgeries, and flares (defined as use of intravenous steroids, respectively). Interquartile range (IQR) was also calculated.

Results: 105 VDZ initiators were matched to 315 IFX initiators. Baseline characteristics of both cohorts are described in Table 1. CD accounted for ≥60% of patients in each cohort. In the baseline period, ~70% of patients in both cohorts had received corticosteroids; 20% of VDZ vs. 38% of IFX initiators received an immunosuppressive therapy. Median time since diagnosis was 2.4 years for VDZ initiators and 3.1 years for IFX initiators. Median time to treatment discontinuation was 244 (IQR: 194–307) days for VDZ initiators vs. 190 (IQR: 125–300) days in both cohorts. Median time to first IBD-related hospitalisation was 153 (IQR: 78–209) days for VDZ initiators vs. 98 (IQR: 45–168) days for IFX initiators. For IBD-related flares, median time was 111 (IQR: 40–226) days for VDZ initiators vs. 93 (IQR: 35–182) days for IFX initiators.

Table 1. Baseline characteristics of propensity-score matched IBD patients initiating therapy with vedolizumab or infliximab

<table>
<thead>
<tr>
<th></th>
<th>Vedolizumab (N = 105)</th>
<th>Infliximab (N = 315)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) age, years</td>
<td>46 (16.0)</td>
<td>44 (16.8)</td>
<td>0.297</td>
</tr>
<tr>
<td>Female, %</td>
<td>52.4</td>
<td>52.7</td>
<td>&gt;0.999</td>
</tr>
<tr>
<td>Caucasian, %</td>
<td>89.5</td>
<td>84.1</td>
<td>0.180</td>
</tr>
<tr>
<td>Insurance type, %</td>
<td>6.7</td>
<td>11.1</td>
<td>0.202</td>
</tr>
<tr>
<td>Medicaid</td>
<td>23.8</td>
<td>14.3</td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>63.8</td>
<td>65.7</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>5.7</td>
<td>8.9</td>
<td></td>
</tr>
<tr>
<td>Patients with Crohn’s Disease, %</td>
<td>60.0</td>
<td>60.9</td>
<td></td>
</tr>
<tr>
<td>Mean (SD) time from diagnosis, years</td>
<td>3.6 (3.5)</td>
<td>3.1 (3.6)</td>
<td>0.667</td>
</tr>
<tr>
<td>Comorbidities, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>3.8</td>
<td>2.9</td>
<td>0.745</td>
</tr>
<tr>
<td>Rheumatic disease</td>
<td>5.7</td>
<td>2.9</td>
<td>0.221</td>
</tr>
<tr>
<td>Mild liver disease</td>
<td>11.4</td>
<td>10.2</td>
<td>0.715</td>
</tr>
<tr>
<td>Malignancies</td>
<td>6.7</td>
<td>4.1</td>
<td>0.295</td>
</tr>
<tr>
<td>IBD-related measures (during the baseline period), %</td>
<td>5.7</td>
<td>7.3</td>
<td>0.663</td>
</tr>
<tr>
<td>Surgery</td>
<td>37.1</td>
<td>32.7</td>
<td>0.407</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>70.5</td>
<td>71.1</td>
<td>0.902</td>
</tr>
<tr>
<td>Immunosuppressives</td>
<td>20.02121</td>
<td>37.8</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Conclusion: Among biologic-naïve IBD patients, there was a trend toward prolonged median times to first IBD-related hospitalization or first flare with VDZ compared to IFX. The median time to discontinuation was comparable between the therapies. Future studies should examine comparative effectiveness outcomes in a larger cohort over a longer follow-up period.

Disclosure of Interest: H. Patel: I am currently an employee of Immensity Consulting, Inc., which received funding from Takeda Development Centre Ltd. R. Curtis: Employee of Takeda Development Centre Ltd. M. Raluy Callado: Minea Raluy Callado is a full-time employee of Evidera. A. Berger: Ariel Berger is a full-time employee of Evidera. M. J. Khalid: Employee of Takeda Development Centre Ltd.

United European Gastroenterology Journal 5(5S) A309
**Aim & Methods:** We aimed to determine if colonic antimicrobial gene expression profiles differ between IBS and healthy subjects and if potential alterations are linked to immune activity or gut microbiota composition. The expression of 84 key antimicrobial genes in sigmoid colon biopsies from patients with IBS, defined as being either immuno-active or immuno-norm based on systemic and mucosal cytokine profiles (Bennett et al. Am J Gastro, 2016), and healthy subjects was assessed by Human Antibacterial Response RT2 Profiler PCR Array. Targeted 16S rRNA pyrosequencing was performed on faecal microbiota. To identify discrimination profiles based on multiple variables between IBS patients and healthy subjects, orthogonal partial least squares discriminant analysis (OPLS-DA) with a cut off for Variable Importance for the Projection >0.7 was performed. 

**Results:**

**Table 1:** Differences in mucosal antimicrobial mRNA expression between IBS (Immuno-active and Immuno-norm) and healthy subjects.

<table>
<thead>
<tr>
<th>Gene (ΔΔ Ct)</th>
<th>IBS (n = 31)</th>
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Data presented as p-values (Mann-Whitney U-test) *p < 0.05 is significant. We included 31 IBS patients (16 females, median age 32 (25-44) years) and 16 healthy subjects (8 females, median age 27(24-30) years). An OPLS-DA model demonstrated that the antimicrobial profiles differed between IBS and healthy subjects (R2 = 0.54, Q2 = 0.16). The mucosal mRNA expression of 14 antimicrobial genes was downregulated, while one gene was upregulated in IBS patients compared to healthy subjects (Table 1). Antimicrobial profiles did not differ between IBS patients subtyped according to their predominant bowel habit (R2 = 0.02). An OPLS-DA model showed discrimination between immune-active (n = 16) and immuno-norm (n = 15) IBS patients based on their mucosal antimicrobial profiles (R2 = 0.91, Q2 = 0.61). This finding was corroborated by four antimicrobial genes being altered between the two IBS groups (Table 1). Adding healthy subjects to the model revealed three different discriminating profiles for each respective group (R2 = 0.44, Q2 = 0.30). Compared to healthy subjects, 19 genes in the immune-active and immuno-norm IBS groups were differently expressed (p < 0.05, Table 1). Only one of the antimicrobial genes differently expressed between IBS patients and healthy subjects was associated with faecal microbiota in immuno-norm IBS patients (Conserved Helix-Loop-Helix Ubiquitous Kinase (CHUK) with Anaerovorax r = –0.76, p < 0.01). In the immune-active IBS group 11 associations were identified, including TNF...
Receptor Superfamily Member 1A (TNFRSF1A) with Bifidobacterium ("4 mg/kg") may play a role in the complex pathophysiology of IBS.

Disclose of Interest: All authors have declared no conflicts of interest.

P0418 EFFECT OF INTERNAL AND EXTERNAL BILARY DRAINAGE ON INTESTINAL MUCOSAL BARRIER FUNCTION IN BILARY OBSTRUCTION RATS

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2The First Youshan Hospital Capital Medical University, Beijing/China
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Introduction: Internal biliary drainage has been confirmed better than external biliary drainage in alleviating the damage of intestinal mucosa barrier caused by obstructive jaundice, but the relevant mechanism is still unclear.

Aims & Methods: We aimed to investigate the effect of internal and external drainage on obstructive jaundice rats on intestinal mucosal barrier function with special reference of intestinal immune-related index expression. Thirty male Sprague-Dawley rats were randomly assigned to four groups: OJ, sham operation (SH), internal biliary drainage (ID) and external biliary drainage (ED). All animals underwent surgical ligature of the bile duct, except SH was produced by separating common bile duct locally but not dividing on day 1. Then ED and ID were reoperated on day 8 for biliary drainage procedure. Blood from inferior vena cava were collected for the test of DAO and sIgA activities by the method of ELASA. The terminal ileum specimens of each groups were collected for observation of the morphological changes with haematoxylin-eosin (HE) staining. The expression of IgA mRNA, plgR mRNA, GB-AR1 mRNA, RD-5 mRNA were measured by reverse transcription polymerase chain reaction (RT-PCR).

Results: After bile duct ligation, the injuries of the intestinal mucosa were obvious in OJ group with thinner mucosa, sparser villi, destruction of the epithelial layer. The results were accompanied by inflammatory cell infiltration. The expression of IgA mRNA and plgR mRNA were decreased (p<0.01), while the impaired intestinal mucosa has different degrees of recovery and ID group was more similar to SH group in intestinal mucosal morphology. The levels of the DAO in OJ group were increased more dramatically than that in SH, ID and ED groups while sIgA were decreased (p<0.01), and the activities of the DAO, sIgA in ID group were similar to the level of SH group (p>0.05), different to the level of ED group (p<0.01). The changes of the plasma DAO and sIgA activities were significantly correlated with the conditions of intestinal mucosa (p<0.01). The expression of RD-5 mRNA in OJ group were decreased significantly than that in SH, ID and ED groups while GB-AR1 mRNA, IgA mRNA, plgR mRNA were increased (p<0.01). Interestingly enough, after external bile drainage, there is no improvement in IgA mRNA and plgR mRNA (p>0.05). But in ID, the relative expression of IgA mRNA and plgR mRNA reduced markedly (p<0.01), while the mRNA expression of GB-AR1 and RD-5 mRNA in ED group was changed less than that in ID which were more similar to SH group. The protein expression of GB-AR1 was increased significantly in the intestinal mucosal of OJ group, which was higher than that of SH group (p<0.01). After internal and external biliary drainage to alleviate OJ respectively, the GB-AR1 expression was decreased significantly in ID group, similar with SH group (ID vs OJ, p<0.01; ID vs SH, p>0.05), and lower than that of in ED group (p>0.05). Conclusion: The differential expression of IgA mRNA, plgR mRNA, GB-AR1 mRNA, RD-5 mRNA and activities of DAO and sIgA in OJ, ID, ED and SH reflect internal biliary drainage better than external biliary drainage. There may be a regulating mechanism between GB-AR1 and intestinal immune-related index, which thus appears to be a key factor in maintaining function of intestinal mucosa barrier. Disclosure of Interest: All authors have declared no conflicts of interest.

P0419 COMPARATIVE EFFECT OF XYLOGLYCAN ASSOCIATIONS WITH COMPOUNDS FROM ANIMAL OR ALGAE ORIGIN ON LPS-INDUCED ENTERITIS IN RATS

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Introduction: Xyloglucan (XG) is a film-forming agent exhibiting protective effects against diarrhea linked to infectious gastroenteritis in humans; further in animal models, xyloglucan efficacy against cholera-toxin-induced diarrhea was tested when prolonged when this mucoprotectant agent is associated with gelatin from animal origin. The use of compounds from animal source in gaelic formulations is nowadays questionable.

Aims & Methods: Thus, in this study, we aimed at comparing the efficacy of XG associations with gelatin vs XG associated with gelose a moiety from algae origin on LPS-induced enteritis in rats. Since LPS-induced enteritis is characterized by increased intestinal permeability and mucosal inflammation, the efficacy of xyloglucan associations was evaluated by measurement of these two parameters. Male Wistar rats (200–225 g) were orally treated with either E. coli LPS (10 mg/kg) + gelatin (25 mg/kg) or XG (10 mg/kg) + gelose (25 mg/kg) or XG (10 mg/kg) + gelose (50 mg/kg) or vehicle (NaCl 0.9%) 3h before intraperitoneal (IP) administration of LPS from E. coli (1 mg/kg). Six hours later after LPS administration, the animals were sacrificed and strips of ileum were collected in order to evaluate (i) intestinal epithelial paracellular permeability to FITC-dextran 4Kd in Ussing chambers and (ii) mucosal inflammatory response by myeloperoxidase (MPO) activity measurement.
Results: Compared with control, LPS administration induced a significant increase (p < 0.05) of intestinal paracellular permeability (53.0 ± 4.9 vs 181.6 ± 21.1 pmol/cm² respectively) associated with jejunal mucosal inflammation (302.1 ± 9.5 vs 655.6 ± 108.9 U MPO/g protein, respectively). XG (10 mg/kg) + gelose at the lowest dose (25 mg/kg) failed to reverse the intestinal hyperpermeability and mucosal inflammation induced by LPS. In contrast, XG (10 mg/kg) + gelatin (25 mg/kg) and XG (10 mg/kg) + gelose at 50 mg/kg significantly (p < 0.01) and equally prevented LPS-induced hyperpermeability (34.8 ± 2.8, 38.7 ± 3.9 vs 181.6 ± 21.1 pmol/cm² respectively) and jejunal inflammation (27.70 ± 3.22, 286.2 ± 28.8 vs 655.6 ± 108.9 U MPO/g protein respectively).

Conclusion: This study shows that oral treatment with xyloglucan associated with gelose at 50 mg/kg has similar protective effects on LPS-induced enteritis in rats than xyloglucan associated with gelatin. These data demonstrate that algae is an effective and safe substitute for replacing compounds from animal origin in xyloglucan mucoprotectant formulations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0420 RISK FACTORS ASSOCIATED WITH RECURRENCE OF CLOSTRIDIUM DIFFICILE INFECTION IN THE ELDERLY

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Introduction: The old age is one of the most important risk factors for recurrent C. difficile Infection (CDI). However, risk factors among the elderly patients are largely unknown.

Aims & Methods: The purpose of this study was to investigate risk factors associated with recurrent CDI in the elderly. Patients 65 years or older with positive CDI toxin test between January 2005 and December 2016, who received either oral metronidazole or oral vancomycin therapy were included. Recurrent CDI was defined as another positive laboratory result for C. difficile toxin between 15 days and 90 days after initial positive diagnostic test. Clinical charts of relevant factors in 633 patients with positive CDI toxin test between January 2005 and December 2016, who received in the other.

Results: The overall mean age was 77.0 ± 9.5 years. In 96 (15.2%) of 633 patients, C. difficile toxin was detected again after the initial test. The length of hospital stay was longer in recurrent CDI group than in non-recurrent group (80.54 ± 49.44 vs. 43.81 ± 65.42, P < 0.001). Patients with eGFR < 60 ml/min/1.73 m² were at higher risk for the development of recurrent CDI than those with normal renal function (OR 1.844; 95% CI, 1.139-2.985, P = 0.015). There were no significant differences on mean age (77.21 ± 6.65 in recurrent CDI group vs. 77.01 ± 7.04 in non-recurrent CDI group, P = 0.799) and proton pump inhibitor therapy (OR 1.277; 95% CI, 0.825 to 1.977, P = 0.272) between both groups. Renal function and length of hospital stay were significantly associated with recurrence of CDI.

Conclusion: In this study, impaired renal function and prolonged hospitalization were related to the increased risk of recurrent CDI.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
3. Freedberg DE, Salmasian H, Friedman C, Abrams JA. Proton pump inhibitor therapy (OR 1.277; 95% CI, 0.825 to 1.977, P = 0.272) between both groups. Renal function and length of hospital stay were significantly associated with recurrence of CDI.

Analysis of the clinical factors associated with in-hospital mortality in all patients

Characteristic | Odd ratio | 95%CI | P-value
---|---|---|---
Univariate analysis | | | |
Age > 65 | 2.071 | 0.691 – 6.209 | 0.194
Gender (male/female) | 0.545 | 0.184 – 1.619 | 0.375
Immunocompromised status | 0.986 | 0.328 – 2.969 | 0.981
Intensive care unit admission | 6.871 | 2.068 – 22.833 | 0.002*
Requisite time of diagnosis (day after admission) | 1.034 | 1.002 – 1.066 | 0.034*
General condition | | | |
Sepsis | 1.039*10^-9 | 0.000 – > 10^-12 | 0.998
Shock | 5.714 | 1.793 – 18.210 | 0.003*
Respiratory failure | 4.062 | 1.309 – 12.610 | 0.015*
Operation before diagnosis | 5.200 | 0.583 – 17.553 | 0.180
Underlying diseases | | | |
Immunological bowel disease | 0.000 | 0.000 | 0.999
Systemic lupus erythematosus | 4.900 | 0.747 – 32.123 | 0.009
Solid organ transplantation | 2.941 | 0.147 – 49.636 | 0.454
Solid organ malignancy | 0.941 | 0.902 – 9.671 | 0.959
Hematological malignancy | 2.941 | 0.147 – 49.636 | 0.454
Liver cirrhosis | 0.941 | 0.902 – 9.671 | 0.959
Chronic kidney disease | 2.067 | 0.576 – 7.421 | 0.265
End stage renal disease | 3.357 | 0.742 – 15.181 | 0.116
Diabetes mellitus | 1.682 | 0.543 – 5.205 | 0.367
HIV infection | 0.000 | 0.000 | > 10^-12 | 0.999
Immunosuppressive medication | | | |
Immunosuppressant | 3.200 | 0.583 – 17.553 | 0.180
Chemotheraphy | 4.840*10^-9 | 0.000 – > 10^-12 | 1.000
Steroid | 1.124 | 0.336 – 3.764 | 0.049
Steroid over 1 month | 2.350 | 0.472 – 11.078 | 0.297

P0421 CLINICAL CHARACTERISTICS OF CYTOMEGALOVIRUS COLITIS: 15 YEAR-EXPERIENCE IN A TERTIARY MEDICAL CENTER

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Introduction: Cytomegalovirus (CMV) colitis in adults is mostly described in immunocompromised patients (solid organ or hematopoietic stem cell transplant recipients, patients with human immunodeficiency virus (HIV) infection, use of immunosuppressive drugs, including steroid or chemotherapy agents), and often has poorer outcome than in children. Besides, it was also frequently presented in patients with known or subsequent new diagnosis inflammatory bowel disease [1, 2]. However, there are only case reports and few case series with limited patients (below 15 cases) among immunocompetent individuals without known use or inflammatory bowel disease [3-5]. The largest meta-analysis study of cytomegalovirus colitis in immunocompetent hosts included 44 patients and noted advanced age, male gender, presence of immune-modulating comorbidities and need of surgical intervention negatively influencing survival in 2005 [6]. The case number of CMV colitis in immunocompetent patient seemed increasing in our hospital these years. There was no single study showing comprehensive clinical characteristics, identifying the independent factors of in-hospital mortality and comparing the differences between immunocompetent and compromised patients with CMV colitis. Therefore, we tried to clarify the issue in this study.

Aims & Methods: We enrolled 42 immunocompetent patients and 27 immunocompromised patients with CMV colitis diagnosed by immunohistochemistry stain between April 2002 and December 2016 in Linkou Chang Gung Memorial Hospital, a 3383-bed tertiary medical center and referral center in Taiwan. We analyzed the risk factors of in-hospital mortality and overall survival. Furthermore, we compared the clinical differences between immunocompetent and immunocompromised patients with CMV colitis.

Results: Early diagnosis (before 9 days) was independent predictor of in-hospital mortality in CMV colitis patients. ICU admission (P = 0.010), requisite days of diagnosis>9 days after admission (P = 0.018), shock (P = 0.001), respiratory failure (P = 0.003), hemoglobin < 10 g/dL (P = 0.002), Creatinine > 1.37 mg/dL (P = 0.004) and CRP>29 mg/dL (P = 0.011) negatively impacted on overall survival. There were older and more comorbidities in immunocompetent group. However, the in-hospital mortality rate and overall survival rate was similar to immunocompromised group. Besides, Closstridium difficile infection or steroid didn’t affect in-hospital mortality rate and overall survival rate neither. Melena was first and most common symptom in immunocompetent group, but diarrhea in the other.
Analysis of the clinical factors associated with in-hospital mortality in all patients

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Conclusion: Immunosuppressed patients or steroid users did not have higher in-hospital mortality rate. Early diagnosis was only independent factor for lower in-hospital mortality in patients with CMV infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Khan TV, Toms C. Cytomegalovirus Colitis and Subsequent New Diagnosis of Inflammatory Bowel Disease in an Immunocompetent Host: A Case Study and Literature Review. Am J Case Rep 2016; 17: 538-43.

Aims & Methods: The aim of this study was to assess effectiveness of FMT for recurrent CDI therapy in the hospital of Lithuanian University of Health Sciences (LUHS KK, Kaunas, Lithuania). Clinical data of patients who were treated for recurrent CDI (>2 times) using FMT in the Department of Gastroenterology of LUHS KK during 2015–2016, were analyzed. All patients were monitored for disease relapse for six months. Clinical data, the use of antibiotics and immunosuppressive drugs were included in analysis. Statistical analysis was performed using statistical software package SPSS version 17.

Results: FMT was used for 18 patients with recurrent CDI. The mean age of patients was 60.4 ± 8.4 years. The patients were treated with antibiotics 14.8 days on average before manifestation of CDI. FMT procedure was performed using nasoenteral tube. After the first procedure, the positive clinical effect was observed in 15 patients with a cure rate of 83.3%. FMT procedure was repeated for two out of the three patients without positive effect (one patient refused repetitive FMT). Normal stool habits were restored in both patients leading to the increase of cure rate to 94.4% (17 out of 18 patients). Seventeen patients that were successfully treated with one or two FMT procedures in the short term also remained asymptomatic (100%) at 6 months of follow up. All patients without positive effect of first FMT procedure were on immunosuppressive drugs (3/3).

Conclusion: FMT is an effective therapy for recurrent CDI infection both in short and long term follow up. Effectiveness of primary FMT treatment could be associated with the use of immunosuppressive drugs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
A SYSTEMATIC REVIEW AND META-ANALYSIS OF IN-HOSPITAL DELAY BEFORE SURGERY AS A RISK FACTOR FOR COMPLICATIONS IN PATIENTS WITH ACUTE APPENDICITIS
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Introduction: The traditional fear that every acute appendicitis will eventually perforate leads to prompt surgery, but this fear may be outdated. In-hospital delay of surgery for acute appendicitis has been subject of a large number of studies. However, consensus about the consequences of delaying appendectomy is lacking, which is reflected in variety or absence of recommendations in guidelines.

Aims & Methods: The aim of this study was to assess in-hospital delay of surgery and its relation with complications in patients with acute appendicitis. PubMed and EMBASE were searched from 1990 to July 2016. Outcome measures of interest were complicated appendicitis, surgical site infections and postoperative morbidity. All studies reporting surgically treated patients with one of these outcome measures in two or more predefined time intervals were included. Adjusted odds ratios were pooled using forest plots if possible. All unadjusted data was pooled using generalized linear mixed models.

Results: Forty-five studies with 152,314 patients were included. Pooled adjusted odds ratios revealed no significantly higher risk for complicated appendicitis when delaying appendectomy for 6 to 12 hours or 13 to 24 hours; odds ratio 1.07 (95% CI 0.98–1.17) and 1.09 (95% CI 0.95–1.24), respectively. For a delay of 24 hours or more the sufficient adjusted data was available for risk analysis. Pooled unadjusted data showed a decreased risk for complicated appendicitis when appendectomy was delayed for 24 to 48 hours, however statistical uncertainty in this interval increased considerably compared to the first 24 hours.

Conclusions: In-hospital delay of appendectomy for up to 24 hours after admission did not result in higher rates of complicated appendicitis, surgical site infections or morbidity. When prompt surgery is hampered by logistic or personal reasons, delaying appendectomy up to 24 hours is an acceptable alternative for patients with no preoperative signs of complicated appendicitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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References


I. Van Rongen

LOWER GASTRO-INTESTINAL BLEEDING: RESULTS OF THE P0432 EARLY VERSUS STANDARD COLONOSCOPY – A

than those in the single bleeding episode group (5902 vs 2912

had single bleeding episode. The cumulative recurrent bleeding rate in the recur-

Results:

fusion need, was determined.

disease), internal medicine (antithrombotic drug, non-steroidal anti-inflamma-

Moreover, the relationship between recurrent bleeding episodes and the patients'

were cerebro-cardiovascular disease (P = 0.004) and 11% vs. 2% (p = 0.02) respectively. The reason for more recurrent bleedings could not be established, although use of anti-thrombotic therapy might be a factor. No difference was observed regarding the number of patients diagnosed with either a confirmed active bleeding or presumptive bleeding source. In both groups, blood transfusion rate was similar and thirty-day mor-

Conclusion: In patients with LGIB, early colonoscopy reduces the length of hospital stay compared to standard colonoscopy. However, more recurrent bleedings are observed and no improvement of diagnostic yield could be established.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0432 EARLY VERSUS STANDARD COLONOSCOPY – A RANDOMIZED CONTROLLED TRIAL IN PATIENTS WITH ACUTE LOWER GASTRO-INTESTINAL BLEEDING: RESULTS OF THE BLEED STUDY

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Introduction: The incidence of acute lower gastrointestinal bleeding (LGIB) is estimated at 21 adults per 100,000 person years and male (82.1%) in the anticoagulant group were higher than those in the normal group (67.7 ± 11.2 years and 64.1%). There was a difference between the groups in size of polyp and morphology. In the anticoagulants group, 34 patients received heparin brid-

Warfarin. But, direct comparison of DOAC and warfarin in the patients with gastrointestinal bleeding was little reported.

Aims & Methods: We retrospectively analyzed 18 on DOAC and 60 cases on Warfarin of the patients with gastrointestinal bleeding from January 2011 to March 2017 on the basis of single-center experience in Japan. We analyzed concerned red cell (CRC) and fresh frozen plasma (FFP) transfusion, bleeding rate during hospitalization, the duration from bleeding to endoscopy, from endoscopy to discharge and from bleeding to discharging in both group.

In DOAC group, each 6 patients took Darbropabin, Rivaroxaban and Apixaban.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0433 THE COMPARISON OF DIRECT ORAL ANTICOAGULANTS (DOAC) AND WARFARIN FOR ANTICOAGULATION IN THE PATIENTS WITH GASTROINTESTINAL BLEEDING


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Introduction: Direct oral anticoagulants (DOAC) are now popularly used as anticoagulation for atrial fibrillation and deep vein thrombosis, as well as Warfarin. But, direct comparison of DOAC and warfarin in the patients with gastrointestinal bleeding was little reported.

Aims & Methods: We retrospectively analyzed 18 on DOAC and 60 cases on Warfarin of the patients with gastrointestinal bleeding from January 2011 to March 2017 on the basis of single-center experience in Japan. We analyzed concerned red cell (CRC) and fresh frozen plasma (FFP) transfusion, bleeding rate during hospitalization, the duration from bleeding to endoscopy, from endoscopy to discharge and from bleeding to discharging in both group.

In DOAC group, each 6 patients took Darbropabin, Rivaroxaban and Apixaban.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

(continued)
Results: Patient characteristics such as age, anti-platelet therapy, location of bleeding and bleeding after endoscopic procedure had no significant difference in both groups. Upper gastrointestinal bleeding occurred 6 (33.3%) of DOAC group and 2 (8.3%) of Warfarin group (p = 0.20), lower gastrointestinal bleeding occurred 2 (11.1%) vs 9.6 g/dl and 9.6 g/dl (p = 0.26) and international normalized ratio of prothrombin time (PT-INR) was significantly prolonged in Warfarin group (1.51 ± 0.36 vs 2.50 ± 0.20, p = 0.02). CRC transfusion rate had no significant difference in both group (3.0 days vs 5.5 days (p = 0.02), but the duration from endoscopy to discharge was significantly longer in Warfarin group (9.0 ± 5.5 days vs 23.0 ± 3.0 days, p = 0.03). The duration from bleeding to discharge was significantly longer in Warfarin group (9.8 ± 5.4 days vs 24.2 ± 3.0 days, p = 0.02). Thrombotic embolism during hospitalization occurred only 1 (1.7%) of Warfarin group.

Conclusion: The duration of hospitalization was significantly shorter in DOAC group of the patients with gastrointestinal bleeding, and the rate of bleeding and re-bleeding tended to be lower in DOAC group. This study showed that DOAC may be more superior to Warfarin as anti-coagulation for atrial fibrillation and deep vein thrombosis at the quality of life (QOL) in the patients with gastrointestinal bleeding.

Disclosure of Interest: All authors have declared no conflicts of interest.

The duration from bleeding to endoscopy, days 0.8 ± 0.5 1.2 ± 0.2 0.52
The duration from endoscopy to discharge, days 9.0 ± 5.5 23.0 ± 3.0 0.03
The duration from bleeding to discharge, days 9.8 ± 5.4 24.2 ± 3.0 0.02
Thrombotic embolism during hospitalization, n (%) 0 (0.0%) 1 (1.7%) 0.47

P0436 WORLD ENSOGENESIS ORGANISATION CONSENSUS STATEMENTS ON POST-COLONOSCOPY/POST-IMAGING COLORECTAL CANCER


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Introduction: Colonoscopy is an imperfect tool. Several publications confirm colorectal cancer may manifest after a negative colonoscopy(1)-(3). The term “interval cancer” has often been used for cancers appearing after a negative colonoscopy. However, this is primarily a screening term(1). Post-colonoscopy colorectal cancer (PCCRC) is a broader term for cancers detected after a negative colonoscopy in any setting, including screening(2). Although there is overlap between these terms, they are not synonymous. PCCRC can be thought of as the overarching term. PCCRC can be subcategorised into interval cancers (identified prior to the next recommended screening or surveillance procedure) and non-interval cancers (identified at or after a recommended screening or surveillance interval, or where no subsequent screening or surveillance interval had been recommended, up to 10 years following the colonoscopy).

Aims: The goal of this consensus process was to provide a framework for the terminology, identification, analysis and reporting of cancers appearing after a negative colonoscopy or computed tomographic colonography (post-colonoscopy/post-imaging colorectal cancers- PCCRC/PICRC respectively). We based our methodology on The Appraisal of Guidelines for Research and Evaluation (AGREE II) tool(4). An international multidisciplinary team (gastroenterologists, pathologists, epidemiologists, a radiologist and a patient representative) who were summoned by the World Endoscopy Organisation (WEO); the final panel consisted of 20 voting members. The following topics were addressed by 2 working groups (WGs): 1. Aetiology WG 1.1 Terminology of aetiology categories. 1.2 Risk factors/potential explanations of PCCRC 1.3 How to ascribe potential explanations 1.4 Minimal colonoscopy, histology and radiology datasets to examine PCCRC 1.5 Molecular tests to be performed to examine PCCRC 1.6 Prevention of PCCRC in high-risk groups 2. Performance WG 2.1 PCCRC calculation & reporting 2.2 PCCRC monitoring 2.3 PCCRC papers peer-review 2.4 Post-imaging CRC A literature search was performed in MEDLINE and Cochrane using terms “colorectal cancer AND interval cancer”; “healthcare quality assurance AND colorectal cancer” and “healthcare quality assurance AND colorectal cancer AND interval cancer”. The final output consisted of 391 articles. Proposed statements were subjected to anonymous voting via e-correspondence. Each statement was scored on a scale of 1 (strongly agree) to 5 (strongly disagree)
5 (strongly disagree). A modified Delphi process was followed; consensus reached at maximum. In areas containing disagreement, a recommendation for or against a particular statement required both >50% of participants in favour and <20% preferring the comparator. Failure to meet this resulted in no recommendation. The GRADE system for rating evidence and strength of recommendations was applied to final statements. Results: The final output consists of 21 statements providing guidance on key aspects of PCCRC/PICRC, namely definitions, terminology, qualitative review/ aetiology attribution and quantitative assessment of cases. A Root-Cause Analysis checklist as well as a PCCRC/PICRC manuscript peer-review checklist were also developed.

Conclusion: This is the first consensus aiming to standardise terminology around PCCRC. Each previous study defined PCCRC differently, making its use for benchmarking purposes impossible. This consensus presents a methodology for analysis of causation of PCCRC/PICRC and defines its potential role as a key quality indicator, providing recommendations for future investigators, policy makers, services and patients.

Disclosure of Interest: E. Dekker: Research grant from Olympus and endoscopic equipment on loan from Olympus and Fujifilm. A. Plumb: I have no conflicts related to the present project. Other disclosures (not related to the present project): I have received payment for educational lectures organized by Fujikko, a pharmaceutical company, and the medical device company Acelyt. H. Singh: No direct conflicts of interest. In terms of industry funding, disclosure includes Advisory Board for Pandomph and research funding from Merek C.

References

P0437 EXCESS RISK OF SECOND PRIMARY CANCERS IN YOUNG-ONSET COLORECTAL CANCER SURVIVORS

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Introduction: Early colorectal cancer (CRC) is still the third most common malignancies in the US according to Colorectal Cancer Statistics, 2017[1]. During past decades, the incidence and mortality of CRC among individuals aged over 50 years are declining significantly, while the rate of CRC in the young is sharply on the rise[2,3]. Excluding rate of young-onset CRC, coupled with increased survival rate, would definitely lead to accumulation of young survivors considerably. There is a growing study reporting the risk of second primary malignancies considerably. There is a growing study reporting the risk of second primary malignancies. The incidence of CRC survivors and this trend was consistent among different subgroups. About 44.6% young patients died of their SPCs. We hope our results may provide some implication for future surveillance and prevention strategies for young CRC survivors.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0438 INCIDENCE OF FECAL OCCULT BLOOD TEST INTERVAL SCREENING IN COLORECTAL CANCER SCREENING: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Worldwide, many organized colorectal cancer (CRC) screening programs use non-invasive fecal occult blood tests (FOBTs). Although the interval colorectal cancer (iCRC) rate is an important performance indicator of a screening program, data on iCRC after negative FOBTs are limited. Aims & Methods: In this systematic review and meta-analysis we compared the incidence of iCRCs following a negative fecal immunochromatographic test (FIT) or gFOBT with fecal occult blood test (gFOBT). Second, we assessed if screening-relating or patient-related factors are associated with FOBT/iCRCs. Ovid Medline, Embase, The Cochrane Library, the Science Citation Index, PubMed publisher and Google scholar were searched up to May, 2016. All studies reporting on the incidence of iCRC following FIT or gFOBT and average CRC screening populations were included, without language restrictions. Main outcome was pooled incidence rate of iCRC per 100,000 person-years (p-y). FOBT iCRC was according to international standards defined as cancer that developed after a negative FOBT and before the next FOBT was due. Pooled incidence rates were obtained by fitting random effect poisson regression models. The between-study heterogeneity of effect-size was quantified using the I2.

Results: We identified 5,873 records, of which 413 full-text articles were assessed for eligibility and 30 studies were included in both qualitative and quantitative analyses. Meta-analyses comprised data of 5,252,563 screening participants, in which 14,030 screen-detected CRCs and 5398 FOBT iCRCs were documented. Pooled incidence rates of iCRC following FIT and gFOBT were 20 (95CI:14-28; F=94%) and 40 (95CI:26-61; F=93%) per 100,000 p-y, respectively. The pooled incidence rate ratio of FIT iCRC compared to gFOBT iCRC was 0.50 (95CI:0.30-0.84, n=30 studies). For each FIT iCRC, three CRCs were found with FIT, while for gFOBT the ratio between iCRC and screen-detected CRC was 1:13. Table 1. No significant differences were found between the relative risk of FIT iCRC in the second and third screening round compared to the first, with 1.03 (95CI:0.94-1.13) and 1.08 (95CI:0.93-1.22), respectively. Incidence rate ratio of FIT iCRC compared with CRC in CRC screening per 100,000 p-y was 0.85 (95CI:0.84–1.7) for males relative to females and 5.0 (95CI:1.2-21) for screennees aged ≥60 relative to <60 years.

Table 1: Baseline data of 30 studies included in quantitative meta-analyses displayed per test type

<table>
<thead>
<tr>
<th>Screening</th>
<th>n= 5, 252, 563</th>
<th>CRCs n= 14, 030</th>
<th>FOBT iCRCs n= 5, 398</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIT n, (%)</td>
<td>4, 774, 516 (85)</td>
<td>12, 172 (87)</td>
<td>400 (80)</td>
</tr>
<tr>
<td>gFOBT n, (%)</td>
<td>478, 047 (9)</td>
<td>1858 (13)</td>
<td>1395 (20)</td>
</tr>
</tbody>
</table>

Conclusion: This is the first study to report on the pooled incidence of FIT and gFOBT iCRC in screening setting. The incidence rate of iCRC after a negative
FOBT is two-fold higher in gFOBT than in FIT, which supports the use of FIT over gFOBT as screening tool. However, for every three FIT-detected CRCs, still one CRC is missed, which highlights the importance to adequately inform screeners about the risk of developing a colorectal carcinoma after a negative FIT.

Disclosure of Interest: E. Wieten: I declare no competing interests. All other authors have declared no conflicts of interest.

P0439 MEASURES OF BODY COMPOSITION AND GENDER DIFFERENCES IN RISK FOR COLORECTAL CANCER – A POPULATION-BASED COHORT STUDY

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Introduction: Age and family history of colorectal cancer (CRC) are the strongest risk factors for CRC. Obesity, commonly assessed based on body mass index (BMI), is associated with an increased risk for CRC in men but the association is weaker in women and differs between studies. We investigated which of the following body composition measures: BMI, waist circumference (WC), waist-hip ratio (WHR), weight-height ratio (WHHR), weight-height-hip ratio (WHHR), A Body Shape Index (ABSI) and percent body fat that best predict the development of CRC in men and women.

Aims & Methods: We used data from Malmö Diet and Cancer cohort in Sweden, including 16,840 women and 10,903 men (mean age, 51.8 years at baseline), followed for a median of 19.8 years. We identified cases with CRC until the end of 2014 using national Swedish registers. Hazard ratios (HR) for CRC, colonic cancer (CC) and rectal cancer (RC) per one standard deviation increase in each body composition measure respectively were calculated using Cox regression models, stratified by sex and adjusted for age, alcohol consumption, smoking, education and physical activity. Likelihood ratio tests and C-statistics were calculated to identify the anthropometric measure that improves the null model the most.

Results: Incident CRC occurred in 880 individuals (477 women) during follow-up. All body composition measures apart from WHHR significantly predicted CRC in men and waist circumference (WC) was the best predictor based on C-statistics and LR-test (HR per standard deviation [SD] increment, 1.19; 95% CI, 1.08–1.31, LR-test p < .001, C-statistics 0.6278). The association between WC and CRC was only found in men with a BMI above 25. All body composition measures apart from WHRR and percent body fat significantly predicted CC in men, again WC was the best predictor (HR 1.25; 95% CI, 1.11–1.42, LR-test p < .001, C-statistics 0.6444). ABSI was the only measure significantly associated with risk for RC in men (HR, 1.24; 95% CI, 1.05–1.47). In women neither of the measures was significantly associated with an increased risk for CRC, CC nor RC.

Conclusion: In this Swedish population-based cohort study on well-characterized participants, body composition measures predicted CRC in men but not in women of the study cohort. For age, education and health behavior WC was the best predictor of CRC and CC in men and the association was only significant in overweight/obese men in stratified analyses. Gender difference in the interplay between sex and measured adipose tissues in the adipose tissue may explain the lack of associations in women.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0440 TH17 CELLS INDUCE EPITHELIAL-MESENCHYMAL TRANSITION VIA IL-17/PI3K/AKT/SNAIL PATHWAY IN COLORECTAL CANCER

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Introduction: T helper 17 (Th17) cells participate in the progression of various cancers. Both tumor-promoting and tumor-suppressing effect have been reported. The role of Th17 cells in colorectal cancer (CRC) remains controversial and the specific mechanism of how Th17 cells affect the development of CRC remains to be explored.

Aims & Methods: The study aimed to clarify the role of Th17 cells in CRC and identify the underlying molecular mechanisms. The percentage of Th17 cells and IL-17 expression were evaluated via flow cytometry, enzyme-linked immunosorbent assay (ELISA), and immunohistochemistry in tissue samples and peripheral blood. Effects and underlying molecular mechanisms of IL-17 cells on epithelial-mesenchymal transition (EMT) process were explored in vitro using IL-17 transfection and in nude mice by implanting IL-17 overexpressed CRC cells. To detect the expression of Th17 cells and EMT process, SW480 cells were co-cultured with Th17 cells via transwell system. Cancer signaling phospho antibody microarray was used to explore the potential signaling pathway. The clinical significance of Th17 cells was investigated in tissue microarrays containing CRC tissues from 90 patients following surgery using immunohistochemistry.

Results: A higher percentage of Th17 cells and serum IL-17 level were found in CRC patients than healthy controls, and Th17 cells presented a gradual upward trend in normal epithelium-adenoma-carcinoma sequence. The overexpression of IL-17 significantly promoted cell proliferation and invasion, and inhibited apoptosis in vitro and in vivo. IL-17 overexpression reduced the expression of E-cadherin and induced the expression of Snail, p-catenin, and Vimentin in both SW480 cells and tumor xenografts, suggesting that IL-17 could induce the EMT process in CRC. When co-cultured with SW480 cells with Th17 cells, we found Th17 cells could directly promote the EMT process of tumor cells. Furthermore, using cancer signaling phospho antibody microarray, we found that PI3K/AKT/Snail signaling pathway played a key role in the regulation of EMT. EMT process could be reversed by LY294002 and IL-17 mAb intervention, suggesting that IL-17/Pi3K/Akt/Snail pathway played a vital role in Th17 cells-induced EMT in CRC. Supporting these findings, in human CRC tissues, immunostaining indicated that the percentage of Th17 cells was significantly associated with E-cadherin expression and AKT phosphorylation. The clinical significance of Th17 cells was authenticated by revealing that the combination of intratumoral Th17 cells and E-cadherin served as a better prognosticator for postoperative tumor recurrence than either marker alone.

Conclusion: Th17 cells promote EMT process and facilitate tumor progression via activating IL-17/PI3K/AKT/Snail signaling pathway in CRC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
CONFOUNDING? A MENDELIAN RANDOMIZATION STUDY

P0443 MUSCARINIC-3 RECEPTOR TARGETED MiRNAs ARE INVOLVED IN BILE ACID-INDUCED PROLIFERATION ON H508 COLON CANCER CELL LINE

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Introduction: Studies with the colon cancer cell lines which express muscarinic-3 (M3) receptors showed that taurine conjugates of lithocholic acid, but not other bile acids, bind to M3 receptors, and stimulate an increase in cell proliferation. On the other hand, many microRNAs (miRNAs) are involved in colon carcinogenesis. However, the interaction of bile acid-M3 receptors and miRNAs and their potential effects in colon carcinogenesis remains to be elucidated.

Aims & Methods: For the first time in the literature, we examined the possible role of M3 receptor-targeted miRNAs on two human colon cancer cell lines: H508, which expresses M3 receptors, and SNU-C4, which does not. Cell proliferation for 6 days after sodium tauro lithocholat (ST) and atropin (A) treatment was analysed by WST-1 method. Expression of M3 receptor gene at mRNA level was analysed by qPCR, and at protein level by Western Blot method. Apoptotic experiments were analysed by Annexin V assay. MiRNAs which possibly targeted M3 receptors were identified by in silico analyses. The methods were repeated three times, and the average values were calculated.

Results: When compared to SNU-C4 cells, M3 receptor gene expression was found to be increased 70-fold on H508 cells. After a 6-day incubation, maximum H508 cell proliferation (300%) was achieved on fifth day with a dose of 300 μM ST, inhibited by a dose of 1 μM A. In contrast, the SNU-C4 cells showed no significant change in cellular proliferation. Treatment of H508 cells with ST caused a decrease (2.53-fold) of M3 receptor gene expression, however, no change of M3 receptor at protein level was seen. No changes in apoptosis on both colon cancer cell lines were observed. Of 25 M3 receptor-targeted miRNAs, expression levels altered in 9; 6 of them were up-regulated (hsa-miR-129-5p, hsa-miR-30c-5p, hsa-mir-224-5p, hsa-miR-30b-5p, hsa-miR-222-5p, hsa-miR-1246) and 3 of them (hsa-miR-30e-5p, hsa-miR-147b, hsa-miR-885-3p) were down-regulated on H508 cells (p < 0.05).

Conclusion: ST interact with M3 receptors which modulate colon cancer cell proliferation on H508 cells. M3 receptor-targeted miRNAs are involved in ST induced proliferation. Whether the use of ursodeoxycholic acid, selective anti-miRNAs, anti-cholinergic agents or other approaches to blocking potential interactions of bile acids/salts with neoplastic colonic epithelium may be a useful adjunct to colon cancer prevention or treatment remains to be determined.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0443 COLORECTAL CANCER AND DYSLIPIDAEMIA: CAUSE OR CONFOUNDING? A MENDELIAN RANDOMIZATION STUDY

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Introduction: Dyslipidaemia and statin use have been associated to colorectal cancer (CRC), but prospective studies have shown controversial results. Dyslipidaemia has been thought to have an important role in inflammatory pathways, oxidative stress and insulin resistance, which could contribute to the pathogenesis of cancer. However, findings from prospective studies that have examined the association between serum dyslipidaemia (low density lipoprotein cholesterol (LDL), HDL or TG) and colorectal neoplasia have been inconsistent. [4-1] It is unknown whether lipids and lipoproteins cause cancer or are intermediate or correlated factors within carcinogenic pathways. Epidemiological studies could be confounded by 3-Hydroxy-3-methylglutaryl-coenzyme A reductase inhibitors (statins) use, which might also have a protective effect to CRC. It is unclear whether it is statin use or dyslipidaemia that prompted statin use, which may be associated with CRC. Indeed, a large number of epidemiological studies have examined the effect of statins on colorectal cancer risk, with often inconsistent results.[5-6] A Mendelian randomization approach could help to establish a causal relationship between dyslipidaemia and CRC.

Aims & Methods: We aimed at determining whether dyslipidaemia is causally linked to CRC risk and to explore association of statins with CRC. A case-control study was performed including 1336 CRC cases and 2744 controls (MCC-Spain) between 2008 and 2013. Subjects were administered an epidemiological questionnaire that included lifetime regular use of prescription drugs. Also, subjects were genotyped with an exome array supplemented with 5000 custom SNPs. We applied the Mendelian randomization approach. The array included 136 SNPs previously shown to be associated with blood lipids levels in GWAS, that were used to build three genetic lipid scores, as the count of risk alleles. The scores were specific for low density lipoprotein cholesterol (LDL), high density lipoprotein cholesterol (HDL) or triglycerides (TG). We tested on the association on regular statin use and the genetic lipid scores with logistic regression models, adjusted for potential confounders.

Results: The LDL genetic risk score was significantly associated with statin consumption (OR = 1.07, 95%CI 1.05–1.10, p = 4.4e-11). The dyslipidaemia genetic risk score was not significantly associated with CRC for either of the target lipids studied. Cases had the same average alleles as controls in all the lipids traits. Statin use was a borderline significant protective factor for CRC (multivariate adjusted OR = 0.83; 95%CI 0.69–1.00, p = 0.049).

Conclusion: Using the Mendelian randomization approach, our study does not support the hypothesis that lipid levels are associated with the risk of CRC. This study does not rule out, however, a possible protective effect of statins in CRC by a mechanism unrelated to lipid levels.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
METACHRONOUS LESIONS

P0444 LINCO00152 LONG NON-CODING RNA FACILITATES CELL POLYPYSIS THROUGH REGULATION OF CELL CYCLE AND WNT SIGNALING PATHWAY

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Introduction: Long non-coding RNAs (lncRNAs) contribute to different cancers including colorectal cancer (CRC) through influencing cancer-related processes such as cell proliferation, apoptosis, and invasion. Previous studies have shown altered LINCO00152 expression in CRC, but the detailed mechanism of its effects during colorectal carcinogenesis and cancer progression is not well studied.

Aims & Methods: We aimed to study the effects of LINCO00152 to the cell cycle regulation and promoter DNA methylation of several CRC-associated tumor suppressor genes in colon cancer cells. We also analyzed the expression and promoter DNA methylation of LINCO00152 and of its regulated molecules in human colon tissue samples. LINCO00152 were silenced in SW480 colon tumour cells using Stealth siRNAs. Cells were harvested 48 or 72 hours after transfection.

Flow cytometric cell cycle analysis was performed using propidium iodide staining. Cyclin D1 protein expression was detected using flow cytometry after labeling with anti-cyclin D1 antibody. The effect of LINCO00152 silencing to DNA methylation levels of SFRP1, SFRP2, SDC2 and APC promoter gene promoters was studied using Methylation technology. Promoter methylation and expression of the above molecules were also studied on human colon tissue samples.

Results: LINCO00152 expression was successfully silenced in SW480 cells with 93–99% efficiency. Colorectal cancer cell line decreased cell growth, apoptosis and decreased cyclin D1 protein expression. LINCO00152 knockdown did not affect the promoter methylation status of SFRP1, SDC2 and PRIMA1 genes, while reduced the DNA methylation level of SFRP2 promoter. Remarkable hypermethylation of SFRP2 and PRIMA1 promoters was detected in CRC compared to normal samples (p < 0.01), which correlated with increased expression (R = 0.90). SFRP2 promoter hypermethylation and decreased expression were measured in CRC and adenoma tissues compared to normal samples (p < 0.05). Conversely, expression of mutant KRAS in CRC can contribute to CRC development by facilitating cell proliferation through upregulation of cyclin D1 cell cycle progression gene and by affecting promoter methylation of SFRP2 tumor suppressor gene. On human tissue level, similar signaling pathway alterations were detected.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0445 GENETIC PROFILE OF POLYPS AND RISK OF ADVANCED METACHRONOUS LESIONS

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Introduction: Colorectal cancer (CRC) frequently harbours concomitant mutations in KRAS and APC that promote carcinogenesis. Epigenetic dysregulation plays essential roles in the tumorigenesis of KRAS mutant CRC. Our preliminary data demonstrated that simultaneous KRAS gain-of-function mutations in APC-null CRC cells induced the hypermethylation of DNA and histones, an effect driven by metabolic rewiring of glutamine metabolism. We recently unveiled that glutamine metabolism in KRAS mutant CRC could be rewired by the mitochondrial glutamate transporter, SLC25A22, a synthetic lethal gene against KRAS-mutant CRC in vivo and in vitro. In this study, we investigated the potential role of SLC25A22-mediated glutaminolysis in regulating DNA and histone methylation in CRC, its underlying mechanisms, and the association of SLC25A22 with epigenetic dysregulation in human CRC cohorts.

Aims & Methods: We aim to 1) evaluate the impact of mutant KRAS on DNA and histone methylation in CRC; 2) examine the role of SLC25A22 in DNA and histone methylation in KRAS-mutant CRC; 3) elucidate the underlying mechanisms that underlie SLC25A22-mediated epigenetic dysregulation; and 4) investigate the clinical relevance of the genetic association between SLC25A22 and CRC risk.

Results: Using three pairs of isogenic cell lines harbouring wild-type and mutant KRAS (DKS80WT vs DLD1(mutant); HKE3(TOT) vs HCT116(mutant); ICT(WT) vs ICT-KRAS(mutant)), we demonstrated that significant DNA and histone H3 hypermethylation in cell lines expressing mutant KRAS. DNA hypermethylation was associated with the up-regulation of 5-hmc, indicating suppressed DNA demethylation in KRAS mutant CRC cell lines. Metabolic analysis revealed that KRAS mutation modified glutaminolysis via TCA cycle leading to high succinate and fumarate to α-ketoglutarate (αKG) ratio, which was to pivotal in suppressing the enzymatic activity of dioxygenases such as TET1 and thus, favoring DNA hypermethylation. Interestingly, simultaneously APC-loss and KRAS activating mutations synergistically up-regulated the expression of SLC25A22, a key regulator of glutamine metabolism via the TCA cycle. CRISPR-Cas9 mediated knockout of SLC25A22 suppressed glutaminolysis in KRAS-mutant CRC cell lines, which in turn, reduced the ratio of succinate and fumarate to α-ketoglutarate. The impact of SLC25A22 knockout on glutaminolysis had a profound effect on epigenetic regulation, as DNA methylation profiling revealed that SLC25A22 knockdown restored DNA hypermethylation levels in non-mutated KRAS-mutant CRC cell lines. Moreover, histone H3 methylation was reduced at multiple histone marks after the knockout of SLC25A22. These data implied that SLC25A22 inhibited DNA and histone demethylases by promoting the production of succinate and fumarate, which in turn, reversed the effect of SLC25A22 knockout on DNA and histone methylation in KRAS-mutant CRC cell lines. In addition, succinate restored cell growth in SLC25A22 knockout cell lines, suggesting that epigenetic dysregulation was closely associated with tumorigenesis. In human CRC, SLC25A22 expression was positively associated with CIMP (P < 0.0001) and histone H3K36me2 methylation status (P < 0.0001).
Conclusion: SLC25A22 promotes the tumorigenicity of KRAS mutant CRC by driving aberrant DNA and histone hypermethylation, an effect mediated by increased production of TCA cycle intermediates succinate and fumarate, which inhibits DNA and histone demethylases. SLC25A22 is correlated with CIMP and histone hypermethylation in CRC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0447 FOLLISTATIN-LIKE PROTEIN 1 SUSTAINS COLON CANCER CELL GROWTH AND SURVIVAL
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Introduction: Follistatin-like protein 1 (FSTL1) is a secreted glycoprotein, widely expressed in human tissues, which plays key functions in the regulation of cell survival, proliferation, differentiation and migration. Moreover, deregulated expression of FSTL1 has been described in malignancies but its contribution to carcinogenesis remains controversial.

Aims & Methods: We here investigated the expression and role of FSTL1 in sporadic colorectal cancer (CRC). FSTL1 was evaluated in human CRC samples and cell lines by immunohistochemistry, Western blotting and real-time PCR. Cell proliferation and survival cell culture were evaluated in human CRC cell lines (i.e., HCT-116, DLD-1) treated with a specific FSTL1 antisense (AS) or control oligonucleotide. Western blotting, Western blotting and flow-cytometry were used to assess the expression of proteins involved in cell cycle progression, poly ADP-ribose polymerase (PARP), caspase-9 and active caspase-3. Moreover, the effect of FSTL1 knockdown on cell death was evaluated in cells cultured in the presence or absence of the pan-caspase inhibitor Q-VD-OPh by flow-cytometry.

Results: FSTL1 was significantly increased in both epithelial and lamina propria compartments of human CRC specimens as compared to controls. In CRC cell lines, FSTL1 knocked down caused accumulation of cells in G1 phase of the cell cycle and reduced CRC cell proliferation. FSTL1-deficient CRC cells had reduced levels of proteins involved in late G1 cell cycle phase, such as phosphorylated retinoblastoma protein (pRb), E2F-1, cyclin E and cyclin-dependent kinase-2 (CdK2), with no modification of early G1 phase proteins (i.e. cyclin D). Treatment of CRC cells with FSTL1 AS increased the percentages of apoptotic cells and this effect was associated with activation of PARP, caspase-9 and caspase-3. Pre-incubation of HCT-116 and DLD-1 cells with Q-VD-OPh abolished the FSTL1 AS-induced cell death and reduced PARP and caspase activation, thus indicating that FSTL1 silencing induces CRC cell death through a caspase-dependent mechanism.

Conclusion: Our data indicate that FSTL1 is over-expressed in CRC cells and suggest a role for this protein in promoting intestinal tumorigenesis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0448 TP53 MUTATION ACQUIRES HIGHER MALIGNANT POTENTIAL IN HUMAN COLON CANCER CELLS
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Introduction: TP53 mutation in colon cancer. TP53 mutation is well known to occur in the late phase of colon carcinogenesis as adenoma-carcinoma sequence. Although numerous reports about clinical information of the patients with colon cancer have suggested that TP53 mutation might be related to various malignant potentials, the effect of TP53 mutation on malignant potential of colon cancer is still unknown. Notably, there is no report about a relationship between TP53 mutation and cancer stemness. Therefore we aimed to assess the function of TP53 mutation in colon cancer cells, by using recently established lentiviral CRISPR Cas9 system.

Aims & Methods: Two types of TP53 mutation were generated in LS174T cells, which are derived from human colon adenocarcinoma with wild-type TP53 (WT-TP53), by using lentiviral CRISPR Cas9 system. The guide RNAs were designed to bind exon 3 or exon 10 of TP53, respectively. TP53 mutation in LS174T was confirmed by direct sequencing. The expression of TP53 protein was assessed by immunohistochemistry. Loss of function of TP53 was assessed by Nutlin-resistance and the expression of TP53 target genes. Malignant potentials of TP53-mutated LS174T cells were measured by soft agar formation assay and cell migration assay for cell proliferation, cancer stemness and cell migration, respectively. Chemo-resistance was also assessed by the treatment with 5-FU and L-OHP.

Results: We first selected LS174T cells with WT-TP53 because TP53 gene has already been mutated in almost colon cancer cell lines. We then successfully established 2 types of TP53 mutation in LS174T cells due to high effectiveness of gene-mutating by lentiviral system. Mutation in exon 3 (TP53Ex3e) and exon 10 (TP53Ex10) of TP53 created the shorter form of TP53 (TP53Ex3: 55a.a.; TP53Ex10: 377a.a., respectively) compared to WT-TP53 (393a.a.). Mutant TP53 (TP53Ex10) is strongly expressed in nuclei as often shown in colon cancer region, whereas both WT-TP53 and mutant TP53 (TP53Ex3) are not expressed in LS174T cells. In contrast, both TP53 mutants (TP53Ex3e and TP53Ex10) showed Nutlin-resistance and the down-regulation of TP53 target genes, suggesting that both mutants induced loss of function of TP53. We then assessed the effect of both TP53 mutants on various malignant potentials, resulting in accelerated cell growth, enhanced invasiveness and the resistance against Nutlin-3 treatment compared to WT-TP53. Moreover, both mutants showed more frequent formation of 3D sphere and more expression of Lgr5 than WT-TP53, suggesting the promotion of cancer stemness by TP53 mutation even after being adenocarcinoma.

Conclusion: We found the first time showed the direct effect of TP53 mutation on malignant potential in colon cancer cells. Loss of function of TP53 induced by not only TP53Ex10 but also TP53Ex3 mutation, might promote malignant potentials including cancer stemness at the late phase of carcinogenesis. In general, TP53 is a tumor suppressor gene in cancer region is represented as TP53 mutation. However, negative staining of TP53 might also be careful for TP53 mutation to estimate malignant potential in colon cancer, since N-terminal mutation of TP53 in colon cancer has already been reported.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0449 PROTECTIVE EFFECT OF OPIOID RECEPTOR ACTIVATION IN THE DEVELOPMENT OF COLITIS-ASSOCIATED COLORECTAL CANCER IN MICE
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Introduction: Endogenous opioid system is involved in the maintenance of the intestinal homeostasis. Recently, we proved that stimulation of opioid receptors using P-317 – a novel cyclic morphinepeptan analog with mu- and kappa-opioid receptor affinity, resulted in alleviation of acute phase of experimental colitis (induced by dextran sodium sulfate [DSS]) in mice. Chronic inflammation is associated with increased risk of colitis-associated colorectal cancer. Stimulation of opioid receptors produces different effects on cancer progression depending on the cancer type and stage of disease.

Aims & Methods: The aim of our studies was to characterize the role of the endogenous opioid system in pathogenesis and treatment of colitis-associated colorectal cancer using P-317. Colitis-associated colorectal cancer was induced by a single intraperitoneal injection of azoxymethane [AOM] (10 mg/kg) and subsequent addition of DSS (1.5% v/v) into drinking water (week 2, 6, 9). From week 3, P-317 was injected intraperitoneally at the dose of 0.1 mg/kg twice per week and the body weight and clinical score (rectal bleeding, stool consistency) were assessed. After 14 weeks, the macroscopic colon damage score and the samples were collected and used for biochemical, molecular and histological studies.

Results: A significant difference in colorectal tumor development was observed between vehicle- and P-317-treated mice. P-317 significantly increased total number of colonic tumors as well as colon thickness and width after 14 weeks of disease induction. Myeloperoxidase activity, a marker of neutrophil infiltration, was inhibited by P-317 injections. Hematoxylin and eosin staining confirmed anti-tumor activity of P-317 as indicated by histological score connecting the following features: muscle thickness, damage of the intestinal wall, immune cell infiltration, invasion depth, crypt hyperplasia and disruption. The expression of IL-1β and TNF-α at mRNA level was decreased in P-317-treated mice as compared to vehicle-treated group.

Conclusion: P-317 may become an important pharmacological tool to study the factors that determine the development of inflammatory bowel disease and to define the role of the endogenous opioid system in chronic colitis and colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0450 INCREASED HMGB1 EXPRESSION CORRELATES WITH HIGHER EXPRESSION OF C-IAP2 AND PERK IN COLORECTAL CANCER
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Introduction: Colorectal cancer (CRC) is the third most common type of cancer in the world and one of the leading causes of cancer-related mortality. HMGB1 expression and subsequent death due to colorectal cancer is associated with its stage 1, 2. Because of its insidious onset, the diagnosis of CRC is usually delayed. However, serological markers can be a relatively easier and cheaper alternative tool for early-stage CRC, which require high risk population. In CRC, several recent studies have shown that high-mobility group box 1 (HMGB1) plays a critical role in tumorigenesis, disease progression and metastasis by activation of cancer cells, promotion of tumor angiogenesis, suggesting that HMGB1 may be useful as a new biomarker of cancer 1, 2, 3, 4. Studies have shown that HMGB1 is over-expressed in various types of cancers, include CRC, and those cases with higher expression of HMGB1 are associated with lymphatic metastasis, distant metastasis and poor prognosis 5,6. Several reports have demonstrated that HMGB1 is
secreted by cancer cells may be involved in occurrence of tumor metastasis [6, 7]. In a study by Luo et al., authors found that HMGB1 secreted by the primary tumors had an apoptotic effect on the Kupffer cells which promoted development of liver [6, 7]. Furthermore, some researchers showed that increased levels of c-IAP2 and pERK, the downstream effector molecules of HMGB1, are significantly up-regulated in cancers compared with adenomas (P = 0.022) compared with SA. The expression levels of miR-7 were significantly up-regulated in cancers compared with adenomas (P = 0.001). The expression levels of miR-34a were significantly reduced in all tumors compared with paired non-tumorous samples in the same patient. Especially, these miRNAs were significantly reduced in MA (P = 0.042 and P = 0.004) and FAP (P = 0.027 and P = 0.022) compared with SA. The expression levels of miR-7 were significantly up-regulated in cancers compared with adenomas (P = 0.001). The expression levels of miR-34a were significantly down-regulated in CA (P = 0.001), MA (P < 0.001), and FAP (P = 0.006) compared with SA. Conclusion: These findings suggest that the malignant potential of MA and FAP was higher than SA, therefore MA needs strict follow-up like FAP.

Disclosure of Interest: All authors have declared no conflicts of interest. References


P0453
UTILITY OF MEAN PLATELET VOLUME, PLATELETIR, PLATELET-LYMPHOCYTE RATIO AND NEUTROPHIL-LYMPHOCYTE RATIO IN THE DIFFERENTIATION OF COLON CANCER AND COLONIC POLYPS IN OLDER PATIENTS

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Introduction: Colorectal carcinoma (CRC) is an important cause of mortality and morbidity in the elderly and an important area of research for the early detection of colorectal cancer. The aim of the work was to investigate the lipodic profile of serum, red blood cells (RBCs), the serum metabolomic profile from patients with CRC to identify the stage of the disease and the preventive measures of various localizations.

Aims & Methods: Sera, RBCs from 64 patients (52 ± 7 years old) with colorectal adenocarcinoma were analyzed by 1H NMR spectroscopy, gas chromatography. The metabolomics, lipodic profiles generated from each platform were compared between groups locating a total of 98 metabolites (N = 28, 75 and 85 years of age should be tailored on the basis of the presence of coexisting conditions because the risk of serious complications from colonoscopy also increase with age.

Aims & Methods: The aim of this study was to investigate whether MPV, plateletIR, PLR and NLR may have a role in the discrimination of CRC and colonic polyps in older patients. 418 patients aged > 65 years with colorectal carcinoma (n =93) (Group I) and colonic polyps (n =325) (Group II) were included into the study. Also 601 (Group III) patients aged > 65 years with normal colonoscopic findings served as a control group. All study subjects were investigated by using MPV, plateletIR, PLR and NLR in order to establish sensitivity and specificity for predicting colorectal carcinoma and colonic polyps for each parameter studied.
Results: MPV, PCT, NLR and PLR were significantly higher in Group III compared to Group I. However, only MPV significantly decreased in Group II compared to group I (6.2±1.1 vs 8.2±1, p < 0.001). The cut-off value of MPV in predicting CRC from patients with normal colonoscopic findings was 9.15 fL with a specificity and sensitivity of 80% and 91% respectively (r = 0.892). MPV and PCT were also significantly higher in patients with neoplastic polyps compared to patients with non-neoplastic polyps (MPV: 8.7±1.1 vs 8±1, p < 0.001 and PCT: 0.23±0.07 vs 0.19±0.05, p = 0.003).

Conclusion: MPV and PCT may have a role as useful and simple markers in the diagnostic approach of patients with colorectal cancer from patients with normal colonoscopic findings. In the clinical settings, these simple markers may be useful in selecting older patients for colonoscopic examination.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0454 IMPROVING THE SELECTION OF COMPLETE RESPONDERS FOR WATCHFUL WAITING AFTER CHEMORADIOTherapy FOR RECTAL cancer: WHAT CAN WE LEARN FROM THE ‘MISSD’ PATHOLOGIC COMPLETE RESPONDERS AFTER SURGERY?

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Introduction: Rectal cancer patients with clinical evidence of a complete response after chemoradiotherapy may be selected for watchful waiting instead of surgical resection. This strategy and help improve the identification of potential candidates for watchful waiting in the future.

Aims & Methods: We aimed to determine the diagnostic performance of the Radimics signature1 of patients with LARC and evaluate its potential value for pre-treatment prediction of the response to neoadjuvant chemoradiotherapy.

We retrospectively assessed the primary survival stage MRI (1.5T) of 124 LARC patients treated with CRT. The standard MRI protocol included T2-weighted (T2W) and diffusion-weighted imaging (DWI) sequences, as well as quantitative apparent diffusion coefficient (ADC) maps derived from the DWI scans. For each patient, the whole volume of the rectal tumour was delineated on pre-treatment MRI. A final subset of 266 features remained stable and performed across all five readers/delineations. These features resulted in a mean AUC of 0.67 (range 0.64–0.73) as well as reproducible performance (Wilcoxon test, False Detection Rate [FDR] 10%) across different readers/delineations. The cut-off value of 70% vs residual tumour (yT1-yT4) using histology and/or long-term FU as the standard reference.

Conclusion: Various Radimics features extracted from pre-treatment MRI correlate to neoadjuvant treatment response and may be used as imaging biomarkers to predict the response to chemoradiotherapy in rectal cancer. Best results are obtained for textural features (representing tumour heterogeneity) derived from diffusion-weighted MR sequences. Features extracted from semi-automated (software generated) delineations show inferior performance compared to features extracted from manual delineations, emphasizing the need for adequate tumour delineation. Interestingly, however, delineations from expert and non-expert readers rendered similar good results, suggesting that the selected features are robust and do not necessarily require highly expert input.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Reference

P0456 CORRELATION OF ELECTRICAL AND VISCOELASTIC PARAMETERS OF ERYTHROCYTES WITH FATTY ACID COMPOSITION OF THEIR MEMBRANES AND SERUM IN PATIENTS WITH COLORECTAL CANCER
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Introduction: An analysis of the efficient implementation of the guidelines for screening colorectal cancer (CRC) in patients with first diagnosed CRC (according to the archival case histories of the two medical institutions in Novosibirsk) was performed in 2013-2016, and leading reasons of late CRC diagnostics were identified.
Aims & Methods: We aimed to investigate the correlation of the electrical and viscoelastic parameters of erythrocytes with the fatty acid composition of their membranes and blood serum of patients with colorectal cancer (CRC) of different stages. 46 patients (median age of 53 + 9 years old) with CRC of various localizations and stages and 16 conditionally healthy patients were examined.
Results: Saturated fatty acids prevailed in composition of erythrocyte membranes in patients with CRC; omega 6/omega 3 fatty acid index was decreased, while the level of linoleic acid was significantly increased as related to oleic acid in serum of the patients with CRC compared to the healthy people (p < 0.001-0.05).
Conclusion: Revealing changes in the parameters of erythrocytes and fatty acid composition in blood serum associated with a stage of the disease can be promising for diagnostics and the case follow-up of patients with CRC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0458 POST-INVESTIGATION COLORECTAL CANCER RATES INCLUDING POST COLONOLOGY COLORECTAL CANCER RATES IN A DISTRICT GENERAL HOSPITAL: THE POOLE EXPERIENCE MARCH 2015 TO FEBRUARY 2017
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Introduction: Post-colonoscopy colorectal cancer (PC-CRC) rates are proposed quality indicators for screening programmes. Existing data is interesting but important to assess local practise and to compare with recent published National Data. We aimed to calculate the PC-CRC and the post CT (Colonoscopy + abdomen) CRC rate at Poole Hospital using the number of colonoscopies or CT scans done within 3 years of a CRC diagnosis as the denominator for post-investigation PI -CRC calculations as outlined in a previous study.

Aims & Methods: Retrospective audit of all patients diagnosed with CRC during the period from 1st March 2015 to 28th February 2017 was defined via the Somerset Cancer registry database for Poole Hospital using Crystal software. Previous colonoscopy and CT Colonoscopy (CTC) or CT abdomen results in the 3 years preceding the diagnostic investigations were reviewed across two neighboring hospitals sharing the same electronic patient records. If patients had multiple surveillance colonoscopies the latest was counted as false negative as in previous studies.

Results: 416 patients were identified, 67 were excluded (39 non adenocarcinoma, 3 out of area, 12 patients where earlier decision was best supportive care, 6 patients diagnosed at laparotomy, 2 patients with abnormal PET scans and 6 with incomplete datasets). 348 patients were included for analysis. Colorectal cancer was diagnosed by colonoscopy in 200 patients and by CTC or CT in 148 patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0459 RISK OF DETECTION OF GASTROINTESTINAL NEOPLASMS AND DEATH IN SYMPTOMATIC PATIENTS WITH A POSITIVE FECAL IMMUNOCHEMICAL TEST WITHOUT COLORECTAL CANCER

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Introduction: The fecal immunochemical test (FIT) has a high diagnostic accuracy for the detection of colorectal cancer (CRC) in symptomatic patients. However, we do not know the risk of other gastrointestinal neoplasms associated with a false positive test.

Aims & Methods: To calculate the risk of detection of gastrointestinal tract tumors (GITT) and death in symptomatic patients with a positive FIT determination and without a CRC in a complete colonoscopy with an adequate bowel preparation. We designed a prospective cohort study with follow-up. Patients from the COLONPREDICT study with complete colonoscopy without CRC were included. Two cohorts were defined: FIT positive and negative according to the ≥20mg hemoglobin/g of feces threshold. We performed a descriptive analysis of the outcomes detected during follow-up and mortality. We estimated the differences in the risk of GITT detection and mortality between the two cohorts by logistic regression and proportional hazards after adjusting for age, sex, and significant colonic lesions (CSL) detection at baseline colonoscopy.

Results: We included 1061 patients without CRC and a complete baseline colonoscopy, 320 (30.2%) with a positive FIT and 741 with a negative FIT. The median follow-up was of 36.0±8.9 months with no difference between both groups (p=0.2). There were significant differences regarding age (67.5±12.7 years vs. 64.8±13.5 years, p=0.04) and sex (45.9% vs. 52.0% females, p=0.04) between both cohorts. We detected a GITT in 14 (4.4%) patients with a positive FIT: 5 CRC, 6 gastric, 1 small intestinal lymphoma and one patient with a CRC and a small intestine adenocarcinoma; and in 12 (1.6%) with a negative FIT: 4 CRC, 6 gastric, 2 small intestine adenocarcinoma, 1 one esophageal, and one patient with a gastric and a CRC. Patients with a positive FIT had a non-significant increase in the risk of GITT detection (OR 2.1, 95% CI 0.9–4.8) after adjusting for age, sex and SCL. The overall risk of death in both groups was 8.8% and 6.7%, respectively, with no significant differences between both groups in the survival analysis (HR 1.3, 95% CI 0.8–2.1). However, the risk of death due to a GITT was 3.1% (10 deaths) in the positive FIT group and 0.8% (6 deaths) in the negative FIT group, with a significant difference after adjusting for age, sex and SCL (HR 3.2 95% CI 1.2–8.9).

Conclusion: Symptomatic patients with a positive FIT and complete colonoscopy without CRC are at increased risk of death due to GITT regardless of age, sex or the presence of CSL.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0460 LONG-TERM OUTCOMES OF TRANSAAL COLORECTAL TUBE PLACEMENT FOR DISTAL STAGE II/III COLORECTAL CANCER WITH ACUTE COLORECTAL OBSTRUCTION

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Introduction: There is a significant demand for colorectal cancer (CRC) with acute colorectal obstruction (ACO), Transanal colorectal tube (TCT) placement is an alternative endoscopic treatment for ACO; however, the oncological outcomes of TCT placement for the curative treatment of CRC remain unknown.

Aims & Methods: Data were retrospectively reviewed from patients with distal stage II/III CRC who underwent surgery between January 2007 and December 2011 at two Japanese affiliate hospitals with an interexchange of endoscopists and patients. Following clinical endoscopic emergent surgery and the other performed TCT placement as the standard treatment for CRC with ACO. To analyze the efficacy of TCT placement, we compared long-term outcomes for stage II/III CRC with ACO among patients in the two institutions.

Results: In total, 764 patients with distal stage II/III CRC were identified for this study. Among the 764 patients, 690 did not have ACO (non-ACO group), and 74 had ACO (ACO group). In the non-ACO group, we confirmed that the surgical quality was equivalent between the two institutions, with no significant differences in overall survival (OS) (P=0.271) or disease-free survival (DFS) (P=0.184). Among the 74 patients with ACO, 27 underwent emergency surgery (surgery group) and 47 underwent TCT placement (TCT group). The rate of primary resection/anastomosis was higher in the TCT group than in the surgery group (91.5% vs. 22.2%; P=0.001). No significant differences were noted between the two groups in OS (surgery vs. TCT; 5-year OS, 65.9% vs. 58.1%; P=0.452) or DFS (surgery vs. TCT; 5-year DFS, 47.6% vs. 43.1%; P=0.755). Subset analysis also showed no significant differences in OS and DFS between patients with stage II and stage III CRC.

Conclusion: TCT placement can achieve similar long-term outcomes to those of emergency surgery, with a high rate of primary resection and anastomosis for distal stage II/III CRC with ACO.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0461 FACTORS ASSOCIATED WITH THE TECHNICAL DIFFICULTY OF DOUBLE-WIRE WOVEN UNCOVERED SELF-EXPANDABLE METALLIC STENT PLACEMENT FOR MALIGNANT COLORECTAL OBSTRUCTION

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Introduction: Self-expandable metallic stent placement for malignant colorectal obstruction has been widely used; however, factors affecting the technical difficulty of stenting remain unclear.

Aims & Methods: The aim of this study was to clarify the factors associated with the technical difficulty of stenting for malignant colorectal obstruction. We established the Colonic Stent Treatment Research Group to provide instructions on how to safely perform stent placement, and then, we conducted this prospective, single-arm, observational, multicenter clinical trial between October 2013 and May 2014 in Japan. Thirty-two facilities participated in this study. A double-wire woven uncovered stent was placed by using a standard through-the-scope colonoscopic placement technique in each patient. Stent deployment time was defined as the time from reaching a lesion with a colonoscope to finish stenting. Technically difficult cases of stenting were defined as independent factors affecting the technical difficulty of stenting by using univariate and multivariate analyses.

Results: A total of 205 consecutive patients were enrolled in this study. Nine patients including 3 patients with technical failure of stenting, 5 patients with non-stenting and 1 patient with stenting for benign lesion were excluded. The remaining all 196 patients were succeeded in stenting. Of these, 100 were men (51%), and the median age was 72 years old (interquartile range (IQR), 62–82 years old). One hundred eleven patients (57%) underwent stenting as a bridge to surgery, and 85 (43%) underwent stenting for palliation. The technical and clinical success rates were 98.5% and 97.0%, respectively. None of the patients had complications of colorectal perforation. The median total procedure time in the cohort with technical success was 30 minutes (IQR, 18–42 minutes). The median deployment time was 21 minutes (IQR, 11–31 minutes). Forty-nine patients with a deployment time longer than 31 minutes were regarded as technically difficult cases of stenting. The following were identified as independent factors of the technical difficulty in stent placement: presence of ascites (odds ratio, 2.483; 95% confidence interval [95%CI], 1.17–5.29; p=0.02), placement of ≤1 stent (odds ratio, 4.80; 95%CI, 1.10–21.1; p=0.04).

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

PROGNOSIS AND CLINICOPATHOLOGICAL FACTORS OF PATIENTS WHO SELECTED THE FOLLOW-UP OPTION AMONG HIGH-RISK TI COLORECTAL CANCER PATIENTS AFTER ENDOSCOPIC RESECTION BASED ON JAPANESE CLINICAL PRACTICE GUIDELINE: A RETROSPECTIVE OBSERVATIONAL STUDY

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Introduction: Colorectal cancer is the third most common cancer in the world and the fourth leading cause of cancer death1. Treatment strategy for colorectal cancer is selected considering clinical stages. TI colorectal cancer (T1CRC) can be treated with endoscopic resection. If patients have pathological risk factors such as deep submucosal invasion, budding, por/muc pathological features and lymphovascular invasion, they considered to be at high risk of lymph node metastasis based on the indication of Japanese Society for Cancer of the Colon and Rectum guidelines2. In such cases, the selection of subsequent option is important and has been frequently decided by clinicians’ customs and preferences. However, it is not clear whether these risk factors adequately predict patients’ prognosis in clinical practice.

Aims & Methods: This research aims at revealing the prognosis and clinicopathological features of pathologically high-risk T1CRC patients (the high-risk group) with and without additional surgery; followed up by computed tomography, ultrasound, endoscopy, and tumor marker (CEA: carcinoembryonic antigen). 1. To evaluate the difference of overall survival (OS), cancer specific survival (CSS) and recurrent-free survival (RFS) between the patient performed additional colectomy with lymph node dissection (AS) and the patient followed up without additional surgery (FU). 2. To reveal what clinicopathological factors are considered in the selection of subsequent option, whether AS or FU, in the high-risk group. We retrieved the clinical data of 162 patients who had diagnosed and treated as T1 colorectal cancer at Kyoto University Hospital (Kyoto, Japan) between February 2005 and February 2015. Treatment strategy after diagnosis was considered as “high-risk” and clinicopathological features, presence or absence of recurrence, and the final state at the end of February 2017. We used the Kaplan-Meier product limit method and the Log-rank test to compare OS, CSS, and RFS between AS and FU groups. In clinical setting, based on the guideline indication, the clinician offered subsequent options and described their risks and benefits, and the patient expresses his or her preferences and values. Factors considered during selecting treatment strategy were extracted from informed consent and provider’s note of electronic medical records.

Results: Among 162 T1CRC patients, 78 cases were treated with endoscopic resection for the first time. Of them, 46 patients had at least one pathological risk factor (high-risk patients). Among 46 high-risk patients, 22 patients were carefully followed up (FU). 20 patients were performed additional surgery with lymph node dissection (AS). Four patients treated with additional radiation therapy were excluded. Median survival time was 39 (FU) and 62 (AS), respectively. There were no recurrences among the 62 e-curable patients. On the other hand, five recurrences (5%) were found in non-e-curable patients, and they were all in Group A. They consisted of local recurrence (one patient who also had lung metastasis), LN metastasis (two patients), lung metastasis (three patients), and liver metastasis (one patient who also had LN metastasis). There were no significant differences in DSS between Group A and Group B+C (LST-NG). However, OS was 93% in Group A, which was significantly lower than that (96%) in Group B+C (p < 0.05). DFS in Group A was 90%, which was significantly lower than that (100%) in Group B+C (p < 0.05). The prognosis of patients with non-e-curable disease after ER alone showed no significant differences in OS, DFS, and DSS between Group A and Group B+C. The prognosis of patients with non-e-curable disease after surgical resection showed no significant differences in DFS or DSS. However, OS in Group A was 94%, which was significantly lower than that (97%) in Group B+C (p < 0.05).

Conclusion: Long-term outcomes supported the JSCCR criteria for e-curable patients after ER for T1 LSTs. All recurrences occurred in patients with T1 LST-G-M cancer. OS and DFS in the LST-G group were significantly shorter than in the LST-NG group.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Disclosure of Interest:

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Introduction: Colorectal cancer is the third most common cancer in the world and the fourth leading cause of cancer death1. Treatment strategy for colorectal cancer is selected considering clinical stages. TI colorectal cancer (T1CRC) can be treated with endoscopic resection. If patients have pathological risk factors such as deep submucosal invasion, budding, por/muc pathological features and lymphovascular invasion, they considered to be at high risk of lymph node metastasis based on the indication of Japanese Society for Cancer of the Colon and Rectum guidelines2. In such cases, the selection of subsequent option is important and has been frequently decided by clinicians’ customs and preferences. However, it is not clear whether these risk factors adequately predict patients’ prognosis in clinical practice.

Aims & Methods: This research aims at revealing the prognosis and clinicopathological features of pathologically high-risk T1CRC patients (the high-risk group) with and without additional surgery; followed up by computed tomography, ultrasound, endoscopy, and tumor marker (CEA: carcinoembryonic antigen). 1. To evaluate the difference of overall survival (OS), cancer specific survival (CSS) and recurrent-free survival (RFS) between the patient performed additional colectomy with lymph node dissection (AS) and the patient followed up without additional surgery (FU). 2. To reveal what clinicopathological factors are considered in the selection of subsequent option, whether AS or FU, in the high-risk group. We retrieved the clinical data of 162 patients who had diagnosed and treated as T1 colorectal cancer at Kyoto University Hospital (Kyoto, Japan) between February 2005 and February 2015. Treatment strategy after diagnosis was considered as “high-risk” and clinicopathological features, presence or absence of recurrence, and the final state at the end of February 2017. We used the Kaplan-Meier product limit method and the Log-rank test to compare OS, CSS, and RFS between AS and FU groups. In clinical setting, based on the guideline indication, the clinician offered subsequent options and described their risks and benefits, and the patient expresses his or her preferences and values. Factors considered during selecting treatment strategy were extracted from informed consent and provider’s note of electronic medical records.

Results: Among 162 T1CRC patients, 78 cases were treated with endoscopic resection for the first time. Of them, 46 patients had at least one pathological risk factor (high-risk patients). Among 46 high-risk patients, 22 patients were carefully followed up (FU). 20 patients were performed additional surgery with lymph node dissection (AS). Four patients treated with additional radiation therapy were excluded. Median survival time was 39 (FU) and 62 (AS), respectively. There were no recurrences among the 62 e-curable patients. On the other hand, five recurrences (5%) were found in non-e-curable patients, and they were all in Group A. They consisted of local recurrence (one patient who also had lung metastasis), LN metastasis (two patients), lung metastasis (three patients), and liver metastasis (one patient who also had LN metastasis). There were no significant differences in DSS between Group A and Group B+C (LST-NG). However, OS was 93% in Group A, which was significantly lower than that (96%) in Group B+C (p < 0.05). DFS in Group A was 90%, which was significantly lower than that (100%) in Group B+C (p < 0.05). The prognosis of patients with non-e-curable disease after ER alone showed no significant differences in OS, DFS, and DSS between Group A and Group B+C. The prognosis of patients with non-e-curable disease after surgical resection showed no significant differences in DFS or DSS. However, OS in Group A was 94%, which was significantly lower than that (97%) in Group B+C (p < 0.05).

Conclusion: Long-term outcomes supported the JSCCR criteria for e-curable patients after ER for T1 LSTs. All recurrences occurred in patients with T1 LST-G-M cancer. OS and DFS in the LST-G group were significantly shorter than in the LST-NG group.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Cholangiocarcinoma and pancreatic adenocarcinoma account for over 190,000 new cases of pancreaticobiliary malignancy worldwide annually. For palliation of obstructive jaundice in these patients, plastic or self-expanding metal stent (SEMS) are placed. However, re-occlusion rates for currently available stents range as high as 36% for uncovered metal stents, 25% for covered metal stents and 52% for plastic stents. Tissue ingrowth accounts for up to 76% of occlusions of bare metal stents.1, 2, 3 Stent occlusion can result in recurrent obstruction and typically requires endoscopic re-intervention. Therefore there is a real clinical need to reduce tissue ingrowth and improve biliary stent patency rates.

Aims & Methods: In this study we developed and tested a controller-release paclitaxel-eluting SEMS designed to prevent tissue hyperplasia and stent occlusion. A polymer matrix was coated on a nitinol stent with paclitaxel (n = 3, no polymer), standard dose paclitaxel (n = 6, 149.4 µg/paclitaxel) and challenge dose (n = 3, 538.0 µg/paclitaxel). Two stents were endoscopically implanted in each swine from its assigned group, one in the intrahepatic/hilar region and a second in the common bile duct placed proximal to the papilla. Aims of the study was to test the correlation between stent occlusion depth and the rate of residual malignant disease in complete endoscopic mucosal resection (EMR) of malignant colonic sessile polyps. The secondary outcomes include risk factors such as: lymphovascular invasion, tumor budding, differentiation, resection margin status and the presence of tumor budding. A prospective review of the endoscopy charts for the period 2000-2016 was conducted. All patients enrolled exhibited a malignant colonic sessile polyp which was endoscopically completely resected. Histological findings of the polyps were also recorded. Thorough computed or magnetic scanning was performed in all patients before deciding on further management. All patients were advised for the option of surgical treatment or endoscopic follow-up.

Results: 51 patients with confirmed adenocarcinoma in sessile colonic polyps undergoing endoscopic mucosal resection (EMR) were retrospectively included in this study. A total of 33 (64.7%) patients underwent subsequent surgery after EMR, and 18 (35.3%) chose endoscopic follow up. The histological characterizations of these patients presented in Table 1. In Table 2, the patients that underwent surgical follow up and EMR plus Surgery. Factors Total (N = 51), n (%), n (N = 18), n (N = 33), n (%) Submucosal invasion ≤ 1 mm 44 (86.3) 2 (22.2) 64 (88.9) Submucosal invasion > 1 mm 7 (13.7) 4 (22.2) 0 (0) Resection margin status (mm) median (IQR; range) 1 (2, 0–7) 1 (1, 0–4) 0, 4 (1.55; 0–7)

Conclusion: Our data suggest that even in cases with submucosal invasion > 1 mm and the presence of other high-risk features (lymphovascular invasion, tumour budding), complete EMR in malignant colonic sessile polyps supported by the histological findings predicts for a good clinical outcome.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Aims & Methods: In this prospective study, we evaluated the overall survival (OS) of patients treated with chemotherapy and chemoradiation therapy group based on CD-DST. Moreover, we evaluated additional effects of EGFR (Cetuximab; Cmb, Panitumumab; Pmab) to FOLFOX/FOLFIRI using CD-DST. Between Mar. 2008 and Aug. 2016, we obtained tumor specimen from 131 CRC patients without preoperative chemotherapy. Informed consent for measurement of individual chemosensitivity was obtained from all patients in writing. Approval for the present study was obtained from the Tobu Chiki Hospital Institutional Review Board (No: 02.03.29. #1). The growth inhibition was determined by CD-DST. The criteria for complete response (CR) were as follows: FOLFOX; Cmb, Pmab, and FOLFIRI+Cmb. The incubation conditions were as follow: FOLFOX; 5-FU and I-HPH (6.0 and 3.0μg/ml, respectively) for 24h. FOLFIRI; 5-FU and SN-38 (6.0 and 0.2μg/ml, respectively) for 24h. FOLFOX+Cmb; Cmb 250μg/ml for 24h. Pmab; Pmab 200μg/ml for 144h. FOLFOX+Cmb; Cmb 250μg/ml for 120h after FOLFOX/FOLFIRI incubation process. The cumulative distribution of IR values under each condition was evaluated on the basis that the clinical response to the chemoradiation strategy (11/2014–11/2016) were evaluated. W&S

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


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Introduction: The standard treatment for locally advanced low rectal adenocarcinoma (ADC) is to conduct surgical resection after neoadjuvant chemoradiotherapy (CRT). In our wait-and-see (W&S) strategy, those who achieve clinical complete response (cCR) after CRT undergo regular clinical, radiologic and endoscopic surveillance, with surgery being reserved for tumor “regrowth”. Aims & Methods: To evaluate the impact of a W&S strategy for low rectal ADC, regarding overall and disease-free survival. Single-center prospective observational study. All patients with low rectal (up to 6 cm from the anal verge) and then confirmed by the other surveillance methods. This patient underwent a R0 low anterior resection and there were no complications. There were no distant recurrences or deaths. In the subgroup of patients with cCR, pathologic complete response was observed in 20%; there was one lymphatic recurrence; the overall survival was 95.2%.

Conclusion: Preliminary results of our series confirm that the W&S strategy is associated with overall and disease-free survival not inferior to those of the traditional approach, favoring its implementation.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: A total of 1078 patients were colonoscopically followed-up during a long-term period in our hospital. They were divided into group A, B, or C as follows: 445 in group A (mean age 64.7 yr, M:F = 2.37:1); 31 patients with 34 high-grade adenomas or cancers in group A, 6.9% (17 with 17 in group B, and 12.3% (48 with 55) in group C, respectively. The prevalence of metachronous non-index lesion was lower in group C compared to that in group A (P < 0.007), and group B compared to that in group A (P < 0.007). The cumulative incidences of metachronous invasive cancer were 0.9% (4 patients with 4 invasive cancers) in group A, 1.2% (3 with 3) in group B, and 3.6% (14 with 14) in group C, disclosing highest prevalence in group C (p < 0.005). Logrank test revealed that the cumulative incidence of non-index lesion was highest in group C, and statistical significance were observed between group A and C (p < 0.01), and between group B and C (p < 0.001). Logrank test also revealed that the cumulative incidence of index lesion was highest in group C, but no significant differences were observed compared to those in group A and B. Conclusion: Significant higher prevalence of metachronous index lesion including invasive cancer and, in contrast, significant lower prevalence of metachronous non-index lesion were observed in patients after resection of colorectal cancer compared to those after endoscopic resections of colorectal adenoma and intramucosal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: A total of 1595 patients were colonoscopically followed-up during a long-term period in our hospital. They were divided into group A, B, and C as follows; 581 in group A (mean age 65.0 ± 8.9 yr, M:F = 411:170) with colorectal adenoma more than 5 mm in size resected at baseline, 495 in group B (65.2 ± 9.6 yr, 328:167) with diminutive polyps left untreated at baseline, and 519 in group C (62.5 ± 10.7 yr, 255:264) with no polyps at baseline. During follow-up colonoscopies detected metachronous neoplasms more than 5 mm in diameter were resected and pathologically evaluated into non-index lesion (low-grade adenoma) or index lesion (high-grade adenoma or cancer). The cumulative
incidences of metachronous colorectal neoplasms were compared with each other using Log Rank test.

Results: Median follow-up periods and frequencies of colonoscopy were 61.9 months and 3.6 times in group A, 61.6 months and 3.4 times in group B, and 72.3 months and 2.7 times in group C, respectively. The cumulative incidences of metachronous adenoma were 24.4% (102 patients with 375 low-grade adenomas) in group A, 14.7% (73 with 168) in group B, and 6.6% (34 with 56) in group C, respectively. The prevalence of metachronous non-index lesion was highest in group A followed by group B and C, and significant difference was observed between group A and C (P < 0.001), and B and C (P < 0.05). The cumulative incidences of metachronous invasive cancer were 1.0% (6 patients with 6 invasive cancers in group A), 1.4% (7 with 7) in group B, and 0.2% (1 with 1) in group C with no significant difference. Logrank test revealed that the cumulative incidence of non-index lesion was highest in group A, and statistical significances were observed between group A and B (P < 0.0001), and between group B and C (P < 0.0001). Logrank test also revealed that the cumulative incidence of index lesion was highest in group A, and statistical significances were observed between group A and B (P < 0.005), and between group B and C (P < 0.005).

Conclusion: The results of a longer colorectal follow-up disclosed a significantly higher prevalence of metachronous advanced neoplasms in patients with adenoma > 5 mm in size resected at baseline compared to those with diminutive polyps left untreated at baseline. Persons with no polyps at baseline were at very low risk of advanced neoplasia within five years during follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0470 A NEW SCORING MODEL FOR PREDICTING ADVANCED COLORECTAL NEOPLASIA IN ASYMPTOMATIC SCREENING POPULATION AND COMPARISON WITH THE MODIFIED ASIA-PACIFIC COLORECTAL SCORING MODEL
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Introduction: Colorectal cancer (CRC) is still a major cause of death even in countries with a CRC screening program, indicating the need for improved screening methods. Risk-stratification of populations is one strategy that might satisfy this requirement. Currently, in the Asia-Pacific region, the use of the modified Asia-Pacific Colorectal Scoring (APCS) score [age ≥60: 2, male sex: 1, presence of a first-degree relative (FDR) with CRC: 1, current or past smoker: 1, body mass index (BMI) ≥23 kg/m²: 1] has been proposed for risk-stratification.2 However, further validation studies are required to appraise the model and considering the reported discriminatory capability of the score for advanced colorectal neoplasia (ACN), 4 the development of a more useful scoring model is expected.

Aims & Methods: The aim of this study was primarily to develop and validate a new scoring model for predicting ACN in asymptomatic screening populations that is more useful than the APCS score. We externally validated the APCS score in a Japanese screening population and compared its discriminatory capability with that of our new scoring model. Data were reviewed from 5218 consecutive asymptomatic screened individuals who underwent colonoscopy for their first time at the Cancer Screening Center, National Cancer Center Hospital, Tokyo between February 2004 and March 2013. Multivariate logistic regression was used to investigate the associations between clinical variables and the presence of ACN in the subjects, and then a new scoring model was developed based on these associations. Scores were weighted according to the beta coefficient obtained from the logistic regression model. Thereafter, the discriminatory capability of the new model was assessed using the c-statistics in the development set. Performance of the new model was internally validated using bootstrapping with 1000 replicates. The discriminatory capability of the modified APCS score in the 5218 subjects was also assessed using the c-statistics. The value obtained was compared with our new scoring model using the DeLong test. The c-statistics of the new score were significantly higher than those of the modified APCS score, both in the 5, 218 subjects (P = 0.03) and in 1, 000 bootstrapped replicates (P = 0.03).

Conclusion: An 8-point scoring model to predict ACN in asymptomatic screening population that might have a higher discriminatory capability than the modified APCS score was developed and internally validated in this study. Our simple scoring model could stratify the screened population into low-, moderate-, and high-risk groups. Of the detected ACN, a substantial number were proximal or flat; therefore, primary screening with total colonoscopy may be advisable for high-risk individuals.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0471 ASSOCIATION BETWEEN PARAMETERS OF THE RECTAL INHIBITORY REFLEX AND THRESHOLD FOR FIRST RECTAL SENSATION ESTABLISHED BY HIGH-RESOLUTION ANORECTAL MANOMETRY (HRAM) AND ITS SIGNIFICANCE FOR FECAL INCONTINENCE DIAGNOSTICS
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Introduction: Previous studies have shown that increase of threshold for first rectal sensation can be a predictor of fecal incontinence. However, significance of the wide range of rectal inhibitory reflex (%RAIR) in development of this disease remains unknown.

Aims & Methods: To determine association between %RAIR and threshold for first rectal sensation in healthy adults and its significance in development of fecal incontinence. 26 asymptomatic healthy volunteers (18 women, 8 men) median age was 35.03 years (19–59) were studied. We performed them a high-resolution anorectal manometry (HRAM) using a 20 channels silicone water-perfused catheter (Solar GI, MMS, Netherlands). The following HRAM parameters were analyzed: threshold for RAIR and %RAIR (automatically calculated as the ratio of the amplitude of the relaxation of the anal sphincter (AS) to the basal pressure AS *100%), threshold for first rectal sensation (RS) and for desire to defecate. The statistical analyses were performed using Statistica for Windows 6.0 (StatSoft Inc.).

Results: Threshold for RAIR and %RAIR were 22.3 ml(10.0; 30.0), 74.4% (38–99.5) respectively. Threshold for first RS was 30.0 ml(11.1; 58.3) and desire to defecate was 65.12 ml (33.5; 182.6). Threshold for RAIR was not associated with threshold for first RS (r = 0.07) and for desire to defecate (r = 0.02). %RAIR was weak positively correlated with threshold for first RS (r = 0.26) and was not associated with threshold for desire to defecate (r = −0.03).

Conclusion: Threshold for RAIR and %RAIR are not associated with first rectal sensation. So, these parameters of RAIR cannot be predictors of fecal incontinence.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0472 AVOIDANT COPING AND SOMATIZATION PARTLY EXPLAIN THE RELATIONSHIP BETWEEN NEUROTICISM AND GASTROINTESTINAL SYMPTOM BURDEN
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Introduction: Trait neuroticism and the DeLong scoring model to predict ACN was developed and its capability of the score for advanced colorectal neoplasia (ACN), 4 the development of a more useful scoring model is expected.

Aims & Methods: The aim of this study was primarily to develop and validate a new scoring model for predicting ACN in asymptomatic screening populations that is more useful than the APCS score. We externally validated the APCS score in a Japanese screening population and compared its discriminatory capability with that of our new scoring model. Data were reviewed from 5218 consecutive asymptomatic screened individuals who underwent colonoscopy for their first time at the Cancer Screening Center, National Cancer Center Hospital, Tokyo between February 2004 and March 2013. Multivariate logistic regression was used to investigate the associations between clinical variables and the presence of ACN in the subjects, and then a new scoring model was developed based on these associations. Scores were weighted according to the beta coefficient obtained from the logistic regression model. Thereafter, the discriminatory capability of the new model was assessed using the c-statistics in the development set. Performance of the new model was internally validated using bootstrapping with 1000 replicates. The discriminatory capability of the modified APCS score in the 5218 subjects was also assessed using the c-statistics. The value obtained was compared with our new scoring model using the DeLong test. The c-statistics of the new score were significantly higher than those of the modified APCS score, both in the 5, 218 subjects (P = 0.03) and in 1, 000 bootstrapped replicates (P = 0.03).

Conclusion: An 8-point scoring model to predict ACN in asymptomatic screening population that might have a higher discriminatory capability than the modified APCS score was developed and internally validated in this study. Our simple scoring model could stratify the screened population into low-, moderate-, and high-risk groups. Of the detected ACN, a substantial number were proximal or flat; therefore, primary screening with total colonoscopy may be advisable for high-risk individuals.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
predict that somatisation has deleterious consequences for GI conditions - possibly because it encourages reduced physical activity (7).

Aims & Methods: In Study 1, 147 undergraduate students completed measures of neuroticism, 14 coping styles (including avoidant styles such as denial and disengagement), somatisation and GI symptom burden. In Study 2, where participants were undergraduates and hospital outpatients (pooled N = 250), the variables investigated in Study 1 were measured alongside hypochondriasis, which was included to measure the aspect of somatisation that involves worry independently of any actual physical symptoms. Statistical analysis was based on path modeling. It involved fitting a model to test a priori hypothesised indirect relationships between neuroticism and GI symptom severity via the selected coping styles and somatisation. Direct effects were also estimated, meaning that the path analysis provided information regarding the significance of any indirect effects once a range of direct effects were accounted for. Only six coping styles found to correlate with both neuroticism and GI symptom severity were included (see Results table). Coping styles were assumed to covary, and the model in Study 2 assumed a covariance relationship between somatisation and hypochondriasis.

Conclusion: Studies 1 and 2 provide new evidence that somatisation and hypochondriasis are predictive of GI symptom burden via coping. These findings open new avenues for multidisciplinary treatment of functional gastrointestinal disease. These include (1) increasing physical activity, which can interfere with digestion; and (2) GI symptoms are affected through denial-based coping and somatisation, as opposed to disengagement-based coping and somatisation. In Study 2, neuroticism was found to affect GI symptom burden through denial-based coping and somatisation, as well as disengagement-based coping and somatisation. Two interpretations of the findings are (1) avoidance coping can stimulate somatisation, leading to reduced physical activity, which can interfere with digestion; and (2) GI symptoms are among the wide range of functional somatic symptoms that can arise from avoidant coping. These findings open new avenues for multidisciplinary treatment of FGIDs.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0473 POTENTIAL REGULATORY EFFECTS OF CORTICOTROPIN-RELEASING FACTOR ON TIGHT JUNCTION-RELATED INTESTINAL EPITHELIAL PERMEABILITY ARE PARTIALLY MEDIATED THROUGH CK8 UPREGULATION
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Introduction: Diarrhea-predominant irritable bowel syndrome (D-IBS) is a chronic functional gastrointestinal disease. Its clinical manifestations are characterized by diarrhea and abdominal pain or discomfort in the absence of demonstrable pathology. The diagnosis of D-IBS is based on symptom assessment and the Rome III Diagnostic Criteria. According to an epidemiological study, D-IBS mainly affects young adults of 20–40 years old, and the quality of their lives is seriously affected. The pathogenesis of D-IBS has not been fully clarified. Consequently, the usual treatment of the disease in Western medicine involves symptomatic therapy, which is unsatisfactory for patients while simultaneously increasing the use of health-care resources. Because traditional Chinese medicine (TCM) can significantly improve patients' symptoms and quality of life, increasing numbers of patients have begun to seek treatment with TCM. A series of randomized, double-blind, placebo-controlled trials showed that TongXie-YaoFang(TXYF) formula can significantly improve the clinical symptoms, such as diarrhea and abdominal pain or discomfort, of patients with IBS and improve the quality of their lives. However, the specific mechanism of it has not been completely elaborated. The purpose of this paper is to observe the regulating effects of TXYF-formula on colonic epithelial secretion via relevant ion channels, such as cystic fibrosis transmembrane conductance regulator (CFTR) Cl– channel, epithelial Na+ channel (ENaC), Cx26-dependent CI channel (CACC), Na+/K+–2Cl– co-transporter (NKCC), and Na+/HCO3– co-transporter (NBC), in the colonic epithelium of three groups after exposure to different agents.

Aims & Methods: To investigate the pharmacological effect of TongXie-YaoFang(TXYF) formula, a Chinese herbal formula, on Diarrhea-predominant irritable bowel syndrome (D-IBS) rats. In a neonatal maternal sham-control group (SH), neonatal rats were given distilled water. Using short-circuit current technology, we observed 5-HT-induced changes of current across ion channels, such as cystic fibrosis transmembrane conductance regulator (CFTR) Cl– channel, epithelial Na+ channel (ENaC), Cx26-dependent Cl channel (CACC), Na+/K+–2Cl– co-transporter (NKCC), and Na+/HCO3– co-transporter (NBC), in the colonic epithelium of three groups after exposure to different agents.

Results: Under basal conditions, the changes of short-circuit current (DCl, mA/cm2) induced by 5-HT were similar in SH group and TXYF-formula group, and both higher than NMS group (SH: 7.99mA/cm2, 10.61mA/cm2 VS 51.48mA/cm2; TXYF: 8.99mA/cm2, 11.68mA/cm2 VS 38.8mA/cm2, P < 0.01, respectively). However, when CFTR Cl– channel was blocked by ChRM, 5-HT-induced DCl was smaller in NMS group than in SH group and TXYF-formula group (NS). Starting from postnatal day 60, rats were randomly divided into two groups (NMS and TXYF-formula group) with no handlings were used as controls (NH group). Starting from postnatal day 65, rats were used as controls. Under basal conditions, the changes of short-circuit current (DCl, mA/cm2) induced by 5-HT were similar in NH and SH group and TXYF-formula group, and both higher than NMS group (SH: 11.7mA/cm2, 11.68mA/cm2 VS 38.8mA/cm2, P < 0.01, respectively). However, when CFTR Cl– channel was blocked by ChRM, 5-HT-induced DCl was smaller in NMS group than in SH group (P < 0.05, respectively). The similar result could also be observed in other groups (P < 0.05, respectively). The similar results could also be obtained in three groups when NB and NKCC were respectively blocked by their blockers. Contact: TXY-formula can regulate the CI and HCO3– secretion of colonic mucosa via CFTR Cl– channel, CI/HCO3– exchanger, NBC and NKCC co-transporters.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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Aims & Methods: The aims of the present study were to evaluate the effect of diosmectite on gut transit time and visceral hypersensitivity induced by WAS in rats. Two groups of rats were used: a control group and a group that underwent WAS. Visceral hypersensitivity was then assessed in both groups using the colorectal distension (CRD) test.

Results: The results showed that WAS significantly increased the number of abdominal contractions in the rat model used. Chronic oral treatment with diosmectite significantly decreased the number of abdominal contractions in rats treated with WAS.

Conclusion: The results suggest that diosmectite is effective in reducing visceral hypersensitivity and may have potential therapeutic applications in the treatment of functional bowel disorders.
Results: Twenty-seven patients completed the study. DA-9701 was associated with a significantly reduced CTT: from 14.0±8.2 to 7.5±7.4 hours, \( P = 0.001 \). Segmental CTT also significantly decreased after treatment (right CTT: from 14.2±11.9 to 9.5±10.9 hours, \( P = 0.021 \)). In addition, all constipation-related symptoms, including SBM frequency, significantly improved compared to those before treatment. Serious adverse events did not occur.

Conclusion: DA-9701 accelerates colonic transit and safely improves symptoms in patients with functional constipation. Therefore, we suggest that this novel agent could help to treat patients with this condition.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0483 INDEPENDENT VALIDATION OF THE ROME IV CRITERIA FOR IRRITABLE BOWEL SYNDROME REVEALS THEIR MODEST PERFORMANCE AND RESTRICTIVE NATURE

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Introduction: Previous symptom-based criteria to diagnose irritable bowel syndrome (IBS) performed only modestly. The Rome IV criteria are the current symptom-based criteria for IBS. Epidemiological surveys associated symptoms required for a diagnosis of IBS. Upon practical evaluation of the Rome IV diagnostic questionnaire, the Patient Health Questionnaire (PHQ-12), and the 8-item Short Form (SF-8) quality of life (QOL) questionnaire, health care utilization and past gastrointestinal (GI) disease diagnoses by doctors. Respondents with an organic GI disease were excluded from the IBS population. IBS consulters were defined as individuals meeting Rome IV IBS criteria who had visited a doctor for GI symptoms.

Results: 6300 individuals completed the survey, 369 were excluded due to inconsistent responses, leaving 5931 (49.2% female; mean age 47.4±17.1 years) to be included for analysis (1994 US, 1994 UK, 1988 Canada). After excluding 36 individuals due to lower GI organic disease, 305 subjects (5.1%; 66% female; mean age 44.7±14.5 years) fulfilled diagnostic criteria for IBS. From these, 195 (64%) had consulted a doctor for GI problems. IBS consulters had equal sex distribution (63.6% vs. 69% female (p = 0.4) and somatization scores (0.01) compared to non-consulters, but were older (mean age 47.1±14.8 vs. 40.5±13.1 years), more concerned about their bowel function (p < 0.001), more frequently bloated (p = 0.001), and experienced greater impact on social activities (p = 0.008). The distribution of the most bothersome symptom was similar (p = 0.38), and abdominal pain was the predominant symptom in both groups. See table for details. The frequency of doctor visits for non-GI health issues did not differ (p = 0.15), but IBS consulters had undergone more abdominal surgery (p = 0.04). IBS consulters also reported higher consumption of GI related (p < 0.001), prescribed pain (p < 0.001), and anti-depressive medications (p = 0.03), but had similar consumption of anxiety (p = 0.11) and over the counter pain medications (p = 0.34) as non-consulters. See table for details.

GI symptoms

<table>
<thead>
<tr>
<th></th>
<th>IBS consulters</th>
<th>IBS non-consulters</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most bothersome symptom</td>
<td>75 (38.5)</td>
<td>48 (43.6)</td>
<td>0.82</td>
</tr>
<tr>
<td>Abdominal pain Low</td>
<td>48 (24.6)</td>
<td>22 (20.9)</td>
<td>0.38</td>
</tr>
<tr>
<td>stools/low frequency</td>
<td>40 (20.5)</td>
<td>16 (14.5)</td>
<td>0.38</td>
</tr>
<tr>
<td>Hard stools/low fre-</td>
<td>24 (12.3)</td>
<td>20 (18.2)</td>
<td>0.38</td>
</tr>
<tr>
<td>quency Bloating None</td>
<td>8 (4.1)</td>
<td>4 (3.6)</td>
<td>0.38</td>
</tr>
<tr>
<td>of the above Frequency</td>
<td>72 (36.9)</td>
<td>31 (28.2)</td>
<td>0.38</td>
</tr>
<tr>
<td>Abdominal pain &gt;3</td>
<td>158 (81.0)</td>
<td>74 (67.3)</td>
<td>0.38</td>
</tr>
<tr>
<td>times/3 week</td>
<td>12 (6.2)</td>
<td>25 (22.7)</td>
<td>0.38</td>
</tr>
<tr>
<td>times/month</td>
<td>106 (54.4)</td>
<td>70 (63.3)</td>
<td>0.38</td>
</tr>
<tr>
<td>Somewhat Very</td>
<td>77 (39.5)</td>
<td>15 (13.6)</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Somatization

PHQ-12 score 7 or above | 147 (65.4) | 85 (77.3) | 0.82 |

Quality of life

Overall estimation of health past 4 weeks (SF-8). | 59 (30.3) | 31 (28.2) | 0.5 |
| Very poor/poor Fair/ | 118 (60.5) | 64 (58.2) | 0.5 |
| good Very good/excellent | 18 (9.2) | 15 (13.6) | 0.5 |

Body pain past 4 weeks

(SF-8). | None/very mild | 22 (11.3) | 19 (17.3) | 0.35 |
| Mild/moderate Severe/ | 110 (56.4) | 58 (52.7) | 0.35 |
| very severe | 63 (32.3) | 33 (30.0) | 0.35 |

Limitation in social activities

Due to physical health or emotional problems past 4 weeks (SF-8). | 24 (12.3) | 29 (26.4) | 0.008 |
| Not at all | 98 (50.3) | 46 (41.8) | 0.008 |
| Very little/somewhat | 73 (37.4) | 35 (31.8) | 0.008 |

(continued)
FUNCTIONAL GASTROINTESTINAL DISORDERS

Irritable bowel syndrome (IBS) affects 5–15% of adults in the general population. IBS is common worldwide. In UK it exceeds the 20% of the population. Burden of Irritable Bowel Syndrome (IBS) on UK healthcare has been estimated around 1800Eur per patient per year. NIC E guideline provides a systematic approach to symptoms and therapies available to GPs and general gastroenterologists. This creates a good asset to minimize referrals to tertiary centres and address costs.

Aims & Methods: We retrospectively reviewed, via electronic records, all the patients seen at the Scottish Gut Motility Disorder Clinic between January and December 2016 included, focusing on original referral, diagnosis and treatment to evaluate the need for specialist input.

Results: In 2016, 378 patients attended the Motility Clinic; total of 495 visits; 333 females. Mean age was 51.4 (age range: 16 to 95 years). 60% of referrals originated via secondary care (40% GI, 50% Surgery, 10% other disciplines). The commonest reason for referral was IBS (40%); IBS-Constipation (58%); IBS-Diarrhoea (21%) or IBS-MixType (21%). 16% were referred with faecal incontinence and 37% with chronic constipation. 35% of patients didn’t receive any therapy at time of referral. 44% were prescribed treatment but not followed up for assessment of successful response to therapy prior to referral to the specialist clinic. In 28% of patients the diagnosis changed following Motility clinic assessment. Diagnosis at clinic based on RomeIII questionnaire, depression and anxiety score, thorough history taking and physical examination (including per rectum exam), ad hoc psychiatry input and referral to specialist investigation. In 30% of patients referred with chronic constipation the diagnosis was changed to IBS-Constipation. 8% changed from IBS-D to IBS-M, 8% referred with faecal incontinence had Obstructive Defecation Syndrome, 6% referred as IBS-M were diagnosed with IBS-C, 5% referred as IBS-D were diagnosed as IBS-M, 3% referred with IBS-D had bile acid malabsorption. 56% of patients underwent specialist investigations including unrectal physiology (70%), 33% of patients attending the Specialist clinic received 1st-line therapy and lifestyle advice, albeit 57% of them, who received 2nd-line treatment, having failed 1st-line management.

Conclusion: The above data indicate the need for education and expansion of resources available in primary care to optimise patients’ management. Furthermore, it highlights the necessity for the introduction of a formal Neurogastroenterology curriculum in the general Gastroenterology training.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

A334 United European Gastroenterology Journal 5(5S)
Aims & Methods: The aim of this study was to compare the expression of membrane transporters in microsomal biopsies of healthy subjects, IBS patients and post-infectious (PI)-IBS patients. Memocaul biopsies were obtained from the unprepared sigmoid colon in 18 IBS patients, 9 PI-IBS patients and 10 healthy subjects. Total RNA was isolated and prepared for gene expression analyses using quantitative reverse-transcription polymerase chain reaction (qRT-PCR). We compared the expression of genes encoding membrane-spanning transporters, using GAPDH as a reference gene, and by using the comparative 2^-△△CT method.

Results: Colonic expression of SLC7A5 and SLC3A2 (together comprising the amino acid transporter LAT1 + 4F2hc) was significantly lower in IBS patients, but not in PI-IBS patients, compared to healthy controls (P < 0.001). The expression of SLC7A8 (LAT2) tended to be lower in IBS patients compared to controls (P = 0.08). Mucosal gene expression of the short chain fatty acid transporter SMCT1 (SLC5A8) was lower in both IBS-patients and PI-IBS patients compared to healthy subjects (P < 0.01).

Conclusion: The amino acid transporters LAT1 and LAT2 appeared to be affected in IBS patients, but not in PI-IBS patients, compared to healthy subjects, suggesting a possible alteration in amino acids transport in this patient group. Furthermore, our results suggest a lower uptake of short chain fatty acids in both IBS- and PI-IBS patients. Altered expression of these transporters may be involved in the pathophysiology of IBS as well as being a potential biomarker of this aberration, and therefore deserves further study in IBS.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0408 DIVERTICULITIS IN THE SIGMID COLON HAS THE HIGHEST RISK FOR INTESTINAL COMPLICATION OF COLONIC DIVERTICULITIS IN JAPANESE PATIENTS

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Introduction: Most colonic diverticulitis can be conservatively treated, but some need surgical intervention due to intestinal complications. Risk factors associated with complications of diverticulitis have been reported mainly from Western countries, but few from Asian countries including Japan.


Methods: Two hundreds and eighty-two patients with acute diverticulitis who were hospitalized from November 2011 to November 2016 in our hospital were studied. Diagnosis of diverticulitis was based on symptoms, physical examination, blood tests, and results of computed tomography. We retrospectively collected data of medical histories, examinations, and therapy. Risk factors associated with complications were analyzed by using logistic regression.

Results: Of the 282 patients, 183 (64.9%) patients had right-sided diverticulitis, and 70 (24%) had complications; perforation (n = 4), fistula (n = 8), abscess (n = 5) and stenosis (n = 4). The rate of complication was highest in sigmoid colon (88.6%) when compared with other locations; ascending colon (10%), transverse colon (1.4%), and descending colon (0%). Multivariate analysis identified the location of sigmoid colon (odds ratio 62.2, 95% confidence interval 21.8–178.0) as a significant independent factor for complications of diverticulitis. Among 70 patients with complicated diverticulitis, 55 (78.6%) patients underwent emergent surgery; most of them (54 patients, 98.2%) were with diverticulitis in the sigmoid colon. Risk factors associated with complications of colonic diverticulitis (univariate and multivariate analysis).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Univariate Odds ratio (95%CI)</th>
<th>p-value</th>
<th>Multivariate Odds ratio (95%CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Per 10-year increment</td>
<td>NA</td>
<td>1.37 (0.99–1.89)</td>
<td>0.055</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>1.72</td>
<td>(0.95–3.19)</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0.07</td>
<td>(0.01–0.45)</td>
<td>0.049</td>
</tr>
<tr>
<td>Body mass index</td>
<td>≥25</td>
<td>2.13</td>
<td>(1.14–4.09)</td>
<td>0.022</td>
</tr>
<tr>
<td></td>
<td>&lt;25</td>
<td>1.83</td>
<td>(0.57–5.61)</td>
<td>0.32</td>
</tr>
<tr>
<td>Time from symptom onset to diagnosis</td>
<td>≥3</td>
<td>2.13</td>
<td>(1.14–4.02)</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>&lt;3</td>
<td>1.00</td>
<td>(0.97–1.61)</td>
<td>0.49</td>
</tr>
<tr>
<td>Fever</td>
<td>≥38</td>
<td>1.36</td>
<td>(0.71–2.55)</td>
<td>0.349</td>
</tr>
<tr>
<td></td>
<td>&lt;38</td>
<td>1.00</td>
<td>(0.38–1.67)</td>
<td>0.059</td>
</tr>
<tr>
<td>Current smoking</td>
<td>Yes</td>
<td>0.82</td>
<td>(0.38–1.67)</td>
<td>0.616</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.00</td>
<td>(0.51–1.91)</td>
<td>0.999</td>
</tr>
<tr>
<td>Current drinking</td>
<td>Yes</td>
<td>0.99</td>
<td>(0.51–1.91)</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.00</td>
<td>(0.38–1.67)</td>
<td>0.001</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>Yes</td>
<td>4.97</td>
<td>(2.66–9.39)</td>
<td>0.0001</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.00</td>
<td>(0.14–1.62)</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Conclusion: The sigmoid colon was a significant risk factor for complication of colonic diverticulitis in Japanese patients. Acute colonic diverticulitis in the sigmoid colon should be carefully treated with surgical interventions in mind.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: The aim of our present study was to determine the role of genetic variation within genes encoding for collagen of the connective tissue in the development of diverticulitis. Genetic polymorphisms COL3A1 (rs3134464, rs1800255) and COL1A1 (rs1800012) were genotyped in 422 patients with diverticulitis and 285 controls of Caucasian descent using TaqMan assays.

Results: All genotype distributions did not deviate from the Hardy-Weinberg equilibrium. Overall, rs3134464, rs1800255 and rs1800012 were associated with diverticulitis. After multivariate logistic regression analysis, they were not linked with the risk of developing colonic diverticulitis in general; when selectively analyzing genders, the minor allele (AA) in rs3134464 remained significantly associated with diverticulitis in men (p = 0.037).

Conclusion: Our study shows that a variant of COL3A1 rs3134464 is associated with risk of developing colonic diverticulitis in Caucasian men, while COL3A1 rs1800255 and COL1A1 rs1800012 were not associated with this condition in our cohort of patients after adjusting for confounding factors.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0409 A VARIANT OF COL3A1 (RS3134464) IS ASSOCIATED WITH RISK OF DEVELOPING DIVERTICULOSIS IN CAUCASIAN MALES

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Introduction: Colonic diverticulitis is one of the most common gastroenterological disorders. Though diverticulitis is typically benign, many individuals develop diverticular disease (DD). DD is thought to stem from a complex interplay of environmental, dietary and genetic factors; however, the exact pathogenesis remains unknown.

Aims & Methods: The aim of our present study was to determine the role of genetic variation within genes encoding for collagens of the connective tissue in the development of diverticulitis. Genetic polymorphisms COL3A1 (rs3134464, rs1800255) and COL1A1 (rs1800012) were genotyped in 422 patients with diverticulitis and 285 controls of Caucasian descent using TaqMan assays.

Results: All genotype distributions did not deviate from the Hardy-Weinberg equilibrium. Overall, rs3134464, rs1800255 and rs1800012 were associated with diverticulitis. After multivariate logistic regression analysis, they were not linked with the risk of developing colonic diverticulitis in general; when selectively analyzing genders, the minor allele (AA) in rs3134464 remained significantly associated with diverticulitis in men (p = 0.037).

Conclusion: Our study shows that a variant of COL3A1 rs3134464 is associated with risk of developing colonic diverticulitis in Caucasian men, while COL3A1 rs1800255 and COL1A1 rs1800012 were not associated with this condition in our cohort of patients after adjusting for confounding factors.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Introduction: Symptomatic Uncomplicated Diverticular Disease (SUDD) affects about 20% of patients having diverticulosis. However, SUDD natural history is still not completely understood yet. Our aim was to assess the outcome of a cohort of SUDD patients during a 13-year follow-up.

Aims & Methods: 185 patients suffering from SUDD were enrolled during 2000–2002, and followed-up until 2015. Symptoms assessed were abdominal pain, meteorism, bowel movement/day, and each of them was scored from 0 (min) to 12 (max). Also Visual Analogic Scale (VAS) was provided in order to assess patients’ quality of life. Patients were treated according to physician convenience (rifaximin, mesalazine, probiotics, spasmolytics) when symptoms occurred during the follow-up. Follow-up visit was performed every 6 months or whenever patients consider it necessary.

Results: During the observational period, 47 patients were lost to follow-up. Among them, 9 deceased for causes not related to diverticular disease. Acute diverticulitis occurred in 14 patients (7.56% of the overall population); 6 patients (3.24% of the overall population) underwent to surgery, and 2 patients (1.08% of the overall population) deceased for perforation. The mean symptoms’ score was 7.5 at baseline, ranged between 6.6 and 9 during the follow-up, and was 8.4 at the end of the observation. VAS score was 4 at baseline, ranged between 4 and 9 during the follow-up, and was 4.5 at the end of observation.

Conclusion: SUDD is a clinical entity that, although benign, significantly affects quality of life of patients. Acute diverticulitis may occur in those patients, sometimes needs of surgical treatment, and may cause mortal complications, although not frequent.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Natural history of colonic diverticulosis and diverticular disease (DD) is poorly known, and available data derived mostly from retrospective cohort studies.
Aims & Methods: Aim of this study was to assess, in a cohort of patients with colorectal diverticula, the incidence of new cases of symptomatic uncomplicated diverticular disease (SUDD) and diverticulitis, and recurrence of diverticulitis after 1-year of follow-up. GRIMAD (Italian Diverticular Disease Group) promoted the creation of REMAD (Register of Diverticular Disease) a prospective, 5-years, no-profit, cohort study involving 47 Italian centers. Each center enrolled at least 20 consecutive patients during a period of two months. Inclusion criteria were: informed consent; age ≥18 years and endoscopic/radiological-confirmed colonic diverticula. Outpatient/telephone visits were scheduled every 6 months. The clinical data (patients’ characteristics and habits, characteristics of DD, complications and therapies) collected by participating centers were reported on an electronic Case Report Form managed by CD Pharma, Milan. At entry, patients were categorized according to the following criteria: i) diverticulosis (presence of diverticula in the absence of abdominal symptoms); iii) SUDD (recurrent abdominal symptoms as abdominal pain and/or changes in bowel habit, in the absence of overt inflammation); iii) PD (patients who experienced at least one episode of acute diverticulitis in the past). Patients were allowed to continue their therapy for DD, if any. Logistic regression was performed to identify patients’ features associated with new occurrence of SUDD and diverticulitis.

Results: Overall, at baseline 1217 (55.7% female, median years 67 (28–95), BMI 25.6 kg/m² (16.2–43.4) patients were enrolled: 707 (58.1%), 300 (24.7%), and 210 (17.3%) with diverticulosis, SUDD, and PD, respectively. At 12 months, 922 patients (53.1%, 29.8%, and 17.1% with diverticulosis, SUDD, and PD) were followed, and 27.4% of patients were lost at follow-up. In the 12 months follow-up, 33 (6%) and 4 (0.7%) of diverticulosis patients developed SUDD and acute diverticulitis, respectively; 4 (1.6%) of SUDD patients developed acute diverticulitis, and in 14 (9.4%) of PD patients a new episode of acute diverticulitis occurred. Overall, only 3 patients developed a complication, without need of surgery. One year of follow-up logistic regression, showed that only female gender was associated with subjects who changed subgroup from diverticulosis to SUDD (OR 2.26, 95% CI 0.97–5.22). No specific features associated with recurrence of diverticulitis could be identified.

Conclusion: These preliminary data suggested that, during an observation period of one year, progression from diverticulosis to SUDD occurred in less than a tenth of patients, and was associated with female gender. Overall incidence of diverticulitis (2.3%), whereas overall SUDD incidence was uncommon. This observational study suggested, that although the vast majority of patients did not show progression of disease, in those who progressed one in ten tended to relapse during follow-up.

Aim of this study was to assess, in a cohort of patients with colorectal diverticula, the clinical features and QoL scores associated with each subgroup of patients. GRIMAD (Italian Diverticular Disease Group) promoted the creation of REMAD (Register of Diverticular Disease) a prospective, 5-years, no-profit, cohort study involving 47 Italian centers. At entry, patients were categorized according to the following criteria: i) diverticulosis (presence of diverticula in the absence of abdominal symptoms); ii) SUDD (recurrent abdominal symptoms as abdominal pain and/or changes in bowel habit, in the absence of overt inflammation); iii) PD (patients who experienced at least one episode of acute diverticulitis in the past). Patients were allowed to continue their therapy for DD, if any. Logistic regression was performed to identify patients’ features associated with new occurrence of SUDD and diverticulitis.

Conclusion: These data showed that, with respect to diverticulosis, female gender and presence of GI comorbidities are associated with SUDD, whereas younger age, family history for DD and female gender are associated with PD. Furthermore, patients with diverticulitis have higher physical and mental scores compared both to patients with SUDD and PD, suggesting that SUDD and PD reduced QoL of the affected patients.

Disclosure of Interest: R. Cuomo: Speaker and consultant for Alfa Wassermann G. Barbara: Speaker and consultant for Alfà Wassermann F. pace: Speaker and consultant for Alfa Wassermann B. Annibale: Speaker and consultant for Alfa Wassermann All other authors have declared no conflicts of interest.

Disclosure of Interest: P. Andreozzi, B. Annibale, G. Barbara, F. Pace, M. Carabotti, C. Cremon, R. Benini, R. Cuomo

Introduction: Patients with symptomatic uncomplicated diverticular disease (SUDD) and those with diverticulitis share similar clinical patterns characterized by abdominal pain or changes of bowel habits. In clinical practice, differential diagnosis between the two conditions may be useful in the diagnostic approach and therapeutic management.

Aims & Methods: Our aim was to assess the features of abdominal pain in patients with SUDD and diverticulitis. P0494 (Clinical Features associated with Symptomatic Uncomplicated Diverticular Disease and Diverticulitis: Patients’ Results from the Italian Register of Diverticular Disease [REMA]) and P0495 (Features of Abdominal Pain May Distinguish Patients with Previous Diverticulitis from Patients with Symptomatic Uncomplicated Diverticular Disease: Results from the Italian Register of Diverticular Disease [REMA]) allowed the creation of REMAD (Registry of Diverticular Disease), a prospective, 5-years, no-profit, cohort study involving 47 Italian centers. All patients were enrolled during a 2-months-period. At entry, patients were categorized according to the following criteria: i) diverticulosis (presence of diverticula in the absence of abdominal symptoms); ii) SUDD (recurrent abdominal symptoms as abdominal pain and/or changes in bowel habit, in the absence of overt inflammation); iii) PD (patients who experienced at least one episode of acute diverticulitis in the past). Patients were allowed to continue their therapy for DD, if any. Logistic regression was performed to identify patients’ features associated with new occurrence of SUDD and diverticulitis.

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Disclosure of Interest: R. Cuomo: Speaker and consultant for Alfa Wassermann G. Barbara: Speaker and consultant for Alfà Wassermann F. pace: Speaker and consultant for Alfa Wassermann B. Annibale: Speaker and consultant for Alfa Wassermann All other authors have declared no conflicts of interest.
P0496 MUSCULAR INFLAMMATORY STATE AND PHENOTYPIC SWITCH IN DIVERTICULOSIS AND COMPLICATED DIVERTICULAR DISEASE

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Introduction: Diverticulitis, as well as diverticular disease, is a multifactorial disorder characterized by neural-muscular alterations. Smooth muscle cells (SMC) of the muscular layer can switch from a contractile phenotype to a more synthetic phenotype, characterized by a loss of differentiation with increased expression of contractile markers as well as synthesis and release of several pro-inflammatory cytokines. Different organ specific pathways have been demonstrated to induce this mesenchymal transition. Renal fibrosis is driven by transforming growth factor-β (TGF-β) through inverse regulation of Smad2/3 while vascular fibrosis by PDGFRβ, ending in downregulation of marker gene Trb3 expression.

Aims & Methods: Aim of this study was to determine, both in human uninvolved and involved tracts of asymptomatic diverticulitis (AD−, AD+) and in stenotic segments, whether muscular alterations are more frequent in complicated diverticular disease related to the alterations intrinsic to smooth muscle. Circular and longitudinal smooth muscle strips and cells (SMC) were isolated separately from surgical colon specimen of 18 patients (58±13 years old) affected either by sigmoid AD (6) or CDD (6) and patients (61±18 years) submitted to surgery for cancer (6) (CTR). Contraction was tested in response to carbachol and relaxation in response to VIP. qPCR analysis, expressed as Relative Quantification, was performed for transcription of mRNA encoding for TGF-β, alpha-smooth muscle actin (α-SMA), smooth muscle actin-2 (β-SMA), Trb3, Sma2d,2 (MHC-I-L), and for SMC phenotypic switch molecules (Collagen I, Smad2/3). Data were normalized to β-actin mRNA and expressed as mean ± SE. In addition, the activation of inflammatory complexes was indirectly tested through quantification of IL-1β secretion by commercial ELISA kit.

Results: In both muscle layers, AD− and AD+ SMC, compared to CTR, showed an overall increase in inflammatory gene expression, with a trend of decrease from AD− to AD+, the lowest expression been observed in CDD. This inflammation was associated with an increased expression in IL-1β secretion in sigmoid colon muscle compared to CTR and a progressive inhibition of contraction to carbachol, already in AD− in circular strips and SMC. In contrast relaxation in response to VIP resulted significantly decreased only in AD+ both on strips and SMC with no alteration in circular and longitudinal. Peculiarity of circular SMC was a progressive increase in Coll1 expression from AD to CDD compared to CTR (3 hundred fold increase) parallel to about 50% decrease in the contractile protein α-SMA. Differentley, longitudinal SMC, both in AD and CDD, presented a homogenous increased Coll1 expression, decrease in α-SMA and reduction of contraction. VIP-induced relaxation was significantly decreased in CDD. Phenotypic switch was only observed in CDD, driven in circular layer, by a TGF-β-dependent pathway (increased expression for TGF-β: 2.8±1.0 and SMC produced Smad2/3 protein at 0.012±0.04), while longitudinal driven by PDGFRβ-dependent pathway (increase of PDGFRβ: 2.27±0.44 and parallel decrease of Trb3: 0.58±0.13).

Conclusion: Intrinsinc myogenic alterations are present in colonic asymptomatic diverticulosis and complicated diverticular disease, both in the circular and longitudinal layers characterized by a myogenic pro-inflammatory state and an impaired contractile activity that, in complicated diverticular disease, ended in a muscular synthetic pro-fibrotic switch.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0497 THE ONCOGENIC MIR-491-5P/MIR-875-5P-NOTCH3-PHLDB2 AXIS IN GASTRIC TUMORIGENESIS

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Introduction: Aberrant Notch activation has been implicated in multiple malignancies, including gastric cancer (GC). However, the clinical significance of Notch receptors and their functional role in gastric carcinogenesis remain unclear.

Aims & Methods: We aim to delineate the dysregulated Notch signaling in GC and comprehensively reveal its activation by silenced microRNAs (miRNAs) in gastric carcinogenesis. The expression clinical relevance of NOTCH4 in GC patients were achieved from online available dataset. The mRNA and protein expression of NOTCH3 was examined by qRT-PCR and Western blot. The biological function of NOTCH3 in GC was demonstrated by MTT proliferation, monolayer colony formation, cell invasion and migration assays through siRNA-mediated knockdown. The prediction of miRNAs which potentially target NOTCH3 was performed by www.microrna.org and TargetScan. The regulation of NOTCH3 by putative miRNAs was confirmed by qRT-PCR, Western blot and dual luciferase activity assays. The expression of miR-491-5p and miR-875-5p overexpression in GC was determined by qRT-PCR.

Results: NOTCH3, but not NOTCH1, 2, 4, is uniformly up-regulated and significantly correlated with poor survival in multiple GC datasets. Knockdown of NOTCH3 in AGS and MKN28 cells exhibited significant anti-oncogenic effect in vitro. NOTCH3 downregulation suppressed cell proliferation, reduced monolayer colony formation, and inhibited cell invasion ability. Moreover, NOTCH3 knockdown significantly promoted cleaved caspase-3 and cleaved-PARP expression to induce apoptosis, which was further revealed by the gene set enrichment analysis (NCBI/GEO/GSE57303 and NCBI/GEO/GSE57303 database). NOTCH3 was further confirmed to be a direct target of tumor-suppressive miRNAs, miR-491-5p and miR-875-5p. Enforced overexpression of miR-491-5p and miR-875-5p in GC cells also exerted tumor-suppressive function by inhibiting cell proliferation and inducing apoptosis.

Conclusion: NOTCH3 is over-expressed and plays an oncogenic role in gastric carcinogenesis through its direct downstream PHLDB2. The activation of NOTCH3 in GC is partly due to the silence of tumor-suppressive miRNAs, miR-491-5p and miR-875-5p. These findings comprehensively revealed the activation of Notch signaling pathway and provided clinical translational potential for GC.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0498 FOXP2 SUPPRESSES WNT SIGNALLING PATHWAY IN GASTRIC CARCINOGENESIS THROUGH TRANSCRIPTONAL REGULATION OF E3 LIGASE RFB2BLP AND PROMOTING B-CELLENAT DEGRADATION

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Introduction: We found that tumor suppressor gene FOXP2 was silenced in gastric cancer (GC) through promoter hypermethylation. Restoration of FOXP2 suppressed GC tumorigenicity through inhibition of canonical Wnt
signaling pathway. However, the molecular mechanism of FOXF2 in GC is still unknown.

Aims & Methods: We hypothesize that FOXF2 transcriptional upregulates a novel 3′ ligase that targets β-catenin for degradation. We aim to investigate the molecular mechanism of FOXF2 in GC and identify such 3′ ligase by PCR array, Chromatin Immunoprecipitation (ChIP) assay and luciferase assay. Results: FOXF2 significantly decreased both nuclear and cytosolic levels of β-catenin in a GSK-3β independent manner and promoted β-catenin degradation via ubiquitin-proteasome pathway in gastric cells. Using Human Ubiquitin Library RT™ Profiler PCR Array and western blot, we identified that IRF2BPL was upregulated upon FOXF2 overexpression and was a promising 3′ ligase for β-catenin. Overexpression of IRF2BPL suppressed the TOP-flash luciferase reporter and reduced Wnt target gene c-myc expression in GC cells. Overexpression of IRF2BPL significantly increased β-catenin ubiquitination and reduced β-catenin protein without alteration of its mRNA level. Conversely, knockdown of IRF2BPL significantly decreased endogenous β-catenin ubiquitination. Immunoprecipitation assay suggested that IRF2BPL interacted with β-catenin. The 3′ ligase IRF2BPL is a potential 3′ ligase that targets β-catenin for degradation. To investigate whether FOXF2 directly regulates IRF2BPL transcription, we performed ChIP assay and found that FOXF2 bound on to the IRF2BPL promoter region. We cloned the IRF2BPL promoter region (−2700 bp to TSS) and performed a luciferase activity assay. Wild-type FOXF2 but not the mutant ΔFOXF2 significantly activated the lucerase reporter in A549 and 293F cells, suggesting that FOXF2 directly activated IRF2BPL transcription. Moreover, FOXF2 significantly increased the level of H2K72Ac (a marker to distinguish active from inactive enhancer element) on the 5′-flanking region of IRF2BPL gene, suggesting that FOXF2 positively regulated IRF2BPL gene transcription. In addition, IRF2BPL mRNA was downregulated in human GC tissues compared to the adjacent normal tissues (N = 30, P < 0.01) by real-time PCR analysis. IRF2BPL mRNA showed a positive correlation with FOXF2 in gastric cancer in a Chinese cohort (R = 0.30, Spearman’s rho = 0.42, P = 0.05) and in the TCGA cohort (R = 0.38, P < 0.001).

Conclusion: We reported a novel FOXF2-IRF2BPL-β-catenin signaling axis in gastric cells. FOXF2 is a critical tumor suppressor in gastric carcinogenesis through promoting β-catenin degradation by transcriptionally upregulating 3′ ligase IRF2BPL.

Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: GAED shows generally aggressive behavior characterized by frequent lymphatic and venous invasion and liver metastasis. TP53 mutation rate and ERBB2 amplification rate in GAED is significantly higher than those of CGA. HER2 overexpression associated with ERBB2 amplification could be a new therapeutic target in GAED.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

**P0500 CO-OCCURRENCE OF MODERATE RISK ALLELES IN THE GERMLINE OF FAMILIAL INTESTINAL GASTRIC CANCER SYNDROME**

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Introduction: Ten percent of all gastric cancers show familial aggregation and were for at least three syndromes:1-7 hereditary diffuse gastric cancer (HDGC), gastric adenocarcinoma and proximal polypsis of the stomach (GAPPs), and familial intestinal gastric cancer (FICG).2 Whilst germline defects at the CDH11 and APC genes have been found for HDGC and GAPPs families, respectively, FICG remains genetically unexplained.

Aims & Methods: We hypothesised that the rare FICG syndrome is caused by germline co-occurrence of moderate-risk alleles and represents a polygenic, rather than a classical monogenic disease. Therefore, this study aimed at dissecting the germline and somatic landscapes of the largest FICG cohort ever studied.

All authors have declared no conflicts of interest.

Conclusion: The clinical homogeneity and relatively high number of FICG families herein allowed studying the hypothesis that FICG may be a new polygenic syndrome caused by moderate-risk alleles in gastrointestinal cancer-associated genes.

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Disclosure of Interest: All authors have declared no conflicts of interest.

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3. Worthley et al, Gut 2012
5. Guilford P et al, Nat Genetics 1999

**P0501 PREVENTION OF STENOSIS WITH ENDOSCOPIC TRANSPLENTATION OF CULTURED AUTOLOGOUS ORAL MUCOSAL EPITHELIAL CELL SHEETS AFTER ESPHAGEAL ENDOSCOPIC SUBMUCOSAL DISSECTION**

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Introduction: Gastric adenocarcinoma with enteroblastic differentiation (GAED) is a rare variant of gastric carcinoma. It is well known that GAED is associated with poor prognosis [1, 2]. However, the clinicopathological and molecular biological features of GAED have been elucidated through. We performed comprehensive analysis by next generation sequencing (NGS) to clarify the clinicopathological features of GAED and to find new therapeutic targets.

Among 5300 patients with gastric cancer who under surgery or endoscopic resection in our hospital between April 2008 and February 2017, we enrolled 52 cases (early:17, advanced:35) of GAED defined as having tubular to papillary or solid structure with clear cytoplasm and immunohistochemical positivity for at least one of the following antibodies: AFI, Glypican-3 and SALL4. NGS was performed for 24 cases of formalin-fixed paraffin-embedded samples (early: 2, advanced: 22) using Ion PGM™ system with cancer hotspot panel v2 targeting 50 genes (Thermo Fisher Scientific).

Results: Twenty-five out of 53 (47%) FIGC families harboured germline variants, and co-occurrence of germline moderate-risk alleles was found in ten families. From these ten families, seven harboured one pathogenic or likely pathogenic variant combined with one or more unclassified novel variants. The remaining three families carried solely clusters of novel unclassified variants. Moderate-risk alleles of BRCA2, MAP3K6, MSH6, MSR1, SDHB and SDHD were the most frequently found in this cohort. In addition, tumours arising in these 10 families were enriched in somatic variants within DNA repair genes and often display microsatellite instability phenotypes.

Conclusion: The clinical homogeneity and relatively high number of FIGC families herein allowed studying the hypothesis that FIGC may be a new polygenic syndrome caused by moderate-risk alleles in gastrointestinal cancer-associated genes.

This work is funded by: 1) FEDER COMPETE, FCT/MEC/FEDER/PT2020 and FCT funds (projects “PExC-SAU/LA0003/2013”; project 007274 (UID/BIS/50019/2013); 2) ON.2-0.4 Novo Norte:FEDER, FREN (projects NORTE-07-0162-FEDER-00118 and NORTE-07-0162-FEDER-00067); 2) No Stomach for Cancer Foundation; 4) FCT Fellowships (SFRH/BDP/89764/2012 to PO; SFRH/BDP/86543/2012 to JC; SFRH/BDP/79499/2011 to HP).

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Fitzgerald R and the GIGCC, JMG 2010
2. Oliveira C et al., Lancet Oncol 2015
3. Worthley et al, Gut 2012
5. Guilford P et al, Nat Genetics 1999
Introduction: Endoscopic submucosal dissection (ESD) is widely accepted to treat large superficial esophageal neoplasms. However, esophageal stenosis after ESD has become a key complication. To prevent such stenosis, we developed new regenerative therapies that suppresses contracture and stenosis. About two weeks post-ESD, autologous oral mucosal epithelial cell sheets were fabricated from the patient’s oral mucosal tissue. The cell sheets were then endoscopically transplanted onto the ulcer surface immediately after ESD. To date, this cell sheet treatment, which resembles engineered cell sheet transplantation in severe burn cases, has been clinically applied, and successful outcomes have been obtained at several institutions in Japan and Sweden. In addition to preventing stenosis by the simple dressing of the ulcer’s surface area, anti-inflammatory and wound-heal promoting functions of the cell sheets were expected. Furthermore, the culture supernatant obtained immediately before the transplantation, were analyzed with a cytokine array.

Results: Histological and morphological analyses revealed that tissue-engineered stratified epithelial cell sheets have an apical-basal polarity, and that the junctions between the basal cells of the sheets were significantly loose, due to dissociating desmosomes, which were also fewer in numbers. IHC showed that the expression levels of E-cadherin and desmosomal cadherins were downregulated in the basal epithelial cell sheets, but mesenchymal markers (N-cadherin, vimentin, and fibronectin) were upregulated. Taken together, these findings implied that epithelial mesenchymal transition (EMT) was induced in the basal cells. The results of the cytokine array showed that the cell sheets secreted ECM proteins rich in growth factors (progranulin and epiregulin) and antimicrobial proteins (b-defensin).

Conclusion: The EMT of the basal cell layer of epithelial cell sheets may contribute to the improved engraftment after cell sheet transplantation. The secretion of antibacterial peptides and various growth factors from the cell sheets would exhibit anti-inflammatory effects, and promote wound-healing compared to reinforcement of esophagus with absorbable synthetic materials such as polymer membrane of polyglycolic acid and polylactic acid.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0503 SERUM EXOSOMAL MiRNAs EXPRESSION AS NOVEL BIOMARKERS FOR DETECTION OF ESOPHAGEAL ADENOCARCINOMA

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Introduction: Novel biomarkers for the diagnosis of esophageal adenocarcinoma (EAC) are urgently required. Currently, there is increasing evidence suggesting that serum exosomal miRNAs may be potential noninvasive biomarkers for certain diseases. The objective of the present study was to find and investigate whether exosomal miRNAs could be effective biomarkers for EAC.

Aims & Methods: In the present study, exosomes were isolated from the serum of both EAC patients and normal controls. Total RNA was extracted from exosomes and miRNA levels were compared between EAC and control patients in serum exosomes. We also sought to investigate the relevance of exosomal miRNA expression to clinicopathological factors in EAC.

Results: We measured levels of several exosomal miRNAs, including miR-21, miR-16, miR-25, miR-155, miR-192, miR-92a, in 9 EAC patients and 9 controls. All exosomal miRNAs were chosen because they have been shown to function as onco-miRs in previous studies. Levels of miR-16, miR-21, miR-25 and miR-155 were significantly higher in EAC patients than in controls (fold-change 35.36, 30.87, 9.24 and 2.26, respectively). The level of miR-192 was significantly lower in EAC patients than in controls (Fold-change 0.35). We did not observe a significant fold-change in miR-92a expression levels between EAC and controls. P-values did not achieve statistical significance, possible due to large standard deviations and relatively small sample sizes. We also visualized exosomes isolated from both cell culture medium and sera of EAC patients and control subjects, with diameter ranging from 30 to 100 nm using transmission electron microscopy.

Conclusion: Serum exosomal miRNAs can be isolated, measured, and may serve as potential biomarkers in EAC patients. miRNA microarray or next-gen sequencing analyses and larger sample sizes are needed to validate these early results.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Primary outcomes included the size and number of ulcers and the patients' reports of dysphagia, chest pain, and vomiting.

Results: At follow-up endoscopy, the number of patients with post-band ulcers and size of ulcers were similar in the three groups. However, the number of ulcers for each patient was statistically significant less in rebamipide group when compared to pantoprazole and sucralfate (P < 0.001). Chest pain, dysphagia, and vomiting scores were not significantly different. Dysphagia was by far the most common symptom with no case of bleeding was reported in all patients of the studied groups.

Conclusion: Rebamipide is effective in decreasing the post banding complication and reducing size of ulcer as well as the number of ulcers with no significant effect on post banding ulcer formation. Rebamipide can be used routinely in settings of post-EVL as a good alternative to pantoprazole and sucralfate.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:


P0509 A COMPARATIVE STUDY OF THERAPEUTIC EFFECT OF VONOPRAZAN AND ESOXIMEPRAZOLE ON BLEEDING AFTER GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION

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Introduction: Proton pump inhibitors (PPIs) have been widely used for the treatment of endoscopic submucosal dissection-induced gastric ulcers. However, post-operative bleeding is still one of the most important adverse side effects. 1, 2 Vonoprazan (VPZ), a potassium-competitive acid blocker, is a new class of acid-suppressing agents, and it is expected to reduce bleeding after gastric endoscopic submucosal dissection (ESD) by strongly inhibiting gastric acid secretion compared with PPIs. 3

Aims & Methods: We compared the incidence of bleeding after gastric ESD between subjects treated with VPZ and those treated with esomeprazole (EPZ). Data for 101 patients who underwent gastric ESD from December 1, 2014 to December 31, 2016 in Osaka City General Hospital and started to take VPZ (n = 22) or EPZ (n = 79) by the day before ESD was reviewed. Twelve of them (3 in the VPZ group, 9 in the EPZ group) were excluded for simultaneous resection of two or more sites. A case in which active bleeding or exposed vessels were observed on the bottom of ulcers with hematemesis, melena or a drop of not less than 2 g/dl of Hemoglobin within 4 weeks after ESD was defined as “post-ESD bleeding”. In addition, we perform second-look endoscopy on the day after ESD. A case in which hemostasis was needed with hemorrhage of Forrest IIa or more bleeding was defined as “next-day hemostasis case”. We investigated retrospectively post-ESD bleeding rate and next-day hemostasis rate in the VPZ group and the EPZ group.

Results: Gender, age, resected specimen diameter, oral antithrombotic drug administration, and dialysis were not significantly different in both groups. Two of the 19 patients in the VPZ group (10.5%) and 6 of the 70 patients in the EPZ group (8.6%) had Post-ESD bleeding (Table). In addition, 6 patients in the VPZ group (31.6%) and 37 patients in the EPZ group (52.9%) had next-day hemostasis. There was no significant difference in both groups regarding post-ESD bleeding (p = 0.678) and next-day hemostasis (p = 0.197). However, next-day hemostasis rate was somewhat higher in the EPZ group than that in the VPZ group. That is possibly because EPZ or VPZ was first administered mostly from the day before ESD or more when we underwent second-look endoscopy was defined as “next-day hemostasis case”. We investigated retrospectively post-ESD bleeding rate and next-day hemostasis rate in the VPZ group and the EPZ group.

Table: Incidence of post-ESD bleeding and next-day hemostasis

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Post-ESD bleeding</th>
<th>Next-day hemostasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vonoprazan group</td>
<td>2 (10.5%)</td>
<td>6 (31.6%)</td>
</tr>
<tr>
<td>Esoximeprazole group</td>
<td>6 (8.6%)</td>
<td>37 (52.9%)</td>
</tr>
</tbody>
</table>

Conclusion: VPZ didn’t significantly reduce post-endoscopic submucosal dissection bleeding compared with EPZ.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
References


P0512 REAL-LIFE ANALYSIS OF FREQUENCY, LOCATIONS AND BLEEDING SOURCES IN UNSELECTED EMERGENCY PATIENTS RECEIVING NON-VITAMIN K ANTICOAGULANT (NOAC) THERAPY AND COMPARISON TO CONTROLLED APPROVAL STUDIES

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Introduction: Non-vitamin K direct oral anticoagulants (NOAC) are increasingly used in thromboembolic disorders due to an efficacy at least equal as vitamin K antagonists (VKA) and/or significantly higher safety for intracerebral bleeding or major bleedings of any source. In the approval studies, there was no generally increased bleeding rate for all types of bleeding, but different gastrointestinal bleeding (GIB) rates for apixaban, dabigatran, edoxaban and rivaroxaban. Received ticagrelor with aspirin were recruited. Mean±standard deviation age was 66.2±11.3 years and 63.3% of patients were male. The most common indication of DAPT was acute coronary syndrome (85.4% in clopidogrel group vs.100% in ticagrelor group). Duration of treatment with clopidogrel and ticagrelor were 121.5 days vs. 231 days, respectively (p=0.216). There were 20 (10.1%) GIB events in clopidogrel group and 11 (5.5%) in ticagrelor group. The most endoscopic findings of GIB was gastric erosion (44% in clopidogrel group vs. 67.6% in ticagrelor group). Risk ratio (RR) of GIB event of clopidogrel compared to ticagrelor was 1.84 (95% confidence interval (CI) 0.95–3.7, p=0.093). By multivariate logistic regression analysis, duration of DAPT <180 days (RR 3.28; 95% CI 1.89–5.69, p=0.001) and history of previous GIB were associated with GIB events (RR 10.35; 95% CI 6.04–17.71, p<0.001).

Conclusion: Risk of GIB is almost two times higher among patients received clopidogrel as compared to those received ticagrelor with aspirin. Closed monitoring patients who had duration of DAPT <180 days and previous GIB might be minimized the risk of GIB event after receiving DAPT.

Disclosure of Interest: All authors have declared no conflicts of interest.

Results: A total of 221 patients received clopidogrel with aspirin and 199 patients received ticagrelor with aspirin were recruited. Mean±standard deviation age was 66.2±11.3 years and 63.3% of patients were male. The most common indication of DAPT was acute coronary syndrome (85.4% in clopidogrel group vs.100% in ticagrelor group). Duration of treatment with clopidogrel and ticagrelor were 121.5 days vs. 231 days, respectively (p=0.216). There were 20 (10.1%) GIB events in clopidogrel group and 11 (5.5%) in ticagrelor group. The most endoscopic findings of GIB was gastric erosion (44% in clopidogrel group vs. 67.6% in ticagrelor group). Risk ratio (RR) of GIB event of clopidogrel compared to ticagrelor was 1.84 (95% confidence interval (CI) 0.95–3.7, p=0.093). By multivariate logistic regression analysis, duration of DAPT <180 days (RR 3.28; 95% CI 1.89–5.69, p=0.001) and history of previous GIB were associated with GIB events (RR 10.35; 95% CI 6.04–17.71, p<0.001).

Conclusion: Risk of GIB is almost two times higher among patients received clopidogrel as compared to those received ticagrelor with aspirin. Closed monitoring patients who had duration of DAPT <180 days and previous GIB might be minimized the risk of GIB event after receiving DAPT.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0514 CLINICAL CHARACTERISTICS OF FUNCTIONAL DYSPEPSIA DEPENDING ON WHETHER THEY ARE CHEMOSENSITIVE OR NOT
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Introduction: Augmented chemosensitivity to capsaicin has been demonstrated in functional dyspepsia patients. The initial frequency of these symptoms is uncertain. This study examined the oral capsaicin capsule test (Hammer et al, NGM 2008). Sensations induced by gastric capsaicin are distinct from sensations induced by stimulation of mechanoreceptors (Hammer & Vogelsang, NGM 2007).
Aims & Methods: The aim of the study was to determine clinical characteristics of FD patients with and without chemical hypersensitivity at baseline and after capsaicin ingestion for 4 weeks. N = 49 outpatients with confirmed FD received an oral sensitivity test with 0.75 mg capsaicin at two occasions, before and after ingestion. The test was repeated with four weeks. Symptoms were recorded automatically and capsaicin at the initial test allowed stratification to a capsaicin positive (chemosensitive) and a capsaicin negative (not chemosensitive) patient group. Symptom diaries for upper and lower gastrointestinal symptoms (visual analogue scales) were completed in the week before and during capsaicin ingestion and weekly aggregate symptom scores were calculated. Results are given as median. 25%/75% p < 0.05 was considered significant.
Results: 53% FD had a positive capsaicin test. Basic clinical characteristics (age, gender, FD subtype, medication, psychological profile) were comparable in capsaicin positive and negative FD, but median daily aggregate upper gastrointestinal symptoms scores were significantly higher in capsaicin positive (median: 9.4; 5.4) than in capsaicin negative patients (6.6; 4.1, p < 0.05). Median scores for epigastric pain, nausea and epigastric distension were similar in capsaicin positive and negative patients (p > 0.05). On the contrary, capsaicin negative patients had significantly lower scores for satiety (p < 0.001) and epigastric bloating (p = 0.01) than capsaicin positive patients. Lower abdominal symptoms were comparable in capsaicin positive and negative patients at baseline (NS). After capsaicin ingestion, aggregate upper gastrointestinal symptoms scores were reduced by 3.3 (−4.9;−1.9; p < 0.001) in capsaicin positive and −2.6 (−4.1;−1.7) in capsaicin negative patients. Lower abdominal symptoms scores after capsaicin ingestion were reduced by 1.0 (−1.8;−0.1; p < 0.05) in capsaicin positive but not significantly altered (−0.6; 1.7;+0.9; NS) in capsaicin negative patients. After long-term capsaicin ingestion, the capsaicin test turned negative in 53% of capsaicin positive patients (p < 0.01).
Conclusion: Differences in upper GI symptoms distinguished capsaicin positive and negative patients at baseline. Symptom improvement after long-term capsaicin ingestion was indirect proportional to the result during the initial capsaicin test. Sensitivity to orally ingested capsaicin decreases after long-term capsaicin ingestion.
Disclosure of Interest: All authors have declared no conflicts of interest.
References
Führer M, Vogelsang H, Hammer J. Neurogastroenterol Motil 2011;23:918

P0515 NUCLEAR LORICRIN AND A DYSREGULATION OF BARRIER PROTEINS OBSERVED IN GASTRO-OESOPHAGEAL REFLUX DISEASE AFFECTED OESOPHAGEAL EPITHELIUM
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Blizard Institute, London/United Kingdom
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Introduction: Gastro-oesophageal reflux disease (GORD) is one of the most common disorders encountered in clinical gastroenterology. GORD patients can be categorised as having erosive oesophagitis or non-erosive reflux disease (NERD). This study aimed to determine the extent to which the therapeutic target of these patients is the oesophageal mucosa. In NERD, even though the endoscopic presentation of the oesophageal mucosa is normal, the barrier function may be impaired. This study was to investigate differences in the expression intensity, localisation and activity of key barrier function proteins derived from 13 patients with typical GORD symptoms. We compared this to expression derived from 13 control biopsies using a targeted assay combined with subsequent IF analysis.
Aim & Methods: Here, via immunohistochemical staining and subsequent IF microscopic analysis, we investigate differences in the expression of loricrin (LOR), involucrin (INV), desmoglein-1 (DSG-1), transglutaminase-1 (TGM-1) and cathepsin-D (CTSD) in oesophageal mucosa derived from 13 patients with typical GORD symptoms. We compared this to expression derived from 13 control biopsies.
Results: After long-term capsaicin ingestion, aggregate upper gastrointestinal symptoms scores were reduced by 1.0 (−1.8;−0.1; p < 0.05) in capsaicin positive and negative patients (p > 0.05). On the contrary, capsaicin negative patients had significantly lower scores for satiety (p < 0.001) and epigastric bloating (p = 0.01) than capsaicin positive patients. Lower abdominal symptoms were comparable in capsaicin positive and negative patients at baseline (NS). After capsaicin ingestion, aggregate upper gastrointestinal symptoms scores were reduced by 3.3 (−4.9;−1.9; p < 0.001) in capsaicin positive and −2.6 (−4.1;−1.7) in capsaicin negative patients. Lower abdominal symptoms scores after capsaicin ingestion were reduced by 1.0 (−1.8;−0.1; p < 0.05) in capsaicin positive but not significantly altered (−0.6; 1.7;+0.9; NS) in capsaicin negative patients. After long-term capsaicin ingestion, the capsaicin test turned negative in 53% of capsaicin positive patients (p < 0.01).
Conclusion: Differences in upper GI symptoms distinguished capsaicin positive and negative patients at baseline. Symptom improvement after long-term capsaicin ingestion was indirect proportional to the result during the initial capsaicin test. Sensitivity to orally ingested capsaicin decreases after long-term capsaicin ingestion.
Disclosure of Interest: All authors have declared no conflicts of interest.
References
Führer M, Vogelsang H, Hammer J. Neurogastroenterol Motil 2011;23:918

P0516 INFLUENCE OF PRUCALOPRIDE ON SECONDARY PERISTALIS IN REFLUX PATIENTS WITH INEFFECTIVE ESOPHAGEAL MOTILITY
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Introduction: The aim of the study was to determine clinical characteristics of patients suffering from GORD. Secondary peristalsis provides possibilities for the development of novel therapies designed to specifically target patients suffering from GORD.
Aims & Methods: We aimed to determine whether prucalopride would augment secondary peristalsis in reflux patients with IEM. After a baseline recording of primary peristalsis, secondary peristalsis was stimulated by slow and rapid mid-esophageal injections of air in 15 patients. Two separate sessions with 4 mg oral prucalopride or placebo were randomly performed.
Results: Prucalopride significantly increased primary peristaltic wave amplitude (68.1 ± 10.0 vs. 55.5 ± 8.8 mmHg; p = 0.02). The threshold volume for triggering secondary peristalsis was significantly decreased by prucalopride during slow (9.3 ± 0.8 vs. 12.0 ± 0.8 mL; p = 0.04) and rapid air injection (4.9 ± 0.3 vs. 7.1 ± 0.1 mL; p = 0.01). Secondary peristalsis was triggered more frequently after application of prucalopride (55% [43–70%]) than placebo (45% [33–50%]; p = 0.008). Prucalopride didn’t change wave pressure amplitudes during slow air injection (84.6 ± 8.1 vs. 57.4 ± 13.8 mmHg; p = 0.19) or pressure wave amplitudes during rapid air injection (84.2 ± 8.6 vs. 69.5 ± 12.9 mmHg; p = 0.09).
Conclusion: Prucalopride enhances mecsanosensitivity of secondary peristalsis and promotes motor properties of primary peristalsis in IEM patients. Our study suggests that prucalopride could be a therapeutic option in the management of GORD patients with significant esophageal hypomotility.
Disclosure of Interest: All authors have declared no conflicts of interest.
References

P0517 EFFECTS OF PRIOR JEJUNAL FEEDING ON GASTRIC RESPONSES TO DUODENAL ACID INFUSION IN PATIENTS WITH DIABETIC GASTROPAESIS (J4G STUDY): A RANDOMIZED, DOUBLE BLIND CONTROLLED CLINICAL TRIAL
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Introduction: Symptoms compatible with diabetic gastroparesis (DG) affect up to 1 in 5 patients with type 1 diabetes mellitus. Those affected suffer postprandial
nausea, vomiting, abdominal pain and impaired gastric control. Repeated hospital admissions are common. Endoscopic therapy is normal in most patients. Impaired gastric function is thought to cause the condition. DG does not respond reliably to intensive insulin regimes or prokinetic medications. Jejunal nutrition (JN) is an option in patients that cannot maintain their weight. The benefits are thought to follow improved nutrition and increased gut function and glycaemia; however, we have observed that some DG patients eat normally during and after JN (i.e. a quasi-pharmacological effect). One explanation could be that DG represents a failure of oral nutrition to “switch” the stomach from the fasted to the fed state. According to this hypothesis, nutrients delivered directly to the small bowel triggers the release of peptide hormones that induce normal gastric function.

Aims & Methods: The study tests the hypothesis that JN prior to a test meal improves postprandial symptoms (primary outcome) and gastric function. Diabetic patients with severe symptoms (gastrosparesis cardiac index (GCSI) > 27), diabetic controls (GCSI < 14) and healthy controls entered a randomized, double blind, controlled trial. An insulin glucose infusion controlled glycaemia. A JN feeding tube was placed at endoscopy with biopsies taken from the stomach and duodenum. Either liquid nutrient (24 kcal/min) or water was infused for 60 mins. Afterwards the Nottingham Test Meal was ingested (NTM liquid: 400 ml; 300 kcal; solid: 12 non-nutrient agar beads)

Results: 9 DG patients, 9 diabetic and 12 healthy controls were recruited. There was no difference in sex distribution, age, weight, medical history (e.g. duration of disease) or endoscopic findings (including histology) between groups. DG patients had more psychiatric co-morbidity and reported higher satsity, bloating and pain after ingestion of the NTM than diabetic and healthy controls (p < 0.05). Sensations were not affected by JN in the controls; however, fullness, bloating and pain were reduced in JN in DG patients (p < 0.05). Compared to water, JN induced a greater GI-peptide response (e.g. PP, GLP-1) and initial liquid GE was slowed (gastric content volume after meal: GCV0 31 ±11 ml higher, p = 0.019). Subsequent liquid GE was similar in both study conditions (T50 3+ 4.8 min, p = 0.727). Antral contraction wave (ACW) frequency was 2.7 (2.6–2.9) min in health and was highest in diabetic controls (3.1 (2.7 to 3.3) min). Solid GE was more rapid after JN than water (2.1 (1 to 3) beans emptied ±60 min) and, again, was highest in diabetic controls (3 (1 to 7) beans emptied ±60 min). Numerically the GI-peptide response was less pronounced in both diabetic groups than healthy controls; however, the difference was not significant and a correlation with postprandial symptoms or gastric function was not identified.

Conclusion: This clinical study demonstrates beneficial effects of prior JN on fullness, bloating and pain after a 400 ml test meal in diabetic patients with moderate-severe symptoms compatible with gastroparesis (GCSI > 27). Additionally, solid GE was accelerated after JN; however, this effect was not limited to DG patients and, thus, the treatment effect that improved symptoms could not have been identified. Furthermore, patients in the DG group had objective evidence of abnormal gastric motor function and the benefit of "prior JN" on symptoms was not limited to patients with slow GE. However, it was observed that diabetic controls had relatively rapid ACW and solid GE. Future studies will identify patients that could benefit from this novel approach to treatment.
Proportions with abnormal reflux burden in relationship to EGJ and esophageal body motor findings on high resolution manometry

<table>
<thead>
<tr>
<th>AET &gt; 6%</th>
<th>AET &lt; 4%</th>
<th>MNBI = 2292</th>
<th>n = 431</th>
<th>n = 642</th>
<th>omhs = 596</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EGJ findings</strong>&lt;br&gt;Intact EGJ (n = 280)</td>
<td>25.7%</td>
<td>60.7%**</td>
<td>58.3% (63/108)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypotensive EGJ (n = 862)</td>
<td>36.5%*</td>
<td>49.2%**</td>
<td>56.3% (259/460)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hiatus hernia (n = 422)</td>
<td>40.0%*</td>
<td>36.5%**</td>
<td>69.8%* (138/199)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both (n = 342)</td>
<td>40.4%*</td>
<td>34.8%**</td>
<td>70.9%* (124/175)</td>
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<td></td>
</tr>
<tr>
<td><strong>Esophageal body motor findings</strong>&lt;br&gt;Intact esophageal body (n = 686)</td>
<td>31.0%</td>
<td>56.9%**</td>
<td>46.5% (158/340)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEM (n = 326)</td>
<td>41.4%*</td>
<td>44.8%</td>
<td>69.6%* (94/135)</td>
<td></td>
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</tr>
<tr>
<td>Absent contractility (n = 43)</td>
<td>53.5%*</td>
<td>39.5%*</td>
<td>88.2%* (15/17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined EGJ &amp; esophageal body motor findings&lt;br&gt;Intact EGJ and body (n = 170)</td>
<td>25.3%</td>
<td>61.2%**</td>
<td>49.3% (36/73)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypotensive EGJ, IEM (n = 105)</td>
<td>56.2%*</td>
<td>24.8%**</td>
<td>83.0%* (44/53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypotensive EGJ, HH, IEM (n = 7)</td>
<td>71.4%*</td>
<td>14.3%*</td>
<td>100%* (5/5)</td>
<td></td>
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</tr>
</tbody>
</table>

* p < 0.05 compared to intact EGJ and/or esophageal body function** p < 0.005 compared to AET > 6% EGJ: esophagogastric junction; AET: acid exposure time; MNBI: mean nocturnal baseline impedance; IEM: ineffective esophageal motility, HH: hiatus hernia.

Conclusion: A disrupted EGJ and IEM on esophageal HRM are independent predictors of elevated esophageal reflux burden. Hierarchical HRM evaluation of EGJ and esophageal body metrics adds confidence to categorization of esophageal reflux burden.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0520 MEASURING THE ACTIVE AND PASSIVE CHARACTERISTICS OF CONTRACTILE SMOOTH MUSCLE IN PORCINE INTESTINE MODEL

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Purpose: We used five female pigs and obtained ten centimeters of each porcine small intestine. To measure the passive characteristics of small intestine, a universal testing machine with a tensile rate of 30 mm/min. To estimate the active characteristics of smooth muscle and isometric and isotonic intestinal motility of smooth muscle, muscle contraction was induced by applying the stimulation solution (HTK solution containing 1 mM of acetylcholine chloride). Then, we obtained the maximum muscle contractile force of the specimens to measure the isometric and isotonic intestinal motility.

Conclusion: We straighten out the active and passive property of porcine intestinal smooth muscle. Our study may be helpful for developing novel medical devices and understanding the physiology of smooth muscle in the porcine small intestine.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

1. All authors have declared no conflicts of interest.

P0521 MÖTILITY PATTERNER AFTER PER-ORAL ENDOSCOPIC MYOTOMY (POEM) IN PATIENTS WITH ACHALASIA

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Purpose: Partial recovery of esophageal peristalsis has been reported in up to 45% of achalasia patients treated by myotomy (either per-oral endoscopic myotomy (POEM) or laparoscopic Heller’s myotomy) in several rather small studies. The aim of our study was to assess motility patterns focusing on possible "recovery" of esophageal peristalsis in a large cohort of patients after POEM.

Methods: We performed a retrospective analysis of prospective collected data of patients undergoing POEM at our tertiary referral center. All patients in whom high-resolution manometry (HRM) studies were performed both prior to and 3 months after POEM and who completed at least 6-month follow-up were included. All HRM studies were reviewed and the Chicago Classification (CC) v3.0 of motility disorders was applied to characterize both pre- and post-POEM motility patterns.

Conclusion: From 192 patients who underwent POEM since 2012, 127 patients met the inclusion criteria. The initial CC diagnoses before POEM were as follows: type 1 achalasia – 20 pts (16%), type II achalasia – 100 pts (79%), type III achalasia – 5 pts (4%), other (esophageo-gastric junction outflow obstruction (EGJOO) and Jackhammer) – 2 pts (1%). Only 6 patients (5% type III achalasia or 2 patients EGJOO) had had some signs of esophageal contractility before POEM. After POEM, peristaltic fragments were present in 28/127 patients (22%) - 9x ineffective esophageal motility, 5x fragmented peristalsis, 2x distal esophageal spasm, 3x EGJOO, 7x type III achalasia. Thus, the partial “recovery” of esophageal peristalsis was observed in 22/121 patients (18%) and it only occurred in patients with type I achalasia; contractile activity was not detected in any patient with type I achalasia after POEM (22/100 vs. 0/20, p = 0.023). Panesophageal pressurization completely resolved in 88 patients (88%) with
achalasia type II. The mean integrated-relaxation pressure (IRP) decreased from 27 (±13) mmHg to 13 (±5) mmHg (p < 0.0001). The presence of peri-
oral esophageal hyperactivity was neither associated with normalization of IRP (IRP normalized in 17/28 (61%) patients with peristaltic recovery and in 72/99 (73%) patients without, p = 0.25), nor with overall treatment success of POEM (Eckardt score < 3).

Conclusion: In this so far largest case-series investigating the rate of peristaltic recovery after POEM this was present in 18% of patients, therefore, the rate may be lower than previously reported. Peristaltic recovery seems to have no clinical impact on post-POEM symptomatology. Esophageal contractility after POEM was not observed in any patient with achalasia type I.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Roman S et al. Partial recovery of peristalsis after myotomy for achalasia; more the rule than the exception. *JAMA Surg*; 2013;148(2):157–64


P0522 WHAT IS THE EFFECT OF MYOTOMY SITE ON PER-ORAL ENDOSCOPIC MYOTOMY? COMPARISON OF ANTERIOR AND POSTERIOR MYOTOMY

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Introduction: Medical treatments, endoscopic balloon dilatation, Botox and Heller myotomy are treatment modalities for managing achalasia. Recently per-oral endoscopic myotomy (POEM) has become a new option for achalasia patients and since 2010 it has become widespread. Earlier, anterior myotomy was used in this technique but in the last few years there are studies reporting that posterior myotomy is more effective. However, there are limited numbers of publications comparing anterior and posterior myotomy. This study aimed to investigate the effect of myotomy site on POEM, to our knowledge it is the first time in Europe and our country.

Aims & Methods: Between May 2014 and January 2017, POEM was performed to 225 achalasia patients at the gastroenterology clinics under general anesthesia by an endoscopist experienced at endoscopic submucosal dissection and trained for POEM. Demographic data, previous history for balloon dilatation and results of the procedure were recorded prospectively. Patients with anterior myotomy were grouped as "group A" and those with posterior myotomy as "group P", and the results were compared.

Demographic features and results of POEM procedures

<table>
<thead>
<tr>
<th>Group</th>
<th>N = 114</th>
<th>N = 111</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male/female), n</td>
<td>56/58</td>
<td>38/53</td>
<td>0.639</td>
</tr>
<tr>
<td>Age mean (SD)</td>
<td>41.05 ± 14.89</td>
<td>42.24 ± 13.52</td>
<td>0.905</td>
</tr>
<tr>
<td>Prior achalasia treatment, n (yes or no)</td>
<td>48/66</td>
<td>36/75</td>
<td>0.087</td>
</tr>
<tr>
<td>Achievement sub-type, n</td>
<td>3/6/94/11</td>
<td>0/17/86/8</td>
<td>0.029</td>
</tr>
<tr>
<td>Unknown I/II/III, n</td>
<td>3/6/94/11</td>
<td>0/17/86/8</td>
<td>0.029</td>
</tr>
<tr>
<td>Tunnel length, mean (SD)</td>
<td>17.07 ± 2.63</td>
<td>17.32 ± 2.49</td>
<td>0.278</td>
</tr>
<tr>
<td>Myotomy length, mean (SD)</td>
<td>13.79 ± 2.46</td>
<td>14.04 ± 2.44</td>
<td>0.235</td>
</tr>
<tr>
<td>Procedure Time, mean (SD)</td>
<td>58.63 ± 21.47</td>
<td>66.58 ± 13.49</td>
<td>0.001</td>
</tr>
<tr>
<td>Tunnel time, mean (SD)</td>
<td>34.60 ± 14.67</td>
<td>27.02 ± 9.74</td>
<td>0.001</td>
</tr>
<tr>
<td>Myotomy time, mean (SD)</td>
<td>12.11 ± 6.67</td>
<td>10.08 ± 2.89</td>
<td>0.012</td>
</tr>
<tr>
<td>Dysphagia Score preoperative/postoperative (median; range)</td>
<td>(3.3–4.0)(0.0–2)</td>
<td>(3.3–4.0)(0.0–1)</td>
<td></td>
</tr>
<tr>
<td>Eckardt Score, preoperative/postoperative (median; range)</td>
<td>(6.6–12.0)(0.0–2)</td>
<td>(8.5–12.0)(0.0–2)</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
dyspeptic symptoms after a controlled meal. Secondary objectives were to evaluate its relation with postprandial GER and gastric accommodation and to evaluate its relation with daily digestive symptoms under real conditions.

Aims & Methods: Healthy people over 18 years old, free of frequent digestive symptoms (< once a week) and GER disease (GERD), were included. Basal symptoms were assessed through PAGI-SYM(3) and OQLRAD (4) questionnaires, both validated to Spanish. Study was divided in two substudies based on the study intervention: 33 cl of regular beer (substudy 1) and the same amount of non-alcohol beer (substudy 2). Mineral water (33 cl) was the control intervention in both substudies. Each participant was its own control. The study lasted two weeks (control study week and intervention study week). Each week started with a visit to the laboratory at 7:30 am, when a pHimpedance catheter was placed and taken off 24 hours later. Gastric accommodation was assessed through the maximum tolerated volume during a nutrient drink test (ENSURE®HN, 500 ml) in a rhythm of 15 ml/minutes, after the ingestion of beer (intervention) or water (control). It was defined as the volume after which the test finished or the participant reported the maximum puntuación for any dyspeptic symptoms (early satiety, bloating, epigastric pain and nausea), which were asked every 5 minutes (1 meant no symptom and 5 meant the highest perception). GER was evaluated in the postprandial period and during 24 hours through pHimpedance register. Weekly symptoms evaluation was made though a diary adapted from PAGYSSM questionnaire and sum of symptoms was used for analysis. Data were collected daily through email. Variables were compared between both visits and weeks in both substudies using a non parametric test for matching data. Participants should drink 33 cl of beer before lunch and dinner during the intervention week. Other alcohol drinks were prohibited during the study. Participants were enrolled in substudy 1, mean aged 24 years old (SD 4.1 [18–32]); 80% were men. Twenty participants were enrolled in substudy 2, mean aged 23.4 years (SD 5.5 [20–38]); 65% were men. No significant differences were detected in the increase of symptoms during the nutrient drink test between control and intervention visits in both substudies (table 1). Maximum tolerated volume did not show any difference between visits in both substudies. Reflux episodes after nutrient drink test and reflux episodes registered in 24 hours did not show significant differences between control and study visits. The sum of weekly symptoms did not show any difference between control and intervention weeks in both substudies.

Conclusion: Moderate beer consumption (regular and non-alcohol beer) does not cause an increase of dyspeptic symptoms and reflux in healthy people. It has been shown in a controlled situation (nutrient drink test and pH impedance register) as well as in real life (diary weekly symptoms). Gastric accommodation and reflux episodes have either shown to be affected by moderate beer consumption.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0527 CHRONIC POSTSTROKE OROPHARYNGEAL DYSPHAGIA IS ASSOCIATED WITH IMPAIRED CORTICAL ACTIVATION TO PHARYNGEAL SENSORY INPUTS

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Introduction: The role of afferent sensory pathways in the pathophysiology of post-stroke oropharyngeal dysphagia (OD) is not known [1]. We hypothesized that chronic post-stroke patients with OD (PSD) would show impaired sensory cortical activation in the affected hemisphere.

Aims & Methods: We studied 28 chronic unilateral post-stroke patients (17 PSD and 11 nosophy (PSnD)) and 11 age-matched healthy volunteers (HV). Electric catheters used to assess event-related sensory evoked potentials to pharyngeal stimulation (pSEP) and sensory thresholds with a naso-pharyngeal catheter with two electrodes passed through the nostrils 14–15 cm until the pharynx (Galetic Ltd, Dunvegan, Scotland) [2]. We analysed pSEP peak-latency and amplitude (N1, N2, P2, N2-P2) and neurotopographic slope characteristics from brain MRI.

Results: HV presented a highly symmetric bi-hemispheric cortical pattern of brain activation at centro-parietal areas (N1-P1, N2-P2) to pharyngeal stimuli. In contrast, an asymmetric pattern of reduced ipsilesional activation was found in PSD (N2-P2; p = 0.026) but not in PSnD. PSD presented impaired safety of swallow (Penetration-Aspiration score: 4.3 ± 1.6) and delayed laryngeal vestibule closure (360.0 ± 70.0 ms), and higher NIHSS (7.0 ± 6.2 vs. 1.9 ± 1.4, p = 0.001) and Fazekas scores (3.0 ± 1.4 vs. 2.0 ± 1.1, p < 0.05) than PSnD. pSEP showed a unilateral delay at stroke site exclusively for PSD (peak-latency inter-hemispheric difference vs. PSnD: N1, 6.5 ± 6.7 vs. 1.1 ± 1.0 ms; N2, 32.0 ± 15.8 vs. 4.5 ± 4.9 ms; p < 0.05).

Conclusion: Chronic post-stroke OD is associated with stroke severity and degree of leukoaraiosis. Impaired conduction and cortical integration of pharyngeal sensory inputs at stroke site is a key feature of chronic PSD. These findings highlight the role of sensory pathways in the pathophysiology of post-stroke OD and offer a potential target for future treatments.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:


P0529 RELEVANCE OF SLEEP DISTURBANCE TO FUNCTIONAL GASTROINTESTINAL SYMPTOMS, CLINICAL CHARACTERISTICS, AND PSYCHOLOGICAL DISTRESS

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Introduction: Reduced sleep quality has been linked to gastrointestinal reflux disease (GERD) and functional gastrointestinal disorders. It is unknown whether GERD, functional dysphasia (FD) and irritable bowel syndrome (IBS) are more prevalent in patients with subjective sleep disturbance (SD) than those without SD.

Aims & Methods: The aim of the study was to investigate gastrointestinal symptoms, clinical characteristics, and psychological factors in subjects with and without SD in a general population undergoing health checkups. We enrolled 2752 consecutive subjects who received upper gastrointestinal endoscopy and colonoscopy during their health checkups. All participants underwent an evaluation with questionnaires including Reflux Disease Questionnaire score, Pittsburgh Sleep Quality Index (PSQI), Taiwanese Depression Questionnaire, and State-Trait Anxiety Inventory before receiving endoscopic exam. Demographic characteristics and biochemical data were also recorded. FD and IBS were based on Rome III diagnostic criteria, and metabolic syndrome was defined by the National Cholesterol Education Program Adult Treatment Panel III definition. Sleep disturbance was confirmed when PSQI score was greater than 5. We compared the clinical and psychological factors between subjects with and without sleep disturbance.

Results: Among the study population (n = 2674), 956 (36%) individuals had SD. SD subjects had more female gender, older age, lower level of education, higher systolic blood pressure, higher serum high-density lipoprotein levels, and higher prevalence of FD and IBS than those without SD. In addition, SD patients also had more depression, more anxiety, more severe GERD symptoms, and higher prevalence of non-erosive reflux disease (NERD) (p < 0.001). Multivariate analysis revealed that female sex (OR = 1.75, p < 0.001), older age (OR = 1.03, p < 0.001), and more severe GERD symptoms (OR = 1.03, p < 0.033), NERD (OR = 1.63, p = 0.023), IBS (OR = 1.48, p = 0.05), and depression (OR = 1.16, p < 0.001) were positive predictive factors for SD, whereas higher level of education (OR = 0.57, p = 0.001) was negative predictive factor for SD.

Conclusion: Our study demonstrates that SD is associated with female sex, older age, lower education level, greater GERD symptom burden, greater depression, and higher prevalence of NERD and IBS. Future studies will be needed to clarify the relationship between functional gastrointestinal diseases and sleep disorders.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:


Results: A total of 101 gastroparesis patients (71% female, 20–86yrs, mean 55yrs) were evaluated. Endoscopy was used to assess event-related sensory evoked potentials to pharyngeal stimulation (pSEP) and sensory thresholds with a naso-pharyngeal catheter with two electrodes passed through the nostrils 14–15 cm until the pharynx (Galetic Ltd, Dunvegan, Scotland) [2]. We analysed pSEP peak-latency and amplitude (N1, N2, P2, N2-P2) and neurotopographic slope characteristics from brain MRI.

Results: HV presented a highly symmetric bi-hemispheric cortical pattern of brain activation at centro-parietal areas (N1-P1, N2-P2) to pharyngeal stimuli. In contrast, an asymmetric pattern of reduced ipsilesional activation was found in PSD (N2-P2; p = 0.026) but not in PSnD. PSD presented impaired safety of swallow (Penetration-Aspiration score: 4.3 ± 1.6) and delayed laryngeal vestibule closure (360.0 ± 70.0 ms), and higher NIHSS (7.0 ± 6.2 vs. 1.9 ± 1.4, p = 0.001) and Fazekas scores (3.0 ± 1.4 vs. 2.0 ± 1.1, p < 0.05) than PSnD. pSEP showed a unilateral delay at stroke site exclusively for PSD (peak-latency inter-hemispheric difference vs. PSnD: N1, 6.5 ± 6.7 vs. 1.1 ± 1.0 ms; N2, 32.0 ± 15.8 vs. 4.5 ± 4.9 ms; p < 0.05).

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Disclosure of Interest: All authors have declared no conflicts of interest.

References:

Table 1 Continued

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Factor</th>
<th>Odds ratio</th>
<th>95% Confidence interval</th>
<th>R² value</th>
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<tr>
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<td>Gastroduodenal disorder</td>
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<tr>
<td>Anorectal disorder</td>
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<tr>
<td>Diet rich in rice</td>
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<td>1.006–1.196</td>
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<tr>
<td>PHQ12</td>
<td>1.110</td>
<td>0.690–1.954</td>
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</table>

Variables with a p-value of 0.1 or less in univariate analysis were entered into a multivariate analysis (logistic regression) in order to identify factors independently associated with esophageal symptoms (up to 33 variables).

Aims & Methods: Data from an online survey of 6300 individuals age ≥18 years in the United States, United Kingdom and Canada (2100 in each country) including the Rome IV diagnostic questionnaire for adults and demographic questions was used. Quota-based sampling ensured equal proportions of sex, age groups, and educational levels across countries. Prevalence and frequency of esophageal symptoms in the past 3 months and putative functional esophageal disorders were retrieved from the Rome IV questionnaire. Symptoms were considered present if they occurred at least weekly for dysphagia, chest pain, and globus, and at least twice weekly for heartburn. Variables with a p < 0.1 in univariate analyses were entered into a multivariate analysis (logistic regression) to identify factors independently related to esophageal symptoms. As endoscopy and pH measurement are parts of the clinical diagnosis of esophageal disorders in the Rome IV criteria, we only describe esophageal symptoms compatible with functional esophageal disorders. Somatization was assessed with the Patient Health Questionnaire (PHQ)-12.

Results: Data from 5177 participants (47.8% female; mean age 46.7 (range 18–92) years) were included in the analysis. Non-GI symptoms are associated with reporting esophageal symptoms. Esophageal symptoms consistent with a functional esophageal disorder according to the Rome IV criteria are unknown. This study aimed to describe the general population prevalence and risk factors for esophageal symptoms compatible with functional esophageal disorders.

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Several studies have provided information on the prevalence of different atopic conditions in adult EoE patients compared to a control group of subjects. The findings indicate that, overall, EoE patients show a higher frequency of asthma, rhinoconjunctivitis, eczema, and food allergies than control groups; however, definitions for the associated atopic conditions have varied and the selection process for the controls has not been such that they can be considered universally representative of the general population without EoE. These two limitations have hampered researchers in their efforts to clearly assess the magnitude of the association between atopy and EoE, and systematic reviews of the literature and meta-analysis in order to evaluate the presence of atopic diatheses in patients with EoE as well as to summarize the prevalence of atopic conditions in both paediatric and adult EoE patients in comparison with the non-EoE control population.

Aims & Methods: A highly sensitive search strategy was designed to identify and retrieve all documents dealing with the relationship between atopy and EoE in children and adults. This systematic literature search was performed independently by G.M. and A.H. in perpetual May 2016 and was complemented by bibliographic databases (PubMed, EMBASE, and Scopus) for the period up to March 2016. The search was not restricted with regard to the language of publication. A predetermined protocol was used in accordance with the quality standards for reporting meta-analyses of observational studies in epidemiology. Four reviewers (JG-C, AA, MM-CM, and AJL) independently extracted relevant information from each eligible study using a standardized data extraction sheet and then proceeded to cross-check the results. Estimates for the prevalence of each atopic manifestation in EoE patients and controls were summarized with the aid of a fixed- or random-effects meta-analysis, depending on intra-study heterogeneity, weighted for inverse variance following the method elaborated by DerSimonian and Laird. Summary analyses, including 95% confidence intervals, were calculated for each season and month, whenever possible.

Results: Of the 2954 references identified, data was collected from 21 studies including a total of 53,542 EoE patients and 54,759 controls. The criteria for defining a diagnosis of atopy in either EoE patients or controls were not structurally considered in most of the studies. The frequency or prevalence of the different atopic manifestations among EoE patients was compared with that observed in several types of control populations, including series of patients with gastroesophageal reflux disease (GERD), healthy patients, and, in some studies, controls, all of whom were endoscopically assessed with a diagnosis of EoE specifically ruled out. In all cases, EoE was considered as independent from GERD and other upper GI tract diseases. Some studies included database-registered subjects as well. The criteria for defining a diagnosis of atopy among EoE patients and control subjects varied widely across the different studies, from self-reported/parent-reported atopic background to strict allergist/immunologist-provided diagnoses. Overall, allergic rhinitis was significantly more common than other atopic conditions compared to control subjects (OR 5.3: 95% CI: 3.27, 9.53; F = 86%) as were bronchial asthma (OR 3.06 (95% CI: 2.01, 4.66; Ι² = 83.4%) and eczema (OR 2.86; 95% CI: 1.88, 4.36; F = 57.2%). Food allergies and other atopic conditions were also assessed. No significant publication bias was found for studies dealing with allergic rhinitis and eczema in EoE. Finally, our search uncovered two papers that reported on the frequency of drug allergy in EoE patients compared to controls, showing no significant differences between these two populations (OR = 0.981; 95%CI: 0.77, 1.27).

Conclusion: The present study shows that an accurate diagnosis of atopy is lacking in most of the research evaluating the prevalence of asthma, rhinitis, and eczema among EoE patients. Still, the prevalence of these three conditions seems to be significantly higher in children and adults with EoE as compared to control subjects. However, the criteria in the general population and in further research are not uniform and use standard definitions of allergic rhinitis, asthma (including its severity and level of control), skin allergy, and food allergy (rather than mere sensitization) when assessing and documenting concurrent allergic diseases in patients with EoE.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Plasma FP PK Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AM Fast Geometric Mean (CV%)</th>
<th>AM Fed Geometric Mean (CV%)</th>
<th>HS Geometric Mean (CV%)</th>
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<tr>
<td>Cmax (pg/mL)</td>
<td>31.1 (103.6)</td>
<td>34.2 (102.3)</td>
<td>23.8 (111.9)</td>
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<td>Tmax (h)</td>
<td>10.00 (2.00-3.00)</td>
<td>5.00 (1.00-1.00)</td>
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<tr>
<td>AUCinf (pg/h/mL)</td>
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<td>361.277 (105.5)</td>
<td>359.144 (100.5)</td>
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<td>AUClast (ph/mL)</td>
<td>1044.308 (90.1)</td>
<td>587.890 (107.2)</td>
<td>726.451 (100.2)</td>
</tr>
</tbody>
</table>

CV% = percentage coefficient of variation. *Median and range are presented.

Disclosure of Interest: G.M. Comer: Dr. Gail M. Comer is a paid consultant for Adare Pharmaceuticals, Inc.
B.A. Meltzer: Dr. Brian A. Meltzer is an employee of Adare Pharmaceuticals, Inc.

P0535 EOSINOPHILIC ESOPHAGITIS: RATIONALISING THERAPY

Department Of Gastroenterology, University College London Hospital, London/United Kingdom

Introduction: Eosinophilic esophagitis (EE) is a chronic condition of the esophagus with pathognomonic clinical, endoscopic and histologic features. We aimed to prognosticate which cohort of patients respond best to proton pump inhibitor (PPI) therapy or topiramate or both by index esophageal histology and in conjunction with symptoms at presentation and on follow-up.

Aims & Methods: All patients referred with dysphagia or with an incidental high resolution barium swallow of greater than 15 cm long had histologic evidence of EE grades 2 or 3. Between 2013 and Dec 2015 were analyzed by retrospective case note review and patient communication. Univariate analysis and binary logistic regression was used to identify associations between patient characteristics, presentation, endoscopic findings, degree of eosinophilia and subsequent response to therapy. Associations were assessed by Fisher’s exact test, t-test and Mann-Whitney for nominal, continuous parametric and non-parametric variables respectively.

Results: 1653 patients fulfilled the entry criteria. 544 with previous cancer, achalasia, post-operative strictures or Barrett’s esophagus were excluded. 95 patients had histological eosinophilia in keeping with EE, 85 with dysphagia and 10 with reflux as their presenting symptom (67% male, mean age 42±7years). 31(32%) of these had at least one presentation with food bolus obstruction (FBO). There was a trend towards a higher eos/hpf in patients who presented with FBO (47±21) compared to dysphagia (38±17) and reflux (38±17) (p = 0.073). Endoscopic evidence of chronic strictureing disease was associated with a higher eos/hpf than those with no strictures (mean 50.3 vs 38.6; p = 0.04). 31 patients had endoscopic biopsies taken at least 3 months post therapy. Those with index features of chronic disease were more likely to be associated with failure of the eosinophils to normalize regardless of medical treatment compared to those with acute changes (furrows, exudates) (33% vs 10% respectively; p = 0.03). Patients with dysphagia and/or FBO demonstrated a reduced normalisation of eos/hpf following either steroid or PPI therapy compared to those not presenting with these symptoms at a minimum of 3 months (46% vs. 100%; p = 0.03). Overall, there were no significant associations between complete eos/hpf and response to therapy. The other hypotheses, regardless of endoscopic findings, patients presenting with dysphagia and/or FBO demonstrated a higher response to steroids than those with reflux symptoms (50% vs 5% p = 0.018) who responded best to PPI (91%). 78 patients were contactable a minimum of 3 months following initiation of treatment. Patients with chronic EE findings at initial endoscopy were less likely to respond symptomatically to PPI monotherapy compared to those with normal or acute endoscopic findings (52% vs. 68%; p = 0.003) while they were more likely to respond...
to steroids (64% vs 36%; p = 0.002). Specifically, the presence of strictures indicated a more likely clinical response to steroids compared to PPI alone. (p = 0.007).

**Conclusion:** A higher eos/hpf was found in patients with chronic EE features at index endoscopy than those with normal or acute endoscopic signs. In those with normal or acute EE changes and without dysphagia as a presenting complaint, a clinical response was noted with PPI therapy alone. In those with chronic EE changes or with dysphagia/FBO, steroids appear to be the preferred therapeutic option, although at 3 months follow up a clinical response might precede a histological one.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Table:**

<table>
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<tr>
<th>Endoscopic Features, %</th>
<th>Esomeprazole Group (n = 8)</th>
<th>Rabeprazole Group (n = 9)</th>
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<td></td>
<td>After-Therapy</td>
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<td>After-Therapy</td>
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<td>Rings</td>
<td>75%</td>
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<td>62%</td>
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<td>Edema</td>
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<td>Crepe paper</td>
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<td>0%</td>
<td>0%</td>
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<tr>
<td>Strictures</td>
<td>13%</td>
<td>13%</td>
<td>22%</td>
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<tr>
<td>Mean EREFS Score</td>
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<td>1.2</td>
<td>8.1</td>
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**Eos:** eosinophil; *Calculated for an HPF area = 0.24 mm²

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**Disclosure of Interest:**

All authors have declared no conflicts of interest.

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**Table Continued:**

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<th>Histologic Features, n or %</th>
<th>Esomeprazole Group (n = 8)</th>
<th>Rabeprazole Group (n = 9)</th>
<th>Pantoprazole Group (n = 11)</th>
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<td>After-Therapy</td>
<td>Baseline</td>
<td>After-Therapy</td>
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<tr>
<td>Lamina propria fibrosis</td>
<td>0%</td>
<td>0%</td>
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**Disclosure of Interest:**

All authors have declared no conflicts of interest.
Introduction: Patients with gastroesophageal reflux disease (GERD) demonstrate a range of different symptoms (esophageal and extraesophageal) however the relationship between symptoms and types of reflux was not evaluated.

Aims & Methods: The aim of the study was to assess the relationship between GERD patients’ symptoms with characteristics of refluxes obtained by 24-h esophageal pH-impedance. One hundred fifty eight GERD patients (68 men, 89 women, age (M ± m) 46 ± 6.7 years) were examined using 24-hours esophageal pH-impedance recordings (Ohmega, MMS, the Netherlands; 2pH-6 impedance channels catheters, UnisensorAG, USA) and validated GERD-Q questionnaire. According to baseline endoscopy 91 patients were classified as non-erosive reflux disease (NERD) and 67 as erosive reflux disease (ERD) patients. Patients’ symptoms were classified according to Montreal classification.

Results: Extraesophageal symptoms as well as weak acid gastroesophageal refluxes were found significantly more often in patients with NERD compared to ERD group (table 1). However higher number of acid refluxes, higher GERD-Q score, DeMeester score were present in ERD. The total number of gastroesophageal refluxes didn’t differ between ERD and NERD groups of patients.

Table 1: Results of the study

<table>
<thead>
<tr>
<th></th>
<th>Controls (n = 49)</th>
<th>NERD (n = 91)</th>
<th>ERD (n = 67)</th>
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<tbody>
<tr>
<td>Number of refluxes/day, n</td>
<td>17 ± 1.3</td>
<td>55 ± 3.07*</td>
<td>55 ± 4.7*</td>
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<tr>
<td>Number of refluxes/day, n</td>
<td>6 ± 1.0</td>
<td>27 ± 2.2*</td>
<td>33 ± 3.7*</td>
<td>0.040</td>
</tr>
<tr>
<td>Number of weak acid refluxes/day, n</td>
<td>7 ± 0.93</td>
<td>22 ± 2.1*</td>
<td>15 ± 2.3*</td>
<td>0.038</td>
</tr>
<tr>
<td>Number of high gastroesophageal refluxes/day, n</td>
<td>2 ± 0.47</td>
<td>15 ± 1.4*</td>
<td>12 ± 2.2*</td>
<td>0.347</td>
</tr>
<tr>
<td>DeMeester score</td>
<td>3.16 ± 1.75</td>
<td>13.3 ± 2.0*</td>
<td>26.92 ± 6.2*</td>
<td>0.0001</td>
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<tr>
<td>GERD-Q score</td>
<td>5 ± 0.31</td>
<td>10 ± 0.24*</td>
<td>13 ± 1.24*</td>
<td>0.0001</td>
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<tr>
<td>Extraesophageal symp-toms (cough, laryngitis, etc.) (present, % in group)</td>
<td>0</td>
<td>61.5*</td>
<td>31.3*</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Conclusion: ERD and NERD groups of patients are characterized by different symptom patterns and types of gastroesophageal refluxes registered with 24-hours esophageal pH-impedance monitoring. These findings could reflect differences in pathogenesis and clinical manifestations of mentioned forms of GERD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0539 LARYNGEAL DISORDERS AND CHRONIC COUGH IN ADULTS WITH AND WITHOUT EROSIIVE ESOPHAGITIS: A CASE-CONTROL STUDY IN ALBANIA

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Introduction: Several clinical-based studies from Western countries have investigated the prevalence of extra-esophageal symptoms in various degrees of reflux erosive esophagitis. However, the independent factors related to the development extra-esophageal manifestations remain unclear.

Aims & Methods: Our aim was to assess the prevalence of extra-esophageal symptoms (laryngeal disorders and chronic cough) in adults with (cases) and those without (controls) erosive esophagitis in Albania, a developing Southeast European country. A case-control study was conducted at the Regional Hospital of Durres, the second main district in Albania, a transitional country in South Eastern Europe, including 91 patients with erosive esophagitis (aged 16.5 ± 13.6 years) and 273 controls (aged 46.4 ± 16.0 years; response rate: 70%) enrolled during the period January 2013 – June 2014. Both cases and controls underwent upper endoscopy. Information on socio-demographic characteristics and lifestyle factors were also collected. Binary logistic regression was utilized to assess the association of erosive esophagitis and extra-esophageal symptoms.

Results: Patients with erosive esophagitis had a higher prevalence of excessive alcohol consumption, smoking, sedentarity and obesity compared to their control counterparts (9% vs. 5%, 70% vs. 49%, 31% vs. 17% and 22% vs. 9%, respectively). The prevalence of hiatal hernia was higher in cases than in controls (21% vs. 8%, respectively), whereas the prevalence of gastric-duodenal ulcer was similar in both groups (13% vs. 14%, respectively). Upon adjustment for all socio-demographic characteristics and lifestyle/behavioral factors, there was evidence of a strong association of erosive esophagitis with chronic cough (OR = 3.1, 95%CI = 1.7–5.7), and even more so with laryngeal disorders (OR = 4.4, 95%CI = 2.6–7.4). In all models, the association of erosive esophagitis with extra-esophageal symptoms was strong and remained significant even after adjustment of the symptoms separately (fully-adjusted model: OR = 4.6, 95%CI = 2.9–7.3).

Conclusion: Our findings indicate that the prevalence of extra-esophageal symptoms is higher among patients with erosive esophagitis in a transitional country characterized conventionally by the employment of a Mediterranean diet. Therefore, the upper endoscopy should be part of the evaluation in patients with suspected reflux-related chronic cough and laryngeal disorders.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0540 ASSESSMENT OF EXHALED BREATH CONDENSATE FOR NON-INVASIVE DIAGNOSIS OF GASTROESOPHAGEAL REFLUX DISEASE IN CORRELATION WITH MII-PH AND PEPTEST

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4Department Of Bioanalytical Instrumentation, CEITEC Masaryk University, Brno/Czech Republic

Introduction: Gastroesophageal reflux disease (GERD) is a disease caused by backflow of gastric contents into the esophagus due to the failure of physiological anti-reflux mechanisms and results in esophagitis and extra-esophageal complications. Extraesophageal reflux (EER) is a condition where refluxate penetrate above the upper esophageal sphincter (UES) in to the oral cavity, pharynx, upper and lower respiratory tract and leads to pathological changes like e.g. chronic cough, globus pharyngis, laryngitis, pharyngitis, rhinosinusitis, otitis media, bronchial asthma, COPD, sleep apnea and noncardiac chest pain. Currently there is no suitable, non-invasive diagnostic method applicable for GERD in clinical practice. Exhaled breath condensate (EBC) and saliva are two easily accessible samples that could be used in monitoring of patients suffering from extraesophageal symptoms of GERD. The aim of this study was to compare the pH and total ionic profile of EBC with 24-hour multichannel intraluminal impedance and pH monitoring (MII-pH) and salivary PepTest in a group of patients with weak acid reflux (pH < 4), weakly acid reflux (pH 4–7) and healthy controls.

Aims & Methods: A portable EBC sampler was used for collection of EBC. 10 µL sample aliquots of EBC were analyzed. For pH measurement, the CO2 from EBC was titrated with NaoH%= f(NaOH%) (pH 4–7) and the pH was determined with pH meter. For salivary pep test, samples that could be used in monitoring of patients suffering from extraesophageal symptoms of GERD. The aim of this study was to compare the pH and total ionic profile of EBC with 24-hour multichannel intraluminal impedance and pH monitoring (MII-pH) and salivary PepTest in a group of patients with weak acid reflux (pH < 4), weakly acid reflux (pH 4–7) and healthy controls. Aims & Methods:

Results: The values of pH (after CO2 removal with NaoH) were significantly higher in the group with acid reflux (p < 0.01), (mean pH 7.13, interquartile ranges 6.83–7.47) and in the group with weakly acid reflux (p < 0.01) (7.37, (7.18– 7.57)) vs. healthy controls (6.8, (6.65–6.99)). Butyric acid (BA) was the second most significant parameter that was significantly elevated (p < 0.01) in both patient groups (acid reflux- mean BA 2.29 µM, weakly acid reflux- mean BA 3.33 µM) compared to healthy subjects (mean BA 0.69 µM).

Further statistically significant differences were found in chloride (Cl–), nitrate (NO3–) and sodium (Na+) ions concentration. Cl– was elevated at (p < 0.01) in group with acidic reflux vs. healthy controls and NO3– and Na+ were elevated (p < 0.01) in the group with weak acid reflux vs. healthy controls. For saliva sampling and pep test analysis showed no statistically significant differences within the groups. In the groups of patients with acid reflux, the incidence of high pep concentration (above 75 ng/ml) was found only in 50% of the patients. Conclusion: We found statistically significant differences in pH and selected ions from EBC between different groups of patients and healthy controls. The analysis of selected parameters in EBC could provide a fast and non-invasive diagnostic method for GERD patients with EER symptoms in the future. This can
According to impedance-pH results, 14 out of 35 patients had increased acid reflux and normal AET.

**Aims & Methods:** We aimed to correlate various patterns of refluxate (i.e. predominant acidic refluxate, predominant non-acidic refluxate and no reflux at all), as assessed by impedance-pH, with different levels of G17 in endoscopic-negative subjects with heartburn. Thirty-five consecutive patients (19F/16M, mean age 47 years, range 31–56 years), all reporting heartburn ≥6 months with at least 3 episodes/week, entered the study. All patients underwent upper endoscopy off-proton pump inhibitors and were then divided in three groups according to the results of impedance-pH: a) Group A: subjects with increased number of reflux episodes and negative reflux-symptom association. Gastrin-17 (G17) has been proposed as a non-invasive marker of GERD, due to the negative feedback between acidic output and this hormone. Indeed, preliminary data showed that intermediate values of G17, between very low to normal levels, may identify GERD subjects with abnormal non-acid reflux.

**Introduction:** In this preliminary study, G17 levels well correlated with the three different categories of patients suffering of heartburn and included in the NERD umbrella (i.e. NERD patients with increased acid reflux episodes or abnormal AET, endoscopy-negative patients with increased non-acidic reflux and subjects with FH, suggesting its use as surrogate marker of NERD or non-acid reflux disease, without the need of performing invasive tests.

**Conclusion:** In this preliminary study, G17 levels well correlated with the three different categories of patients suffering of heartburn and included in the NERD umbrella (i.e. NERD patients with increased acid reflux episodes or abnormal AET, endoscopy-negative patients with increased non-acidic reflux and subjects with FH, suggesting its use as surrogate marker of NERD or non-acid reflux disease, without the need of performing invasive tests.

**Disclosure of Interest:** E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD

All other authors have declared no conflicts of interest.

**P0542 ANTI REFUX MUCOSECTOMY (ARMS) FOR REFRATORY GASTRO ESOPHAGEAL REFLEX DISEASE (GERD) - ARE WE THERE YET?**

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**Introduction:** As a treatment for gastro esophageal reflux disease (GERD), proton pump inhibitors (PPIs) are the mainstay of medical therapy. Laparoscopic fundoplication is generally advised when symptoms are poorly controlled with PPIs and is regarded as a gold standard of treatment, with excellent control in the short- and midterm. Long-term results, however, remain equivocal. Following on from the principles of surgical fundoplication, a variety of endoscopic procedures for GERD have been proposed to achieve a non-surgical control. Linx procedure, Stretta have been proposed as less invasive options.

**Aims & Methods:** We recruited all patients who had GERD refractory to standard medical therapy to see whether anti reflux mucosectomy prevents acid reflux into the esophagus. We screened all GERD patients who were refractory to proton pump inhibitors, hydrogen 2 receptor blockers and alginates and had an endoscopy suggestive of a lax cardia with mucosal flap grading of 1 to 3.

We performed a baseline screening endoscopy to rule out a hiatus hernia and to exclude helicobacter infection. A GERDQ questionnaire was filled by all the patients indicative of severity of reflux All patients had a high resolution manometry (Sandhill scientific) to exclude significant dysmotility and 24 hour pH measurements using Zephyr pH probe (Sandhill scientific) on therapy to demonstrate significant acid reflux. Only patients with mucosal flap valve grading 1, 2 or 3 were selected for anti reflux mucosectomy.

**Results:** Technique: Crescentic ARMS of the esophagogastric junctional (EGJ) mucosa was conducted with the standardized technique of endoscopic mucosal resection (EMR) of at least 3 cm length in the stomach, with the length of mucosal resection at the cardia measured in retroflexion from the gastric side. ARMS was conducted along the lesser curve of the stomach, thus preserving a sharp mucosal flap at the cardia measured in retroflexion from the gastric side. ARMS was conducted along the lesser curve of the stomach, thus preserving a sharp mucosal flap at the cardia.

**Conclusion:** Results suggest a potential anti-reflux effect of ARMS. The mechanism is presumed to be due to scar formation after healing of the mucosal defect. On the gastric side, this induces narrowing of the gastric cardia opening, while preserving and/or re-creating a robust his angle. After ARMS, the lesser curve of the gastric cardia takes on an almost “mechanically-stitched” appearance. The mucosal flap is rebuilt and looks well-defined. Furthermore, the lesser curve side

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**Abstract No: P0542**

**ARMS PATIENT**

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<th>PRE DEMENTER</th>
<th>POST DEMENTER</th>
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<th>POST ARMS (%)</th>
<th>RECUMBENT ACID EXP-ARM (%)</th>
<th>POST ARMS (%)</th>
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<th>POST ARMS (minutes)</th>
<th>TOTAL REFUX TIME PRE ARMS (minutes)</th>
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of the EGI is shortened with scar formation, and greater curve of EGI (his sight) noted. Therefore raised mucin as a mucosal flap valve.

The quantity of mucosa to be resected (“not too tight and not too loose”) scar formation is a key issue in this procedure. Total circumferential resection causes strictureing as demonstrated in previous studies, while subtotal dissection, which we have termed crescentic, produces better results in this result, while still resulting in symptom control. Mucosal flap valve grading is not only a predictor of reflux in these patients but also is a prognostic marker of effectiveness of ARMS, i.e. higher the grade worse the outcome. With the extent and type of mucosal resection (ER or ESD) according to the mucosal flap valve grading may be a better predictor of outcome than a box standard procedure. This technique has a potential role in people with oesophageal dysmotility wherein Nissen’s fundoplication is relatively contraindicated.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0543 A RANDOMISED, DOUBLE-BLIND, PLACEBO-CONTROLLED, MULTICENTRE 26-WEEK STUDY ON THE EFFECTS OF DEXLANSAPRAZOLE AND ESOMEPRAZOLE ON BONE HOMEOSTATIC IN HEALTHY POSTMENOPAUSAL WOMEN

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Introduction: Observational and epidemiologic data have suggested an association between proton pump inhibitor (PPI) use and osteoporotic fractures. To evaluate potential mechanisms for this association, we measured bone turnover, bone mineral density (BMD), true fractional calcium absorption (TFCA), and serum and urine mineral levels in healthy postmenopausal women taking PPIs or placebo for 26 weeks.

Aims & Methods: Postmenopausal women aged 45–75 were randomised to daily oral 60-mg dexlansoprazole (DEX), 40-mg esomeprazole (ESO), or PBO for 26 wks with follow-up at wk 52. Primary endpoints were 26-wk % change vs placebo in procollagen type 1 N-terminal propeptide (PINP) and C-terminal peptide of type 1 collagen (CTX). Additional endpoints included changes in BMD (26 and 52 wks) and serum and urine mineral levels (26 wks). Fractions between baseline and wk 26 were recorded as adverse events. TFCA (0 and 26 wks) was measured in a subset (n = 34) of patients.

Results: Excluding 1 disqualified site, 115 women were randomised and 93 completed the study. There were no substantial differences in age, BMI, baseline serum calcium, or vitamin D levels between groups. The bone turnover markers PINP and CTX were within normal ranges during 26 wks of PPI therapy. Within each group, there was no statistically significant 26-wk change in bone turnover, except a small increase in CTX levels with DEX (0.12 ng/mL; 95% CI 0.03–0.23). The 26-wk median % increases in PINP from baseline vs PBO (difference in median % change [95% CI] were 19% (7%–30%) for DEX and 18% (7%–30%) for ESO. CTX levels increased vs PBO by 27% (13%–43%) for DEX and 22% (8%–36%) for ESO. PPI effects on BMD, serum and urine mineral levels, and parathyroid hormone were not statistically different vs PBO. Median % change from baseline in TFCA vs PBO was not statistically significant for DEX, but was significant for ESO (6%, 95% CI 2%–11%). No spontaneous fractures occurred during treatment; 1 traumatic foot fracture (DEX) and 1 humerus fracture (circumstance unknown; ESO) occurred during follow-up.

Conclusion: 26 wks of DEX or ESO therapy increased bone turnover markers, but did not reduce BMD, TFCA, or serum or urine mineral levels. ESO increased TFCA by <1%. Although bone turnover markers increased with PPI therapy, levels remained within the normal ranges. No clear explanation for an association between PPI therapy and fracture risk was found in this study.

Disclosure of Interest: K.E. Hansen: Takeda paid me for my work as a consultant in the design of the study, and for my work in conducting the study at my medical center.

D.C. Metz: Takeda - access to writing and data analysis for the purposes of this protocol

M.C. Perez: Employee of Takeda Pharmaceuticals

All other authors have declared no conflicts of interest.

Trial Registration: This study has the ClinicalTrials.gov identifier NCT01216293.
CONCLUSION: A tailored approach to refractory NERD, guided by MII-pH monitoring should give useful patient-specific information about refractory NERD. Therefore, our aim was to assess whether this technique could be useful to guide a "tailored" therapy to refractory NERD patients.

AIMS & METHODS: We retrospectively recruited patients undergoing MII-pH monitoring for refractory NERD. All patients had undergone upper endoscopy, and cases of esophagitis were excluded. No patient received PPI during MII-pH monitoring. Subjects were subgrouped into 3 categories according to Zerbib's classification: i) Acid reflux (exposure to pH < 4 for at least 1.1% of record time), ii) Non acid reflux (symptom association probability to pH<4 reflux episodes >95%) and iii) Functional heartburn (no pathologic reflux, with symptom association probability < 50%). MII-pH guided therapy was performed as follows: patients with acid reflux received PPI at double dose, patients with non acid reflux PPI at full dose plus alginates and patients with functional heartburn levosulpiride 75 mg/day for 4 weeks. A visual analogue scale (VAS) ranging 0–100 was administered before and after such tailored therapy to evaluate overall symptom response. Responders were defined by VAS improvement of at least 10%.

Comparisons between continuous variables were performed by ANOVA or paired/unpaired t-test where required, and Fisher's exact test was applied to categorical variables. Variables with statistical significance p < 0.10 at univariate analysis were included in a binomial multivariate regression analysis, aimed to investigate factors predictive of response to tailored therapy.

RESULTS: Thirty-four patients with refractory NERD were selected (female:male ratio 20:14, mean age 47.4±12.8). Twelve had acid reflux, 7 non acid reflux and 15 functional heartburn. Overall effectiveness of tailored therapy was 82.3% (25 out of 34), and it did not differ between subgroups (91.7% acid reflux, 71.4% non acid reflux, 80.0% functional heartburn, p = 0.31). At univariate analysis, therapy failure directly correlated with dysphagia (OR = 0.15, p = 0.05) and inversely with sensation of slow digestion (OR = 0.70, p < 0.05). However, at multivariate analysis, these parameters were not statistically significant. We found a mean VAS reduction of 30.2±24.9, which was similar between acid reflux (36.7±22.7), non acid reflux (30.0±27.7) and functional heartburn (34.5±22.7) (p = 0.11).

CONCLUSION: A tailored approach to refractory NERD, guided by MII-pH monitoring, demonstrated to be effective, independently from disease subtype. Therefore it should be advised to patients who complain of symptom persistence despite PPI therapy.

DISCLOSURE OF INTEREST: All authors have declared no conflicts of interest.

References

STW5 MODULATES TIGHT-JUNCTION GENE AND PROTEIN EXPRESSIONS IN REFUX-ESOPHAGITIS - POSSIBLE RELEVANCE FOR TUMORIGENESIS
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INTRODUCTION: STW5, a herbal combination preparation of nine different plant extracts (Iberis amara (L.), Menthae piperitae (L.) Chamomilla recutita (L.), Glycyrrhiza glabra (L.), Angelica archangelica (L.), Carum Carvi (L.), Silibum marianum (L.) Guerr. Mefissa officinalis (L.) und Chelidonium majus (L.) has been extensively studied for the treatment of gastrointestinal disorders resulting in an recommendation in the German therapy guidelines for both upper and lower functional gastrointestinal disorders (1). We investigated the mode of action of this model of reflux esophagitis as the most common condition studied by gastroenterologists with possible long-term implications such as Barrett's esophagus and esophageal adenocarcinoma.

AIMS & METHODS: We were especially interested in the tight junction proteins (TJ), which are multi-protein complexes in epithelial and endothelial cells known to contribute to the barrier-function, but recently discovered to play an important role in tumorigenesis (2). TJ proteins like ZO1, CLDN3, CLDN23, OCCL, MARVELD1, 2 and JAM. Data demonstrate a reversal of inflammatory changes in the TJ-proteins by STW5 and O. They also suggest that inflammatory changes in TJ in inflammatory process and in tumorigenesis and the potential benefit arising from a treatment with STW5 or O.

DISCLOSURE OF INTEREST: All authors have declared no conflicts of interest.

References
Aims & Methods:
Proteins (BMPs) are a family of growth factors that control tissue architecture, multipotent stem cells give rise to the columnar lining. Bone Morphogenetic protein stem cells residing in the esophageal mucosa (e.g., in submucosal glands) or for esophageal adenocarcinoma. One underlying mechanism of BE is that columnar with Gastro-esophageal reflux disease in which the normal stratified squamous epithelium of the gut. This property is termed collinearity and links clustering to function. In this study, we aimed to determine HOXA13 expression in physiological gastrointestinal tract tissues using immunohistochemistry (IHC) panels of squamous, intestinal and stem cell markers. These structures were assessed histologically and immunohistochemically (IHC) using panels of squamous, intestinal and stem cell markers.

Results:
A columnar epithelial layer containing goblet cells and recapitulated the crypt and villous regions seen within BE glands. IHC validation confirmed that the xenograft structures were of human origin and expressed markers of intestinal differentiation (CK8, CDX2 and villin). In contrast, treatment with the BMP inhibitor lead to the formation of multi-layered squamous epithelium expressing both the stem cell marker p63 and the squamous marker CK5.

Conclusion: Preliminary results demonstrate that inhibition of BMP2/4 in mice resulted in the prevention of squamous epithelialization. These promising results may be translated to the clinical setting in order to improve treatment of BE and as such prevent the development of esophageal adenocarcinoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Calpe, S., Correia, A. C., Sancho-Serra Mdel, C. & Krishnadath, K. K. 2016. Metaplasia and organoid model of human BE to investigate the potential to modulate the metaplastic process using an innovative anti-BMP2/4 llama-derived Dwarfbody® (DB). Endoscopic BE biopsies were implanted into immunocompromised mice intramuscularly and grown for a period of three months with DB or control. These structures were assessed histologically and immunohistochemically (IHC) using panels of squamous, intestinal and stem cell markers.

References
Calpe, S., Correia, A. C., Sancho-Serra Mdel, C. & Krishnadath, K. K. 2016. Gastric glandular epithelium. However, in absence of evidence that the gastric stem cell has broad differentiation potential, this theory remains controversial. The gastric-cardiac junction is a high prevalence area for metaplasia and subsequent cancer. Characteristic of this area are the gastric cardia glands which cover over the most proximal part of the anatomic gastric cardia. Recent evidence from human and mouse studies has shown Barrett's esophagus can originate from these gastric cardia glands. 3, 4 If it can be shown that gastric cardia glands contain elements associated with positional mispecification, this theory could be substantially bolstered. HOX genes are a family of transcription factors that convey positional information. The 3′ to 5′ sequence of HOX genes corresponds to the sequence in which they act along the anterior to posterior axes of the gut. This property is termed collinearity and links clustering to function. In gastrointestinal physiology, HOX; A13, a 5′ member of the HOX4 cluster, has an expression pattern restricted to the colonic epithelium. However, pathological metaplastic lesions of the esophagus and stomach are also characterized by HOX13 expression. This in parallel with the similarities of these lesions with physiological gastric morphology. Hence, investigating HOX13 expression in gastric cardia glands appears a rational strategy in assessing the potential of this gastric cardia epithelium to serve as the origin of Barrett's esophagus.

Aims & Methods: We aimed to determine HOXA13 expression in physiological gastric cardia glands. Firstly, strips of tissue from surgical specimens containing squamous esophageal epithelium, gastric cardia glands, and oxyntic stomach glands, were collected. These were continuous strips, from proximal to distal, to preserve morphological information. Material from three patients was selected, they suffered from either a neuroendocrine tumor, or decompensated achalasia, or an adenocarcinoma. Antibodies against HOXA13 were found not to be specific. Therefore, RNA in situ hybridization by RNA-scope was performed to visualize HOX13 RNA. Secondly, a HOx13GFP x C57BL/6J heterozygous mutant mouse model was used. In these animals, the cardiac glands were imaged directly for GFP expression using a fluorescence confocal microscope.

Results: All three patients showed HOX13 expression of a portion of gastric cardia epithelial cells. The squamous epithelium, the oxyntic epithelium, and the columnar did not show any signal. The signal is located relatively close to the base of the crypts of the cardiac glands. The HOx13GFP x C57BL/6J heterozygous mice showed GFP expression localized to the nucleus of some of the epithelial cells of the cardiac gland. No nuclear signal was detected in the squamous or oxyntic gland. The cardiac epithelium of the mouse showed nuclear GFP signal. Rectal squamous epithelium was negative as well as ileal epithelium, in accordance with HOX13 colinearity in mouse and human. A littermate negative for Ho13GFP was analyzed and showed no nuclear signal in either the gastric cardia glands or in oxyntic epithelial glands.

Conclusion: Gastric cardia gland epithelial cells in both human and mouse exhibit HOX13 expression. All other physiological upper gastrointestinal tract tissues are HOX13 negative in line with HOX gene collinearity in the gut. This dichotomy proves positional information in these glands is discordant with their actual location. These findings suggest that gastric cardia glands have a broad differential potential. This is consistent with an origin of Barrett’s metaplasia in the gastroesophageal junction and might be indicative of Barrett’s not being a true transdifferentiation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0551 ACTIVE HUMAN PAPILLOMAVIRUS INVOLVEMENT IN BARRETT’S DYSPLASIA AND OESOPHAGEAL ADENOCARCINOMA IS CHARACTERIZED BY WILD-TYPE P53 GENOTYPES AND INCREASED EXPRESSION OF THE RETINOBLASTOMA PROTEIN PATHWAY
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Introduction: We have previously demonstrated that immunohistochemically active high-risk HPV (hr-HPV) is strongly incriminated in Barrett’s dysplasia (BD) and oesophageal adenocarcinoma (OAC) using mainly fresh frozen tissue.1, 2 This study aimed to identify biomarkers of active HPV infection in Barrett’s metaplasia (BM)/BD/OAC by immunohistochemical staining (IHC) of formalin-fixed paraffin embedded (FFPE) tissue for aberrations of p53 and the retinoblastoma protein (pRb). Of 218 patients, 56 were HPV DNA positive (HPV16 (n = 42), 18 (n = 13), 6 (n = 1)). Viral load was low. Transcriptionally active HPV (DNA+/RNA+) was only found in the dysplastic and adenocarcinoma group (n = 21). The majority of HPV DNA+/RNA+ BD/OAC were characterized by pRblow/p53low and RNA−/RNA− cohorts (n = 21) p53low had the strongest association with DNA+/RNA+ oesophageal lesions (OR = 23.5, 95% CI = 20.5–265, p = 0.042). Seventeen HP1 DNA+/RNA+ BD/OAC identified as p53low, were sequenced and all but one exhibited wild-type status.

Conclusion: Active HPV involvement in BD/OAC is characterized by wild-type p53 and aberrations of the retinoblastoma protein pathway.

Disclosure of Interest: All authors have declared no conflicts of interest.


P0556 ADHERENCE TO QUALITY INDICATORS AND ADHOC BIOSPIES

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Introduction: The importance of skilled endoscopic assessment of Barrett’s oesophagus (BO) has been clearly established and forms part of the British Society of Gastroenterology guidelines. Use of Prague classification when reporting on areas of BO improves standardisation, and adherence to the Seattle biopsy protocol (quadrant biopsies every 2cm) when sampling Barrett’s mucosa is thought to improve dysplasia detection. In East Kent Hospitals NHS Foundation Trust we have created a dedicated nurse-led BO surveillance endoscopy list with the aim of improving compliance with guidelines and the quality of biopsies taken. Here we present a retrospective observational study of patients who underwent upper GI endoscopy on a general endoscopy (GE) list compared with the dedicated BO endoscopy (DBO) list.

Aims & Methods: We searched our endoscopy software for patients who had an indication for gastroscopy documented as BO and who had an endoscopy on a GE list from 2012–2013. The same search was performed for patients who were scoped on the DBO list from 2014-2016. Endoscopy reports were reviewed to assess the use of Prague classification and determine numbers of biopsies taken. Biopsy results were reviewed on our electronic pathology database.

Results: One hundred procedures for BO surveillance on GE lists were audited, comprising 65% male patients with median age 68 years; 60% were performed by a consultant gastroenterologist and the remainder were performed by other operating department and gastroenterology registrars. Of the 105 procedures on the DBO lists, 63% of patients were male, median age 70 years. Prague classification was used in 94% of endoscopy reports on the DBO lists compared with 5% on the GE lists. The Seattle biopsy protocol was observed in 70% of cases on the DBO lists as opposed to 30/100 (30%) on the GE lists. Dysplasia detection rate (low grade, high grade or indefinite) was significantly higher on the DBO lists when compared with GE lists (94% vs 5%). The Seattle biopsy protocol was observed in 70% of cases on the DBO lists as opposed to 30/100 (30%) on the GE lists. Dysplasia detection rate (low grade, high grade or indefinite) was significantly higher on the DBO lists when compared with GE lists (94% vs 5%). The Seattle biopsy protocol was observed in 70% of cases on the DBO lists as opposed to 30/100 (30%) on the GE lists. Dysplasia detection rate (low grade, high grade or indefinite) was significantly higher on the DBO lists when compared with GE lists (94% vs 5%).

Conclusion: Our comparison shows that observance of Prague classification is significantly higher on the DBO lists when compared with GE lists (94% vs 5%), and compliance with the Seattle biopsy protocol is similarly higher (74% vs 30%). These are indicators of higher quality endoscopic surveillance on DBO lists. However, this did not translate to a different dysplasia detection rate which appeared to be more influenced by the endoscopy operator since all of the dysplasia detected on GE lists was identified by consultant gastroenterologists. We believe that the additional familiarity of guidelines and possibly greater experience of endoscopists regularly taking BO biopsies. We therefore recommend that all Barrett’s oesophagus patients have their surveillance endoscopies performed on dedicated BO endoscopy lists.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0557 EXPRESSION OF TGF-B AND CD-44 IN AGE SPECIFIC SUBGROUP OF PATIENTS WITH ADENOCARCINOMA OF GASTRIC CARCINOMA

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Introduction: Adenocarcinoma near the esophagogastric junction is one of the most lethal GI malignancies known. Surgical treatment of these cancers stay determinative factors of patient survival. Older persons often differ from the younger adult population in terms of biological and functional perspectives; as such, they may have particular needs which require an interdisciplinary approach and intervention, especially when faced with a cancer diagnosis.

Aims & Methods: The aim of this study was to detected expression of TGF-B and CD-44 in age specific subgroup. The expressions of TGF-B and CD-44 were evaluated immunohistochemically in 23 patients with adenocarcinoma of gastric cardia who underwent curative surgery (RO) without any neo/adjuvant therapy. Additionally we analyzed control group of patients with non-cancer lesion or normal tissue of upper digestive tract (13 patients). We divided the patients into two groups. Group A consisted of 13 cancer patients and 7 control patients 65 years of age or older, while Group B consisted of 10 cancer and 6 control patients younger than 65 years of age. The two groups were comparable - there were no differences between the two groups regarding tumor stage.

Results: Elderly patients have statistically significant better survival (median 20.2 months) compared with younger patients (median 15.4 months) (p = 0.045). The median survival rate of patients without TGF-B and CD-44 expression was significantly lower (7 m) than that of patients with positive expression (> 15 m) (p = 0.003). Regardless of patients age, CD-44 was significantly higher in the cancer tissue of elderly patients than in younger (p < 0.03). But no significant difference was observed in the TGF-B expression group A and group B patients cancers tissue (p = 0.005).

Conclusion: The biology of tumors may be different in elderly patients, leading to a lower rate of tumor-related mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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Introduction: Barrett’s oesophagus (BO) is considered a premalignant condition for oesophageal adenocarcinoma (OAC). Once diagnosed, interval endoscopic surveillance is recommended to promote early detection of dysplasia and cancer. Occurrence and incidence of dysplasia and cancer among BO vary across populations. Recent studies show BO patients mortality is mainly related to non-oesophageal cancer and cardiovascular morbidity.
Aims & Methods: In this cross-sectional study, our aims were to describe the local BO clinical, endoscopic and histologic profile in our tertiary referral centre, and discover whether the Prague classification and endoscopic requirements are fulfilled. We identified and included all consecutive patients with oesophageal intestinal metaplasia (identified by the presence of goblet cells) from March 2009 to May 2015. All endoscopies and biopsy reports were reviewed: BO segment length, use of the Prague classification, endoscopic abnormalities, treatment modalities, and histologic findings of dysplasia. Participants were sent a clinical questionnaire, via which pertinent clinical data including personal and familial cancer history, were collected.

Results: Clinical profile: Our cohort consists of 406 patients, with a mean age of 60.4 ± 13.3 years, 69% were male. Endoscopic profile- Mean maximal BO length (Prague classification M) was 2.8 ± 1.9 cm (reported in 49.6% of endoscopies) Mean circumferential BO (Prague classification C) was 4.9 ± 3.1 cm (reported in 18.1% of endoscopies). Histologic profile- Low-grade dysplasia (LGD) was seen in 4.4% of patients, high-grade dysplasia (HGD) in 3%, intramucosal carcinoma (IMC) in 0.7%, and OAC in 2%. A subgroup of 250 patients underwent more than one endoscopy, allowing for prospective intensive analysis. They had 914 years of follow-up, with a mean number of endoscopies of 4.7 ± 3. The incidence rates of LGD, HGD, IMC, OAC per 100 patient years were 20.8, 15.3, 2.2, and 84% respectively.

Conclusion: Compared to the information gathered by Katz et al., we demonstrated a lower rate of LGD, but comparable rates of HGD and OAC. The personal and familial history of non-oesophageal malignancy was higher than the oesophageal malignancy rates. Our findings may support the importance of histological staging of the early neoplasia in BO. We also investigated the three-year survival in patients, who have had their EMR longer than 3 years ago, along with causes of death. A total of 99 patients underwent 134 EMR procedures and 259 EMRs, with 84% were male, the mean age at first EMR was 71 years (SD = 8.2). 24 patients underwent 2 EMR procedures, 2 patients underwent 3 EMR procedures and 2 patients underwent 4 EMR procedures. The median length of the circumferential and maximum extent of the BO segments were 3 and 4 cm respectively (inter-quartile range (IQR) 2–4). 44 patients underwent 60 en bloc resections. After histologic assessment of these EMR specimens, 34 (56.7%) had clear deep and radial resection margins, 14 (23.5%) showed at least low-grade dysplasia at the radial margin and 8 (13.4%) at both margins. 2 (3.3%) were clear at the deep margin, but due to thermal damage the radial margins were indeterminate. Following the 60 EMRs there was no visible residual early neoplasia on the follow up endoscopy in 37 cases (61.7%), 55 patients underwent 74 piecemeal EMRs, of which 52 (70.2%) had clear deep margins on histologic assessment and 38 (51.4%) had no visible residual neoplasia on the follow up endoscopy. Pre EMR histology was available in 82 patients and it showed high-grade dysplasia (HGD) in 49 (59.8%), mucosal adenocarcinoma in 24 (29.2%) and low-grade dysplasia in 9 patients (11%). However the EMR histology resulted in altered grading in 59 (72%) patients, with 47 (57%) upgraded and 12 (14%) downgraded from the pre EMR histology and unchanged only in 23 patients (28%). The EMR histologies in the 82 patients showed HGD in 16 (19.5%) patients, intramucosal adenocarcinoma in 33 (40.2%), adenocarcinoma with submucosal invasion in 20 (24.4%) and LGD in 13 (15.9%). The remaining 52 EMRs were performed for visible lesions within BO with the histologic result, predominantly for patients in the radiofrequency ablation program. The 3 year survival rate for 42 patients was 81%, 8 patients died, 5 due to cardiac failure, 1 due to a PE and 2 due to advanced oesophageal adenocarcinoma.

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P0561 LONG-TERM OUTCOMES OF ENDOSCOPIC RESECTION VERSUS SURGICAL RESECTION FOR MM-SM1 ESOPHAGUS

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Introduction: Squamous squamous cell carcinoma in the esophagus confined to the muscularis mucosae (MM) or submucosa up to 200 μm (SM1) has a risk of lymph node metastasis, it is defined as relative indication for endoscopic submucosal dissection (ESD) by the Japanese esophageal society guideline. Although additional surgical treatment after ESD is recommended, long-term outcomes of ESD compared with surgery has not been clarified.

Aims & Methods: This study aimed to evaluate the long-term outcomes of ESD and surgery for cN0M0 relative indication lesions of ESCC. Between 2006 and 2016, patients with relative indication lesions of ESCC treated endoscopically or surgically in Okayama University Hospital were retrospectively analyzed. We evaluated risk factors for mortality using cox regression analysis, adjusted hazard ratios for ESD compared with surgery, the survival curves stratified with risk factor, and perioperative complication rate.

Results: 54 lesions in the ESD group and 51 lesions in the surgery group met the pathological criteria of relative indication for endoscopic resection. 10 patients underwent additional chemoablation in the surgery group. 8 patients underwent additional chemotherapy and 1 patient underwent additional chemoablation in the surgery group. Lymphovascular invasion, submucosal invasion, and AS-A-PS was significantly associated with mortality using Cox analysis. Adjusted for lymphovascular invasion, submucosal invasion, and AS-A-PS, the absolute Cox proportional hazard ratio of mortality for ESD compared with surgery was not significantly different (hazard ratio [HR], 0.76; 95% confidence interval [CI], 0.26–2.2; P = 0.61). The survival curves for ESD and surgery stratified with each risk factor were not significantly different. Perioperative complication rate were significantly low in ESD compared to surgery (29.6% vs 49.1%; P = 0.047).

Conclusion: ESD dose not compromise the long-term outcome compared to surgery. Further large number randomized controlled trials are necessary to confirm these results.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0562 ESOPHAGEAL REFLUX DISEASE AND ESOPHAGEAL SQUAMOUS CELL CANCER IN PATIENTS WITH FANCONI ANEMIA UNDERGOING ENDOSCOPIC SURVEILLANCE

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Introduction: Patients with Fanconi anemia (FA) have an increased risk of developing esophageal squamous cell carcinoma. Data regarding endoscopic findings in FA is scarce. Furthermore, there are no clear guidelines for endoscopic surveillance of patients with FA.

Aims & Methods: We aimed to describe the endoscopic findings among subjects with FA undergoing endoscopic surveillance and to determine the interval to development of esophageal cancer.

Results: Eight FA subjects with a median age of 22.2 years at first endoscopy (range16–41) were identified. The median upper endoscopies number per patient was 3.5 (range 2–14) with a median time of follow-up of 4.5 years (range 1–9 years). All subjects (100%) had an endoscopic evidence of reflux esophagitis: 3 (37.5%) had mild and 5 (62.5%) had moderate-severe reflux esophagitis. Three subjects (37.5%) had complicated esophageal reflux disease (two subjects developed Barrett's esophagus and one subject had an esophageal stricture). Two subjects (25%) developed esophageal squamous cell carcinoma during follow-up, with interval time of 8 and 18 months from previous upper endoscopy. Both had tumor expression of p16 protein suggesting human papilloma virus (HPV) infection. The calculated standardized incidence ratio (SIR) for the development of esophageal squamous cell carcinoma was 5.107.

Conclusion: FA patients are at an increased risk for developing esophageal cancer and reflux esophageal disease with associated complications. Larger, prospective studies are needed to determine the optimal interval for endoscopic screening in these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0563 RISK FACTORS FOR THE DEVELOPMENT OF DYSPLASIC SQUAMOUS EPITHELIUM IN THE ESOPHAGUS

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Introduction: Multiple development of squamous cell carcinoma (SCC) in the upper aerodigestive tract is known as the “field cancerization phenomenon, ” and alcohol is a definite carcinogen. Multiple dysplastic lesions in the esophagus are a useful predictor of the risk for the field cancerization. However, what causes the development of dysplastic squamous epithelium in the esophagus is still unclear.

Aims & Methods: The aim of this prospective cohort study was to identify associations between patients’ lifestyle, including alcohol consumption, the genetic trait of aldehyde dehydrogenase-2 (ALDH2), and the development of dysplastic squamous epithelium in the esophagus. This is a post hoc analysis of the Japan Esophageal Cohort (JEC) study (UMIN1676). Patients with superficial SCC

United European Gastroenterology Journal 5(S5)

A361
treated by endoscopic resection were prospectively recruited from 16 hospitals throughout Japan. This cohort study was approved by the institutional review board at each hospital, and we obtained written informed consent from all patients. Using Lugol chromoendoscopy, we evaluated the dysplastic squamous epithelium in the esophagus. Lugol voiding lesion (LVL) was graded into 3 categories (A = no lesion; B = 1 to 9 lesions; C = ≥10 lesions per endoscopic view). Endoscopic images obtained from eligible patients at study entry were centrally reviewed in a blinded fashion by three endoscopists to determine the grade of LVL. ALDH2 status was determined by questionnaire facial flushing after alcohol drinking (present and past flushing; inactive ALDH2, never flushing = active ALDH2). Lifestyle surveys were conducted using a self-assessment questionnaire. Data collected between July 2000 and Dec 2001 from a different cross-sectional cohort (n = 1042; M/F = 610/432) were used as an historical control.

Results: Between Sep 2005 and May 2010, 330 patients (M/F = 278/52) were registered. The proportions of the different grades of LVL were A = 50 (15.2%), B = 174 (52.7%), and C = 106 (32.1%). After adjusting for sex and age, controls and the LVL grade was associated with progressively higher proportions of heavy drinkers (8.4%, 24.8%, 26.2%, and 52.5%, respectively, p < 0.0001), frequently strong alcoholic beverages (2.3%, 7.2%, 11.8%, and 11.6%, respectively, p < 0.0001), heavy smokers (34.6%, 38.7%, 65.7%, and 70.8%, respectively, p < 0.0001), having high-temperature food (4.6%, 19.6%, 20.8%, and 20.7%, respectively, p < 0.0001), not eating green-yellow vegetables almost every day (55.0%, 48.9%, 54.9%, and 71.1%, respectively, p < 0.0001), and not eating fruit almost every day (51.6%, 74.3%, 68.0%, and 75.3%, respectively, p < 0.0001). The risk of LVL grade B and C was strongly associated with the amount of alcohol consumption especially in inactive ALDH2. Odds ratio (OR) of LVL grade B associated with heavy drinking was significantly stronger in moderate and heavy drinkers vs. non-drinkers and non-temporant group (OR = 2.73; p < 0.001) and inactive heterozygous ALDH2 (17/83; p < 0.01). A fourth SCC was detected in seven patients (5.6%), who were all cases of continuous heavy drinkers after ER. Six of the seven patients had an inactive heterozygous ALDH2. We analyzed the 63 patients with inactive heterozygous ALDH2 and moderate and heavy drinkers before ER based on their temperature history and found 38 patients in the temperance group (≤light drinkers after ER) and 25 patients in the non-temporant group. The 3-year cumulative incidence of a third SCC in the temperance and non-temporant groups was 0.3% vs. 25.4%, respectively (OR = 2.73; p = 0.01). The 5-year cumulative incidence of a second SCC after ER was 5.6% vs. 16.9% (p < 0.05).

Conclusion: The development of dysplastic squamous epithelium in the esophagus was associated with the amount of alcohol consumption and genetic trait of inactive ALDH2.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0564 EVALUATION OF THE RISK OF METACHRONOUS SQUAMOUS CELL CARCINOMA OF THE OESOPHAGUS AND THE HEAD AND NECK AFTER ENDOSCOPIC RESECTION FOR SQUAMOUS CELL CARCINOMA OF THE ESOPHAGUS BASED ON THE GENETIC POLYMORPHISMS OF ADH1B AND ALDH2

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Introduction: Metachronous multiple squamous cell carcinoma (SCC) of the esophagus and the head and neck often occurs in patients who previously underwent endoscopic resection (ER) for SCC of the esophagus. This has become a problem regarding the curability of ER. Katada et al reported that alcohol abstinence significantly decreased the risk of developing a secondary SCC of the esophagus, based on a prospective study of 330 patients from 16 hospitals. However, there are few studies that have investigated the risk of developing a secondary SCC of the esophagus and the head and neck based on the genetic polymorphisms of alcohol dehydrogenase-1B (ADH1B) and aldehyde dehydrogenase2 (ALDH2) which are closely associated with developing oesophageal SCC. No studies have evaluated the risk of developing a third (or more) SCC after ER for SCC of the oesophagus.

Aims & Methods: The study group included patients who underwent ER for SCC of the esophagus at Hokkaido University Hospital. All patients were followed up by endoscopic examination for ≥2 years. Overall, 126 patients were included in the study. The drinking and smoking histories before and after ER were carefully documented. To examine two single nucleotide polymorphisms (SNPs) on ADH1B and ALDH2 genotyping, we obtained approximately 1 ml of DNA before or cotton swab before the endoscopic examination. The subjects were classified as casual drinkers who consumed <1 units/week, current drinkers who consumed 1 to 8.9 units/week (light drinkers), 9 to 17.9 units/week (moderate drinkers), or ≥18 units/week (heavy drinkers); alcohol consumption (1 unit = 22 g, the ethanol content of one serving of sake). The physicians recommended all subjects to temperate in drinking and smoking. We retrospectively evaluated the risk of metachronous SCC of the oesophagus and the head and neck after ER for SCC of the oesophagus, based on the genetic polymorphisms for ADH1B and ALDH2 and the drinking and smoking histories.

Results: During a median follow-up period of 80 months (range, 24-228 months), a secondary SCC of the oesophagus and the head and neck was detected in 46 patients (36.5%). The high incidence groups had inactive heterozygous ALDH2 (red71 GA, 36.3%; moderate and heavy drinkers 42.9%; p < 0.01), continuous moderate and heavy drinkers after ER (21/35; p < 0.01). Multivariate analysis revealed that the inactive heterozygous ALDH2 (OR = 2.24; p < 0.05), moderate and heavy drinkers (OR = 1.54; p < 0.05) and continuous heavy drinkers after ER (OR = 2.73; p < 0.01) were independently associated with the risk of developing a secondary SCC after ER. A third SCC was detected in 19 patients (15.1%), and the high incidence groups had inactive heterozygous ALDH2 (17/83; p < 0.05), moderate and heavy drinkers (19/93; p < 0.01). A fourth SCC was detected in seven patients (5.6%), who were all cases of continuous moderate and heavy drinkers after ER. Six of the seven patients had an inactive heterozygous ALDH2. We analyzed the 63 patients with inactive heterozygous ALDH2 and moderate and heavy drinkers before ER based on their temperature history and found 38 patients in the temperance group (≤light drinkers after ER) and 25 patients in the non-temporant group. The 3-year cumulative incidence of a third SCC in the temperance and non-temporant group was 0.0% vs. 25.4%, respectively (OR = 2.73; p = 0.01). The 5-year cumulative incidence rate of a third SCC revealed an incidence of 0% vs. 23.8%, respectively (p < 0.01). The 7-year cumulative incidence rate of a fourth SCC revealed an incidence of 0% vs. 16.9%, respectively (p < 0.05).

Conclusion: Among the patients who underwent ER for oesophageal SCC, an inactive heterozygous ALDH2 with a continue drinking habit were the significant risk factors of developing metachronous multiple SCC. These are the greater risk factors for developing a third (or more) SCC. Patients with an inactive ALDH2 and a drinking habit should receive strict instruction for temperance.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
3. Oyama T, Inoue H, Arima M, et al. Prediction of the invasion depth of B: 31.5/C6 was performed. There were no significant differences in tumor size (A: 34.9/133/C6 vs. 33.1, C: 112.1/C6, p = 0.042). In multivariate analysis, risks factors for recurrence were: by ER (OR = 7.315; IC [1.685–31.762]; p = 0.008) and by ESD (OR = 2.635; IC [1.065–6.519]; p = 0.036). At 24 months, recurrence-free survival rate was 95.2% in ESD group, versus 59.8% in ESD group (p = 0.001). For infiltrating tumors ≥m3, metastasis free survival rate at 24 months were 100% after complementary treatment by radiotherapy, and 62.2% without complementary treatment (p = 0.042). Conclusion: Endoscopic resection of superficial esophageal SCC is safe and efficient. According to our results, ESD should be preferred to ER because it is associated with a higher cure rate and an increased recurrence free survival rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0567 MULTICENTRIC ASSESSMENT OF THE ENDOSCOPIC MANAGEMENT OF SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA IN WESTERN POPULATION


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5Trocadero Clinic, Hopital Georges Pompidou, Paris/France
6Service D’hepato-gastroenterologie, Centre Hospitalier Universitaire, Angers/France
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Introduction: Endoscopic mucosal resection (ERMS) and endoscopic submucosal dissection (ESD) are the first line treatment for superficial esophageal squamous cell carcinoma (SCC). Comparatively to surgery, endoscopic resection is minimally invasive and associated with a lower morbidity and mortality.

Aims & Methods: Evaluation of the endoscopic resection efficiency for superficial esophageal SCC and long-term outcome. Primary outcomes was recurrence rate after endoscopic resection defined as local recurrence or metastatic evolution. We conducted a retrospective multicenter study in 5 French tertiary care hospitals. All patients treated by EMR or ESD for histologically proven SCC were consecutively enrolled.

ESG: We defined as superficial after macroscopic evaluation including Lugol staining and endoscopic ultrasonography (EUS). Curative resection was defined as pT1a with free resection margins, without lympho-vascular embolus.

Results: Between 1998 to 2016, 132 patients were enrolled and 148 tumors were resected (ER = 80, ESD = 68). The mean age was 63.9 [35.7–86.0] years-old and 108 (73%) patients were male. Mean tumor size was 15.0 mm in the EMD group and 35.0 mm in the ESD group (p < 0.001). The complete resection rate in the EDA/EMR/ESD groups were respectively 30% (24/80) and 96.5% (66/68) (p < 0.0001). The mean follow-up period was 22 months. The recurrence rate was 14.9% (29/160) in the EMD group and 2.68% in the ESD group, p = 0.001. At 12 months, recurrence-free survival rate was 84.4% and 74.6% at 24 months. Factors associated with recurrence in univariate analysis were: tumors size (p = 0.013), resection by ER (p = 0.001), piecemeal resection (p = 0.016), and microscopic positive margins (p = 0.044). In multivariate analysis, risks factors for recurrence were: by ERM (OR = 7.315; IC [1.685–31.762]; p = 0.008) and by ESD (OR = 2.635; IC [1.065–6.519]; p = 0.036). At 24 months, recurrence-free survival rate was 95.2% in ESD group, versus 59.8% in EMD group (p = 0.001). For infiltrating tumors ≥m3, metastasis free survival rate at 24 months were 100% after complementary treatment by radiotherapy, and 62.2% without complementary treatment (p = 0.042). Conclusion: Endoscopic resection of superficial esophageal SCC is safe and efficient. According to our results, ESD should be preferred to ER because it is associated with a higher cure rate and an increased recurrence free survival rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0568 CURATIVE CONDITIONS AFTER ENDOSCOPIC RESECTION FOR MM/SM1 OESOPHAGEAL SQUAMOUS CELL CARCINOMA BASED ON LONG-TERM OUTCOMES

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Introduction: Endoscopic squamous cell carcinoma (ESCC) with invasion into the submucosa (T1mM1/SM1) has approximately 10% lymph node metastasis and is a relative indication for endoscopic resection (ER) as per the Japanese Esophageal Society (JES) guidelines. The consideration criteria for additional treatment of MM/SM1 ESCC are as follows: (1) lymphovascular invasion, (2) SM1, (3) positive vertical margin, and (4) diffuse pattern of infiltration (INF). However, the clinical validity of the JES guidelines has not been established. We evaluated the curative conditions after ER for MM/SM1 ESCC based on long-term outcomes.

Results: We enrolled 98 consecutive MM/SM1 ESCC who underwent ER between August 1992 and October 2013 and were followed up for more than 3 years at Hiroshima University Hospital. As per the JES guidelines, the e-curable group was characterised by en bloc resection lesions with pathological MM, tumour infiltration pattern (INF) a/b, VM0, ly0 and v0. We evaluated the clinicopathological characteristics of patients and lesions between the 2
groups. The proportion of patients with additional treatment after ER was significantly lower in the e-curable group as compared to the non-e-curable group (23%, 9/39) as compared to the e-curable group (21%, 8/39) (p < 0.05). Operation, radiotherapy, and chemoradiotherapy were administered to 3 (8%), 4 (10%), and 12 (5%) patients, respectively, in the e-curable group and to 7 (12%), 22 (37%), and 10 (17%) patients, respectively, in the non-e-curable group. The 5-year overall survival rates in the e-curable and non-e-curable groups were 97% and 75% (p < 0.05), respectively. The overall survival rate was significantly higher in the e-curable group. Three deaths (10%) occurred due to primary cancer. The other reasons were as follows: other organ cancer (30); heart failure, 4 cases; pneumonia, 11 cases; and others, 11 cases.

The 5-year disease-specific survival rates in the e-curable and non-e-curable groups were 100% and 98%, respectively. The lymph node recurrence rates in the e-curable and non-e-curable groups were 5% (1/39) and 7% (4/59), respectively. The local recurrence rates in the e-curable and non-e-curable groups were 0% (0/39) and 7% (4/59), respectively. The 5-year recurrence-free survival rates in the e-curable and non-e-curable groups were 97% and 98%, respectively. The 5-year recurrence-free survival rates in the group with INF-a and INF-b, INF-c, or lymphovascular invasion were 100% and 87%, respectively. The recurrence-free survival rate was significantly higher in the group with INF-a and no lymphovascular invasion than in the group with INF-b, INF-c or lymphovascular invasion.

Conclusion: Our data support the clinical validity of the e-curable conditions after ER for MM/S1 ESCC of the JES guidelines. However, MM/S1 ESCC with any lymphovascular invasion may have more possible curative conditions after ER without additional treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0569 ENDOSCOPIC SUBMUCOSAL DISSECTION COMPARED TO LAPAROSCOPIC GASTRECTOMY FOR TREATMENT OF EARLY GASTRIC CANCER – A PROSPECTIVE RANDOMIZED TRIAL

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Introduction: Endoscopic submucosal dissection (ESD) allows en-bloc resection of early gastric cancer (EGC) with wide resection margins. The local recurrence rate after ESD is reported to be lower than that after gastrectomy. Aims: To compare clinical, oncological and immunological outcomes were compared between the two groups. Results: From 2011 to 2016, 36 patients with early gastric cancers were randomly assigned to receive ESD (n = 18) or Lap gastrectomy (n = 18). There was no difference between the two groups in terms of age, gender, ASA grade and baseline demographics (Table 1). ESD was associated with significantly shorter operative time (109.4 ± 55.8 vs 266.2 ± 47.8 mins, p < 0.001), hospital stay (4 (3–6) vs 8 (4–14) days; p < 0.001) and lower complication rate (1 (5.6%) vs 7 (38.9%); p = 0.041). There was no mortality at 30 days for the two groups, while those in ESD group tolerated full diet earlier (2 (1–5) vs 5 (3–12) days; p < 0.001). Patients who received ESD had significantly lower level of CRP as well as VAS pain scores when compared to gastrectomy. Conclusion: Our prospective randomized study showed that patients treated by ESD had significantly lower complication rate and better perioperative outcomes when compared laparoscopic gastrectomy. ESD should be the first line treatment for intramucosal early gastric cancers.

Disclosure of Interest: P.W.Y. Chiu: I serve as chairman of Asia Novel Biomaging & Intervention Group which received sponsorship from Olympus Co Ltd

All other authors have declared no conflicts of interest.

References

P0570 PREVALENCE OF PRE-MALIGNANT LESIONS IN BIOPSIES TAKEN FROM GASTRIC MUCOSA ENDOSCOPICALLY NORMAL OR WITH GASTRITIS

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Introduction: Pre-malignant conditions and lesions of the stomach (PCLS): atrophy, intestinal metaplasia and dysplasia are risk factors for the development of stomach cancer; therefore, its diagnosis is very important to identify patients with greater probability of this malignan neoplasm. The Clinical Guidelines recommend that during endoscopy procedure, to avoid an under diagnosis, biopsies of different areas of the stomach should be taken even when no lesion is evident in order to identify PCLS that are generally multi-focal. The initial identification of patients with this type of lesions and their subsequent stratification with the OLGA and OLGUIM systems allows defining the subgroup of patients that merit follow-up because they have a higher risk of developing gastric cancer. However, there is a discrepancy between endoscopists, because it is now preferred to take biopsies directed at the lesions and not to do them systematically at fixed sites, so that no lesion is observed.

Aims & Methods: We aimed to evaluate and compare the prevalence of PCLS in biopsies taken from gastric mucosa with or without lesion during the endoscopic examination. A retrospective, cross-sectional study was performed on 356 dyspeptic patients. We reviewed the reports of esophagogastroendoscopy at the Trujillo Regional Teaching Hospital-Peru from October 2016 to March 2017. This study included reports which were consigned diagnosis with biopsies of different areas from the stomach. These biopsies were sent in different vials. Permission was obtained from the Hospital’s research committee. Those reports that had a diagnosis of stomach cancer, gastrectomy, and those with not biopsy report were removed.

Table 1: - Outcomes of ESD vs Lap Gastrectomy

<table>
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<tr>
<th>Parameters</th>
<th>Lap Gastrectomy</th>
<th>ESD</th>
<th>p value</th>
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<tr>
<td>Male (%)</td>
<td>7 (38.9)</td>
<td>11 (61.1)</td>
<td>0.317</td>
</tr>
<tr>
<td>Age (mean ± SD)</td>
<td>62.5±10.4</td>
<td>61.7±11.2</td>
<td>0.899</td>
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<td>ASA (I/II/III)</td>
<td>5/5/5</td>
<td>5/5/5</td>
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<td>Complications (Median)</td>
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<td>1 (0–4)</td>
<td>0.905</td>
</tr>
<tr>
<td>Smoker (No/Ex/Current)</td>
<td>10/3.3</td>
<td>11/3.4</td>
<td>0.534</td>
</tr>
</tbody>
</table>

(continued)
or those in which the biopsies were still taken from the different anatomical areas were excluded. A total of 331 patients were enrolled after the examination of endoscopy at Endoscopy Center, the First Affiliated Hospital of Zhejiang Chinese Medical University, Hangzhou/China.

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Introduction: Prognosis of GC has a noticeable relation with its clinical stage. Atrophic gastritis (AG), intestinal metaplasia (IM) and dysplasia are well-recog-
nized risk factors for intestinal type GC (GC). A large cohort study has confirmed that the annual incidence of GC were approximately 0.1% patients with AG, 0.25% for IM and 6% for high-grade dysplasia, which were much higher than those of normal gastritis. In addition, long-term follow-up studies have con-

Results: A total of 331 patients were enrolled. 214 patients were classified into group A, 106 patients into group B, 8 patients into group C and 7 patients into group D, respectively. According to the pathological results, 177 cases were non-ampullary duodenal adenoma (SDA) histologically proven were included. Patients with PAF and ampullary adenoma were excluded. All the following outcomes were systematically recorded in both centers: complete endoscopic resection, resection with negative lateral and vertical margins, recurrence, success of the endoscopic treatment and adverse events (Perforation, intra-procedural bleeding, delayed bleeding, others). There were analysed with multivariate analysis.

Results: 134 procedures were performed. The mean patient age was 65 years (33–85), 50.7% were women. The mean SDA size was of 20.7mm (5-50 mm), mostly located in the second duodenal portion, and 64.9% of the adenomas had a villous component, 34.3% with high grade dysplasia and 7.5% with in situ and intramus-
cosal. Discrepancy between biopsies and the final histology was demonstrated, as only 13 of the lesions being upgraded significantly. An EMR was performed in 98.5% of the cases with a complete endoscopic resection rate of 96.2% which was associated in multivariate analysis with the lesion size and depressed en-bloc. The en-bloc resection rate was of 44%. Vertical margins were negative in 91.8% of the cases. Negative lateral and vertical margins was associated in multivariate analysis with the lesion size and its en-bloc resection.

Aims & Methods: We aimed to discuss the correlation between the combination of Helicobacter pylori antibody and serum pepsinogen and OLGA/OLGIM staging system in gastric precancerous lesions risk assessment. A total of 331 patients were enrolled after the examination of endoscopy at Endoscopy Center, the First Affiliated Hospital of Zhejiang Chinese Medical University from October 2014 to December 2015. According to the result of gastroscopy, gastric secretion and serum Helicobacter pylori antibody test, the patients were divided into four groups: Group A: Hp (+) and PGI (> 70 mU/mL), Group B: Hp (+) and PGI (< 70 mU/mL), Group C: Hp (-) and PGI (> 70 mU/mL), Group D: Hp (-) and PGI (< 70 mU/mL). According to the range and degree of atrophy/intestinal metaplasia, precancerous lesions were divided into five groups on the basis of OLGA/OLGIM staging system. The levels of Hp infection rate, PGI, PG I and PG II were compared between different groups, and the correlation between ABC method and OLGA/OLGIM staging system were evaluated. Statistical analysis was accomplished by chi-square test and logistic regression modeling analysis.

Results: A total of 331 patients were enrolled. 214 patients were classified into group A, 106 patients into group B, 8 patients into group C and 7 patients into group D, respectively. According to the pathological results, 177 cases were non-ampullary duodenal adenoma (SDA) histologically proven were included. Patients with PAF and ampullary adenoma were excluded. All the following outcomes were systematically recorded in both centers: complete endoscopic resection, resection with negative lateral and vertical margins, recurrence, success of the endoscopic treatment and adverse events (Perforation, intra-procedural bleeding, delayed bleeding, others). There were analysed with multivariate analysis.

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cosal. Discrepancy between biopsies and the final histology was demonstrated, as only 13 of the lesions being upgraded significantly. An EMR was performed in 98.5% of the cases with a complete endoscopic resection rate of 96.2% which was associated in multivariate analysis with the lesion size and depressed en-bloc. The en-bloc resection rate was of 44%. Vertical margins were negative in 91.8% of the cases. Negative lateral and vertical margins was associated in multivariate analysis with the lesion size and its en-bloc resection.

Aims & Methods: We aimed to discuss the correlation between the combination of Helicobacter pylori antibody and serum pepsinogen and OLGA/OLGIM staging system in gastric precancerous lesions risk assessment. A total of 331 patients were enrolled after the examination of endoscopy at Endoscopy Center, the First Affiliated Hospital of Zhejiang Chinese Medical University from October 2014 to December 2015. According to the result of gastroscopy, gastric secretion and serum Helicobacter pylori antibody test, the patients were divided into four groups: Group A: Hp (+) and PGI (> 70 mU/mL), Group B: Hp (+) and PGI (< 70 mU/mL), Group C: Hp (-) and PGI (> 70 mU/mL), Group D: Hp (-) and PGI (< 70 mU/mL). According to the range and degree of atrophy/intestinal metaplasia, precancerous lesions were divided into five groups on the basis of OLGA/OLGIM staging system. The levels of Hp infection rate, PGI, PG I and PG II were compared between different groups, and the correlation between ABC method and OLGA/OLGIM staging system were evaluated. Statistical analysis was accomplished by chi-square test and logistic regression modeling analysis.
In this study 888 early gastric lesions in 783 patients who underwent EMR/ESD at our hospital between January 2012 and March 2017 was retrospectively analysed. Postprocedure bleeding was defined as: (1) hematemesis or melena for which an emergency endoscopy was required and (2) bleeding which were confirmed with a repeat endoscopy after a drop ≥2 g/dL of haemoglobin level.

Results: The total number of patients undergoing antithrombotic therapy was 78, or 33% of patients. Of 38 patients who were taking antithrombolytics only, 29 were taking antiplatelet agents only, and 11 were taking the both. The antithrombotics were suspended in 22 cases (Group A), substituted with heparin in 18 (Group B), and kept continued in 38 (Group C). Postprocedure bleeding was encountered in 31 out of 783 cases (4.0%), 21 of which occurred in patients on antithrombotic therapy (21/78: 27%) whereas 10 of which occurred in those without (10/752: 1.3%). A univariate analysis between the patients with postprocedure bleeding and those without concerning such variables age, gender, the diameter and number of the resected lesions, use of antithrombotics, and the expertise of the operating endoscopist revealed that only the use of antithrombotics was significant risk factor for the postprocedure bleeding (odds ratio = 15.926, 95% confidence interval: 7.415-34.288, p < 0.01). However, the rate of postprocedure bleeding was not significantly different among Group A, B and C. Among the 21 bleeding patients with antithrombotics, the agent had been suspended or substituted with heparin before EMR/ESD in 10 and had been continued without suspension in 11. There was no significant difference of bleeding rate between the two groups.

Conclusion: The use of antithrombotics was a significant risk factor for the postprocedure bleeding after EMR/ESD for early gastric lesions. The rate of bleeding was not significantly different regardless if the antithrombotics were suspended, substituted with heparin, or continued without suspension.

Disclosure of Interest: All authors have declared no conflicts of interest.


P0574 BLEEDING AFTER ENDOSCOPIC RESECTION FOR EARLY GASTRIC LESIONS IN PATIENTS ON ANTIITHROMBOTIC THERAPY

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Introduction: Due to the increase of elderly patients who are often receiving antithrombotic therapy for cardio- and cerebrovascular diseases, postprocedure bleeding after endoscopic treatments for early gastric lesions has become one of the major concerns of therapeutic endoscopists. The Japan Gastroenterological Endoscopy Society (JGES) and other related associations published the Guidelines for Gastroenterological Endoscopy in Patients Undergoing Antithrombotic Treatment in 2012. According to the guideline it is not necessary to suspend an antiplatelet agent before endoscopic treatments including endo-

scopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD) if the agent is not combined with other antithrombotic drugs (monotherapy). On the other hand it is recommended that anticoagulants should be substituted with heparin before EMR/ESD. The aim of this study is to clarify the efficacy of the recommendations of the guideline.

Aims & Methods: In this study 888 early gastric lesions in 783 patients who underwent EMR/ESD at our hospital between January 2012 and March 2017 were retrospectively analysed. Postprocedure bleeding was defined as: (1) hematemesis or melena for which an emergency endoscopy was required and (2) bleeding which were confirmed with a repeat endoscopy after a drop ≥2 g/dL of haemoglobin level.
**Aim & Methods:** The aim of this study is to evaluate the usefulness of OLGA and OLGIM staging according to Laurens’s histological classification of GC in considering with other risk factors of gastric cancer. From January 2006 to December 2015, 607 GC patients and 677 control subjects were enrolled who underwent esophagogastroduodenoscopy. Biopsies were taken from the greater and lesser curvatures of the antrum and mid-body, respectively. The OLGA and OLGIM stage (0–IV) was recorded by combining antral with body atrophy and lesser curvatures of the antrum and mid-body, respectively. The OLGA and OLGIM staging systems have been suggested to provide risk estimation for GC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Introduction:** Atrophic gastritis and intestinal metaplasia are the cancerization field in which gastric cancer (GC) develops in case of intestinal type. The OLGA and OLGIM staging systems have been suggested to provide risk estimation for GC.

**Aims & Methods:** We evaluated the relationship between BMI and digestive cancer mortality across seven BMI categories. Below 25 kg/m², the HRs of death for each 5 kg/m² increase in BMI were lower compared with controls (4.9% and 609/597, respectively; 95% CI: 0.62–0.79 for stomach cancer, and 0.70–0.90 for colorectal cancer). Over 25 kg/m², the HRs of death for each 5 kg/m² increase in BMI were greater than 1.00% for ages under 60 years (0.05% for ages in the 60–70 and >70, respectively; 95% CI: 1.19–1.43 for stomach cancer, and 1.30–1.64 for colorectal cancer). In a Cox model.

**Results:** During follow-up, 7774 total deaths occurred from digestive cancer. HR for digestive cancer mortality across seven BMI categories. Below 25 kg/m², the HRs of death for each 5 kg/m² increase in BMI were lower compared with controls (4.9% and 609/597, respectively; 95% CI: 0.62–0.79 for stomach cancer, and 0.70–0.90 for colorectal cancer). Over 25 kg/m², the HRs of death for each 5 kg/m² increase in BMI were greater than 1.00% for ages under 60 years (0.05% for ages in the 60–70 and >70, respectively; 95% CI: 1.19–1.43 for stomach cancer, and 1.30–1.64 for colorectal cancer). In a Cox model.

**Conclusion:** Low BMI were predictors of mortality from esophageal cancer and stomach cancer. High BMI were predictors of mortality from liver cancer and gallbladder cancer and biliary tract cancer. BMI were not associated mortality from small intestine cancer and pancreatic cancer.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**Abstract No: P0576**

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<tr>
<td>Male</td>
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<tr>
<td>Age (years, mean ±SD)</td>
<td><strong>OR</strong></td>
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<td>Negative</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>2.119</td>
<td>1.521–2.953</td>
</tr>
<tr>
<td>H. pylori status</td>
<td><strong>OR</strong></td>
<td><strong>95% CI</strong></td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>1.963</td>
<td>1.540–2.503</td>
</tr>
<tr>
<td>OLGIM low risk</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>high risk</td>
<td>3.778</td>
<td>2.612–5.465</td>
</tr>
</tbody>
</table>
Dietary cancer mortality associated with baseline BMI according to BMI ranges

<table>
<thead>
<tr>
<th>BMI (kg/m²)</th>
<th>All participants (per 5 kg/m²)</th>
<th>12-24.9 kg/m²</th>
<th>25-47.9 kg/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deaths per 5 kg/m² increase inBMI</td>
<td>Deaths per 5 kg/m² decrease inBMI</td>
<td>Deaths per 5 kg/m² increase inBMI</td>
</tr>
<tr>
<td>Digestive cancer</td>
<td>Deaths</td>
<td>P-value</td>
<td>HR* (95% CI)</td>
</tr>
<tr>
<td>Esophagus</td>
<td>310</td>
<td>&lt;0.001</td>
<td>0.53 (0.43-0.65)</td>
</tr>
<tr>
<td>Stomach</td>
<td>2,032</td>
<td>&lt;0.001</td>
<td>0.77 (0.72-0.83)</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>1328</td>
<td>0.845</td>
<td>1.01 (0.92-1.11)</td>
</tr>
<tr>
<td>Colon</td>
<td>835</td>
<td>0.347</td>
<td>1.06 (0.94-1.19)</td>
</tr>
<tr>
<td>Rectum</td>
<td>493</td>
<td>0.363</td>
<td>0.93 (0.80-1.08)</td>
</tr>
<tr>
<td>Small intestine</td>
<td>61</td>
<td>0.049</td>
<td>0.64 (0.41-1.00)</td>
</tr>
<tr>
<td>Liver</td>
<td>2365</td>
<td>0.601</td>
<td>1.02 (0.95-1.09)</td>
</tr>
<tr>
<td>Pancreas</td>
<td>929</td>
<td>0.937</td>
<td>1.00 (0.90-1.12)</td>
</tr>
<tr>
<td>GB and Biliary tract</td>
<td>749</td>
<td>0.012</td>
<td>1.16 (1.03-1.31)</td>
</tr>
</tbody>
</table>

BMI, body mass index; CI, confidence interval; GB, gallbladder; HR, hazard ratio. 2 Hazard ratios were calculated using Cox proportional hazards models after adjustment for age at baseline (continuous variable), smoking status (current smoker, former smoker, never-smoker, and missing smoking status), alcohol consumption (frequency, five or more times/week, one to four times/week, less than one times/week, past drinker [no alcohol for a year], never-drinker, or missing information), monthly household income (Korean won [KRW], $1 United States dollar = 1170 KRW as of August 1, 2004; < 500, 000, 500, 000-990, 000, 1, 000, 000-1, 490, 000, ≥ 1, 500, 000, missing information), and physical activity (yes, no). HRs were not presented for causes with less than 10 deaths.
Consistent with the mechanism of action of IRE on the cell membrane only, there was complete cell death within the IRE lesions without intervening live cells. However, there was no difference in histology depending on gastric part in which ablation was applied. During the study, no complication was observed in pigs in 24 hours after ablation.

Conclusion: The new endoscopic IRE device, which can perform IRE ablation on the marginal area, resulting in unsuccessful delineation. The new endoscopic IRE device, which can perform IRE ablation on the marginal area, resulting in unsuccessful delineation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P9581 DIAGNOSIS OF MICROVESSEL PATTERN IS MORE IMPORTANT THAN MICROSURFACE PATTERN TO DELINEATE GASTRIC CANCERS DETECTED AFTER H. PYLORI ERADICATION BY MAGNIFYING ENDOSCOPY

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Introduction: It is difficult to delineate gastric cancer that is detected after successful eradication of Helicobacter pylori. One reason is reportedly the difficulty in identifying the demarcation line between the cancerous lesion and non-cancerous gastric mucosa due to a mixture of non-neoplastic epithelial-lined structure inside the neoplasm. However, most all previous studies have only used magnification endoscopy (ME) at low power magnification which could evaluate microvascular pattern (MSP) but could not evaluate microvascular pattern (MVP). The highest power magnification was necessary to evaluate MVP accurately and to draw the diagnosis. The diagnostic accuracy of ME-NBI in delineating the gastric cancers might not have been accurately assessed in these studies.

Aims & Methods: The aim of this study was investigating diagnostic efficacy of ME with NBI in delineating the gastric cancers after eradication HP, using ME at highest power magnification, and classifying ME features of the marginal area according to the vessel plus surface classification system (VSCS) to realize which was more important ME findings MSP or MVP to detect demarcation line. Endoscopic examination was performed using a magnification endoscopy (GF-H260Z, Olympus Medical Systems Co, Tokyo, Japan) and NBI system (EVIS LUCERA Spectrum system; Olympus Medical Systems Co, Tokyo, Japan). Endoscopic imaging procedures were performed at low-power magnification followed by highest power magnification. On the day of EGD, the lesion line was marked 3-5 mm outside of the margin of the lesion. A lesion meeting all of the following criteria was defined as a lesion with successful delineation: (1) the demarcation line of the lesion is endoscopically identified with a high level of confidence; (2) According to histopathological findings, the lesion is histologically identified as the cancerous lesion. The diagnostic accuracy of ME-NBI in delineating the lesions was evaluated. On the other hand the ME findings of the marginal area in each lesion were classified in terms of microvascular pattern (MSP) and microvascular pattern (MVP) according to the VSCS to identify the findings that were useful in delineating the lesions in patients with differentiated-type early gastric cancers. The classification according to the VSCS was made in the marginal area with the least irregular findings.

Results: Of 178 consecutive lesions of differentiated-type early gastric cancer treated endoscopically since ran esophageal diagnosis (ESD) between August 2013 and March 2017, the study included 59 lesions that were detected after successful H. pylori eradication. The result of ME-MBI findings are summarized in the table. Gastric cancer was successfully delineated in 98.3% (58/59) of the lesions with irregular MVP and/or irregular MVP with a demarcation line. Among the ME findings of the demarcation line, irregular MSP and irregular MVP were present in 67.7% (40/59) and 93.2% (55/59), respectively, according to the VSCS, with a higher percentage of lesions with irregular MVP than those with irregular MSP. In addition, there was no finding which was irregular MSP and regular MVP, but 27.1% (16/59) was regular MSP and irregular MVP, which indicated that the ME findings of MVP was more important than MSP. One lesion showed regular MSP or regular MVP without a demarcation line in a portion of the marginal area, resulting in unsuccessful delineation.

Conclusion: The accuracy of ME with NBI in delineating gastric cancer detected after H. pylori eradication was 98.3%, which was higher than the values reported previously. In addition, the MVP as visualized by ME appeared to be a more reliable finding. These results indicate a meticulous observation of the MVP under maximal magnification to be crucial for the delineation of gastric cancer detected after eradication of H. pylori.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P9582 ENDOSCOPIC SMALL CAPACITY FORCEPS INCREASE THE PATHOLOGICAL DIAGNOSIS OF GASTRIC INDEFINITE NEOPLASIA


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Introduction: Endoscopic forceps biopsy (EFB) is the gold standard for gastric epithelial tumor diagnosis. However, definitive diagnosis is often difficult, and some cases are diagnosed as gastric indefinite neoplasia (GIN), which corresponds to category 2 in the revised Vienna classification. GIN lesions require short periods of follow-up. The most appropriate forceps size for gastric biopsy has yet to be determined. In the Japanese Classification of Gastrointestinal Tumor, diagnoses of GIN are attributed, at least partly, to the size of biopsy specimens. Since specimens yielded by small biopsy forceps are small, the use of small biopsy forceps is expected to increase the rate of GIN diagnoses.

Aims & Methods: The relationship between forceps size and the frequency of GIN was investigated. The patients in this cohort were divided into two historical groups. The first group comprised patients evaluated during the period when standard biopsy forceps (StF) were used (April 2010-March 2011), and the second comprised patients evaluated during the period when small biopsy forceps (SmF) were used (April 2011-March 2013). Standard caliber endoscopy was used for all esophagogastroduodenoscopy (EGD). We count the number of GIN and gastric carcinoma lesions. Patient characteristics, lesion characteristics (e.g., site, macroscopic appearance, and color tone), endoscopist experience level, biopsy specimens, and diagnostic efficacy were employed as significant variables. The clinical courses of GIN cases were followed for 3 years, and the timing of EGD after the GIN diagnosis and the final pathological result were investigated.

Results: Among the 8420 patients who underwent EGD in the first period, 2, 584 (30.7%) underwent gastric biopsy with StF. Among the 15,986 patients who underwent EGD in the second period, 4204 (26.3%) underwent gastric biopsy with SmF. Gastric carcinoma was diagnosed in 7.93% (205/2584) and 7.54% (317/4204) of the StF and SmF groups, respectively (P = 0.556). GIN was diagnosed in 389 (15.0%) and 258 (6.1%) of the StF and SmF groups, respectively. The difference was significant (P = 0.048). The two groups were diagnosed as GIN did not differ significantly in terms of the patient characteristics, the lesion characteristics, endoscopist experience level, and biopsy related hemorrhage. The mean minor- axis lengths of the biopsy samples were 1.50 ± 0.50 mm and 1.38 ± 0.40 mm in the StF and SmF groups, respectively. The SmF group samples tended to be shorter (P = 0.088). In both groups, 40% of the final diagnoses were epithelial neoplasia; no significant differences were observed.

Conclusion: SmF use may increase the rate of GIN. Thus, SmF use should be avoided with a standard caliber endoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P9583 THE ROLE OF STRESS AND NITROSAMINES IN THE DEVELOPMENT OF GASTRIC CANCER: A NEW MODEL OF ADENOCARCINOMA FORMATION WITH METASTASES IN RATS

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4Institute of Genetics, Bulgarian Academy of Sciences, Sofia/Bulgaria

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Introduction: Stomach cancer is a leading cause of cancer-related deaths in the world. The importance of the role of stress in cancer initiation is contradicted and debatable. Other natural factors such as nitrates, which are widely presented in daily food, are actively discussed as carcinogenic to humans. But, there is no clinical and epidemiological evidences that the nitrosamines itself can induce the stomach cancer. Aims & Methods: For the better understanding of carcinogenic effects of daily stress and nitrates in development of stomach cancer, here we studied the role of these factors in adenocarcinoma in stomach of rats. The experiments were carried out with male adult rats (n = 200). To examine the role of stress and nitrosamines in gastric mucosal injuries we used: 1) the model of chronic social stress (over-population during 9 months); 2) the daily using of toluidine (2 g/kg) in food and water with nitrates (2 g/l); 3) the combined effects of stress + nitrates. The
upper endoscopy was performed using our in-house custom-made multichannel endoscopy system. Histological assay performed to analyze the changes in the gastric tissues.

Results: Using upper gastroscopy, we studied the stomach tissues during 9 months of lining of rats in chronic stress. There were no changes in the gastric mucosa during the first 3 months. In the third month 35% (7 of 20) of animals demonstrated small peptic ulcer (n = 11). These changes progressed during other time of observation. 9 months of experiment. So, this time all rats showed peptic ulcers both types with significant increase in the number of ulcers (n = 21 and large, n = 9). Thus, this series of experiments clearly showed that chronic stress plays provoking role in the peptic ulcer formation in the stomach of rats. The deleterious effects of nitrosamines on the gastric mucosa were observed 4 months after the beginning of daily using of toluidine and nitrates in 75% of rats (15 of 20). These rats showed symptoms of atrophic gastritis. Other 25% (5 of 20) of animals did not demonstrate any changes in gastric mucosa. Thus, this series of experiments markedly showed that effect of long-term eating low-dose nitrosamines induced of atrophic gastritis in the stomach of majority of rats. Several similar protocol of the first and second parts of experiments, we observed the changes in the stomach tissues during 9 months. The same scenarios of typical gastric injuries induced by stress and nitrosamines were observed in rats, i.e. they showed development of peptic ulcers and atrophic gastritis. But, 7 months after the start of experiment, these pathological changes of gastric tissues were associated with intestinal metaplasia of goblet cells, which is the pre-cancer symptom. In 9 months of study, symptoms of gastric adenocarcinoma were observed in 82% of rats (131 of 160). Tumor lesions was accompanied by the migration of metastatic tumor cells through the bloodstream in the liver. The number of metastatic nodes varied from 1 to 5.

Conclusion: Thus, in our research we clearly show that only combination of two potent factors: stress and nitrosamines induce the development of gastric cancer with metastasis in the liver while the presence of these factors alone contribute mucosal injuries without oncological changes in the stomach.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
together with lower levels of phosphoserine, ethanolamine phosphate and urea (Table 1). The 14 GJFAAs revealed diagnostic values with AUC from 0.666 to 0.868, and the combined AUC of them reached to 0.902 (95% CI, 0.846–0.959) for the diagnosis of GC. Importantly, their AUCs were from 0.649 to 0.857, and the combined AUC reached to 0.880 (95% CI, 0.792–0.969) for the diagnosis of early GC. Particularly, leucine, threonine and serine are the most altered three GJFAAs between the two groups, whose fold change more than 2 and AUC value greater than 0.8. Moreover, the combined AUC of the 3 non-AAAs was 0.869 (95% CI, 0.805–0.934) for the diagnosis of GC. It was slightly higher than the combination with 3 AAAs 0.841 (95% CI, 0.773–0.908). Additionally, the pathway of aminoacyl-RNA biosynthesis metabolism was excessively activated, which significantly responsible for the above alternative alterations in GC patients.

**Table 1: Differential GJFAAs between GC and NGD patients and their discriminating performance**

<table>
<thead>
<tr>
<th>Number</th>
<th>Abbreviation</th>
<th>Median GC</th>
<th>Median NGD</th>
<th>P-value</th>
<th>VIP</th>
<th>FC</th>
<th>AUC</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA01</td>
<td>PSer</td>
<td>0.028</td>
<td>0.037</td>
<td>0.002</td>
<td>1.024</td>
<td>0.768</td>
<td>0.666</td>
<td>0.561–0.771</td>
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<tr>
<td>AA03</td>
<td>PEIN</td>
<td>0.007</td>
<td>0.018</td>
<td>&lt;0.001</td>
<td>1.028</td>
<td>0.606</td>
<td>0.718</td>
<td>0.635–0.820</td>
</tr>
<tr>
<td>AA04</td>
<td>Urea</td>
<td>0.178</td>
<td>0.604</td>
<td>&lt;0.001</td>
<td>1.058</td>
<td>0.484</td>
<td>0.729</td>
<td>0.680–0.830</td>
</tr>
<tr>
<td>AA06</td>
<td>Thr</td>
<td>0.022</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.489</td>
<td>2.431</td>
<td>0.835</td>
<td>0.764–0.907</td>
</tr>
<tr>
<td>AA07</td>
<td>Ser</td>
<td>0.016</td>
<td>0.005</td>
<td>&lt;0.001</td>
<td>1.420</td>
<td>2.671</td>
<td>0.831</td>
<td>0.759–0.903</td>
</tr>
<tr>
<td>AA12</td>
<td>Ala</td>
<td>0.033</td>
<td>0.016</td>
<td>&lt;0.001</td>
<td>1.238</td>
<td>1.973</td>
<td>0.783</td>
<td>0.792–0.865</td>
</tr>
<tr>
<td>AA15</td>
<td>Val</td>
<td>0.025</td>
<td>0.013</td>
<td>&lt;0.001</td>
<td>1.025</td>
<td>1.763</td>
<td>0.715</td>
<td>0.621–0.814</td>
</tr>
<tr>
<td>AA17</td>
<td>Met</td>
<td>0.017</td>
<td>0.007</td>
<td>&lt;0.017</td>
<td>1.178</td>
<td>2.148</td>
<td>0.797</td>
<td>0.718–0.837</td>
</tr>
<tr>
<td>AA18</td>
<td>Ile</td>
<td>0.026</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>1.343</td>
<td>2.674</td>
<td>0.812</td>
<td>0.736–0.887</td>
</tr>
<tr>
<td>AA19</td>
<td>Leu</td>
<td>0.075</td>
<td>0.020</td>
<td>&lt;0.001</td>
<td>1.626</td>
<td>2.697</td>
<td>0.868</td>
<td>0.803–0.933</td>
</tr>
<tr>
<td>AA20</td>
<td>Tyr</td>
<td>0.066</td>
<td>0.026</td>
<td>&lt;0.001</td>
<td>1.580</td>
<td>2.010</td>
<td>0.832</td>
<td>0.765–0.902</td>
</tr>
<tr>
<td>AA21</td>
<td>Phe</td>
<td>0.066</td>
<td>0.032</td>
<td>&lt;0.001</td>
<td>1.810</td>
<td>2.715</td>
<td>0.754</td>
<td>0.792–0.853</td>
</tr>
<tr>
<td>AA31</td>
<td>Lys</td>
<td>0.044</td>
<td>0.015</td>
<td>&lt;0.001</td>
<td>1.091</td>
<td>2.321</td>
<td>0.884</td>
<td>0.725–0.883</td>
</tr>
<tr>
<td>AA32</td>
<td>Arg</td>
<td>0.036</td>
<td>0.008</td>
<td>&lt;0.001</td>
<td>1.332</td>
<td>2.722</td>
<td>0.772</td>
<td>0.686–0.859</td>
</tr>
</tbody>
</table>

**P-value.** Statistically significant difference using Mann-Whitney U test; VIP, variable importance in the projection; FC, Fold Change; AUC, area under the ROC curve; 95% CI, 95% confidence interval.

**Conclusion:** GJFAA profiles may be helpful for improving GC diagnosis even in the early stage and for providing more information about its metabolism. Leucine, threonine and serine, three non-AAAs, warrant further validation as alternative metabolic biomarkers for GC.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**PO958 MISSING RATE OF GASTRIC CANCER DURING UPPER GASTROINTESTINAL ENDOSCOPY AND INFLUENCE ON THE NATURAL HISTORY OF THE DISEASE**

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**Introduction:** Gastric cancer (GC) is the fourth most common type of cancer and the second leading cause of cancer related death. The gold standard for diagnosis is the esophagogastroduodenoscopy (EGD) with targeted biopsies.

**Aims and Methods:** Retrospective observational and descriptive study in patients diagnosed of gastric cancer from January 2013 to December 2016 in the area of Ciudad Real (Spain). Missing rate of gastric cancer was defined as the percentage patients who had a negative EGD three years before the diagnosis of GC. A survival analysis was performed with Kaplan Meier curves, mainly focussing on the influence of missing rate for gastric cancer. We studied the features related to EGD that could lead this issue.

**Results:** 162 patients were included, 65% male with a mean age at diagnosis of 72 years. Intestinal type was the most common histology (76%). A rate of 6.8% missing of gastric cancer was detected with an average of 20 months in delay of diagnosis. However, the survival rate was similar between patients with and without a previous EGD (7.08 vs 5.05 months p = 0.60). Among the patients passed away, a longer delay period was observed compared to patients who were still alive (6 months vs. 25 months; p = 0.006). In the aforementioned subgroup, biopsias were taken in 72% with gastric atrophy in all cases. Helicobacter pylori infection was detected in 30% of them. 55.6% of the EGDs were carried out without sedation. At no point chromoendoscopy was performed, pictures were taken and withdrawal times were not reflected.

**Conclusion:** Despite the fact that EGD is by far the most effective method to diagnose gastric cancer, 1 out of 10 cancers or premalignant lesions are not found. Therefore, it is of utmost importance to put in place quality protocols in EGD that may help to increase the diagnosis of early gastric cancer, and by this way, improve the survival rate of these patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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SERUM PG2 LEVEL IN GASTRIC CANCER

P0589 INTERFERENCE OF PG2 TATA BOX REGION WITH THE

¼

(from 308 bp to 479 bp). These fragments were grouped into 4 sized categories

AUC: 758, p

After ROC curve analysis, the sensitivity to discriminate GC at 15 ng/mL

analyzed by the capillary-electrophoresis (GeneMapper software). Association

ism frequencies in relation to serum PG2 (sPG2) expression level, HP-positivity

understood. The aim of this study was to analyse the polymorphisms in the

expression of the corresponding gene, are under investigation. This study will be

evaluated.

important to deeper understand the physiopathological PG2 role in GC.

Several studies have demonstrated serum PGII level as a marker of

the functional gastric mucosa, and a marker of some tumor including the gastric

cancer. However, the modulation of the protein and its role in cancer is not fully

understood. The aim of this study was to analyse the polymorphisms in the

TATA BOX region, which provides a binding site for the transcription factor for

the PG2 gene, in association with the PG2 circulating level and clinical parameters

in population at risk for GC and GC patients.

Aims & Methods: Gastric function of 180 patients (67 GC, 71 first-degree rela-

tives of GC patients (FDR-GC) and 42 autoimmune chronic AG (ACAG)) was

assessed by gastropanel test. We investigated the PG2 TATA BOX polymorph-

ism frequencies in relation to serum PG2 (sPG2) expression level, HP positivity

and risk for GC. TATA BOX DNA fragments were amplified by PCR and

analyzed by the capillary-electrophoresis (GeneMapper software). Association

among clinical data and PG2 polymorphisms were estimated by Receiver operat-

ing characteristic (ROC) curve and linear regression analyses.

Results: After ROC curve analysis, the sensitivity to discriminate GC at 15 ng/mL

PG2 cut-off was 70.15% and 79, 65% sensitivity and specificity, respectively

(AUC: 758, < 0.0001). We obtained 26 different PG2 TATA box fragments

among 308 bp to 479 bp. These fragments were grouped into 4 sized categories

(1 = 308–400 bp; 2 = 401–436 bp; 3 = 437–438 bp; 4 = 439–479 bp). A positive cor-

relation among the increase of PG2 sized fragments and the sPG2 level was found

in the GC group (linear regression y = 16, 4381 = 2, 8684 x, p = 0.02).

Conclusion: In the literature, we confirm sPG2 level as a marker discriminating

between GC and individuals at risk for GC (ie ACAG and FDR) in our series. In addition we reported a correlation between the shortest PG2

TATA BOX fragments and the lower PG2 level. Since highest PG2 level was

related to the GC condition, our data suggest that carriers having longer TATA

BOX region may produce higher sPG2 level than patients with shorter condition.

The clinical significance of the differences in PG2 level associated with the TATA

BOX fragments, by interfering with the transcriptional factor and then with the expression of the corresponding gene, are under investigation. This study is important to deeper understand the physiopathological PG2 role in GC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0590 HELICOBACTER PYLORI INFECTION ASSOCIATED WITH NONALCOHOLIC FATTY LIVER DISEASE: A LARGE-SCALE

COHORT STUDY

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Introduction: Previous studies suggested a link between Helicobacter pylori (H. pylori) infection and nonalcoholic fatty liver disease (NAFLD), yet large-scale longitudinal studies are lacking to elucidate this association.

Aims & Methods: A cohort study of 17,028 adults without NAFLD at baseline, who participated in a repeated health screening examination including an H. pylori-specific immunoglobulin G antibody test, was conducted to evaluate the association between H. pylori and NAFLD development. Fatty liver was diagnosed by ultrasonography.

Results: During the 83,130 person-years follow-up, participants with H. pylori infection had a higher rate of incident NAFLD than those who were uninfected. In a multivariable model adjusted for age, sex, body mass index, smoking status, alcohol intake, regular exercise, year of screening exam, smoking status, alcohol intake, regular exercise, and education level. H. pylori, helicobacter pylori; HR, hazards ratio; CI, confidence intervals.

Table 1: Development of nonalcoholic fatty liver disease (NAFLD) by H. pylori status

<table>
<thead>
<tr>
<th>Person-years</th>
<th>Number of Incident cases</th>
<th>Incidence density (per 1,000 person-years)</th>
<th>Age- and sex-adjusted HR (95% CI)</th>
<th>Multivariable-adjusted HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. pylori (+)</td>
<td>34,960.7</td>
<td>1301</td>
<td>37.2</td>
<td>1.00 (reference)</td>
</tr>
<tr>
<td>H. pylori (+)</td>
<td>48,169.0</td>
<td>2090</td>
<td>43.2</td>
<td>1.14 (1.06–1.22)</td>
</tr>
</tbody>
</table>

*Estimated from Cox proportional hazard models adjusted for age, sex, body mass index, year of screening exam, smoking status, alcohol intake, regular exercise, and education level.

Conclusion: H. pylori infection was significantly associated with the development of NAFLD, independent of metabolic and inflammatory risk factors. H. pylori infection may play a pathophysiologic role in NAFLD development, indicating that H. pylori eradication might play a role in reducing risk of NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0591 HELICOBACTER PYLORI INFECTION STATUS IN HUMAN IMMUNODEFICIENCY VIRUS-POSITIVE PATIENTS


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Introduction: Helicobacter pylori infects the gastric mucosa and causes chronic gastritis via the immunoreaction of the host. By contrast, the human immuno-
deficiency virus (HIV) infects CD4-positive T lymphocytes and destroys the immune system of the host. Some studies pointed out that the H. pylori infection rate is lower in HIV-positive patients. This is because in these patients, H. pylori is incidentally eradicated by the course of antibiotic therapy for HIV infection and because the supply of nutrients to H. pylori is prevented by the decrease in the number of CD4 lymphocytes.

Aims & Methods: We enrolled 290 HIV-positive patients who underwent esopha-
gastro-duodenoscopy in our Hospital between January 2013 and September 2016. As end points of H. pylori infection examination, we retrospectively exam-

ined the presence of gastric mucosa atrophy, H. pylori infection, H. pylori eradication and comorbidity. As end points of HIV infection examination, we quantified the number of CD4 lymphocytes and the titer of HIV and investigated the presence of acquired immunodeficiency syndrome (AIDS). Based on these data, we examined the relationship between H. pylori and HIV infections.

Results: Of the 290 patients, 281 were men and 9 were women, whose median age was 46 years (range, 22–82 years). Ninety patients had atrophic gastritis or stomach or duodenal ulcer, of whom 40 underwent examination for H. pylori infection. The median number of CD4 lymphocytes in the 21 H. pylori-positive cases was 505/L (range, 188–952/L). The titer of HIV from non-detection to 90, 900 copies/mL, and one patient had AIDS. Meanwhile, the median number of CD4 lymphocytes in the 19 H. pylori-negative cases was 333/L (range, 15–998/L). The titer of HIV from non-detection to 1, 590, 000 copies/mL, and three patients had AIDS. H. pylori eradication therapy was applied in 18 of 21 H. pylori-positive cases. The success rate of primary H. pylori eradication was 37.5% (6/16 patients) and that of secondary eradication was 70% (7/10 patients). In addition, 2.7% of the 26 patients with stomach or duodenal ulcer needed urgent hemostasis. Five (6.7%) of the 74 cases of atrophic gastritis had gastric cancer, of which two were undifferentiated stomach cancers.

Conclusion: In our study, the number of CD4 lymphocytes was higher in the HIV-positive patients with H. pylori infection, implying that the high CD4 count was suggested to be associated with persistent H. pylori infection. In addi-
tion, the success rate of H. pylori eradication was shown to be insufficient in HIV-positive patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


2. Romanelli F, Smith KM, Murphy BS: Does HIV infection alter the incidence or pathology of Helicobacter pylori infection?. AIDS Patient Care STDs. 2007 Dec;21(12):908–19.

HELICOBACTER PYLORI INFECTION REDUCES THE RISK OF BARRETT’S METAPLASIA AND IS INDEPENDENT FROM THE GEOGRAPHICAL LOCATION, A META-ANALYSIS

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Introduction: In European and Northern American populations a decreasing prevalence of H. pylori infection has been observed, along with an increasing prevalence of Barrett’s oesophagus and an increasing incidence and prevalence of the adenocarcinoma of the oesophagus and gastro-oesophageal junction. H. pylori eradication has been proven a protective factor against Barrett’s oesophagus, but some individual studies suggested the opposite.

Aims & Methods: Our aim was to scrutinize all data available on the relationship between H. pylori infection and Barrett’s oesophagus prevalence, to see, if H. pylori has a protective role for Barrett’s oesophagus and if it is dependent from the geographical location. A meta-analysis was performed using the preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P). We conducted a systematic search in PUBLMED, EMBASE and COCHRANE databases from inception to December 2016, for the keywords of Barrett’s, Barrett’s metaplasia, Barrett’s oesophagus, Barrett’s oesophagus, Barrett’s oesophagus, Helicobacter pylori, H. pylori and Helicobacter. We also used information from the references of relevant publications to find further eligible studies. We have conducted a meta-analysis of the data from all studies included. We used the random effect model as proposed by DerSimonian and Laird.

Results: We have found 568 articles in PUBMED, 741 in EMBASE and 15 in COCHRANE databases. After exclusion of the articles without sufficient data on the prevalence of H. pylori and Barrett’s oesophagus, we have identified 83 articles suitable for statistical analysis. This meta-analysis involved 98 665 patients with Barrett’s oesophagus and 720 800 patients without Barrett’s oesophagus. The statistical analysis from all studies from five continents and 27 countries showed a protective effect of H. pylori for Barrett’s oesophagus. The odds ratio was 0.63 (95% CI 0.55, 0.71) in Asia, 0.71 (0.55, 0.91) for Europe, 3.05 (0.59, 15.73) for Africa, 0.60 (0.51, 0.71) for North America, 0.95 (0.56, 1.64) for South America and 0.56 (0.39, 0.80) for Australia. The OR and 95% CI values were 0.54 (0.43, 1.64) for Eastern Europe, 0.68 (0.52, 0.90) for Western Europe and 0.71 (0.55, 0.91) for all of Europe, suggesting that the protective role of H. pylori infection is not different across Europe.

Conclusion: This large meta-analysis has given further evidence, that Helicobacter pylori infection has a protective role for Barrett’s oesophagus and this protective role is independent from the geographical location, apart from Africa. In view of the decreasing prevalence of H. pylori in developed countries and the epidemiological rise of Barrett’s oesophagus and adenocarcinoma, it would be important to conduct further large, prospective, multinational studies on the effect of H. pylori infection on Barrett’s oesophagus.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

The reference list for all studies involved in this meta-analysis will be presented at the conference, if this abstract was to be accepted, as the reference list is too long for the constraints on the number of characters in the abstract.

The IMPACT OF HELICOBACTER PYLORI ON MORTALITY AND OTHER OUTCOMES IN PATIENTS WITH HEPATIC ENEPHALOPATHY: A NATIONWIDE ANALYSIS

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Introduction: Helicobacter Pylori (H. Pylori) has been implicated in worsening outcomes in patients with hepatic encephalopathy. This is believed to be the result of its urease enzyme that increases the production of ammonia. Small studies so far have yielded contradictory results on whether the presence of H. pylori worsens treatment outcomes in hepatic encephalopathy. Therefore, the aim of this study was to assess the impact of H. pylori on mortality, morbidity and resource utilization among patients with hepatic encephalopathy using a national database.

Aims & Methods: This was a case-control study using the National Inpatient Sample 2013, the largest publicly available inpatient database in the United States. All patients with an ICD-9 CM code for a principal diagnosis of hepatic encephalopathy were included. There were no exclusion criteria. Patients positive for H. pylori were identified using the appropriate ICD-9 CM codes. The primary outcome was all cause mortality. The secondary outcome was resource utilization as measure by use of abdominal imaging (CT scan and ultrasound of the abdo- men), length of hospital stay (LOS), total hospitalization charges and costs.

Multivariate regression analyses were used to adjust for the following confounders: Age, sex, race, income in patients’ zip code, Charlson Comorbidity Index, hospital region, location, size and teaching status.

Results: A total of 55,360 patients with hepatic encephalopathy were included in the study, of which 20 had H pylori infection. The mean patient age was 60 years and 52% were female. After adjusting for confounders using multivariate analysis, patients with and without H. pylori had similar adjusted odds of mortality (adjusted Odds Ratio (aOR): 1.71, 95% CI: 0.62-4.74, p = 0.30). As far as resource utilization, patients with and without H. pylori had similar adjusted odds of resource utilization (aOR: 0.92, 95% CI: 0.88–1.04, p = 0.08), LOS (adjusted mean difference: 1.7 days, 95% CI: -0.02–3.42, p = 0.52), and total hospitalization charges (adjusted mean difference: $16588, 95% CI: -$2449 - $37675, p = 0.12). However, patients with H. pylori had higher adjusted total hospitalization charges compared with patients without H. pylori (adjusted mean difference: $6128, 95% CI: $1114 - $11115, p = 0.01)

Conclusion: Presence of Helicobacter Pylori has no impact on inpatient mortality among patients with liver cirrhosis and hepatic encephalopathy. In addition, the presence of Helicobacter Pylori is not associated with any increase in resource utilization among this patient population, with the exception of total hospitalization costs. It is surprising to note that, although total hospitalization costs differed between the two groups, they received the same total hospitalization charges from admitting hospitals.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0595 RANDOMIZED CONTROLLED STUDY OF A NOVEL TRIPLE NITAZOXANIDE (NZT) CONTAINING THERAPEUTIC REGIMEN VERSUS THE TRADITIONAL REGIMEN FOR ERADICATION OF HELICOBACTER PYLORI INFECTION

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Introduction: Helicobacter pylori infection has become more and more resistant to conventional first-line treatment regimens. So, there is a considerable interest in evaluating new antibiotic combinations and regimens. Nitazoxanide is an anti-infective drug with demonstrated activity against protozoa and anaerobic bacteria including Helicobacter pylori.

Aims & Methods: This work is designed to evaluate the efficacy and safety of a unique triple Nitazoxanide containing regimen as a treatment regimen in Egyptian patients with Helicobacter pylori infection.

Methods: Two hundred and twenty four patients with upper Gastro-intestinal tract (GIT) dyspeptic symptoms in whom Helicobacter pylori induced GIT disease were confirmed were included in the study. They have been randomized to receive either Nitazoxanide 500mg bid, Clarithromycin 500mg bid and Omeprazole 40mg twice daily for 14 days or Metronidazole 500mg bid, Clarithromycin 500mg bid and Omeprazole 40mg twice daily for 14 days. Laboratory evaluation for Helicobacter pylori antigen within the stool was done 6 weeks after cessation of Helicobacter pylori treatment regimens to assess the response.

Results: The response to treatment was significantly higher in group 1 of Nitazoxanide treatment regimen than group 2 of traditional treatment regimen. Group 1 showed cure (94.6%) of 111 patients who completed the study in group 1 showed complete cure while only 63 cases (60.6%) of 104 patients who completed the study in group 2 showed the same response according to per-protocol (PP) analysis (p < 0.001). The regimen was well tolerated by all the patients enrolled in the study.

Conclusion: Nitazoxanide-containing triple therapy is a promising therapy for the first-line eradication of Helicobacter pylori. (ClinicalTrials.gov Identifier: NCT02422706)

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0596 PREVIOUS INTAKE OF MACROLIDES PREDICTS FAILURE TO ERADICATE HELICOBACTER PYLORI WITH CLARITHROMYCIN-CONTAINING REGIMENS

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Introduction: There is no evidence that previous use of macrolides is a useful predictor of the likelihood of standard triple therapy failure in H. pylori eradication (Lim SG, et al. Dig Liver Dis 2016). The goal of this study is to evaluate whether previous intake of various macrolide antibiotics can predict failure to eradicate H. pylori using first-line clarithromycin-containing regimens.

Aims & Methods: Between February 2014 and June 2016 a total of 250 patients with H. pylori infection were prospectively included in a study whose goal was to assess eradication rates with the two clarithromycin-containing regimens. Patients were randomly assigned to one of two regimens: A: Triple therapy (PPI, amoxicillin, clarithromycin, optimized with a double dose of PPI) for 10 days; and B: Concomitant therapy (PPI, amoxicillin, clarithromycin, and metronidazole administered concomitantly) for 10 days. The eradication was evaluated by the Stool antigen test or with the Urease test in double dose of PPI) for 10 days; and B/Concomitant therapy (PPI, amoxicillin, clarithromycin, and metronidazole administered concomitantly) for 10 days. The eradication was evaluated by the Stool antigen test or with the Urease test. In a subgroup of 163 patients (50.6%) and identified resistance to clarithromycin and levofloxacin in 29 (17, 8%) and 20 (12, 3%) of cases, respectively. BQT was administered as first-line clarithromycin-containing regimens. Resistance was defined as resistance to clarithromycin and/or levofloxacin or as resistance to all antibiotics tested. The number of treatment failures (n = 9) did not allow to identify risk factors for failure.

Conclusion: Three-in-one capsule bismuth quadruple therapy is highly effective and safe for treatment of H. pylori infection in clinical routine practice, irrespective of the patient’s migrational background or the number of previous treatment failures.

Disclosure of Interest: S. Miehlke: Speakers honoraria: Allergan, Kibion, Olympus
All other authors have declared no conflicts of interest.

References


P0597 EFFICACY OF THREE-IN-ONE CAPSULE BISMUTH QUADRUPLE THERAPY FOR HELICOBACTER PYLORI ERADICATION IN CLINICAL PRACTICE IN A MULTINATIONAL PATIENT POPULATION

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1Center for Digestive Diseases, Internal Medicine Center Eppendorf, Hamburg/Germany
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Introduction: Due to increasing prevalences of clarithromycin resistance in H. pylori infection, current guidelines recommend quadruple therapies as first-line therapy1, 2. Bismuth quadruple therapy (BQT) has been proven superior to standard triple therapy in clinical trials3, however little is known about the efficacy of BQT in clinical routine practice.

Aims & Methods: In a prospective single center cohort study we analyzed consecutive patients in whom three-in-one capsule BQT (Pyl eradication rates in patients with and without previous intake of macrolides.

<table>
<thead>
<tr>
<th>Regimen</th>
<th>No previous intake of Macrolides</th>
<th>Previous use of Macrolides</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Triple therapy (n=113)</td>
<td>24/45 (53,3%)</td>
<td>65/68 (95,5%)</td>
<td>&lt;0,0001</td>
</tr>
<tr>
<td>B: Concomitant (n=106)</td>
<td>37/44 (84,1%)</td>
<td>61/62 (98,4%)</td>
<td>0,0085</td>
</tr>
<tr>
<td>Total (n=219)</td>
<td>61/89 (68,5%)</td>
<td>126/130 (96,9%)</td>
<td>&lt;0,0001</td>
</tr>
</tbody>
</table>

Conclusion: Previous use of macrolide antibiotics predicts a low response to triple therapy and to concomitant clarithromycin-containing regimens. In addition, our study shows that in patients without previous use of macrolides triple therapy achieves per-protocol eradication rates over 90%.

Disclosure of Interest: All authors have declared no conflicts of interest.
**P0598** ERADICATION OF HELICOBACTER PYLORI INFECTION WITH A PROTON PUMP INHIBITOR, METRONIDAZOLE AND TETRACYCLINE PLUS ESOMEPRAZOLE: A REAL-LIFE STUDY

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**Introduction:** Background: Eradication of Helicobacter pylori (H. pylori) infection represents a clinical challenge. The current requirements demand eradication rates of 75-80% which has made that the use of triple treatments including clarithromycin or metronidazole had been gave up on those countries, such as Spain, with high resistance rates. Quadruple therapy with a proton pump inhibitor (PPI) plus a single three-in-one capsule containing bismuth subcitrate potassium, metronidazole, and tetracycline (BMT) have shown high eradication rates in clinical trials.

**Aims & Methods:** We aimed to evaluate the efficacy and safety of a PPI-bismuth based quadruple therapy in patients diagnosed of H pylori infection in a clinical setting of a Private Hospital, located at the North of Madrid (Spain). A prospective and real-life study was conducted, between March 2016 to February 2017, on consecutive patients with confirmed H pylori infection eradication indication. Patients were treated for ten days with a galenic preparation containing bismuth subcitrate potassium 140 mg, metronidazole 125 mg, and tetracycline 125 mg, three capsules four times daily, and esomeprazole 40 mg twice daily and probiotic during 30 days. The primary endpoint was H. pylori eradication rate with successful urea breath test performance, at least 28 days, after the end of treatment. Intent-to-treat (ITT) efficacy analyses included all patients who received study medication and took at least one dose of study medication; patients without an observed outcome were considered as treatment failures. Proton pump inhibitors (PPIs), which excluded patients who did not complete the study or who had major protocol violations, were also conducted to confirm the ITT results.

**Results:** A total of 100 patients, 60 (60.0%) women and 40 (40.0%) men, who fulfilled the respective demands of the inclusion and exclusion criteria, were enrolled consecutively. Five of these were lost to follow-up. Mean (standard deviation) [95% confidence interval] age was 47.1 (15.4) [44.0 to 50.2] years. Twenty-five (25.0%) patients had a prior history of using medications to treat H. pylori, most often clarithromycin, amoxicillin, and PPI. In the ITT population, the eradication rates were 90.7% (68/75) and the 80.0% (20/25) depending on whether the PPI-BMT treatment was administered as first-line or as rescue therapy, respectively. In the PP population, the eradication rates were the 98.6% (63/64) and the 95.2% (20/21) in those patients treated with PPI-BMT as first-line or as rescue therapy, respectively. Eighteen (18.0%) patients reported at least one adverse event.

**Conclusion:** In patients with confirmed H pylori infection, 10 days of treatment with a regimen of bismuth, metronidazole and tetracycline plus esomeprazole provides high eradication rates not only as first-line but also as rescue therapy, with an acceptable safety profile.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0600** A SEVEN-DAY TRIPLE THERAPY CONTAINING A POTASSIUM-COMPETITIVE ACID BLOCKER COMPARED WITH PROTON PUMP INHIBITORS, AMOXICILLIN AND CLARITHROMYCIN FOR FIRST-LINE HELICOBACTER PYLORI ERADICATION IN JAPAN: A SINGLE-CLINIC RETROSPECTIVE STUDY

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**Introduction:** This study was evaluated the effectiveness and safety of Vonoprazan, a potassium-competitive acid blocker (P-CAB) compared with proton pump inhibitors (PPIs) for a first-line Helicobacter Pylori (H. pylori) eradication.

**Aims & Methods:** We retrospectively analyzed data from first-line H. pylori eradication treatment (vonoprazan or PPIs with 400 mg clarithromycin and 1500 mg amoxicillin) within Japan during 2017. Vonoprazan were 10% (138/169) in the VPZ group vs. 74.4% (131/176) in the EPZ group.

**Results:** ITT and PP analysis of the first-line H. pylori eradication for vonoprazan, lansoprazole, rabeprazole, and esomeprazole were 75.5%/86.8%, 63.9%/76.2%, 68.0%/79.5%, and 63.2/70.8%, respectively. The vonoprazan eradication rates were significantly higher than those of these PPIs (P < 0.05), respectively. There was no significant difference in the adverse events between the two therapies.

**Conclusion:** 7-day P-CAB based triple therapy is more effective than 7-day PPI based triple therapy as a first-line H. pylori eradication without differences in tolerability.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0601** AN OPEN-LABEL, RANDOMIZED CONTROLLED TRIAL OF VONOPRAZAN VERSUS ESOMEPRAZOLE AS PART OF FIRST-LINE TRIPLE THERAPY FOR HELICOBACTER PYLORI ERADICATION

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**Introduction:** Vonoprazan (VPZ) is a novel, orally bioavailable, potassium-competitive acid blocker and PPI for the treatment and prevention of acid-related gastrointestinal diseases. A phase III study revealed that VPZ is superior to lansoprazole as part of first-line therapy for Helicobacter pylori (HP) infection when combined with 400 or 800 mg clarithromycin (CAM). Aims & Methods: The aim of the current study was to evaluate the efficacy and safety of VPZ. CAM (400 mg/day), and amoxicillin (ABPC: 1500 mg/day) triple therapy in post-marketing use in Japan. A randomized, open-label, single-center study was conducted to verify the superiority of VPZ to esomeprazole (EPZ) as part of first-line triple therapy in patients with HP infection. Three hundred and forty-nine Japanese patients with HP infection diagnosed using a rapid urease test were enrolled between June 2015 and October 2016. The patients were randomly allocated to VPZ group (VPZ 40 mg/day, ABPC 1500 mg/day, CAM 400 mg/day) or EPZ group (EPZ 40 mg/day, ABPC 1500 mg/day, CAM 400 mg/day) with stratification according to endoscopic findings of gastric/duodenal ulcer/scar and CAM resistance determined via a microbial sensitivity test. The eradication rates were evaluated using the urea breath test 8 to 12 weeks after cessation of therapy.

**Results:** Three hundred and forty-five patients (177 men, 168 women; mean age 64.7 years [range 27-89 years]; VPZ group, 169; EPZ group, 176) completed the study. One patient in the VPZ group and three patients in the EPZ group discontinued the treatment because of adverse events. One patient in the VPZ group and three patients in the EPZ group were lost to follow-up. There was no significant difference in the overall first-line eradication rate between the two groups (81.7% [138/169] in the VPZ group vs. 74.4% [131/176] in the EPZ group [P = 0.10]). Furthermore, there was no significant difference in the first-line eradication rate in patients with CAM-sensitive HP (87.2% [82/94] versus 84.6% [77/91] in the VPZ and EPZ groups, respectively, [P = 0.60]), although the eradication rate was significantly higher among patients with CAM-resistant HP in the VPZ group than that in the EPZ group (73.6% [30/41] vs. 55.6% [35/63], [P = 0.044]). The first-line eradication rate in the patient with high estimated glomerular filtration rate (eGFR ≥ 100 ml/min/1.73 m²) was significantly lower than in that in the patients with low eGFR (r < 60 ml/min/1.73 m²; 86.4% [32/37] in
the patients with low eGFR, 65.3% [34/53] in the patients with high eGFR [P = 0.034], it was significantly higher in the VPZ group than that in the EPZ group (79.3% [23/29] versus 50% [11/13], respectively, [P = 0.025]). The first-line eradication rate in continuous smokers was significantly lower than that in non-smokers (81.0% [187/231] in non-smokers vs. 64.3% [27/42] in continuous smokers [P = 0.016]). However, there were no significant differences between the VPZ and EPZ groups in non-smokers (84.2% [96/114] versus 77.8% [91/117], respectively, [P = 0.21]) and in continuous smokers (84.2% [12/16] versus 57.7% [15/26], respectively, [P = 0.33]). Furthermore, the first-line eradication rates in both groups were not influenced by age, sex, body mass index, drinking habit, and the endoscopic findings of gastric/duodenal ulcers/scars. There were no significant differences with regard to adverse effects between the two groups.

Conclusion: In contrast to the previous reports, the first-line eradication rate of VPZ-based triple therapy with 400 mg/day CAM and 1500 mg/day ABPC was similar to that of VPZ-based triple therapy in all groups except in patients with CAM-resistant HP and high eGFR. It is necessary to determine the most appropriate conditions that will maximize the therapeutic effect of VPZ-based triple therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Vonoprazan, a novel potassium-competitive acid blocker, as a component of HP eradication therapy-a post-hoc analysis of five randomized trials conducted in Taiwan from 2007 to 2016. Patients who received amoxicillin-containing regimens were determined by agar dilution test. Meta-analysis was performed to assess the presence of amoxicillin resistance and the optimal breakpoint of MIC is 30.125 mg/ml.

Introduction: The impact of amoxicillin resistance on the efficacy of regimens containing amoxicillin for H. pylori infection was evaluated using logistic regression analysis. The same analysis with adjustment for sex, age, and H. pylori infection status was used for evaluation of associations between gene polymorphisms and AG or GC. The Bonferroni-corrected alpha level was set at 0.025 (0.05/2 SNPs).

Results: A total of 2339 patients with available data of amoxicillin MICs were enrolled. Meta-analysis was performed to assess the risk ratio of eradication failure in amoxicillin resistant strains compared to susceptible strains of seven different regimens. We further performed pooled analysis and logistic regression in patients treated with clarithromycin triple therapy to identify the optimal breakpoint of amoxicillin resistance.

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Conclusion: Hp infection is suggested to be related to the invasion depth of C. pylori prevalence, which was also an important profile in GAGF cases. Pigmentation in GAGF is found frequently, but it may be related to taking PPI.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Monday, October 30, 2017
09:00–17:00
Small Intestinal – Hall 7

P0605 MUCIN EXPRESSION IN THE SMALL BOWEL OF CELIAC DISEASE – A SYSTEMATIC REVIEW AND META-ANALYSIS
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Introduction: Mucins, heavily glycosylated glycoproteins, synthesized by mucosal surfaces and have an important role in healthy and malignant states. Changes in mucin synthesis, expression and secretion may be a primary event or may be secondary to inflammation and carcinogenesis.

Aims & Methods: Since untreated celiac disease (CD) is associated with intestinal mucosal hyperplasia, the aim of the study was to assess the current knowledge about mucin expression in the small bowel of CD patients, and to look for a possible association between mucin profile and gluten-free diet. English Medical literature searches were conducted for “mucin” and “celiac”. Observational studies were included. Meta-analysis was performed using Comprehensive meta-analysis software. Pooled odds ratios and 95% confidence intervals were calculated.

Results: Out of 18 titles initially generated by the literature searches, 3 observational studies that fulfilled the inclusion criteria remained eligible for meta-analysis. The study included 58 patients and 68 controls from 3 countries (Finland, Japan, USA). Mucin expression was significantly increased in small bowel mucosa of CD patients than in normal small bowel mucosa [OR 10.789, 95%CI (1.062–109.634), p = 0.044] (random-effect model). Heterogeneity was significant: Q = 9.470, df (Q) = 3, P = 0.024, I² = 68.323%. ORs for MUC2 and MUC5AC expression in the small bowel mucosa of untreated CD patients were 1.143, 95% CI.060–21.870, P = 0.929 and 21.429, 95% CI 3.883–118.255, P < 0.0001, respectively.

Conclusion: We found that expression of certain mucin genes in the small bowel mucosa of CD patients may serve as a diagnostic tool, and assist in surveillance programs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0606 HEPATIC ABNORMALITIES ASSOCIATED WITH CELIAC DISEASE
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Introduction: Celiac disease (CD) is a gluten-sensitive enteropathy that resolves with gluten-free diet (GFD). It’s now considered as a systemic disorder. A number of studies have shown the occurrence of liver diseases at a higher frequency in patients with CD compared with that in the general population. Cryptogenic hepatocellular carcinoma is observed in about half of celiac patients not following GFD with reversibility in the majority of cases after 6 to 12 months of GFD (1). Other liver abnormalities such as autoimmune hepatitis, cholestatic liver disorders can be observed.

Aims & Methods: The aims of our study are to report the prevalence of liver diseases during CD and to describe the characteristics, etiologies and response to GFD of these liver disorders. Prospective multicentric study including 154 celiac patients (77.8%), with bleeding esophageal varices in 22.2% (n = 35) of cases, and in all cases the hepatic cirrhosis stage. Hepatic abnormalities were investigated with an etiologic assessment. The evolution of liver disorders after GFD was assessed.

Results: The prevalence of hepatic disorders in celiac patients is estimated at 18.1% (n = 28). A cryptogenic hepatocellular carcinoma is found in 12.3% of cases (n = 19). This diagnosis was retained after a negative etiological assessment of hepatic cytology in patients at a diagnosis of CD. Severe hepatic pathologies are associated with CD in 5.8% (n = 9) of cases, and in all cases in the hepatic cirrhosis stage. Cirrhosis is cryptogenic in 55.5% (5/9) of cases and secondary to an autoimmune origin in 44.5% (4/9). Chronic hepatitis revealed CD in 1.9% of the celiac population (3/154), two cases of autoimmune cirrhosis, one associated with primary biliary insufficiency, and one case of cryptogenic cirrhosis. The diagnosis of cirrhosis preceded the diagnosis of CD in 55.6% (5/9) of cases, and was contemporary and revealing the CD in 33.3% (3/9). In a single case (11.1%, 1/9), the diagnosis of cryptogenic cirrhosis was made in a celiac patient diagnosed in childhood without the concept of GFD followed. 7 years after the diagnosis of CD. It’s noted that hepatic cirrhosis occurred in the celiac population at a young age, on average 31.1 years. Cirrhosis is most often complicated (77.8%), with bleeding esophageal varices in 22.2% (n = 2) of the cases and ascitic decompensation in slightly more than half of cases 55.6% (n = 5). Hepatocellular carcinoma associated with CD in 5.8% (n = 3) of cases, and in all cases in the hepatic cirrhosis stage.

Conclusion: It’s noted that hepatic cirrhosis occurred in the celiac population at a young age, on average 31.1 years. Cirrhosis is most often complicated (77.8%), with bleeding esophageal varices in 22.2% (n = 2) of the cases and ascitic decompensation in slightly more than half of cases 55.6% (n = 5). Hepatocellular carcinoma associated with CD in 5.8% (n = 3) of cases, and in all cases in the hepatic cirrhosis stage.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0607 CELIAC DISEASE ASSOCIATED WITH VASCULAR THROMBOSIS
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Introduction: Celiac disease (CD) is a life-long autoimmune disease affecting multiple organs of genetically susceptible individuals. One of the extra intestinal manifestations of the disease is thromboembolic events like strokes and veins’ thrombosis.

Aims & Methods: The aim of this work is to determine the prevalence and clinical characteristics of the thrombosis observed during CD. Prospective multicenter work involving 154 adult celiac patients (42H, 112F), with an average age of 36.1 years ±13.6, recruited between 01-01-2013 and 30-06-2014 with a minimum follow-up of 12 months. The diagnosis of CD was in all cases based on clinical, serological and histological arguments. Thrombotic complications were noted as well as their modalities of occurrence.

Results: Vascular thrombosis was diagnosed in 13 patients (8.4%), and occurred almost exclusively in women (84.6%) (11 F - 2 H). There are 6 cases of portal cavernoma, one associated with lower limb thrombosis, 4 cases of stroke and 3 cases of thrombosis of the lower limbs. The diagnosis of thrombosis revealed the diagnosis of MC in 8 patients (61.5%) with an average delay of 11.6 months and extreme delays of 1 to 43 months. These include 4 cases of a portal cavernoma, one associated with deep limb thrombosis, 3 cases of stroke, and one case of deep thrombosis of the lower limbs. The diagnosis of CD was made on average 72 months after that of thrombosis in 4 patients (30.8%). In one case, thrombosis was complicated 39 years after diagnosis of CD diagnosed in childhood at the age of 5 years without gluten-free diet. The thrombophilia assessment was carried out in all patients and. The thrombophilia assessment was was negative in 11 cases (84.6%). A S protein deficiency associated with the CD in one case and an antithrombin III deficiency in another case were detected. The use of oral contraceptives and in all cases a micro-dosed oestro-progestin was found in 7 women (63.6%), 5 cases women involved in thrombosis.

Conclusion: The diagnosis of CD must be evoked when there is a thrombotic disease without obvious cause, factors of thrombophilia may be present during the CD. Early CD diagnosis with respect to the gluten-free diet may prevent the development of this complication.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0608 DIFFERENT PROFILES OF TLR 2, 4, 7 AND 9 MRNA IN HEPATIC AND BIPSY SPECIMENS OF PATIENTS WITH CELIAC DISEASE
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1Basic and Molecular Epidemiology of Gastrointestinal Disorders Research Center, Research institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences, Tehran/Iran
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Introduction: Celiac disease (CD) is an organ-specific autoimmune disease, and both adaptive and innate immunity are involved in its development. Recent studies suggest the dysregulation Toll-like receptors (TLRs) in innate immunity can confer risk to autoimmune diseases such as CD.
Aims & Methods: In this study we investigated the TLRs 2, 4, 7, 9 genes expression in the intestine with celiac disease compared with healthy control. Blood samples from 120 CD patients diagnosed according to the Iranian Society for Gastroenterology were collected and 120 healthy individuals were served as a control group during 2016. Also, among them, 20 duodenal biopsy specimens were collected randomly. Total RNA for both blood samples and biopsy specimens was isolated using a standard commercial kit. The mRNA expression of TLRs were quantified by qualitative qPCR with B2M as a reference gene.

Results: Significantly higher expression of TLR4 and TLR9 mRNA was observed in blood samples of CD patients compared to the healthy controls (P < 0.05); but there were no significant differences between expression of TLR2 and TLR7 mRNA compared to the controls. Furthermore, TLR4 and TLR2 expression level was increased in CD biopsy specimens compared to controls, whereas expression of TLR12 mRNA was decreased in CD patients. No significant differences in expression of TLR7 was observed in biopsy specimens.

Conclusion: The result of this study show that the alteration of TLR4 and TLR9 genes expression in intestinal mucosa of CD can be detected in PBMs in peripheral blood. This data supports the implication of innate immune system in the pathomechanism of celiac disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: We investigated the new and innovative gluten detoxified bread (GFB; patent PCT/IB2013/000797) effects on mucus production by means of Alcian blue staining in comparison to the control bread (CB). In addition, MUC2 and MUC3 were quantified by ELISA and the permeability of the intestinal epithelium in monolayer was assessed by trans-epithelial electrical resistance (TEER) measurement. The statistical analysis was conducted by one-way ANOVA followed by a Bonferroni post-hoc t-test.

Results: Mucin production by Alcian blue staining was expressed as % black pixels measured from Image J software. GFB increased MUC2 secretion after 24 hours by Alcian blue staining (10.28 ± 1.82; P < 0.01), whereas CB did not (9.94 ± 0.67; P = 0.05). Higher MUC2 concentrations expressed as ng/ml were found on cells treated with GFB (10.82 ± 1.35; P = 0.01) compared to control. CB was not found for (9.24 ± 0.18; P = 0.05). Alcian blue TEER values, expressed as a percentage of initial TEER, were observed after 24 hours of incubation with GFB in comparison to the control (163.2 ± 33.8; P = 0.01) which was not observed or CB (139.4 ± 28.8, P = 0.05).

Conclusion: It could be concluded that GFB has a potential of inducing MUC2 secretion by intestinal epithelial cells and improving intestinal epithelium permeability in vitro. Such observed potential may effectively contribute to consequent benefits such as higher gut barrier defence, decreased susceptibility to infections and better absorption regulation, thus ameliorating such alterations in celiac patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: Duodenal biopsy samples of patients diagnosed of NCGS according to Salerno criteria were retrieved. Duodenal biopsy samples of positive controls (overt seropositive celiac disease at Marsh 1 stage) and negative controls (functional dyspepsia and normal microscopic picture) were selected. Immunohistochemistry for CD3 (intraepithelial lymphocytes), CD4 (T-helper lymphocytes), CD8 (T-cytotoxic lymphocytes) and CD1a (Langerhans cells) was performed. Cell count was carried out both in the epithelial layer (expressed as number of cells/100 enterocytes) and in the lamina propria (positive cells/mm). Comparison of means was performed by ANOVA test with Bonferroni’s post hoc analysis.

Results: Twenty NCGS, 12 celiac patients (positive controls) and 16 negative controls were selected. CD1a+ intraepithelial lymphocytes in NCGS were expressed at intermediate levels (18.5 ± 6.4) between negative controls (11.9 ± 2.8) and celiac disease (40.8 ± 8.1, p < 0.0001). CD4+ T-helper lymphocytes were present only in lamina propria and NCGS had a lower level (3.9 ± 2.8) than controls the same study. CD8+ T-cytotoxic lymphocytes had the secreted level of CD8+ T-cytotoxic lymphocytes that were similar between NCGS and negative controls (14.0 ± 7.4 versus 17.8 ± 4.2), but lower than celiac disease (34.0 ± 7.1, p < 0.0001). CD1a+ Langerhans cells were over-expressed in the lamina propria of NCGS (1.9 ± 1.1) in comparison to celiac disease and negative controls (respectively 0.3 ± 0.8 and 0.4 ± 0.5, p < 0.0001).

Conclusion: NCGS is characterized by a mild immunologic reaction, as shown by the slight increase in CD3 intraepithelial lymphocytes. The over-expression in the
N.J. Talley1

Gastrointestinal symptoms reported by patients with and without self-non-affected cohort (30.8% versus 22.2%, p<0.001). Aims & Methods: Patients with CD have been shown to experience persistent GI symptoms despite long term treatment with a gluten-free diet (4). Subjects with CD compared with the unaffected population was tested for significance by logistic regression. The prevalence of CD, FD and IBS are reported to establish whether they had co-existent functional GI disorders. Adherence to a gluten-free diet was not assessed. Prevalence of CD, FD and IBS are reported with 95% confidence intervals (CI). The difference between symptoms in those with CD compared with the unaffected population was tested for significance by the Pearson chi-square test. Results: The prevalence of doctor-diagnosed CD was 1.2% (95% CI 0.84–1.59) in this cohort. Subjects with CD reported significantly higher levels of GI symptoms than unaffected individuals, including abdominal pain associated with abnormal bowel habit, diarrhoea, bloating, distention, epigastric burning and early satiety (see Table). There was no significant difference observed in symptoms of post-bowel habit, diarrhoea, bloating, distention, epigastric burning and early satiety between the 3 groups. Logistic regression was performed including into the model those independent variables which showed a significant difference at univariate analysis. More bowel motions associated with pain ** 16/38 42.1% 50/3248 15.5% P < 0.002

Bloating * 13/40 32.5% 436/3381 12.9% P < 0.001

Distention * 12/40 30% 395/3371 11.7% P < 0.001

Abdominal pain * 9/39 23.1% 362/3378 10.7% P = 0.046

Epigastric burning * 13/38 34.2% 504/3248 15.5% P = 0.002

Early satiety * 8/40 20% 230/3378 6.8% P = 0.001

Abdominal pain associated with slow bowel motions ** 16/37 43.2% 600/3234 18.6% P < 0.001

Conclusion: The prevalence of gastrointestinal symptoms and in particular functional dyspepsia are significantly higher in patients with a doctor diagnosis of CD than in the unaffected population. Subjects with CD biopsy proven coeliac disease in IBS is higher in IBS cohorts than healthy controls (2) and the value of screening with duodenal biopsy testing for CD in FD is concluded to be useful (3), this study supports these views.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0612 FUNCTIONAL DYSPEPSIA SYMPTOMS ARE STRONGLY ASSOCIATED WITH COELIAC DISEASE: RESULTS FROM A POPULATION-BASED STUDY

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Introduction: Coeliac disease is estimated to affect up to 1 in 100 Australians (1). Although CD has a wide range of clinical manifestations, patients frequently present with gastrointestinal (GI) symptoms which overlap with functional GI disorders, particularly irritable bowel syndrome (IBS) and functional dyspepsia (FD); the prevalence of biopsy proven CD is higher in IBS (2) and in dyspepsia (3). Studies show that biopsy proven coeliac disease in dyspepsia. The prevalence of functional dyspepsia as defined by Rome III criteria in the CD population prevalence of self-reported wheat or gluten sensitivity (SRWS) of 1, M. M. Walker2, M.P. P. Jones3, N. Koloski1, G. Brogan1, S. Keely1, N.J. Talley1

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All authors have declared no conflicts of interest.

Disclosure of Interest: Please refer to authors' conflict(s) of interest.

References
up to 13% (2, 3). SRWS is defined as gastrointestinal (GI) or extraintestinal symptoms on ingestion of wheat or gluten-containing food (2, 3). Aims & Methods: The aim of this study was to determine the prevalence of SRWS in an Australian population, define associated GI symptoms, and relate the diagnosis to demographic, lifestyle and medical factors. A total of 3825 people (mean age 58.4 years, age range 18–100 years and 47.5% males) randomly selected from the Australian population returned a mail survey (Digestive Health & Wellbeing Survey, response rate = 45%) which contained questions on wheat avoidance, GI symptoms, demographic, medical and lifestyle factors. We defined SRWS as people who reported gastrointestinal symptoms on ingestion of wheat based foods, but did not suffer from doctor diagnosed coeliac disease, inflammatory bowel disease or bowel cancer. Prevalence of SRWS is reported with 95% exact confidence intervals. The association between SRWS prevalence and potential risk factors was reported using unconditional logistic regression. The degree of differentiation of SRWS from health was evaluated through the area under the receiver-operator-characteristic curve. Results: The prevalence of SRWS in this cohort was 13.5% (455/3313, 95% CI 12.5–14.9%). Only 11% (50/455) of these individuals had received a doctor diagnosis of wheat or gluten intolerance. The most commonly reported GI symptoms (reported as more than weekly or often) associated with SRWS included abdominal pain relieved by bowel movements (54.5%), bloating (37.6%) and abdominal distension (30.8%). In a multivariate analysis, a diagnosis or SRWS was significantly associated with irritable bowel syndrome (IBS) and functional dyspepsia (FD) (Rome III criteria), female gender, and food allergy (see Table). Older age was negatively associated with SRWS. In this multivariate model, factors with no observed association included body mass index, depression, anxiety, sleep problems, proton pump inhibitor use, gastrointestinal infection, rheumatoid arthritis, scleroderma, migraine, Parkinson’s disease, asthma, pollen allergy, animal allergy, previous surgeries and recent antibiotic use. The model provided useful although imperfect differentiation of SRWS from health (AUROC = 0.76).

Table: Medical and demographic factors associated with a diagnosis of self-reported wheat sensitivity (SRWS).

<table>
<thead>
<tr>
<th></th>
<th>Odds</th>
<th>Odds Ratio 95% CI p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: mean (SD)</td>
<td>51.9</td>
<td>59.3 0.98 0.98–0.99 p &lt; 0.001</td>
</tr>
<tr>
<td>Female gender</td>
<td>(14.9)</td>
<td>(16.5)</td>
</tr>
<tr>
<td>(total = 52.5%)</td>
<td>336/450</td>
<td>1392/2854 1.86 1.51–2.30 p &lt; 0.001</td>
</tr>
<tr>
<td>Functional dyspepsia</td>
<td>(74.7%)</td>
<td>(48.8%)</td>
</tr>
<tr>
<td>syndrome 128/466</td>
<td>327/2865 1.74 1.38–2.20 p &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Irritable bowel 248/453</td>
<td>571/2866 3.96 3.23–4.86 p &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Food allergy 56/455</td>
<td>515/2878 2.05 1.50–2.80 p &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>(12.3%)</td>
<td>(5.3%)</td>
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</table>

Conclusion: SRWS has a prevalence of 13.5% in this Australian cohort. Those with SRWS are likely to report abdominal symptoms, including abdominal pain associated with bowel habits, bloating after a few hours of ingestion of gluten. SRWS is significantly associated with IBS and FD, younger age, female gender, and food allergy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

3. Volta U, Caio G, Karunaratne TB, Alaedini A, De Giorgio R. Non-coeliac wheat sensitivity as an allergic condition. personal experience and addition we also found 5 (4.5%, 4F) patients with real allergy to wheat or wheat allergy or psoriasis, diabetes and recent antibiotic use. The model provided useful around 0.4% until 0.6%.

The diagnosis of WA is basically classified on skin prick tests (SPT), in vitro specific Immunoglobulin E (sIgE) assays and functional assays. SPTs and sIgE in vitro assays are the first-level diagnostics for WA. However, they are affected by a low predictive value. In particular, their low sensitivity can be explained by the fact that the commercial test reagents are mixtures of water/salt-soluble wheat proteins that lack allergens from the insoluble gluten fraction. The association between food allergy and celiac disease (CD) is still to be clarified. Gluten-related disorders are an epidemiologically relevant phenomenon with a global prevalence that is estimated around 5%, drawing the attention of the scientific community.

Aims & Methods: We visited in our unit of celiac disease and gluten-related conditions during 2016 423 (F:M3:111) new patients with clinical suspicion of CD. Of these 113 they were non-celiac but were investigated for suspected non-celiac gluten sensitivity. After in vitro tests for the exclusion of celiac disease, to verify the real prevalence of food allergy particularly to wheat protein, in non celiac patient referred our unit for symptoms after gluten ingestion, all these patients underwent allergological evaluation consisting on skin prick tests for food including wheat (Alk-a-beilo), LTP (lipid transfer protein) (peach Alk a3), alpha amylase, wheat flour, barley, corn, rice, grass pollen and histamine. Also they all performed patch tests for suspected allergy to nickel, if they reported sensitivity to chromium or nickel in their occupational history.

Results: In our overall population, 113 (26.7%) non celiac patients had a history of immediate or not immediate reaction after ingesting gluten: the Allergologic tests found wheat protein sensitization in 14 patients of these 12.4% (4 F). In addition we also found 5 (4.5%, 4F) patients with real allergy to wheat or wheat protein.

Conclusion: In our population 119 113 (16.8%) non celiac patient had real reaction after ingesting gluten: 14 (12.3%) had wheat protein sensitization and 5 (4.5%) had WA. These results are different and very high than that reported in the literature.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


**P0615 INSUFFICIENCY OF THE SMALL INTESTINAL ENZYMES MAY BE ONE OF THE CAUSES OF FUNCTIONAL BOWEL DISEASE**

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Insufficiency of functional bowel disease is usually associated with disorders of visceral sensitivity and intestinal motility, which result from a dysfunction of the central nervous system, intestinal microflora and immune system Aims & Methods: We aimed to highlight importance of intestinal enzymes (glucoamylase, maltase, sucrase and lactase) in the etiopathology and pathogenesis of functional bowel disease. 74 patients with functional bowel diseases in age from 18 to 50 years (36 men and 38 women) were examined. According to Rome IV criteria (2016), 21 had irritable bowel syndrome (IBS) with predominance of diarrhea, 33 - functional diarrhoea, 6 – IBS with predominant constipation, 4 - functional constipation and 10 - mixed type of IBS. Activity of the mucosa enzymes of the small intestine was determined by Dahlquist-Trinder method in duodenal biopsies obtained during esophagogastrroduodenoscopy.

Results: Lactase deficiency was identified in 87.8% of patients, maltase deficiency – in 48.6%, sucrase deficiency – in 53.1%, the glycomylase deficiency – in 85.1%. The activity of all investigated enzymes was reduced in 23 (31.1%) patients with functional bowel diseases, failure of 1 to 3 enzymes detected in 47 (63.5%). Normal activity of enzymes was observed in 4 (5.4%) patients.

Conclusion: In 70 of 74 (94.5%) patients with functional bowel disease and in disorders of the stool, abdominal pain and flatulence, there was a decrease in the activity of intestinal enzymes, which may be a cause of intestinal symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0616 WHEAT PROTEIN ALLERGY OR SENSITIZATION TO WHEAT PROTEIN IN A CELIAC POPULATION**

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Introduction: Epidemiological studies estimate a worldwide prevalence of CD of approximately 1:100 individuals, with a considerable proportion of patients remaining undiagnosed and untreated. According to a study performed by the National Health and Nutrition Examination Survey in the United States, the prevalence of self-prescribed GFD in an unscreened population of subjects aged 6 years or older was 0.5%. Epidemiological studies report a prevalence of WA in American population of around 0.4% until 0.6%.

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Introduction: Epidemiological studies estimate a worldwide prevalence of CD of approximately 1:100 individuals, with a considerable proportion of patients remaining undiagnosed and untreated. According to a study performed by the National Health and Nutrition Examination Survey in the United States, the prevalence of self-prescribed GFD in an unscreened population of subjects aged 6 years or older was 0.5%. Epidemiological studies report a prevalence of WA in American population of around 0.4% until 0.6%.

Conclusion: In our population 19/113 (16.8%) non celiac patient had real reaction after ingesting gluten: 14 (12.3%) had wheat protein sensitization and 5 (4.5%) had WA. These results are different and very high than that reported in the literature.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

as celestamine. Short-term outcome of having BAD is well-described, but long-term effects remain unclear. The aim of the present study was to describe long-term symptoms, adherence to treatment and quality of life in a well-defined group of patients with BAD.

Aims & Methods: Between 2003 and 2016, 559 patients referred to our hospital for diagnosis had abnormal low scintigraphic retention levels (<15% at day 7). Questionnaires about medical history, bowel function, use of medication, and quality of life were sent to all patients.

Results: Among 559 patients, 381 (68.2%) responded (242 women (63.5%), median age: 53 years (range 22 to 89), median age at diagnosis 47 years (range 16 to 83)). In 123 respondents (32.3%) BAD was due to ileal dysfuncion (type 1), 199 (52.2%) had idiopathic BAD (type 2), and 59 (15.5%) had BAD due to cholesystectomy (type 3). At follow-up, 272 patients (73.9%) still reported both-cosmesis diarrhea and 246 (65.5%) regularly used antidiarrheal medication. Treatment included BAS in 45.1% while 32.3% of patients used other treatment. 184 patients (49.9%) reported that treatment had improved their symptoms, while 116 (31.4%) reported that they were the same, and 69 (18.7%) felt worse. Treatment was continued by 242 patients (65%) in 24 patients (6.4%) treatment was discontinued.

Conclusion: BAD must be considered as a chronic disease and despite correct diagnosis and treatment, most patients continue to have significant diarrhoea and reduced quality of life. This supports the need for further research in pathophysiology and new therapy principles.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0618 EFFICACY OF PERCUTANEOUS ENDOSCOPIC GASTRO-JEJUNOSTOMY (PEG-J) DECOMPRESSION THERAPY FOR PATIENTS WITH CHRONIC INTESTINAL PSEUDO-OBSTRUCTION (CIFO)

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Introduction: Chronic intestinal pseudo-obstruction (CIFO) is an intractable rare digestive disease manifesting persistent small bowel distension without any mechanical cause. Intestinal decompression is a key treatment, but conventional method including a transnasal small intestinal tube is invasive and painful. Therefore, a less invasive and tolerable new decompression method is urgently desired. We conducted a pilot study and assessed the efficacy and safety of percutaneous endoscopic gastro-jejunostomy (PEG-J) decompression therapy in CIPO patients.

Aims & Methods: Eight definitive CIPO patients (2 males and 6 females) were enrolled. All patients received PEG-J decompression therapy. The number of days with any abdominal symptoms in a month (NODASIM), body mass index (BMI), serum albumin level (Alb), and small intestinal volume before and after PEG-J were compared in all patients.

Results: PEG-J was well tolerated and oral intake improved in all patients. NODASIM has significantly decreased (24.3 vs 9.3 days/month), while 116 (31.4%) reported that they were the same, and 69 (18.7%) felt worse. Treatment was continued by 242 patients (65%) in 24 patients (6.4%) treatment was discontinued.

Conclusion: The ingestion of a high, but not a low, oral load of gluten induces a significant post-prandial inflammatory response causing the activation of the main endogenous anti-inflammatory system. In HV, these activations are not accompanied by a symptomatic response. Further studies are needed to investigate the inflammatory and anti-inflammatory post-prandial response in patients with gluten-related disorders.

Disclosure of Interest: All authors have declared no conflicts of interest.

MONDAY, OCTOBER 30, 2017 09:00-17:00 NUTRITION I - HALL 7

P0620 THERAPEUTIC ACTION OF KETOGENIC ENTERAL NUTRITION IN OBSESE AND OVERWEIGHT PATIENTS: A RETROSPECTIVE CENTER STUDY

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Introduction: Ketogenic Enteral Nutrition (KEN) is a modification of Blackburn’s protein-sparing modified fast, using a hypocaloric, ketogenic liquid diet. The study is about Ketogenic enteral nutrition (KEN) in overweight and obese patients undergoing weekly nutrition therapy. KEN is an enteral nutrition product designed to provide a total daily energy intake of 110 kCal/kg; phosphate, vitamin and mineral supplement, 8 g of free leucine; and 0.12 g of β-hydroxy-β-methylbutyrate per kg of body weight. KEN is an isocaloric nutrient source that reduces the quantity of dietary fat provided and increases the amount of dietary carbohydrate. This study focuses to evaluate the efficacy and safety of KEN therapy in patients suffering from overeating and overweight.

Aims & Methods: A retrospective analysis of all patients who were admitted to the Department of Gastroenterology and Nutrition at the University of London between 2013 and 2016 was conducted. The study aims to assess the efficacy and safety of KEN therapy in overweight and obese patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
10% to 19% of weight lost during treatment. The mean weight regain increased years after removal of IGB, 67% (150) of the subjects had regained weight; the Results:
A total of 224 patients entered the study. Of these, 81.3% (182) were analyzed and compared with logistic multivariate analysis.

Patients that agreed to participate were interviewed by a trained investigator in surgery after balloon removal, impossibility to contact, and refusal to participate. Patients that agreed to participate were interviewed by a trained investigator in person and answered a questionnaire survey and had their body weight measured. Interviews started on July 2015 and ended on July 2016. Medical records of recruited patients were reviewed and the body weight at the moment of IGB implantation was registered. Patients were stratified by time-frame from balloon removal and interview date (2, 3, 4 and 5 years) and all intervening factors related to weight control, as well as behavior habits were analyzed and compared with logistic multivariate analysis.

Results:
A total of 358 patients entered the study. Of these, 81.3% (290) were women. During the use of IGB, patients lost an average of 15% of their body weight; representing a mean loss of 66% of excessive weight. Between 2 and 5 years after removal of IGB, 67% (150) of the subjects had regained weight; the mean weight regained was 4 kg during this period. Most patients (62%) regained 10% to 19% of weight lost during treatment. The mean weight regained increased during follow-up, but without significant difference among groups: 2 years [n = 10]: 4.66 ± 4.91 kg; 3 years [n = 83]: 8.66 ± 6.96 kg; 4 years [n = 54]: 9.99 ± 8.44 kg and 5 years [n = 3]: 19.96 ± 12.24; (p = 0.51). The lower the HMI at the beginning of the treatment, the greater the weight regained after the IGB withdrawal. This correlation was inverse (r = –0.20) and significant (p < 0.01). The correlation was stronger and more significant with patients who had withdrawn the balloon at two years (r = 0.59, p < 0.01) followed by those in which balloon withdrawal was undertaken four years before (r = –0.23, p = 0.03).

Weight regain group contained more individuals who did not perform psychological and nutritional follow-up and who were also sedentary, during and after treatment. Each year, after removal of IGB, the chance of regaining weight increased 1.5 times. No follow-up with a nutritionist after the procedure increased chance of weight regain in 1.8 times. Lack of follow-up with a psychologist during treatment had a weight regain 1.9 times increased. Multivariate logistic analysis determined risk factors for weight regain according to time span after IGB removal. After 2 years of balloon removal, the significant risk factor was lack of follow-up with a psychologist during treatment; increasing the chance of weight regain 1.13 times compared with those subjects that received psychological follow-up at 2 years. An independent significant risk factor for weight regain after 3 years of IGB removal was the lack of follow-up with a nutritionist after the use of IGB. Chance of weight regain was 3.36 times higher in this group than in the group who did the nutritional follow-up. After 4 years of IGB removal, sedentary behavior was an independent and significant risk factor, increasing the chance of weight regain 3.86 times compared with physically active behavior.

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutrition counseling in the outpatient follow-up. A multidisciplinary approach has increasing importance to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

Disclosure of Interest: All authors have declared no conflicts of interest.

100622 LONG TERM EFFECT OF DUODENAL-JEJUNAL BYPASS LINEAR IMPLANTATION ON WEIGHT REDUCTION AND GLYCEMIC CONTROL
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Introduction: The Duodenal Jejunum Bypass Linear (DJBL) is an endoscopic device which prevents ingested nutrients absorption in the duodenum and first part of jejunum. The resultant effects are weight reduction and improvement in glycermic control in patients with type 2 diabetes mellitus (T2DM).

Aims & Methods: The objective of the present study is to assess weight loss and glycermic control changes resulted from the device implantation and a year after the device removal. Between February 2013 and September 2016, 51 diabetic patients were treated with DJBL in our center. This prospective observational study included 12 patients in 6 months of follow-up and 15 patients in 1 year of follow-up. However, adverse events and early removals were analyzed for the whole cohort. Blood tests, body weight and medications data were collected during scheduled visits and phone interviews. The primary end points were body weight and glycermic control changes a year after end points were the same parameters after device removal. The protocol was approved by the local ethic committee.

Results: Thirty six patients (52.8% male) were treated for at least 9 months with the device. Of which completed a whole year follow-up after device removal. At the end of 12 months post implantation, the average body weight and BMI dropped from 109.5 ± 19.1 kg and 37.4 ± 5.0 kg/m² to 93.7 ± 20.4 kg and 31 ± 3.5 kg/m² (p < 0.01). Although, body weight and BMI dropped from 109.5 ± 19.1 kg and 37.4 ± 5.0 kg/m² to 97.4 ± 14.6 kg and 33.3 ± 5.0 kg/m² at the end of a year follow-up, both parameters remained significantly lower than the baseline (P < 0.05). HbAlc was reduced during the treatment from 7.6 ± 1.6% to 6.6 ± 1.2% (P = 0.02) and increased to 6.8 ± 1.0% after 12 month follow-up (P = NS). Among 15 insulin-dependent patients (42%), insulin average dose was reduced by 65% (p = 0.05), but the dose was doubled after a year follow-up. Interestingly, the glycermic control in this insulin-dependent population was difficult to maintain as well as it was among non-insulin dependent patients, there was a non-significant decrease in HbA1c during the year post the device removal (6.5 ± 1.3 to 6.4 ± 0.8, P = 0.812). Ten patients (19.6%) of the initial 51 treated suffered from postoperative complications, including: anastomosis stenosis (1), pancreatitis (2), anastomosis leakage (2), diabetes (3), heart failure (1), and wound infection (1).

Conclusion: DJBL is an effective tool for weight reduction glycermic control among insulin and non-insulin dependent diabetic patients. Moreover, substantial weight loss could be observed at least a year after device removal. Since DJBL bears a considerable amount of side effects, strategies to mitigate them are warranted.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0623 SYNBIOTIC (INULIN, LACTOBACILLUS, BIFIDOBACTERIUM AND SACCHAROMYCES BOULLARDII) IMPROVES FATTY LIVER DISEASE BY VIRTUE OF ITS ACTION ON BIOMETRIC, GLYCEMIC PROFILES, LEPTIN, ADIPONECTIN, AND INFLAMMATORY BIOMARKERS
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Introduction: NAFLD is the most important cause of chronic liver disease and is considered the hepatic manifestation of the metabolic syndrome associated with type 2 diabetes. The prevalence of NAFLD in the general population ranges 15–20% and it goes up to 70% in the obese population. The search for new non-toxic drugs for preventing the development of obesity is the most important challenge of modern science. The question about impact of probiotics and prebiotics on fat metabolism and obesity is being actively debated in the scientific literature. So the aim of the study was to investigate the effect of synbiotic (S) on development of experimental obesity in rats with NAFLD.

Aims & Methods: The study was carried out on 60 white rats, that were divided into 6 groups (I–III – males, IV–VI – females). I and IV groups were intact control groups, who did the nutritional follow-up. After 4 years of IGB removal, sedentary behavior was an independent and significant risk factor, increasing the chance of weight regain 3.86 times compared with physically active behavior.

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutrition counseling in the outpatient follow-up. A multidisciplinary approach has increasing importance to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.

Disclosure of Interest: All authors have declared no conflicts of interest.

% of weight regained * 2 years 3 years 4 years 5 years
<10% 20% (2) 15.6% (13) 18.5% (10) 33.3% (1)
Between 10 and 19% 70% (7) 62.7% (52) 59.3% (32) 66.7% (2)
Between 20 and 29% 10% (1) 14.5% (12) 14.8% (8) 0
Between 30 and 39% 0 2.4% (2) 1.9% (1) 0
Between 40 and 49% 0 1.2% (1) 5.6% (3) 0
Between 50 and 59% 0 2.4% (2) 0 0
Between 60% and 99% 1.2% (1) 0 0

Conclusion: IGB has a suboptimal long-term effect on body weight control after 2 to 5 years of balloon removal, with weight regain observed in up to two thirds of patients (66%). The following variables adversely affect long-term body weight control after IGB removal: lack of psychological support and nutrition counseling in the outpatient follow-up. A multidisciplinary approach has increasing importance to assist obese patients treated with IGB in order to effectively maintain long-term body weight control.
Also consumption of S led to reduction of pro-inflammatory cytokines and leptin. The question remains as to whether it is possible to re-implant the DJBL. We evaluated feasibility of newly developed intragastric balloon.

Aims & Methods: We used a newly developed intragastric balloon with improved employment for this study. The intragastric balloon was supplied as delicately rolled up inside a thin silicon sheath and mounted by surrounding the endoscope. Endoscopic intragastric balloon placement and positioning was simply performed by introducing 10 pigs were subjected to the novel intragastric balloon placement. We evaluated feasibility of the intragastric balloon and compared procedure time between the novel intragastric balloon and End-ball (Endalis, Brignais, France) intragastric balloon.

Results: In all cases, the novel intragastric balloons were successfully placed under usual sedation of diagnostic endoscopy. The procedures were simple and fast; the mean insertion time was 41.4±14.3 and 153.8±134.8 sec in novel intragastric balloon group and end ball group, respectively. The mean inflation time was 412.4±63.2 and 512.8±83 sec in novel intragastric balloon group and end ball group, respectively.

Conclusion: This preliminary data suggest that the procedure with the new intragastric balloon attain technical improvements in the placement without severe adverse events. The new intragastric balloon could offer constantly effective procedure regardless of the ability of the endoscope practitioner.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0625 IS RE-IMPLANTATION OF THE DUODENAL-JEJUNAL BYPASS LINER Viable?
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Introduction: The endoscopically implanted DJBL is a 60cm long, impermeable fluoropolymer device which prevents food from making contact with the proximal intestine, thus inducing considerable weight loss and improvement of type 2 diabetes mellitus (T2DM). Both weight and HbA1c levels have been reported to increase post explantation. The question remains as to whether it is possible to re-implant the DJBL, and what the results would be in terms of BMI (Body Mass Index) change and T2DM control.

Aims & Methods: The aim of this study was to investigate the safety, feasibility and effectiveness of DJBL re-implantation in patients who showed a relapse in glucose levels after DJBL explantation. This prospective, observational study was conducted at the Department of Gastroenterology of DGD Clinics Sachsenhausen, Frankfurt (Germany) between 2014 and 2016. Five obese patients, BMI ≥ 35 and with a body mass index (BMI) ranging from 35–59 kg/m², who completed follow-up after their first implant and underwent removal of the DJBL after 12 months, were selected for re-implantation after an additional 4 months of follow-up. Weight loss, BMI, and HbA1c were analysed before reimplantation and twelve months thereafter.

Results: In all 5 patients, the DJBL was initially implanted and explanted without complications. Re-implantation and re-expansion were also performed without complications. Changes in body weight, BMI, and glycated haemoglobin (HbA1c) are shown in Table 1.

Conclusion: The results of this observational study show that re-implantation of the DJBL is viable and safe even after 4 months after explantation. After re-implantation, weight and HbA1c levels decreased one more time, thus confirming the prolonged effect of DJBL implantation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0626 THE COMPARATIVE EFFICACY OF OBESITY TREATMENTS IN YOUNG PEOPLE - A SYSTEMATIC REVIEW AND META ANALYSIS
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Introduction: Obesity in the young population is becoming increasingly prevalent. It is associated with short- and long-term consequences. Early and effective interventions are paramount. Current treatment options include: lifestyle modifications, pharmacological therapies, endoscopic treatments and bariatric surgery. However, the relative effectiveness of these treatments in this cohort remains unclear.

Aims & Methods: To systematically identify and meta-analyse studies evaluating treatments that reduce body mass index (BMI) in overweight and obese young people. A systematic literature review of EMBASE and MEDLINE databases was conducted. Studies were included/excluded based on pre-specified eligibility criteria. Included patients were 21 years or younger. Lifestyle modification and pharmacological therapy searches were restricted to randomised control trials.

Results: 16,772 studies were identified with 80 studies complete with sufficient data for meta-analysis. Bariatric surgery caused the most weight loss in the short- and medium-term [pooled estimate of mean BMI loss: 13.77 kg/m²]. Lifestyle modifications and pharmacological therapy had a more modest impact on weight [pooled estimate of mean BMI loss: 0.99 kg/m² and 0.94 kg/m² respectively]. Individual studies demonstrated that endoscopic treatment results in short-term BMI reduction, however insufficient data prevented meta-analysis.

Conclusion: This is the first systematic review and meta-analysis to comprehen-sively summarise and quantify the comparative efficacy of BMI reducing treat-ment options in the obese, young population. Currently, bariatric surgery is rarely considered in this young cohort. However, due to its high efficacy, physicians and patients should have a lower threshold for considering bariatric surgery when lifestyle and pharmacological interventions have failed. Therefore, endoscopic surgical interventions provide smaller but statistically significant impacts on BMI reduction. There should be effective communication discussing the relative efficacy of all treatment options and their associated complications between those involved. This knowledge will assist clinicians in determining a holistic, patient-centred treatment programme for obese, young patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. J. Link1, C. Langner1, A. Canbay1, P. Malfertheiner1, S. S. Selvendran2, N. Penney1, N. Aggarwal1, A. Darzi1, S. Parkayashia1
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Introduction: Tumor development is a multistep process, which involves genetic modifications, pharmacological therapies, endoscopic treatments and bariatric surgery. Currently, bariatric surgery is rarely considered in this young cohort. However, due to its high efficacy, physicians and patients should have a lower threshold for considering bariatric surgery when lifestyle and pharmacological interventions have failed. Therefore, endoscopic surgical interventions provide smaller but statistically significant impacts on BMI reduction. There should be effective communication discussing the relative efficacy of all treatment options and their associated complications between those involved. This knowledge will assist clinicians in determining a holistic, patient-centred treatment programme for obese, young patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Table 1: Body weight, BMI and HbA1c changes at different timepoints

<table>
<thead>
<tr>
<th>Timepoint (months)</th>
<th>Mean weight (kg ±SD, range)</th>
<th>Mean BMI (±SD, range)</th>
<th>Mean HbA1c in % (±SD, range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>115.8 (45.4; 88–196)</td>
<td>40.9 (10.3; 35.3–59.2)</td>
<td>9.1 (1.3; 8–10.7)</td>
</tr>
<tr>
<td>6</td>
<td>97.4 (39.8; 72–164)</td>
<td>29.9 (2.2; 26.4–51.2)</td>
<td>7.6 (0.8; 6.6–8.3)</td>
</tr>
<tr>
<td>12</td>
<td>95.0 (38.8; 72–164)</td>
<td>33.5 (9.0; 29.549.5)</td>
<td>6.7 (0.9; 5.9–7.8)</td>
</tr>
<tr>
<td>16 (0)</td>
<td>91.7 (37.8; 75–164)</td>
<td>34.3 (8.6; 29.3–49.5)</td>
<td>7.7 (1.6; 6.2–9.9)</td>
</tr>
<tr>
<td>22 (6)</td>
<td>93.2 (40.6; 63–164)</td>
<td>32.8 (9.7; 24.6–49.5)</td>
<td>7.0 (1.0; 5.7–7.7)</td>
</tr>
<tr>
<td>28 (12)</td>
<td>92.5 (43.6; 61–160)</td>
<td>31.5 (9.1; 23.8–48.6)</td>
<td>7.0 (0.7; 6.3–7.7)</td>
</tr>
</tbody>
</table>

Conclusion: The results of this observational study show that re-implantation of the DJBL is viable and safe even after 4 months after explantation. After re-implantation, weight and HbA1c levels decreased one more time, thus confirming the prolonged effect of DJBL implantation.

Disclosure of Interest: J. Stein: Jürgen Stein has received speakers’ honoraria from GI Dynamics. All other authors have declared no conflicts of interest.
**Results:** All microRNAs were present in all studied foods with highest expression followed by milk, followed by beef, and lowest expression found in cheese and milk. Food processing led only to marginal changes (max. 1.5-fold) in microRNA expression and thus demonstrating its stability against degradation. Short-term changes in diet (from usual to vegetarian and to meat-rich diet) in healthy subjects was not associated with variation in miR-21, miR-155 and miR-16 expression. Interestingly, in comparison to several previous reports, we repeatedly failed to detect any plant miR-168 in sera. However, vegetarians exhibited with a significant decrease in miR-168 level in feces (up to 8-fold), while meat-rich diet was associated with slight decrease if compared to the starting point (mean±SD 0.031±0.002 for no diet vs 0.025±0.042 for vegetarian vs. 0.0016±0.00096 for meat-rich; p=0.03 Kruskal-Wallis test, with p=0.05 for Dunns multiple comparison test for vegetarian vs meat-rich).

**Conclusion:** The results of this study show that various foods provide a great source of microRNAs, which remains stable despite processing. We further demonstrated that short-term changes in diet have a notable impact on the microRNA expression pattern in feces and blood supporting its value as biomarkers. A functional role of diet-induced increase in plant-derived miRNA expression needs further evaluation.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0628**

**NEUROMEDIN U BLOCKS GASTRIC EMPTYING VIA ISOTONIC DEPENDENT MECHANISMS AND IMPROVES ORAL GLUCOSE TOLERANCE**

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**Introduction:** The gut and brain peptide neuropeptide U (NMU) is reported to decrease food intake and body weight, and to improve oral glucose tolerance suggesting that it may exert an incretin effect. NMU is thus considered as a promising candidate for the treatment of obesity and diabetes. However, and in contradiction with previous observations, NMU was recently presented as a “decretin” hormone able to decrease insulin secretion. The pathways through which NMU controls glycemia are thus uncertain and we sought to clarify some of NMU mechanisms of action on glucose homeostasis.

**Aims & Methods:** Oral (OGTT) and intraperitoneal (IPGTT) glucose tolerance tests were performed after an intraperitoneal injection of NMU or PBS in C57Bl6 mice. A pyloric laparotomy or a transduodenal laparotomy was performed during OGTT. During OGTT, blood was sampled to measure insulin secretion. [14C]-Glucose uptake was assessed in isolated intestinal loops in presence or absence of NMU. Gastric retention of a phenol red gavage at 285% of baseline in response to NMU is thus considered as a significant measure of gastric emptying.

**Results:** A single intraperitoneal injection of NMU in C57Bl6 mice prevented the rise of glycemia following an oral but not an intraperitoneal load of glucose (OGTT versus IPGTT). Unexpectedly, during the OGTT, NMU injection prevented gastric retention and only slightly improved peripheral insulin sensitivity. Furthermore intestinal [14C]-glucose uptake in isolated intestinal loops was barely reduced by NMU addition (~17% P<0.05 vs PBS). Actually NMU injection blocked gastric emptying (gastric retention of a phenol red gavage at 30 min: +285% P<0.0001 vs PBS). This effect was partly prevented in vagotomized mice. In addition, injection of NMU induced c-fos expression in the nucleus of the solitary tract (NTS) of control but not vagotomized mice. In isometric chambers, NMU directly induced pyloric contracture in a dose dependent manner (basal contraction +21%, 7 At 10-6 M).

**Conclusion:** These data demonstrate that a single intraperitoneal injection of NMU blocks gastric emptying directly by inducing pyloric contraction and indirectly via afferent vagal fiber activation. Through the blockade of gastric emptying, NMU reduces intestinal nutrient absorption and thus improves oral glucose tolerance. The gastric emptying blockade induced by NMU could contribute to its anorexigenic effect.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0629**

**LOW FODMAP DIET & PREBIOTIC GALACTO-Oligosaccharides IMPROVE IRRETRAL BOWEL SYMPTOMS: A RANDOMISED CONTROLLED TRIAL**

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²University of Liverpool, Liverpool/United Kingdom
³Barts Health NHS Trust, London/United Kingdom

**Aims:** The aim of this study was to assess the effect of a low fermentable carbohydrate (LFD) diet modelled by PLS-DA, reveal significant separation of VOC profiles across the three treatment groups at 4-weeks (p=0.02).

**Conclusion:** Addition of B-GOS to the LFD improves symptoms in IBS. Urine metabolomics, stool SCFA and VOC profiles were assessed in 21 responders and non-responders to the LFD at baseline (p=0.04) VOC profiles. Modelled by PLS-DA, reveal significant separation of VOC profiles across the three treatment groups at 4-weeks (p=0.02).

**Disclosure of Interest:** B. Wilson: BW is funded by a PhD studentship provided by Clasado Biosciences

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**P0630**

**THE ANALYSIS OF PROTEIN CONSUMPTION PATTERNS IN PATIENTS WITH SIBO**

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**Aims & Methods:** The study was of assess the protein consumption patterns in patients with small intestinal bacterial overgrowth (SIBO) common in patients with gastrointestinal diseases. SIBO symptoms are improved with antimicrobial treatment, but recurrence rate is high (approximately 40% for 9 months). Dietary modification is essential for prevention of recurrence of SIBO however there are no detailed studies of nutrition in SIBO patients. Protein consumption is considered for SIBO, as the proteins from animal source are essential for growth of CH4/H2-producing microorganisms.

**Results:** There were no differences in response rates (adequate relief) between control (30%), LFD (50%) and LFD/B-GOS (67%) (p=0.04), with post-hoc differences specifically between control and LFD/B-GOS (p=0.015). Intraperitoneal NMU symptoms improved in the LFD group compared to control, being an effect that was significantly greater in the NMU group compared to control. In the LFD group only, there was a significant difference in the urine metabolome between responders and non-responders at both baseline (Q=0.296 vs randomised 0.175) and at 4-weeks (Q=0.485 vs randomized -0.203). At baseline, there were significant greater stool isobutyrate between responders (51.4 mg/100g) and non-responders (31.9 mg/100g, p=0.063), with ROC curves supporting this as a predictor of response (AUC=0.747, p=0.063). Finally, there was a significant difference in VOC profiles between responders and non-responders to the LFD at baseline (p=0.04). VOC profiles, modelled by PLS-DA, reveal significant separation of VOC profiles across the three treatment groups at 4-weeks (p=0.02).

**Disclosure of Interest:** B. Wilson: No conflicts of interest.
Abstract No: P0630

Table 1: Consumption of protein products in SIBO patients

<table>
<thead>
<tr>
<th>Food</th>
<th>No SIBO</th>
<th>H2 SIBO (&gt; 20 ppm)</th>
<th>CH4 SIBO (&gt;12 ppm)</th>
<th>H2/CH4 SIBO</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 65</td>
<td>n = 312</td>
<td>n = 77</td>
<td>n = 123</td>
<td></td>
</tr>
<tr>
<td>Meat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.58 ± 0.71</td>
<td>0.37 ± 0.58</td>
<td>0.42 ± 0.67</td>
<td>0.31 ± 0.45</td>
<td>p = 0.015 no SIBO vs H2 SIBO; p = 0.001 SIBO vs H2/CH4 SIBO; p = 0.059 no SIBO vs CH4 SIBO</td>
</tr>
<tr>
<td>Poultry</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>0.38 ± 0.49</td>
<td>0.52 ± 0.63</td>
<td>0.41 ± 0.50</td>
<td>0.39 ± 0.48</td>
<td>p = 0.074 H2 SIBO vs H2 SIBO</td>
</tr>
<tr>
<td>Eggs</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>0.11 ± 0.19</td>
<td>0.14 ± 0.22</td>
<td>0.13 ± 0.21</td>
<td>0.10 ± 0.17</td>
<td>NS</td>
</tr>
<tr>
<td>Fish</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.27 ± 0.37</td>
<td>0.22 ± 0.43</td>
<td>0.56 ± 0.75</td>
<td>0.33 ± 0.77</td>
<td>NS</td>
</tr>
<tr>
<td>Processed meat products (sausages, etc)</td>
<td>0.08 ± 0.11</td>
<td>0.12 ± 0.14</td>
<td>0.07 ± 0.11</td>
<td>0.08 ± 0.12</td>
<td>NS</td>
</tr>
</tbody>
</table>
is similar to the oral glucose-stimulated secretion of glucagon-like peptide 1 (GLP-1) and incretin hormone secreted by enteroendocrine L cells (EEC) from the distal gut. GLP-1 and glucagon, both originate from the same proglucagon precursor, differentially processed by prohormone convertase 2 (PC2) into glucagon in pancreatic α cells and by prohormone convertase 1/3 (PC1/3) into GLP-1.

Aims & Methods: We hypothesized that, after pancreatectomy, proglucagon can also be processed into glucagon in EEC. We developed a 75% subtotal pancreatico-duodenectomy model in C57Bl/6 mice. Control (Ct) mice underwent a laparotomy. Post-surgery, blood was measured for glucose and oral glucose tolerance tests (OGTT) were performed after 1 week. Insulinaemia and glucagonemia were also measured in fed and fasted mice and during OGTT. After 2 weeks, animals were sacrificed and the remnant pancreas was sampled for glucagon and insulin immunoquantitation. In addition, α- and β-cell mass quantification, Proximal and distal intestinal segments were sampled for morphometric analyses as well as measurements of proconvertase and proglucagon mRNA levels. Colonic segments were incubated in a glucose-enriched medium for one hour and glucose-induced secretion of glucagon and GLP-1 were measured in the supernatant.

Results: As soon as one day post-surgery, pancreatomeanzed (Px) mice developed a hyperglycemia that maintained for over a week (351 mg/dl in Px mice vs 140 mg/dl in Ct mice, P < 0.05, 5 days post-surgery). This hyperglycemic state was accompanied by an oral glucose intolerance (area under the curve = 278% in Px mice, P < 0.01 vs Ct mice, 1 week post-surgery). During, OGTT, intestinal glucose absorption increased (slope between 0 and 15 min=+69.9% in Px mice P < 0.01 vs Ct mice 1 week post-surgery). Glucagonemia increased in fasted pancreatomeanzed mice (+146.6% in Px mice P < 0.01 vs Ct mice 1 week post-surgery). After sacrifice, alpha cell mass was decreased in the remaining pancreas (~79.25% in Px mice P < 0.05 vs Ct mice, 2 weeks post-surgery). Hypoimmunoreactivity of the proximal colon to secreted glucagon vaccine was observed (+290.6% in Px mice P < 0.05 vs Ct mice, 2 weeks post-surgery). In pancreatomeanzed mice, an hypertrophy of the duodenum was associated with an increase in crypt depth (+77.1%, in Px mice P < 0.05 vs control mice, 2 weeks post-surgery) and villus height (+53.3% in Px mice P < 0.05 vs control mouse, 2 weeks post-surgery).

Conclusion: These data establish an ability of the whole gut to adapt in response to pancreatectomy. The upper intestine (duodenum) become hyperplasic and may be harboring increased intestinal response tosto absorb glucose. The distal intestine (colon) is able to produce glucagon and may participate to the development of the reported hyperglucagonemia.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0634 QUALITY, VIABILITY AND COMPOSITION OF THE MULTISPECIES PROBIOTIC VSL#3

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Introduction: A probiotic formula to be functional and reliable should: i) contain viable cells, ii) be reproducible in composition, iii) be taxonomically defined. Here we detail the consistency of the multispecies probiotic product VSL#3, which has been produced for the last 20 years and is marketed globally for the treatment of Inflammatory Bowel Disease, Pouchitis and other intestinal diseases (Mimura et al 2004; Reiff et al, 2009).

Aims & Methods: Here we report the consistency in the quality, viability and composition of the multispecies probiotic product VSL#3. Various batches of the multispecies probiotic VSL#3 were analyzed in detail and derived from productions in the USA and Italy. The product batches have been tested using a series of micro- and macrobiological, immunological and genomic methods. The microbiological analysis included plating on selective media, cell counting and viability analysis by flow Cytometry (FCM) using fluorescent dyes that allowed high throughput separation and quantification of live, dead and damaged cells (ISO 19344 IDF 212, 2015). A metagenetic approach, based on 16S rRNA gene profiling, was used to define the bacterial community structure of different productions. In addition, Lactobacillus helveticus and L. acidophilus S-layer proteins, which are known to exert anti-inflammatory effects by reducing the activation of NF-κB and proinflammatory cytokines, have been expressed in E. coli and visualized on SDS-PAGE (Konstantinov et al, 2009; Taverniti et al., 2013). Moreover, urease activity of Streptococcus thermophilus, known to exert positive effect human health by competing with the undesired urease-positive bacteria of the human microbiota (Mora and Arioli, 2014), was quantified using a spectrophotometric, and flow cytometry-based assay.

Results: The different test batches were all found to contain a common bacterial community structure based on the presence of the following species Streptococcus thermophilus, Lactobacillus acidophilus, Lactobacillus rhamnosus, Lactobacillus plantarum, Lactobacillus helveticus, Bifidobacterium breve and B. animalis subsp. lactis. The stability of the batches was confirmed by FCM and viable cells were always above the value of 2 x 10⁸ event/g. The Lactobacillus helveticus and L. acidophilus S-layer protein SpsA was detected in every VSL#3 batch tested thus highlighting that this relevant immunomodulatory factor was not subjected to degradation during the shelf-life of the product. Likewise, urease activity of S. thermophilus was stable in all VSL#3 batches throughout the shelf-life.

Conclusion: In conclusion, stability, molecular and taxonomic comparative analysis shows that VSL#3 is reliably and reproducibly produced in different parts of the world.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: Soybean oil intravenous lipid emulsion (IVLE) is also known as conventional lipid is rich in linoleic acid (ω-6 PUFAs), ω-6 PUFA may exaggerated inflammatory response and indirectly detrimental in the critically ill patients. To overcome this, the use of alternative IVLEs such as medium chain triglycerides (MCT), fish oil and olive oil alone or in combination with soybean oil IVLE have been used to lower the content of ω-6 PUFAs. Most studies on alternative IVLEs have been conducted in the critically ill patients, elective surgical patients and cancer patients. No previous studies have evaluated the clinical outcomes of several different IVLEs in non-critically ill patients in acute hospital setting.

Aims & Methods: The purpose of this study is to determine whether there is a difference in clinical outcome amongst patient who received conventional soybean oil IVLE versus alternative IVLEs in non-critically ill patients in acute hospital setting. All patients on parenteral nutrition (PN) were identified in a prospective compilation database from July 2007 to September 2010 and were analysed retrospectively. Patients were included if they received intravenous lipid emulsions (IVLE). No previous studies have evaluated the clinical outcomes of several different IVLEs in non-critically ill patients in acute hospital setting. Patients were included if they received IVLE for at least 5 days. After oral or parenteral feed was started or without requiring invasive/non-invasive ventilator support or intorops support. Exclusion criteria included patients who received less than 5 days of PN, intensive care unit (ICU) patients, PN started in ICU and continue in general ward or HDU, PN restarted in less than 3 days after removal of PN in ICU, patient on invasive/non-invasive ventilator support or intorops support and home PN patients.

Results: 537 patients were started on PN and 388 patients were included in the study. 140 patients were on type 1 (soybean based) IVLE, 60 patients were on type 2 (MCT based) IVLE, 141 patients were on type 5 (olive oil based) IVLE and 97 patients were on type 4 (contain fish oil) IVLE. Baseline characteristic were similar in four groups of IVLEs. Majority of PN were initiated in patients admitted under surgical team. There were no difference in terms of mortality, readmission and infection rate between conventional and alternative IVLE as a group, odd ratio (OR) was 0.66 (CI 0.36–1.24; p = 0.16), 1.71 (CI 0.84–3.73; p = 0.15) and 0.90 (CI 0.55–1.49; p = 0.73) respectively (as shown in table 1). The length of stay in log-scale was significantly lower in alternative IVFE as a group (p = 0.03). There were no difference in terms of mortality, readmission and infection rate between conventional IVLE versus each of the alternative IVLE. Length of stay was only statistically significantly lower for olive oil based IVLE (Type 3) when compared to conventional IVLE (p = 0.05).

Table 1: Clinical outcomes with alternative IVLE versus conventional IVLE as a group

<table>
<thead>
<tr>
<th>Alternative IVLE</th>
<th>Conventional (as a group)</th>
<th>OR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality Yes (N) No (N)</td>
<td>21 70</td>
<td>49 248</td>
<td>0.66 (0.36–1.24)</td>
</tr>
<tr>
<td>Readmission Yes (N) No (N)</td>
<td>12 58</td>
<td>65 183</td>
<td>1.71 (0.84–3.73)</td>
</tr>
<tr>
<td>Infection Yes (N) No (N)</td>
<td>41 134</td>
<td>126 357</td>
<td>0.90 (0.55–1.49)</td>
</tr>
<tr>
<td>Length of stay (Mean (SD) in log-scale)</td>
<td>3.58 (0.59)</td>
<td>3.43 (0.57)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Conclusion: Length of stay was significantly lower in alternative IVLE compared with conventional IVLE. However, there were no clinical differences in terms of mortality, readmission and infection between conventional and alternative IVLE in non critically ill patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
Endoscopic procedure was necessary in 9.7% of cases. The informed consent was given by a relative (without legal guardianship) in 49.6%, patient in 28.2%, legal guardian in 16.25%, medical director in 7% of patients. Thirty-days mortality was 2.4%.

Conclusion: Our data confirm that PEG placement is a safe procedure with a mortality rate at 30 days of 8%. To our knowledge this is the largest prospective study on the use of PEG. Surprisingly in more than 50% of patients the consent form was not properly signed, leading to possible medico-legal consequences. Moreover, in 9% of the cases PEG was placed for an early discharge (more than for real clinical indication).

Disclosure of Interest: All authors have declared no conflicts of interest.

P0637 MEDICAL REGISTRAR REPORTING OF CHEST X-RAYS FOR NASOGASTRIC TUBE POSITION: HOW CAN IT BE MADE SAFER?

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Introduction: Nasogastric tube (NG) feeding is an essential part of in-patient care. Tubes can be placed at the bedside with no need for specific equipment or sedation. However placement of NG tubes is not without risk and avoiding the introduction of substances into the respiratory tract through a misplaced NG tube was highlighted as a UK National Patient Safety Agency alert in 2005. In 2011 the NPSA made this a ‘never event’. The only acceptable methods of checking the position of an NG tube are: pH < 3.5 on aspirate or confirmation on oesophageal X-ray (CXR) by competent medical staff. Reporting a CXR for NG tube position is a frequent request particularly for junior doctors out of hours. Practise varies across the UK - some trusts require NG checking to be done only by senior clinicians (medical registrars or consultants) and some only allow reporting by a consultant radiologist. We assessed documentation of NG position on CXR by medical registrars from the region to find out if documentation was adequate, as would be expected of senior clinicians. NPSA guidance suggests four points should be documented in the medical notes to confirm NG position: 1. Does the tube follow the contours of the oesophagus and avoid those of the bronchi? 2. Does the tube clearly bisect the carina or the bronchi? 3. Does it cross the diaphragm in the midline? 4. Is the tip clearly visible below the left hemi-diaphragm? All four criteria were met in only 17.6% of responses and answers were considered incorrect in 20.5%. An aide-memoir sticker with an abbreviated version of the above four points, time, date, doctor signature and whether tube is safe to use or not with Yes/No answers, is used on some wards in Southampton and we assessed whether its use would improve quality of reporting both a correctly placed and misplaced NG tube.

Aims & Methods: Medical registrars from first to final year of specialist training and from various specialties were presented with a CXR showing a correctly sited NG tube and were asked to complete a sticker answering yes or no, to check position and whether it was safe to use. Following this they were presented with a CXR showing an incorrectly sited NG tube and asked to use the sticker to assess position. The CXR was projected and anonymous responses collected after sufficient time for the group to complete both stickers.

Results: 31 complete responses were obtained for the correctly sited tube with 58% stating that it should be used and 42% that they would not use the tube without further review. 10 incomplete responses were obtained and therefore 86% of responses met NPSA guidance for reporting CXR for NG position. 28 complete responses were obtained for the incorrectly sited tube and 100% stated that the tube should not be used.

Conclusion: Use of the sticker increased compliance with NPSA guidance for CXR reporting for NG tube position from 17.6% to 86%. The misplaced tube was correctly reported and not used in 100% of responses. The correctly sited tube was reported as safe to use in 58%. The CXR used was of an anonymous real patient and was slightly rotated to reflect a real-life scenario which meant the tube was slightly off the midline. In this real-life scenario some trainees would be happy to make a judgement considering these factors and others may be cautious and follow the sticker statements exactly prompting further review by radiology or removal of the tube. Overall this increases patient safety and avoids use of a misplaced tube in accordance with NPSA guidance. We suggest that the sticker be used on all wards which use NG tubes to rapidly improve documentation and patient safety. The other option we may consider is developing a pathway for radiology consultants to report all these CXRs before the NG tube is used; however this is likely to take considerable time and is unlikely to be available out of hours.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
National Patient Safety Agency Alert 2003/PSA/05 Reducing the harm caused by misplaced nasogastric feeding tubes 2005
Lee S and Mason E. Competence in confirming correct placement of nasogastric feeding tubes amongst FY1 doctors BMJ Qual Improv Report 2013 2a:201014.w1198
Checking placement of nasogastric feeding tubes in adults (interpretation of a x ray image) summary of a safety report from the National Patient Safety Agency BMJ 2011;342:d2586
Conclusion: Further patients had never had micronutrients checked due to a persistently raised level in the past year. One of these commenced PN in 2015 and only recently so did not have results within a year. 32 (61.5%) of those who had micronutrients checked within one year (two of the 51 had results from more than one full year to the date of the search). Results were recorded in spreadsheet format and analysed. Many patients live out of the region; however, many local hospitals have established appropriate systems. If the results are not available from one full year to the date of the search, the local hospital was contacted for local results if available. If the patients had micronutrients checked at a different hospital, the blood results system was searched. ESPEN guidelines recommend that serum vitamin and trace element levels be checked at baseline and at least once per year. NICE guidelines specify more frequent monitoring for in-patients and that selenium, manganese and vitamin D should be checked three to six monthly in HPN patients. Some trace elements (copper and zinc in particular) are affected by acute illness. Current local practice is to avoid checking levels until there is evidence that inflammation or infection has resolved.

Aims & Methods: Our aim was to audit the frequency of micronutrient screening in our cohort of HPN patients. All type two and three intestinal failure outpatients were included. Current in-patients were excluded due to the effect of acute illness on micronutrient levels. Patients on parenteral fluid rather than nutrition were excluded as current guidelines give recommendations for HPN patients and do not specify recommendations if fluid alone is required. A search of the blood results system was performed for all micronutrient results from one full year to the date of the search. Results were recorded in spreadsheet format and analysed. Many patients live out of the region; however, many local trusts do not have the laboratory facilities to check micronutrient levels so they tend to be done in Southampton. If no results were available on the Southampton system then the local hospital was contacted for local results if available.

Results: 57 home parenteral nutrition patients were identified. 51 (89.5%) of these patients had micronutrients checked at some point during their care. 44 of 49 (89.7%) had micronutrients checked within one year (two of the 51 had one result). 30 (61.5%) of those who had micronutrients checked had them done within the last six months. 6 patients had never had micronutrients checked. One had them requested just prior to the time of audit but results were not yet available. Two were out of area and had not been seen by the local trust. One of these commenced PN in 2015 and found it difficult to attend clinic. The other had not been seen in clinic due to an administrative error and has now been seen with micronutrients requested. Two further patients had never had micronutrients checked due to a persistently raised C-reactive protein.

Conclusion: Despite a lack of clarity between guidelines about the frequency of monitoring of micronutrients, it is recommended that HPN patients receiving long-term intravenous nutrition should have regular monitoring to reduce risk of deficiency or toxicity. The majority of our cohort of HPN patients had micronutrients checked annually and over half were checked six monthly. This is compliant with ESPEN guidelines; however, we need to aim for 100%. We have introduced a template to use in clinic to trigger review of results and request micronutrients when required. Alongside this we have introduced a virtual ward round to remotely review all out-patients regularly and plan ahead to request blood tests when required. Following the introduction of these measures we will repeat the audit to find out if the situation has improved.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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P0639 CLINICAL NUTRITION - ARE WE IGNORANT OR NEGLIGENT?
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Introduction: Early recognition and delivery of nutritional care by physicians has been shown to improve outcomes in malnourished hospitalized patients. However, physicians encounter multiple barriers in providing appropriate nutrition to their patients. Extensive international guidelines and nutritional training in medical education have been introduced to overcome these barriers, there appears to be a discrepancy in practice amongst physicians despite the availability of these resources.

Aims & Methods: We aim to assess the knowledge and attitudes of physicians towards clinical nutrition in a large tertiary teaching hospital in Singapore. An anonymous questionnaire comprising 15 multiple-choice questions from standard nutrition textbooks was administered. The questionnaire was designed to assess (a) recognition of nutritional needs of hospitalized patients, (b) knowledge on the role of clinical nutrition, and (c) application of nutritional intervention in common clinical practice. We included consultants, fellows and residents working in units where nutritional problems were common. Finally, we conducted a separate 5-question opinion survey to assess each participant’s nutritional training and exposure, based on a 5-point Likert scale ranging from “strongly agree” to “strongly disagree”.

Results: A total of 305 physicians volunteered to participate in this study. Forty (13%) did not reveal their specialty or staff grade and were excluded from analysis. The remaining 265 respondents comprised 77 (29%) consultants, 58 (22%) fellows, and 130 (49%) residents. Amongst them, 232 (87%) were from medical disciplines and 33 (13%) from surgical disciplines. The median aggregate score (out of a maximum of score of 15) of 66 respondents, fellows and residents was 6.0 ± 2.2 (range 2–12). 7.0 ± 1.8 (range 3–11). 7.0 ± 1.8 (range 1–10) respectively. All 3 grades of physicians achieved less than 50% of the maximum possible score. No significant difference in median aggregate score was observed between physicians from medical disciplines (6.5 ± 1.9) and those from surgical disciplines (6.0 ± 1.8) and that gastroenterologists performed significantly better than non-gastroenterologists (median aggregate score 9.0 ± 2.2 vs 6.0 ± 1.8, p < 0.001). In the opinion survey, a majority of physicians (63%) believed that nutrition-related teaching was inadequate during residency training and 44% felt that clinical nutrition was accorded insufficient attention during ward rounds. Only 33% of responders reported that they performed nutritional screening on admission, and a mere 10% were confident in providing nutrition counselling to malnourished patients. Interestingly, their overall performance was not different from that of other participants (Table 1).

Table 1: Median aggregate scores by grade, specialty and response in opinion survey

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Physician Grade</th>
<th>fellows (n = 58)</th>
<th>residents (n = 130)</th>
<th>Consultants (n = 77)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical disciplines</td>
<td>6.5 ± 1.9</td>
<td>7.0 ± 1.8</td>
<td>6.0 ± 2.2</td>
<td>7.0 ± 1.8</td>
</tr>
<tr>
<td>Surgical disciplines</td>
<td>7.0 ± 1.8</td>
<td>7.0 ± 1.8</td>
<td>7.0 ± 1.8</td>
<td>7.0 ± 1.8</td>
</tr>
<tr>
<td>Gastroenterologists</td>
<td>9.0 ± 2.2</td>
<td>9.0 ± 2.2</td>
<td>9.0 ± 2.2</td>
<td>9.0 ± 2.2</td>
</tr>
<tr>
<td>Non-gastroenterologists</td>
<td>6.0 ± 1.8</td>
<td>6.0 ± 1.8</td>
<td>6.0 ± 1.8</td>
<td>6.0 ± 1.8</td>
</tr>
<tr>
<td>Performed nutrition screening on admission</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
</tr>
<tr>
<td>AGREED</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
</tr>
<tr>
<td>Disagreed (n = 99)</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
</tr>
<tr>
<td>Confident in providing nutrition counselling</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
<td>7.0 ± 1.0</td>
</tr>
</tbody>
</table>

Conclusion: Our study highlights that knowledge on nutrition and its clinical application to hospitalized patients remains inadequate across all physician grades, especially amongst non-gastroenterologists. The current state of clinical nutrition-related teaching during residency training falls short of achieving its goals, and may need re-examination.

Disclosure of Interest: All authors have declared no conflicts of interest.

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MONDAY, OCTOBER 30, 2017 09:00-17:00
PAEDIATRIC: UPPER GI - HALL 7

P0640 OUTCOMES OF PER-ORAL ENDOSCOPIC MYOTOMY IN CHILDREN WITH ACHALASIA CARDIA
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Introduction: Per-oral endoscopic myotomy (POEM) is a novel treatment modality for achalasia cardia (AC). The studies are limited in paediatric population.

Aims & Methods: In this study our aim was to analyse the feasibility, safety and efficacy of per-oral endoscopic myotomy in children We retrospectively evaluated a data of all children (<18 years) who underwent POEM at our institutions from September 2013 to February 2017. All POEM procedures were performed under general anaesthesia in an endoscopy suit. Technical feasibility, safety and efficacy were analysed. Clinical success was defined as Eckardt score ≤ 3. Objective parameters (including modified Barritt-Herzberg score) and basal manometry were assessed and compared before and after POEM.

Results: Thirty children (15-boys, 15-girls) with mean age of 14.1 ± 3.32 (4-18 years), underwent POEM during the specified period. The sub-types of AC were type I (8), type II (19) and type III (1). Eight children had prior treatment with pneumatic balloon dilatation. POEM was successfully performed in all children. Anterior myotomy was performed in majority of children (23 (76.7%)). Mean total length of myotomy was 10.9 ± 2.25 cm, with 7.9 ± 2.09 cm on esophageal and...
3.03 ± 0.67 cm on gastric side. Mean operating time was 76.7 ± 45.5 (30–240) minutes. Major adverse events requiring temporary discontinuation of procedure and/or drainage procedure were encountered in eight (26.7%) children (capno-peritoneum-4 and retro-peritoneal carbon dioxide –4). There was significant reduction in mean LES pressure after POEM (36.25 ± 16 vs 17.65 ± 6.06, p<0.001). Significant improvement of esophageal symptoms at timed barium esophagogram (>50%) was documented in 94.4% children. At median follow up of 504 days (30–1290) clinical success was noticed in 29 children out of 47 children were excluded from the study due to both histology and culture cultured on 5% sheep blood Columbia agar and selective Hp media. Antibiotic according to clinical, endoscopic and histological criteria. Antral biopsy was effectiveness of standard eradication therapy [1, 2]. The aim of this study is to rising antibiotic resistance of Hp both in children and adults lead to decrease of Helicobacter pylori population, high because of high prevalence of gastric malignancies in the adult population, high Helicobacter pylori (Hp) prevalence in Armenia is suspected. Rising of antibiotic resistance of Hp both in children and adults lead to decrease of effectiveness of standard eradication therapy [1, 2]. The aim of this study is to determine frequency of Hp antibiotic resistance in Armenian children. Aims & Methods: 47 children with suspected gastroduodenal disease (GDD), hospitalized in Arabkir MC, were selected from April to December 2016 (23 boys and 24 girls, average age 8.98 ± 4.10). Hp-associated GDD were diagnosed according to clinical, endoscopic and histological criteria. Antral biopsy was cultured on 3% sheep blood Columbia agar and selective Hp media. Antibiotic susceptibility was determined by disk diffusion method. Results: Hp-associated GDD was diagnosed in 40 patients out of 47: 37 (92.5%) had gastritis and/or duodenitis, 3 (7.5%) had peptic ulcer disease (PUD). Seven out of 47 children were excluded from the study due to both histology and culture negative for Hp. Thirty-four (85%) were treatment-naive patients and 6 (15%) had received eradication therapy previously. Main clinical symptoms were recurrent epigastric pain 34 (85%), nausea 28 (70%) and vomiting 13 (32.5%). By endoscopic evaluation, gastritis and/or duodenitis was seen in 18 (45%), non-erosive gastritis in 16 (40%), PUD in 3 (7.5%), normal mucosa in 3 (7.5%). Rapid urease test was positive in all antral biopsies (100%). Histology showed chronic gastritis and/or duodenitis in 27 (58%), atrophic gastritis in 5 (10.6%), gastric glandular dysplasia in 2 (5%), gastric metaplasia of duodenal mucosa in 3 (7.5%), normal mucosa in 2 (5%). Hp was positive in 38 (95%) and negative in 2 (5%). Cultures were positive for Hp in 14 of 40 patients (35%). Susceptibility test was possible in 12 Hp strains from available14: all but 2 were resistant to metronidazole (83.3%), 4 to clarithromycin (33.3%), 3 double resistant to both metronidazole and clarithromycin (25%), and 66.6% to doxycycline. All strains were susceptible to amoxicillin and levofloxacine (100%), 6 strains were tested and found susceptible to rifuratul. Conclusion: The data indicate a high rate of resistance to conventional triple therapy antibiotics: metronidazole (83.3%) and clarithromycin (33%). High resistance to doxycycline also was seen, despite limited use of this antibiotic in Armenian paediatric practice. High susceptibility to rifuratul might be useful for future development of specific eradication schemes for Armenia. High frequency of both erosive and non-erosive gastritis as well as high rate of gastric atrophy and dysplasia in these patients were noticed. Disclosure of Interest: All authors have declared no conflicts of interest. References Prospective multicentre study on antibiotic resistance of Helicobacter pylori strains isolated from children living in Europe. Koletzko S et al. Gut 2006;55:1711–1716. Recent Insights into Antibiotic Resistance in Helicobacter pylori Eradication. Gastroenterology Research and Practice, Volume 2012, Article ID 723818, 8 pages

P0642 GASTRIC MICROBIOTA OF CHILDREN WITH CHRONIC GASTRITIS
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Introduction: Children’s gastric microbiota in the presence or absence of Helicobacter pylori (HP) has not been studied well.
Aims & Methods: We aimed to study the composition of the microbiota in the biopsy material of the antral part of the stomach, according to the 16s-RNA sequencing, of children with chronic gastritis, in the presence or absence of HP, and also to compare it with the histological data. Biopsy materials of mucous tunic from antral part of the stomach were taken from 16 children aged 10–17 with chronic gastritis and after the preliminary extraction the biopsy materials were examined using the method of sequencing with a pair of oligonucleotide primers, which are specific for the conservative regions of the 16s-RNA gene, on the Life Technologies Ion Torrent sequencer using the 318v2 chip. Bioinformatic processing was conducted using the QIIME package. The results were compared with the data from the histological examination of the biopsy materials from the same part of the stomach as well as with the results of diagnosis using rapid urease test. AMA RUT Expert with digital Reader.
Results: 8 out of 16 patients were identified as HP(+), positive, 2 of them had HP in small amounts, 6 of them – in significant amounts. The dominant types of bacteria in the stomach of all children were Bacteroidetes, Bifidobacteria, Firmicutes; in a lesser extent - Actinobacteria, Cyanobacteria, Fusobacteria. 64.1% of HP(+) patients’ microbiome was constituted of HP, among Proteobacteria it reached 75–99%, the amount of other bacteria herewith shor- tened, and the microbiota structure decreased. Non-helicobacter microbiota of children with small amount of HP was almost identical in composition as HP(-) patients’, the amount of other microbes was more numerous and diverse, also within Proteobacteria. The signs of inflammation in mucous coat of the stomach in HP(+) patients were more pronounced than in HP absence, they corre- lated with the amount of HP.
Conclusion: Microbiome of the children’s stomach is diverse, it is similar to adults’. The infection from HP inhibits another microbiota and it is accompanied with the signs of mucous coat inflammation, which correlates with the amount of HP.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0643 FEATURES OF CHRONIC GASTRITIS CAUSED BY CO-INFECTION OF HELICOBACTER PYLORI AND EBSTIN-BARR VIRUS IN PEDIATRIC PATIENTS
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Introduction: It is known that co-infection of the gastric mucosa with highly pathogenic Hp strains and the Epstein-Barr virus is a risk factor for the development of severe gastritis and atrophic gastritis. However, characteristics of such co-infection in children are not sufficiently studied.
Aims & Methods: The aim of this study is to estimate the role of co-infection of highly pathogenic strains of Helicobacter pylori and Epstein-Barr virus in pediatric patients with chronic gastritis. Patients and methods. 190 children aged 8–18 years of age with chronic Hp-associated gastritis were studied. All the patients underwent clinical and laboratory examinations and endoscopy. Gastric biopsies were performed and the histological analysis of inflammation graded according to the Salzmann classification. Polymerase chain reaction (PCR) was used to detect the presence of Epstein-Barr virus (EBV), Helicobacter pylori (Hp) and its highly pathogenic strains in the gastric mucosa of the patients. Results: Persistent EBV infection was found in 83 children (43.7%) with chronic gastritis of the antral and (or) gastric body areas. Helicobacter pylori strains that possess the virulence factors (cytotxin-associated gene A (CagA), vaculating cytotoxin gene A (VacA), induced by contact with epithelium (IceA), and blood group antigen-binding adhesion (BabA)) were detected in 49 patients (25.8%). In most cases, the association of two or more virulence factors in one patient was observed. It was found that 39 pediatric patients had co-infection of the highly pathogenic strains of Hp and EBV. The study revealed no significant effect of the variant of the gastric mucosa infection on the clinical manifestations of gastritis - the nature of intoxication, abdominal and dyspeptic syndromes. At the same time, the endoscopic and morphological data analysis has revealed a severe gastritis with the development of pangastritis and signs of gastric mucosa atrophy observed mainly in the antral region, in patients with co-infection (highly patho- genic strains of Hp + VEB). In addition, by correlation analysis, we found that the increase and development of the inflammatory process in the gastric mucosa was mostly influenced by the presence of CagA-positive strains of H. pylori in combination with EBV. We found that children infected by EBV without highly pathogenic Hp strains had mild mononuclear and polymorphonuclear cell infiltration without atrophy.
Conclusion: Co-infection with highly pathogenic Hp strains and the Epstein-Barr virus in pediatric patients is associated with severe gastritis. Disclosure of Interest: All authors have declared no conflicts of interest.

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P064 HELICOBACTER PYLORI INFECTION AND SPECIFIC IMMUNOGLOBULIN E ANTIBODIES TO FOOD ALLERGENS IN SYMPTOMATIC CHILDREN ADMITTED IN A DIGESTIVE ENDOSCPY UNIT
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Introduction: H pylori infection is one of the most widespread bacterial infections worldwide, therefore nowadays its prevalence is decreasing, mostly in developed countries. There are some studies which support that H pylori could favor the development of food allergy.
Aims & Methods: To assess the relationship between H pylori infection and specific immunoglobulin E (Ig E) antibodies to food allergens in symptomatic children. We conducted a prospective study of 394 symptomatic children (249 girls, age range 6 months-18 years), mostly with uninvestigated dyspepsia requiring endoscopy in our unit, from January 2015 to December 2016. All patients were evaluated for H pylori infection by at least two standard invasive tests and for specific immunoglobulin E antibodies to major food allergens (R-Biopharm, Germany). The nutritional status of patients was assessed in all cases by the new World Health Organization (WHO, 2007) growth charts. EPI-INFO version 7 was used for statistical analysis. A two sided p-value less than 0.05 was considered statistically significant.
Results: Active H pylori infection was documented in 246 (62.3%) cases. The allergic sensitization at least one of the food allergens was identified in 134 of 394 patients (34%). The majority of Ig E positive children (109 of 134 cases; 81.3%) were positive for cow’s milk followed by egg (17.9%), wheat (7.46%), peanut (5.45%), soybean (3.73%). The allergic sensitization to food allergens was associated with abnormal levels of specific Ig E antibodies to common inhalatory allergens in 55 of 134 cases (41.04%). Regarding the association of H pylori infection with an elevated serum Ig E level to at least one of the food allergens tested, there was no significant correlation (p = 0.14). A total of 134 (51.30%) patients positive for food specific Ig E antibodies were H pylori infected and 57 of them (38.55%) were H pylori negative (Fisher exact test = 0.08). The assessment of the patients nutritional profile in relationship with H pylori infection and food allergy not revealed a statistically significant correlation between the two ends of the poor nutritional status (undernutrition and overweight).
Conclusion: The recent decline of H pylori infection is not evident in our study. There was no association between H pylori infection and Ig E mediated food allergy. Undernutrition and overweight were not associated with the H pylori infection and food allergy in our patients.
Disclosure of Interest: All authors have declared no conflicts of interest.

P0645 GUT MICROBIOTA ALTERATIONS UNDER OLGOFRUCTOSE-ENRICHED INULIN ADMINISTRATION IN PAEDIATRIC CELIAC DISEASE PATIENTS ON A GLUTEN-FREE DIET: RANDOMIZED CONTROLLED TRIAL
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Introduction: Imbalanced gut microbiota is suggested to be involved in the pathogenesis of celiac disease (CD). In many CD patients, despite a long-term treatment with a gluten-free diet (GFD), the intestinal dysbiosis is not completely restored. Prebiotics, substances of the unique ability to shape intestinal microbiota, can influence intestinal microflora, low-risk GFD supplement to remedy the intestinal dysbiosis in CD patients.
Aims & Methods: The aim of the present study was to assess the effect of prebiotic oligofructose-enriched inulin (OEI) administration on the quantitative gut microbiota characteristics of CD children following a strict GFD for ≥1 year. A randomized, placebo-controlled 12-weeks dietary intervention was conducted on 34 CD children (62 % female, mean age 10 years) on GFD who were randomly assigned to prebiotic (OEI: 10 g/day) or placebo group (maltodextrin; 7 g/day). Before (baseline) and after the intervention, the anthropometric (weight, height) and biochemical blood parameters (C-reactive protein, creatinine, aspartate aminotransferase, alanine aminotransferase, quantitative gut microbiota characteristics (by real-time PCR) and concentration of short-chain fatty acids (by gas chromatography with a flame ionization detector) were assessed.
Results: Thirty CD patients completed the study. After 12-weeks intervention, the biochemical blood parameters remained normative in all CD patients, and the gut microbiota counts in each experimental group did not differ from their counts at baseline. However, in comparison with placebo group, Bifidobacterium counts was significantly (p < 0.01) higher in CD children consuming OEI-supplemented GFD. Moreover, the counts of Clostridium leptum group in children of prebiotic group did not show the decreasing tendency along with the time of GFD. The bacterial community of CD children was reflected inotol bacteria number after the intervention that was constant in prebiotic group but tended to fall in placebo group. Microbiota counts corresponded well with microbial metabolic activity. In comparison with placebo group the concentration of short-chain fatty acids in CD children of prebiotic group (50.27 vs. 69.95 mEq/l, p < 0.05), mainly due to a significantly higher acetate formation (28.82 vs. 44.06 mEq/l, p < 0.05).
Conclusion: Prebiotics, substances of the unique ability to shape intestinal microbiota, can influence intestinal microflora, low-risk GFD supplement to remedy the intestinal dysbiosis in CD patients. Moreover, the administration of OEI in GFD prevents from a gut dysbiosis observed along with the duration of the GFD, and maintains a constant quantity of beneficial bifidobacteria. Moreover, the administered of OEI in GFD stimulates activity gut microbiota observed ashe increased SCFA production assigned to regulatory effects.
Disclosure of Interest: All authors have declared no conflicts of interest.
Acknowledgment: The research was supported by statutory funds of the Department of Chemistry and Biodynamics of Food of the Institute of Animal Reproduction and Food Research PAS. Travel expenses were funded by KNOW2 (Leading National Research Centre) Scientific Consortium: "Healthy Animal - Safe Food" (decision of Ministry of Science and Higher Education No. 05/1-KNOW2/2015).

P0648 EVALUATING GLUTEN IMMUNOGENIC PEPTIDES AS NON-INVASIVE MARKER OF GLUTEN-FREE DIET ADHERENCE IN PAEDIATRIC CELIAC DISEASE
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Introduction: Treatment for celiac disease (CD) is a lifelong gluten-free diet (GFD). Patients should be followed-up with dietary interviews and serology as CD markers to ensure adherence to the diet. However, none of these methods
offer an accurate measure of dietary compliance. Presence of gluten related sub-
stances in faeces proves that transit through gastrointestinal tract happened and
confirms gluten ingestion.

Aims & Methods: Detection of gluten immunogenic peptides (GIP) in stools as a marker of GFD adherence in CD paediatric patients was evaluated and compared against traditional methods of GFD monitoring. A prospective, non-randomized, multi-centre follow-up study, 2 years long, including 64 CD patients started on GFD when diagnosed was conducted (age range 5–18 years).

Results: 62 patients (97%) had detectable GIP levels in stools, during basal visit, before initiation of the GFD, whereas 20.3% of the patients were found to have positive GIP after treated with a GFD. Dietary transgressions were more frequent among children less than 8 years of age (60.8%) of them showed more than one detected transgression. Anti-TG IgA remained in high concentrations in 48, 34 and 20% of the patients at 6, 12 and 24 months of follow-up. Anti-DGP was positive in 13, 4.5 and 0% of cases when tested at 6, 12 and 24 months follow-up. Both serological methods did not correlate with GIP in stools (p < 0.05).

Conclusion: The GIP ELISA enabled direct and quantitative assessment of gluten exposure early after ingestion. Detection of GIP in stools revealed lack of compliance of traditional serological methods to verify GFD compliance in CD paediatric patients. The antibodies can be detected several months or even years to decrease after initiation of the GFD and reduction (but incomplete suppression) of gluten intake. More frequent in children less than 8 years of age. Dietary transgressions were more frequent among children less than 8 years of age (60.8%) of them showed more than one detected transgression. Anti-TG IgA remained in high concentrations in 48, 34 and 20% of the patients at 6, 12 and 24 months of follow-up. Anti-DGP was positive in 13, 4.5 and 0% of cases when tested at 6, 12 and 24 months follow-up. Both serological methods did not correlate with GIP in stools (p < 0.05).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0651 META-ANALYSIS: PROTON PUMP INHIBITORS MODERATELY INCREASE THE RISK OF SMALL INTESTINAL BACTERIAL OVERGROWTH
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Introduction: PPIs have become one of the most commonly prescribed classes of medications. Although PPIs are generally well tolerated, accumulating evidence suggests that PPIs have long-term risks. One potential risk of PPI use is development of small intestinal bacterial overgrowth (SIBO), which is defined as >105 bacteria colony-forming units (CFU) per mL upon culturing upper gut aspirates. However, this is controversial due to conflicting results from prior studies.3,4

Aims & Methods: The aim of this meta-analysis was to evaluate the association between use of PPIs and the risk of SIBO. We systematically searched the online Pubmed, Embase, Cochrane Library databases and Web of Science for relevant articles before November 2016. Two researchers identified and extracted data independently. The pooled analysis was performed using generic inverse-variance random-effects model. Subgroup and sensitivity analysis were conducted to assess the stability and heterogeneity of the pooled results. The risk of publication bias was evaluated by examining funnel plot asymmetry, Egger’s test and Begg’s test. All statistical analyses were performed using Stata software version 13.

Results: A total of nineteen articles met the eligibility criteria for the meta-analysis. The pooled odds ratio (OR) showed a statistically significant association between increased risk of SIBO and PPI use (OR = 1.95 95% CI 1.20–2.43). No statistically significant publication bias was found based on the Egger’s test (p = 0.19) or Begg’s test (p = 0.11). This suggests the association between PPI and SIBO in studies that employed small bowel aspirates culture and glucose hydrogen breath tests (GHBT) as diagnostic tests for SIBO. However, when the pooled analysis was limited to studies recruiting irritable bowel syndrome (IBS) patients, no statistically significant association between PPI use and SIBO was observed, which suggests that PPI use does not affect the risk of SIBO among IBS patients.

Conclusion: Our meta-analysis suggests that the use of PPIs moderately increases the risk of SIBO, which highlights the need for appropriate prescription of PPIs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0652 CLINICAL SIGNIFICANCE OF TRANSFORMING GROWTH FACTOR-ß AND TUMOR NECROSIS FACTOR-Á IN CHILDREN WITH FOOD PROTEIN INDUCED ENTEROCOLITIS SYNDROME


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Introduction: Nowadays food allergy continues to increase, especially in westernized countries and is now recognized as a worldwide problem. Transforming growth factor-ß (TGF-ß) is a profibrotic cytokine, which plays an important role in promoting the structural changes in food allergy. Also for patients with food protein induced enterocolitis syndrome TNF-á appears to have an important role.

Aims & Methods: The aim was to determine the significance of the Transforming Growth Factor-ß (TGF-ß) and Tumor Necrosis Factor-á (TNF-á) in children with food protein induced enterocolitis syndrome. It was examined 38 patients with FPIES at the age from 4 months to 3 years, the average age was 19 ± 4 months. The control group consisted of 11 healthy children of the same age. The determination of TGF-ß and TNF-á in serum was performed by an enzyme immunoassay kits from Bender Medsystems (Austria).

Results: The level of TGF-ß in patients with FPIES exceeded the norm and was respectively 33.5 ± 1.6 ng/ml at norm 20.2 ± 2.1 ng/ml, p < 0.001. The indices of TNF-á were also increased and amounted to 8.8 ± 1.3 ng/ml in comparison with the control group (p < 0.001). For statistical analysis it was characterized by an increase in specific antibodies IgE to cow’s milk in 18 (47.3%) children. In these children with high specific IgE levels to cow’s milk. It is likely that an increase in TGF-ß and TNF-á supports chronic inflammation in allergic diseases.

Conclusion: We did not find any interaction effect between newborns' and mothers' GST1 polymorphisms and anthropometrical parameters (p = 0.545) for FPIES and clinical parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0654 SARCOPENIA IN CHILDREN WITH INTESTINAL TRANSPLANTATION

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Introduction: Deficits in lean mass and muscle measures are well described in children with chronic disease e.g. childhood inflammatory bowel disease[1]. Sarcopenia is a poor prognostic biomarker in adults with advanced cancer, liver transplantation and in children with acute lymphoblastic leukaemia[2-4]. Poas muscle cross sectional area (PCA) has been shown to correlate with whole body muscle mass and can be measured from axial imaging [5]. Little is known about sarcopenia in children with intestinal transplantation (IT). Sarcopenia is a poor prognostic biomarker in adults with advanced cancer, liver transplantation and in children with acute lymphoblastic leukaemia. Poas muscle cross sectional area (PCA) has been shown to correlate with whole body muscle mass and can be measured from axial imaging [5]. Little is known about sarcopenia in children with intestinal transplantation (IT).

Aims & Methods: The primary objective was to determine whether children who had IT show differences in total PCA when compared to healthy controls. The secondary objective was to investigate association of PCA and survival after IT. A retrospective, case note review of children who had IT at a single centre since inception in 2009 to May 2016. Controls were identified from abdominal trauma series. Total PCA (mm²) was measured using direct techniques of magnetic resonance imaging or computed tomography at the level of the anterior superior iliac spine. To correct for body size, PCA index was derived for all subjects: PCA divided by height. PCA index was then described according to outcome. Statistical analysis was carried out using Social Sciences (SPSS) version 23.

Results: 16 patients (9 male) underwent IT at our centre. Post-transplant axial imaging was available for 12/16 males, median age 6.2(3.6 to 12.9) years patients in whom the diagnoses (n): Chronic intestinal pseudo-obstruction(3), gastroscisis(3), intestinal ischaemia(1), intestinal lymphangiectasia (1), volvulus (1), progressive familial intrahepatic cholestasis (1), Hirschsprung’s disease (1) and intestinal failure of indeterminate aetiology(1). One patient was excluded from analysis as she was a bilateral amputee. Children who had IT had a significantly lower PCA and PCA index than controls; median PCA index (10 x 10 mm²) [IQR] in IT patients=4.95 [4.44 to 11.33] p<0.005. There was a trend toward higher PCA index in those who survived (n =9) compared to those who did not (2).

Conclusion: Children who underwent IT had sarcopenia of the poas muscle in comparison to healthy controls and patients who died there was a trend toward poas muscle sarcopenia. This study adds to the evidence that body core muscle is consistently deficient in children with chronic disease and is the first to comment on children with IT. This small study provides the basis to develop PCA as a prognostic marker in children with transplantation

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0655 GENETIC PREDISPOSITION TO PRIMARY LACTOSE INTOLERANCE AND ITS INFLUENCE ON CHILDREN’S QUALITY OF LIFE AND DAIRY INTAKE

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Introduction: Primary lactose intolerance (PLI) is a frequent condition caused by a genetically programmed and progressive loss of lactase expression. It is considered that PLI is the ancestral variant, while lactase persistence is caused by 2 polymorphisms: the dominant C/T13910 and G/A22018. Homozygotes (CC or GG) have undetectable lactase levels. In clinical practice only half of people with PLI have symptoms. However, some studies showed that PLI subjects have lower dairy intake.

Aims & Methods: To investigate whether genetic predisposition to PLI influences the quality of life and dairy intake in a group of Romanian children. We conducted a prospective study, recruiting consecutive children evaluated in our unit in May-August 2016. Our study population included 87 children aged 6–17 years (mean age 10.64 ± 3.51 years), 45 (51.72%) girls. We used strip genotyping to identify genetic predisposition to IPL. Subjects were asked to complete a validated quality of life questionnaire and a dairy intake questionnaire. We used Spearman’s test to evaluate the correlation between IPL and quality of life and dairy intake.

Results: 51 (51.7%) subjects had a CC genotype, 30 (34.5%) subjects had a GG genotype. Our results were consistent with Hardy-Weinberg equilibrium. We found no correlation between homozygosity for PLI and dairy intake (CC: r = –0.06, p = 0.54; GG: r = 0.01, p = 0.86). We found no correlation between either CC, or GG homozygosity and quality of life (r = –0.11, p = 0.3) and r = –0.1, p = 0.34).

Conclusion: In our group genetic predisposition to IPL followed European trends. It did not influence quality of life and dairy intake.

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P0657 HEPATIC FIBROBLAST GROWTH FACTOR-21 AND OMENTIN-1 MRNA LEVELS IN MORBIDLY OBESSE WOMEN WITH NON-ALCOHOLIC FATTY LIVER DISEASE

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Introduction: Fibroblast growth factor-21 (FGF21) and omentin-1 have been recognized as potent antiadipogenic agents, with potential hepatoprotective activity. Aims & Methods: The aim of this study was to evaluate hepatic FGF21 and omentin-1 mRNA expression, and their serum levels as predictive markers of liver injury and insulin resistance in morbidly obese women with NAFLD. The study included 56 severely obese women who underwent intraoperative wedge liver biopsy during the bariatric surgery. Hepatic FGF21 and omentin-1 mRNA was assessed by quantitative real-time PCR, while their serum concentration with commercially available enzyme-linked immunosorbent assays.

Results: FGF21 serum level was significantly higher in patients with more extent steatosis (grade 2 and 3) compared to those without or with mild steatosis (grade 0 and 1) (p = 0.049). However, ROC analysis showed poor discriminant power for FGF21 serum level in differentiation between more and less extensive steatosis with AUC = 0.666. There was evident tendency to higher levels of hepatic FGF21 mRNA in patients with lobular inflammation and fibrosis, and to lower levels in the case of ballooning degeneration and steatosis. There was positive mutual correlation between hepatic FGF21 and omentin-1 mRNA levels (r = 0.73, p < 0.001). Fibrosis stage was associated with serum glucose and HOMA-IR (r = 0.03 and p = 0.02, respectively). Serum omentin was not associated with histopathological features. Hepatic omentin-1 mRNA levels exerted the tendency to be lower in patients with advanced steatosis and hepatocyte ballooning.

Conclusion: In our conclusion our study, which focused on hepatic FGF21 and omentin-1 mRNA expression, confirmed a marked expression of both molecules in the liver of morbidly obese patients with NAFLD. mRNA levels were affected by certain histological abnormalities. In morbidly obese patients with advanced steatosis was associated with evident change in serum FGF21 concentration in morbidly obese women with NAFLD. The vast amount of fat, both visceral and subcutaneous in severely obese patients may affect FGF21 and omentin-1 serum levels.

Disclosure of Interest: All authors have declared no conflicts of interest.

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(HSCs), which were separated from Sprague-Dawley rat, were treated with differ-
cent concentrations of loureirin B. MTT assay was employed to determine HSCs proliferation, western blot was used to test the expressions of Frizzled-4 receptor protein and α-SMA. In addition, enzyme-linked immunosorbent assay (ELISA) was performed to measure the content of α-SMA, TGF-β1 and VEGF in the cultured HSCs' supernatant, and reverse-transcription PCR (RT-PCR) were utilized to detect the expressions of Frizzled-4 and α-SMA genes.

Results: MTT test showed that the proliferation of HSCs was inhibited signifi-
cantly with a time and dose dependent relationship by the treatment of loureirin B in a concentration range of 0.01-0.1 μg/mL. The inhibition concentrations of 0.115g/L (IC50 = 0.180g/L). Western blot analysis showed that the expressions of Wnt receptor Frizzled-4 protein and α-SMA were obviously lower in the group of loureirin B treatment than that in the control group. Moreover, the Loureirin B also inhibited Frizzled-4 (p < 0.01), TGFβ1 (p < 0.05) secretion in the cultured HSCs' supernatant in different degree by the ELISA assay, and RT-PCR results revealed that Loureirin B down-regulated the expressions of Frizzled-4 and α-SMA genes in the level of mRNA.

Conclusion: The Loureirin B mediated anti-hepatic fibrosis by inhibiting the proliferation of HSCs through restraining the Wnt signaling pathway.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Autophagy and the Crosstalk With Hepatocytes Through Mediating Inflammatory Cytokines, Inhibiting the Proliferation of HSCs Through Restraining the Wnt Signaling Pathway.

P0659 MACROPHAGE CONTRIBUTES TO STEATOHEPATITIS THROUGH MEDIATING INFLAMMATORY CYTOKINES, AUTOPIHAGY AND THE CROSSTALK WITH HEPATOCYTES

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Introduction: Macrophages play a pivotal role in the pathogenesis of non-alco-
holic steatohepatitis (NASH) and are a major component of inflammatory cells
infiltrated in NASH. However, the precise mechanism of how macrophages contribute to the pathogenesis of NASH remains unexplored.

Aims & Methods: We aimed to characterize the role and molecular regulators
of macrophages in NASH and the therapeutic effects of macrophage depletion on
NASH. C57BL/6 wildtype (WT) mice and transgenic LysM-Cre;DTR mice were fed with methionine-and-choline-deficient (MCD) diet for 5 weeks to induce
steatohepatitis. Hepatic macrophages were depleted in WT mice by injecting liposomal clodronate (i.p. 50 mg/kg/week) and in LysM-Cre;DTR mice by inject-
ing diphtheria-tox (DTox) (i.p. 100 mg/week). Primary macrophages were iso-
lated from bone marrow of WT mice. For the in vitro study, mouse immortalized
hepatocytes AML-12 were cultured with primary macrophage conditioned medium and mouse primary macrophages were cultured with AML-12 hepato-
cytes conditioned medium to evaluate the interaction between macrophages and
hepatocytes in steatohepatitis. A series of assays including cytokine profiling
assay, DNA binding activity, flow cytometry and Western blot were performed.

Results: Hepatic macrophage marker CD68 expression was significantly higher in
human NASH patients compared with normal controls (P < 0.001). Steatohepatitis was established in WT mice and LysM-Cre;DTR mice fed MCD diet, concomitant with significantly enhanced hepatic macrophage infiltra-
tion as indicated by F4/80 staining. Macrophage depletion by liposomal clodro-
nate or DTox attenuated steatohepatitis in both animal models. This was also
associated with reduced hepatic necroinflammation, oxidative stress, hepatic tri-
glyceride accumulation, and secretion of pro-inflammatory cytokines in both
liposomal clodronate-treated WT mice and DTox-treated LysM-Cre;DTR mice as compared to the corresponding control mice. Macrophage depletion was also
accompanied by the reduction of neutrophils, which together can reduce inflam-
mation. Upregulated macrophages were associated with the increased expression of hepa-
tic pro-inflammatory cytokines including interleukin (IL)-1α, IL-1b, IL-
12, IL-17, Granulocyte-macrophage colony-stimulating factor, Monocyte che-
moattractant protein-1 (MCP-1) and macrophage inflammatory protein 1α
(MIP-1α), and the activation of NF-κB and JNK signaling pathways in the liver.
Macrophage-induced steatosis was mediated by increased hepatic lipogen-
esis and higher levels of X receptors (αR and LXRR), which are regulative
element binding protein-1c and carbohydrate-responsive element-binding protein.
Moreover, autophagy deficiency and endoplasmic reticulum (ER) stress were
involved in macrophage-induced steatohepatitis as indicated by p62/QTSTM1
accumulation and increased GRP7 and p-IRE1α expression. For the in vivo study,
macrophage conditioned medium significantly promoted lipid accumulation
in AML-12 hepatocytes. On the other hand, MCD-cultured hepatocytes medium
promoted primary macrophage polarization to M1 phenotype as well as the pro-
duction of pro-inflammatory cytokines (TNF-α and MCP-1).

Conclusion: We demonstrated that macrophages contribute to the progression of
NASH through promoting inflammation, lipogenesis, autophagy impairment, ER stress and also through a crosstalk with hepatocytes. Similarly, macrophage
depletion has mitigation effects on NASH and may provide a potential treatment
strategy for NASH.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is considered the hepa-
tic manifestation of metabolic syndrome, with simple liver steatosis being capable of
gradually progressing to inflammation, fibrosis, cirrhosis and even hepatocel-
lar carcinoma. Still, disease pathogenesis is complex and no targeted therapies
have yet been approved for NAFLD. Bile acids (BAs) constitute a wide class of
steroid molecules with pleiotropic functions, contributing to the homeostasis
of lipid and glucose. In the liver, they specifically modulate nuclear receptors from
the NR1 subfamily, such as Farnesoid X Receptor (FXR) and Liver X Receptor
(LXR), thus tightly regulating bile acid synthesis and oxidation and storage of
triglycerides.

Aims & Methods: Our aim was to screen BA derivatives for their potential to
selectively activate FXR, thus protecting liver cells against free fatty acid (FFA)-
induced lipid accumulation and lipidotoxicity. Nineteen novel BA derivatives were
analyzed in silico molecular dynamics for FXR binding, and further evalu-
ated in human cells using a FXR reporter assay. Assessment of FXR-depend-
ent gene and protein expression was analyzed upon incubation of primary
mouse hepatocytes and HepG2 cells with selected BA derivatives. In parallel,
BA derivatives were co-incubated with oleic and palmitic acids (2:1) for assess-
ment of cellular cytotoxicity and intracellular lipid accumulation.

Results: From the compound library, five BA derivatives showed stronger activa-
tion of FXR, comparing with their natural precursors. Incubation of HepG2 cells
with FAs led to a ~25% reduction in cell viability and ~35% increase in cell
death, with a dose-dependent accumulation of lipid droplets. Pre-incubation of
cells with selected derivatives efficiently prevented FFA-induced cell death and
lipid accumulation. Finally, incubation of both HepG2 cells and primary mouse
hepatocytes with BA derivatives strongly induced FXR, RXR, SHP, BSEP,
FGF19 and VLDL mRNA levels, and repressed PPAR1, LXR, SREBP1-c and
C/EBPα mRNA expression. Molecular docking studies and FXR reporter
assays confirmed ligand affinity to FXR. Furthermore, chenodeoxycholic acid
and its ester-based derivatives were confirmed as activators of FXR at lower concen-
trations comparing with the parent molecule.

Conclusion: In conclusion, we identified novel BA derivatives that directly modu-
late liver nuclear receptors, such as FXR and LXR, thus protecting liver cells
against FFA-induced lipid accumulation. These new compounds may be used as
sealoids for the development of targeted therapies for NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: NAFLD is currently classified in non-alcoholic fatty liver (NAFL)
and non-alcoholic steatohepatitis (NASH). It is a liver disease related to meta-
bolic syndrome with rising socio-economic impact worldwide. NAFLD is defined
by significant lipid deposition in hepatocytes that is unrelated to alcohol con-
sumption. This high prevalence of liver disease occurs after a protracted inflam-
matory response, which is activated by dietary overloading of fructose-rich goods as shown by the multi-parallel hit theory. Autophagy is a self-digesting mechanism that helps the cells to overcome stress conditions
derived by nutrient deprivation and massive storage, e.g. lipid and proteins.
Autophagy dysfunction has been implicated in lipid accumulation related dis-
cases. Up to now, it in yet fully understood the role exerted by autophagy in liver
diseases not related to alcohol.

Aims & Methods: Here, autophagy has been analyzed in a mouse model of
NAFL/NASH and in human in vitro model. Liver specimens were collected from
24 weeks old FLS and FLS-oh/ob mice. Liver tissue was snap frozen and kept at −80°C. RNA and proteins were isolated. RTP-PCR and western bloting
was performed. HepG2 cells were incubated for 24h with 2mM oleic acid (OA)
P0662 MODULATION OF MITOCHONDRIAL DYNAMICS BY MIRNAS IN NAFLD

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Introduction: Non-alcoholic fatty liver disease (NAFLD) pathogenesis associates with intracellular lipid accumulation in the liver. In addition, recent evidence supports a functional role for both mitochondrial dysfunction and microRNAs (miRNA/miRs) in NAFLD pathogenesis. In particular, deregulation of mitochondrial dynamics proteins, like mitofusin-2 (Mfn2) is frequently observed in obese and diabetic patients.

Aims & Methods: Our aims were to profile global liver miRNA expression changes during NAFLD progression and correlate them with the development of mitochondrial dysfunction in both experimental and human NAFLD. C57BL/6 mice were fed either a standard or a fast food (FF) diet for 25 weeks; or a methionine- and choline-deficient (MCD) diet for 2 and 8 weeks. miRNA profiling was performed using liver RNA from 8 weeks MCD-fed mice, in TigaMan MicroRNA arrays. qPCR array data was analyzed using a HTqPCR package in Bioconductor. Liver biopsies were obtained from patients with simple steatosis or NAFLD. mRNA and protein expressions were analyzed by qRT-PCR and immunoblotting, respectively. miRNA targeting was evaluated by dual-lucerase reporter assays.

Results: Both FF- and MCD-fed mice developed NAFLD-like features, including liver steatosis, inflammation and insulin resistance; as well as progressive steatohepatitis, severe liver damage and fibrosis. Strikingly, liver Mfn2 protein levels significantly decreased in both models (p < 0.05). Inversely, expression of Drp1, a mitochondrial fission protein, was found increased (p < 0.05). Other mitochondrial proteins, such as the voltage-dependent anion channel (VDAC), presented no expression changes. In human patients, Mfn2 protein levels decreased from steatosis to NASH (p < 0.05). Microarray profiling indicated that liver miRNAs are significantly modulated during NAFLD progression. Specifically, 25 miRNAs were found significantly increased in the liver of MCD-fed mice, while inversely, 27 miRNAs were decreased. Curiously, in silico analysis revealed that several of the up-regulated miRNAs could target Mfn2 in at least, one Mfn2 3’UTR binding site. Binding of miRNAs to Mfn-2, including miR-34a, was validated in HepG2 cells using a dual-lucerase reporter vector containing the Mfn2 3’UTR. Finally, overexpression of mir-34a in C2C12 muscle cells lead to Mfn2 inhibition and insulin resistance (p < 0.05).

Conclusion: In conclusion, mitochondrial dysfunction, particularly downregulation of Mfn2, plays a key role in human and experimental NAFLD and is targeted by miR-34a. A better understanding of the molecular network of miRNAs targeting mitochondrial proteins during NAFLD may help in the development of novel targeted therapies for metabolic diseases associated with mitochondrial dysfunctions. (Supported by PTDC/BIM-MEC/0895/2014, FCT, PT and Gilead Sciences International Research Scholars Program 2015).

Disclosure of Interest: All authors have declared no conflicts of interest.

P0663 GRANULOCYTE COLONY STIMULATING FACTOR IN DECOMPENSATED LIVER DISEASE - OUR EXPERIENCE IN A TERTIARY HOSPITAL IN NEPAL

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Introduction: Alcoholic Hepatitis, Decompensated Chronic Liver Disease and Acute-on-Chronic Liver Failure form a bulk of in-patients in Nepal. Mortality is quite high in these presentations despite all the medications currently available in our country. Prednisolone and Pentoxifylline are not up to the mark in terms of both short and long-term outcomes. The only option that remains is liver transplantation, which is not readily available in our country, and even if available it will be only in the near future, needs at least some months for planning and preparation and is also very costly. G-CSF (Granulocyte Colony Stimulating Factor) has shown both morbidity and mortality benefit in some studies in these groups of patients.

By comparing the outcomes in those receiving G-CSF and not receiving G-CSF, we can suggest G-CSF therapy to reduce mortality and morbidity in these patients. Although most of the studies done in the role of G-CSF in ACLF (Acute-on-Chronic Liver Failure) and decompensated CLD (Chronic Liver Disease) have used 4 μg/kg dose of G-CSF, our study has used fixed dosage of 300μg of G-CSF subcutaneously twice a day for a total of 3 days (6 doses).

Aim & Methods: We aimed to study the role of G-CSF in the treatment of alcoholic hepatitis, Decompensated CLD and ACLF. From January 2016 to December 2026, a total 49 patients with alcoholic hepatitis, decompensated chronic liver disease and acute-on-chronic liver failure admitted in TUTH (Tribhuvan University Teaching Hospital) were studied. Patients were randomized (in a 1:1 ratio) to either the ‘GCSF + SMT’ (Standard Medical Therapy) group (cases) or the ‘SMT-alone’ (control) group according to computer-generated random numbers. Patients in G-CSF group received G-CSF 300μg twice daily for 3 days (total 6 doses). Mortality rates at 1 month and CTP (Child Turcotte Pugh) and MELD (Model for End Stage Liver Disease) scores at enrollment and at Day 30 were compared in the two groups.

Results: A total of 49 patients [median age: 49 (range: 27-73), 70% males] were included in the study. 24 of them received G-CSF along with SMT and 25 received SMT alone. Baseline characteristics were similar in both the groups. The 3-day G-CSF therapy did not lead to any significant adverse effects. At one month, in GCSF+SMT group, 4 had died whereas in SMT alone group 15 had died and G-CSF survived with only 40% survived in control group (P = 0.02). Also significant improvement in CTP and MELD scores was seen in the group treated with GCSF at one month after therapy. Also, there were fewer complications of sepsis, hepatic encephalopathy and renal impairment in G-CSF group compared to the SMT alone group.

Conclusion: GCSF therapy improves survival and clinical outcome in patients with alcoholic hepatitis, decompensated chronic liver disease and acute-on-chronic liver failure. It may be useful in patients who do not have access to transplant services and also to the patients awaiting transplantation to prevent worsening during the waiting period. Further studies are needed to explore whether lower doses (total 6 doses) of GCSF are as effective as higher doses (total 10 doses).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0664 TITLE: STEM CELL TRANSPLANTATION IMPROVES SURVIVAL, QUALITY OF LIFE AND SYNTHETIC FUNCTIONS OF THE LIVER IN PATIENTS WITH END STAGE LIVER DISEASE

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Introduction: Cirrhosis and its complications are common causes of death among patients with end-stage liver disease. Liver transplantation as a definitive treatment is limited by shortage of donors and high cost. Autologous bone marrow
mononuclear layer containing stem cells is a novel approach for regeneration of liver. This therapy is not considered as a standard therapeutic option for patients.

Aims & Methods: To determine the outcome after intrasplenic or intrahepatic injection of autologous bone marrow stem cells (ABMSC) transplantation in patients with liver cell failure secondary to chronic hepatitis C infection. Sixty chronic hepatitis C patients with liver cell failure were prospectively enrolled. They were classified into 3 groups; group I: 20 patients underwent (ABMSC) injected intrahepatic. Group II: consisted of 20 patients underwent (ABMSC) injected intrahepatic after trans differentiation into hepatocytes with the double amount of growth factor. Group IIb: 10 patients underwent (ABMSC) injected intrahepatic after trans differentiation into hepatocytes using regular amount of growth factor. Group Ib: 10 patients underwent (ABMSC) injected intrahepatic after trans differentiation into hepatocytes using regular amount of growth factor. Group Ib: 10 patients underwent (ABMSC) injected intrahepatic after trans differentiation into hepatocytes using regular amount of growth factor. Group III: (Control Group) consisted of 20 patients received traditional supportive treatment for chronic liver cell failure and symptomatic treatment of ascites and bleeding abnormalities. All groups of patients were followed regularly for nine months clinically, biochemically and ultrasonographically. Fatigue was assessed by the modified fatigue impact scale questionnaire before, during and at end of the study.

Results: Our study included 60 patients (78.33% males) with mean age ±SD (49.9 ± 6 years). Patients who had ABMSC injection showed improvement in clinical parameters as bleeding tendency, ascites, lower limb edema and hepatic encephalopathy. There was statistically significant improvement in serum albumin, ascites, lower limb edema and hepatic encephalopathy. There was also statistically significant improvement in Child-Turcotte-Pugh in group I and II compared to group III. There was maintained till the end of the study. Fatigue improved in all patients who had ABMSC. There was improvement in serum albumin, ascites, lower limb edema, bleeding tendency and physical activity. Also there was improvement in MELD scores in all groups.

Conclusion: Stem cell transplantation has a beneficial effect on synthetic functions of the liver and possibly improves survival and quality of life of patients with end stage liver disease. Autologous bone marrow transplantation is safe and beneficial technique of treatment of patients with liver cell failure secondary to chronic hepatitis C infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. The prevalence of non-alcoholic fatty liver disease (NAFLD) has increased and several studies have shown that there is an association between NAFLD and insulin resistance (IR). The aim of this study was to determine how much impact the risk factors of metabolic syndrome has on ultrasonographic fatty liver, especially NAFLD.

Aims & Methods: A total of 41,258 adults who underwent routine comprehensive health evaluations, including abdominal ultrasonography, were selected. We calculated the adjusted prevalence ratios (PRs) for components of MetS (high blood pressure (BP), impaired fasting glucose, low high-density lipoprotein cholesterol (HDL-C), and high triglycerides) according to NAFLD.

Results: NAFLD was found in 13.8% of non-obese subjects and 52.3% of obese subjects. NAFLD was associated with most components of MetS in both obese and non-obese subjects. However, non-obese NAFLD patients had significantly higher PRs for certain components of MetS than did obese patients, especially among women. Body mass index, waist circumference, fasting blood glucose, triglyceride, HDL-C and aspartate aminotransferase, alanine aminotransferase, γ-glutamyl transpeptidase levels all affected NAFLD independently. The prevalence of metabolic syndrome was increased in mild (40.3%) and moderate (57.8%) NAFLD groups. When odd ratio (95% CI) for NAFLD group was compared to the contrast group, there was an increased risk of metabolic syndrome with odd ratio of 12.8 (95% CI, 9.1 – 17.0).

Conclusion: NAFLD and its components had a closer association with MetS and also with each risk factors of MetS. Therefore, assessment for concurrent MetS among NAFLD patients is considered to be necessary.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0668 THE USE OF THE FATTY LIVER INDEX TO DETERMINE THE PREVALENCE OF FATTY LIVER DISEASE (HEPATIC STEATOSIS) IN AN IRISH POPULATION

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Introduction: Worldwide, the prevalence of fatty liver disease (FLD) is increasing, particularly in countries with rising obesity rates, such as Ireland. Studies suggest that up to 25% of those with FLD can progress to non alcoholic steatohepatitis (NASH) and be at risk of its sequelae, including cirrhosis and hepatocellular carcinoma. Indeed, NASH is now the second most common indication for liver transplantation in the US. Despite this alarming data, there is no prevalence data for Ireland in relation to FLD.

Aims & Methods: We aimed to use a simple screening tool, the Fatty Liver Index (FLI) to identify those at risk of having fatty liver disease (FLD) amongst all comers presenting to an Acute Medical Unit (AMU) and to use this data as an indicator of prevalence of FLD in Ireland.

Methods: In this prospective cohort study, all patients attending the Acute Medical Unit (AMU) were invited to take part. Their height, weight and waist circumference were measured, and triglycerides (TG) were added to their ‘routine AMU blood panel’, which also included measurement of gamma glutamyl transferase (GGT). Exclusion criteria were as follows: known liver disease, excess alcohol intake (>17 units per week for males, >11 units per week for females), age <18 years, pregnancy, active malignancy. The Fatty Liver Index (FLI), an algorithm to determine the risk of non-alcoholic fatty liver disease (NAFLD), was used to stratify patients into groups based on risk of having FLD. A FLI score of >60 is highly suggestive of having FLD, a score of 30–60 is indeterminate and a score of <30 is considered low risk for FLD. Ethical approval for this research was obtained from the local ethics committee.

Results: Data was completed on 316 participants; 58 were excluded, the majority due to either a history of alcohol excess or known liver disease. A total of 258 participants were therefore evaluated; 50% were male. One hundred and sixteen (45%) participants were >60 on the FLI; 57.3% of which were male. Only 16% of males had a FLI <30, compared with 44% of females. Males had a significantly higher FLI than females; 60.9 vs. 43.12 (p<0.0001). There was a statistically significant difference in all parameters measured between the 3 groups (p<0.0001), apart from height, although there was a trend toward lower height in the FLI <30 group, most likely due to the fact that it was 73% female. When overall participants, at there was no height difference between the 3 groups. Those with a FLI >60 were older than those with FLI <30, 54.6 vs. 48 (p=0.01).

Conclusion: In this study looking at prevalence of fatty liver in Ireland, 45% of participants were found to be at high risk, and 70% were at high or indeterminate risk. Worryingly, only 16% of males fell into this low-risk group. Apart from weight, GGT, TG and BMI this study also showed age and male sex to be significant risk factors for developing fatty liver. This group clearly needs follow up to further evaluate and manage their fatty liver.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0669 ROLE OF BISPHENOL A AS AN ENVIRONMENTAL MODIFIER IN THE PROGRESSION OF NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD)

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Introduction: Bisphenol A (BPA) is an endocrine disrupting chemical, a heterocyclic group of chemicals usually found in food packaging or insecticide residues from multivariate logistic regression analysis. The probability was estimated with the equation: 0.627 + 0.640 * β + 0.593 * glucose (fasting glucose level) - cholesterol level + 0.361 * triglycerides + 0.458 * uric acid + 0.403 * serum lipase + 0.066 * platelet count in liver steatosis. According to the score values for different cut off levels, best ability in the prediction of severe FP has shown the score value above 6.5

Conclusion: Our study demonstrated that pancreatic fat infiltration due to its hormonal factor that plays a central role on mechanisms of MeSand manifestations, affects glucose metabolism and severity of NAFPD. Interestingly, significant association was registered among NAFPD patients

simulate human hyperglycemia, and at low (L-HepG2) glucose concentrations, for 48 h. In vitro, the proliferation of BPA-exposed HepG2 cells at two different concentrations (0.0025 and 0.005 μM) was evaluated, both at high (H-HepG2), in order to
with use of antidiabetic agents and the absence of highly fatty pancreas, indicating its potential protective role. Simple new noninvasive scoring system was designed from multivariate logistic regression analysis to estimate the occurrence of severely FP in NAFLD with best ability in the prediction in score values above 6.5.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0671 SERUM THYROID STIMULATING HORMONE IS INDEPENDENTLY ASSOCIATED WITH HEPATIC STEATOSIS AND STEATOHEPATITIS IN EUTHYROID SUBJECTS

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is a rapidly growing disease worldwide. The pathogenesis of NAFLD is not well recognized. Thyroid is totally involved in regulation of lipid and carbohydrate metabolism, body weight, and energy homeostasis. Therefore, the role of thyroid hormones in pathogenesis of hepatic steatosis is anticipated.

Aims & Methods: This study aimed to investigate thyroid hormone abnormalities in euthyroid subjects with hepatic steatosis. A cross sectional study was conducted between September 2012 and September 2015 at Namazi hospital, Shiraz, Iran. Study subjects were healthy individuals who had undergone liver biopsy for evaluation of liver histology as a routine pre-transplant checkup before living related liver transplantation. Liver function tests, age, gender, weight, height, fasting plasma glucose, thyroid hormones, and lipid profile were recorded. Liver biopsy specimens were reviewed by an expert pathologist for hepatic steatosis and steatohepatitis. Individuals with a history of chronic liver disease, hepatitis B or C infection, hepatitis-biliary cancers, those with > 20 grams/day alcohol consumption, and individuals receiving medications causing hepatic steatosis were excluded from the study.

Results: A total of 210 individuals (130 women and 80 men) were included. Seventy six individuals (36.19 %) had hepatic steatosis and 19 individuals had steatohepatitis (9.04 %) in liver histology. Mean age of individuals with and without hepatic steatosis were 32.9 ± 6.69 and 31.8 ± 6.72 years respectively (P = 0.26). In univariate analysis higher weight, triglyceride, total cholesterol, alanine aminotransferase (ALT), alkaline phosphatase, fasting blood sugar (FBS) and thyroid stimulating hormone (TSH) were associated with hepatic steatosis (P < 0.05). Serum T4 and T3 were not associated with hepatic steatosis (P > 0.05). In regression analysis, higher alkaline phosphatase, higher ALT and higher TSH (OR = 1.36; 95 % CI: 1.02–1.80, P = 0.03) were independent predictors of hepatic steatosis. In regression analysis, higher serum TSH was independently associated with steatohepatitis compared to those without steatohepatitis (6.83 ± 6.04 mIU/L and 2.10 ± 1.27 mIU/L) (OR = 2.11; 95% CI: 1.45–3.07, p < 0.001). A cutoff value of 3.75 mIU/L for TSH was predictor of presence of steatohepatitis in liver biopsies (sensitivity = 73%; specificity = 89%; AUC = 0.754; P = 0.004).

Odds Ratio (OR) 95 % Confidence Interval (CI) P-Value

| Weight     | 1.05 | 0.96–1.16 | 0.245 |
| Triglyceride | 1    | 0.98–1.01 | 0.989 |
| ALT        | 1.007 | 0.93–1.08 | 0.867 |
| TSH        | 2.11 | 1.45–3.07 | <0.001 |

Conclusion: Higher serum TSH is associated with hepatic steatosis and steatohepatitis in euthyroid subjects. Thyroid hormones may have crucial role in hepatic steatosis and may be targeted for treatment of NAFLD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0672 IDENTIFICATION AND IN SILICO CHARACTERIZATION OF SIX NOVEL GNAB MUTATIONS IN POLYCYSTIC LIVER DISEASE

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Introduction: Gastroceidase II is part of the functional pathway of co-translational protein translocation and maturation in the endoplasmic reticulum. It is implicated in autosomal dominant polycystic liver disease (ADPLD) and autosomal dominant polycystic kidney disease (ADPKD). The β-subunit of gastroceidase II, encoded by GANAB, has been identified as one of the causative genes of ADPLD. Recent data suggest that the α-subunit of gastroceidase II (GHI), encoded by GANAB, is associated with ADPKD and ADPLD. We aimed to identify GANAB mutations in an independent cohort of patients with the primary phenotype of polycystic liver disease (PLD) and to predict the influence of these mutations on gastroceidase II function.

Aims & Methods: We identified genetic mutations in GANAB using molecular inversion probe (MIP) analysis in a cohort of PLD patients. Both patients with ADPKD and ADPLD were included for analysis. Mutations identified with MIP analysis were validated using Sanger sequencing. Bioinformatics prediction tools (PolyPhen-2, Align GVGD, SIFT, MutationTaster) were used to predict the functional significance of the mutations. YASARA&WHAT IF were used for analysis of the structural effects of the mutations. Primary cholangiocytes obtained from a patient with GANAB mutation (c.251SC > T) were used to study loss of heterozygosity.

Results: We identified and validated 6 new bona fide GANAB mutations in 7 patients. These are 2 frameshift (c.687delT and c.11_16delTAGGGG), 1 splicing (c.2691–28C > Gi), 2 nonsense (c.2590C > T and c.2656C > T) and 1 missense (c.1835G > C) mutation. In silico analysis showed c.687delT and c.11_16delTAGGGG are located in N-terminal domain of the protein. These mutations probably lead to a total defective protein, c.1835G > C is located in the active site of the protein. It is predicted to disrupt the composition of the active site and reduce enzymatic activity. The remaining mutations (c.2691–28C > Gi, c.2590C > T and c.2656C > T) are located in C-terminal domain, which interacts with PRKCSH. The mutations could result in early termination of this domain. It is speculated this disrupts the ability of the two subunits to interact. Western Blot showed no differences in GHI expression in an ADPLD patient with GANAB mutation (c.251SC > T) compared to primary cholangiocytes obtained from a patient without PLD. This indicates in this patient no loss of heterozygosity occurs in cholangiocytes lining the hepatic cysts.

Conclusion: We describe six novel GANAB mutations that can cause PLD in a mixed population of ADPKD and ADPLD patients. These mutations are found in functionally important domains of α-subunit of gastroceidase II, which may lead to impaired enzymatic activity of the complex. In contrast to other PLD related genes no loss of heterozygosity was found for GANAB in cyst epithelium.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Introduction: Steatohepatitis (NASH) is the most prevalent cause of chronic liver disease and is characterized by hepatic fibrosis and cirrhosis in about 25% of cases. Steatohepatitis is associated with the metabolic syndrome and type 2 diabetes mellitus and is the most common indication for liver transplantation. The natural history of NASH is characterized by a progression to advanced fibrosis and cirrhosis in 80% of patients with NASH, and the risk of developing these complications is similar to that of patients with chronic hepatitis C and significantly higher than that of patients with chronic hepatitis B. Importantly, up to 60% of NASH patients have advanced fibrosis or cirrhosis, which is associated with a decreased life expectancy and the need for liver transplantation. Despite the prevalence and severity of these complications, there are still no effective treatments for NASH, which highlights the importance of further research in this area.

Methods: We performed a systematic review of the literature to identify studies that evaluated the natural history of NASH. We searched PubMed, EMBASE, and Cochrane Library databases for relevant articles published between January 2000 and December 2019. We included studies that provided data on the progression of NASH to advanced fibrosis and cirrhosis. We also included studies that evaluated the impact of NASH on patient outcomes, such as survival and quality of life.

Results: We identified 123 studies that met our inclusion criteria. The studies included a total of 18,666 patients with NASH. The results of the studies showed that the progression of NASH to advanced fibrosis and cirrhosis is a significant clinical concern. The mean annual rate of progression to advanced fibrosis was 4.0% (95% CI: 3.2-4.8%), and the mean annual rate of progression to cirrhosis was 1.3% (95% CI: 0.9-1.7%). The studies also showed that the progression of NASH to advanced fibrosis and cirrhosis is associated with increased mortality and decreased quality of life. Importantly, the studies showed that the progression of NASH to advanced fibrosis and cirrhosis is influenced by lifestyle factors, such as diet and physical activity, and by medications, such as statins and thiazolidinediones.

Conclusion: The natural history of NASH is characterized by a progression to advanced fibrosis and cirrhosis, which is associated with a decreased life expectancy and the need for liver transplantation. Further research is needed to identify effective treatments for NASH that can prevent the progression of NASH to advanced fibrosis and cirrhosis and improve patient outcomes.

Disclosure of Interest: All authors declare no conflicts of interest.
Aims & Methods: Aim of our study was to compare two non-invasive methods: fibrosis (p and NAFLD-FS for significant fibrosis). FIB-4 correlated with TE for high degree statistic significant with TE (p < 0.0001). BARD score did not correlate with TE and NAFLD-FS for significant fibrosis. BARD-4 and TE can be used to evaluate the progression of fibrosis in NAFLD and to select the patients for liver biopsy. In our study BARD score was not useful in detection of high degree fibrosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0678 EFFECTS OF UDCA AND STATIN COMBINATIONS ON LIPID PROFILES IN NAFLD PATIENTS
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Introduction: Dyslipidemia has an important role in NAFLD and inflammation progress and insulin resistance development. The studies suggested the role of UDCA in lipid profile correction. UDCA replaced bile acid balance and improved triglyceride and cholesterol levels in NAFLD patients, has immunomodulatory action.

Aims & Methods: The aim of study was estimation of the efficacy of different dosage of ursodeoxycholic acid (UDCA) with statin combination treatment in patients with NASC and NAFLD. There are 180 patients with NAFLD. It was divided into two subgroups: fatty liver (90 subjects) – patients with normal level of ALT, and nonalcoholic steatohepatitis (NAS, 90 subjects) – patients with elevated level of ALT (the median is 78.5 U/l). All patients were divided in 3 groups. The blood test, liver enzymes, lipid profile, HOMA-IR, Fibroscan and stool test was checked every 2 weeks of treatment. First group was taken UDCA 10 mg/kg/day and the patients of first group continue treatment for 3 months. Second group was taken UDCA 15 mg/kg/day + Statin. Third group were fed the low-lipid and low-glycemic index diet only (900 kcal/day). After 3 months of treatment patients of third group (diet only) add UDCA 15 mg/kg/day to treatment for extra 3 months.

Results: The subgroups did not show any difference in terms of initial total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), and triglycerides (TG). The analysis of the lipid spectrum showed a more intense dynamics in the group of patients taken UDCA combined with statin. After 3 months of follow-up there was a significant reduction in TC to 4.2 mmol/l, LDL-C to 1.8 mmol/l and TG to 1.2 mmol/l in the fatty liver subgroup, and TC to 4.1 mmol/l, LDL-C to 1.8 mmol/l and TG to 1.2 mmol/l in the NAS subgroup. Changes were similar in the subgroups. The level of total cholesterol, triglyceride and liver enzymes were decreased faster in group taken UDCA and statin independent from UDCA dosage. There are no side effects or liver enzyme elevation in group treated with UDCA and statins. In the NASH subgroup there was a significant decrease in ALT to 35 U/l. At the end of the first month of statin therapy combined with UDCA in the NASH subgroup a significant positive dynamics of ALT was found in patients with NASH (initially 78.5 U/l; after treatment decreased to 42.8 U/l).

Conclusion: 3-month statin therapy in combination with UDCA showed significant lipid-lowering effects in patients with NAFLD, as well as normalization of ATR. UDCA and statin treatment was well tolerated. In the group who previously had not taken steatosis in the NASH subgroup, higher levels of TC and TG were observed. The studies suggested the role of UDCA in lipid profile correction. UDCA replaced bile acid balance and improved triglyceride and cholesterol levels in NAFLD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
difficult due to the unreliable history of alcohol consumption and lack of sensi-
ble markers. A new tool to overcome these difficulties: a ANI (alcoholic liver disease/nonalcoholic fatty liver disease index) was created for a non-invasive determination of fatty liver diagnosis.

Aims & Methods: The aim of this study was to evaluate the reliability of ANI as a non-invasive diagnostic tool in alcoholics. A retrospective study between 2010 and 2015 in patients with definite diagnosis of NAFLD and ALD based on clinical, biochemical and histological criteria was performed. ANI scor-
ing system in the differentiation of ALD and NAFLD was evaluated through the area under the receiver operating curve (AUROC). ANI score was calculated through Mayo Clinic formula.

Results: This study was carried out in 22 patients with ALD and 120 with NAFLD, 87 men (61.3%) with a median age of 51 ± 13 years. NAFLD patients presented a higher body mass index (BMI) of 28.9 ± 5.9 vs 23.9 ± 6 in ALD. ANI showed a sensitivity of 81% and specificity of 79% for the diagnosis of ALD with a cut-off value of -1.96 [AUROC 0.806 (0.715-0.898), p < 0.001]. ANI greater than -1.96 indicates a diagnosis of ALD whereas ANI less than -1.96 indicates a diagnosis of NAFLD.

Conclusion: ANI scoring system is a non invasive diagnostic and reliable tool that may be used to distinguish NAFLD from ALD, decreasing the need for liver biopsy. ANI greater than -1.96 suggests the diagnosis of ALD and ANI lesser than -1.96 suggest NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.
The CTCAE scale was used. Overweight was detected in 40 patients: BMI = 25–29.9 kg/m² (n = 40). In 30 (75%) patients with AL, the overload was more than 15 kg. Overweight presence the patients were divided into 2 groups: I (n = 44) – patients with AL and normal body weight, II (n = 40) – patients with AL and overweight.

Results: In AL patients of group I before the start of chemotherapy functional liver mass (%) was not significantly different from healthy people. In group II there was an increase of ALT activity in 1.5 times, AST – in 1.2 times, ALP and GGT in 1.4 times compared to the norm (p < 0.05) and reached grade I level, and no change in bilirubin and total protein levels. On the 28th day of treatment in 3 (6.8%) patients of group I the violation of the functional liver state was revealed, which was characterized by the increased activity of ALT in 2.3 times, AST – in 2.6 times respectively, GGT and ALP in 2.6 and 3.7 times respectively. In group II hepatotoxicity was detected in 26 (65%), which was characterized by the increased activity of ALT in 1.5 times, AST – in 1.3 times, GGT – in 1.9 times compared to normal levels, the bilirubin and total protein levels remained in the normal range, that consistent with grade I. In group II hepatotoxicity was detected in 26 (65%), which was characterized by the increased activity of ALT in 1.5 times, AST – in 2.3 times respectively, GGT and ALP in 1.9 and 2.4 times respectively, the level of total bilirubin increased in 2.1 times (p < 0.05), of which in 17 (42.5%) patients hepatotoxicity was of grade I and in 2 (5%) – of grade II level, with no statistically significant changes in protein synthesis liver function. On the 56th day of treatment in 7 (15.9%) patients of group I the violation of the functional liver state was revealed, which was characterized by the increased activity of ALT in 1.8 times, AST – in 1.3 times, ALP – in 1.6 times. GGT – in 1.9 times compared to normal levels, the bilirubin and total protein levels remained in the normal range, that consistent with grade I. In group II hepatotoxicity was detected in 26 (65%), which was characterized by the increased activity of ALT and AST in 2.6 and in 2.3 times respectively, GGT and ALP in 2.6 and 3.7 times respectively, the level of total bilirubin increased in 3.6 times (p < 0.05), of which in 10 (25%) patients hepatotoxic reactions were of grade I and in 16 (40%) – of grade II level.

Conclusion: The presence of the overweight results in a significant increase in the frequency and degree of hepatotoxic reactions in patients with AL during chemotherapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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Introduction: Binge drinking is a common pattern of alcohol consumption among young people. At present few data are available on the relationship between binge drinking and alcohol use disorder (AUD) in adolescents. The aim of this study was to assess drinking habits, patterns of alcohol consumption, smoking habits, use of illicit drugs, the prevalence of binge drinking and AUD among young students. The correlation between binge drinking and AUD was also investigated.

Aims & Methods: This study was performed on 2704 subjects attending high school. Questionnaires regarding socio-demographic data, anthropometric characteristics, pattern and amount of alcohol intake, smoking habits, use of illicit drugs, and physical activity were administered to students. Moreover Italian versions of AUDIT, STAI-Y1, STAY-Y2 and ZUNG scale were administered.

Results: Alcohol intake was reported by 2126 students (79%); among them 1278 (34%) in the last month. According to AUDIT questionnaires, a diagnosis of AUD was made in 165 (6%) subjects. The prevalence of AUD was higher in subjects that reported binge drinking behavior than in those that did not report binge drinking (p < 0.0001).

Conclusion: Alcohol consumption and abuse among young students is alarming. Binge drinking behavior among young students seems to be very common and it seems a risk factor for the development of AUD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0687 LOW LYSOPHOSPHATIDYLCHOLINE LEVELS MAY PREDICT SEVERE ALCOHOLIC HEPATITIS

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Introduction: Severe alcoholic hepatitis (SAH) remains a condition which bears high mortality and morbidity rates, as well as high healthcare costs. This is why adequate selection of patients who benefit the most from corticotherapy is of utmost importance. Although serum biomarkers are available (Maddrey Discriminant Function - MDF), the diagnostic of SAH relies on liver biopsy. Previous metabolomic studies have shown a core metabolic phenotype represented by decreased serum lysophosphatidylcholines (LPC) and increased serum bile acids that occurs relatively early in liver diseases regardless of etiology, and remains stable in their evolution, including liver cirrhosis and hepatocellular carcinoma (1). Our previous work also showed that decreased LPC levels are associated with alcoholic liver disease (ALD).

Aims & Methods: The aim of the study was to assess the metabolic profile of patients with ALD and to identify potential new biomarkers associated with severity. Between December 2015 and September 2016, 64 patients with biopsy proven AH were included (38 with SAH - MDF  32 and 24 with non-severe AH - MDF < 32). Fasting serum was stored at -80 degrees after centrifugation at 5000 rpm for 10 minutes. Specific purification protocol metabolic analysis was performed using Thermo Scientific UHPLC UltiMate 3000 system, equipped with a Dionex quaternary pump delivery system and a Bruker Daltonics Maxis Impact MS detection equipment (version 2012). Biostatistical analysis The chromatograms obtained were processed using CompassDataAnalysis 4.2 software (Bruker, Germany) and about 3000-4000 molecular masses were identified. Those data were further processed using ProfileAnalysis (Bruker, Daltonics): time alignment, normalization by sum of bucket values in analysis, 80% bucket filter, internal recalibration, etc. The matrix obtained was further processed through MetaboAnalysis, to analyze samples through univariate and multivariate statistical analysis.

Results: Univariate and multivariate statistical analysis by MetaboAnalysis identified 10 potential biomarkers. Among them, LPC (18:0) showed good discrimination for SAH (AUC = 0.804) with significantly lower values as compared with non-severe AH (0.38 fold change, p = 6 x 10^-11).

Conclusion: SAH appears to have a different metabolic profile, mainly due to changes in lysophosphatidylcholine metabolism. Targeted metabolomic studies are required in order to confirm the results and to evaluate the possible applications in current clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


Abstract No: P0685

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ELT - emergency liver transplantation
P0688 APPLICATION OF THE ICA-AKI CRITERIA IN THE DIAGNOSIS OF ACUTE KIDNEY INJURY IN PATIENTS WITH ACUTE DECOMPENSATION OF CIRRHOSIS

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Introduction: Acute kidney injury (AKI) is a common complication in patients with decompensated liver cirrhosis. Recently, the International Club of Ascites (ICA) defined new diagnostic criteria: the ICA-AKI criteria.

Aims & Methods: This study aims to identify patients hospitalized for acute decompensation of cirrhosis with AKI according to the ICA-AKI criteria, and to determine if its application leads to greater prognostic accuracy.

Methods: Retrospective analysis of hospitalized patients in a gastroenterology department for acute decompensation of cirrhosis, without acute-on-cronic liver failure, between January 2014 and December 2015. Identification of AKI patients according to ICA-AKI criteria. Analysis of the severity of liver diseases and in-hospital and short-term mortality among patients with and without AKI. Compared the accuracy of the conventional criteria vs. ICA-AKI criteria in the prediction of mortality.

Results: 161 patients included, 85.7% male, mean age of 65 ± 10.8 years. Average length of stay of 11.6 ± 9.5 days. 39.8% of patients had AKI on admission or during hospitalization according to the ICA-AKI criteria (50.9% in stage 1, 20.3% in stage 2 and 18.8% in stage 3). Patients with AKI according to ICA-AKI had longer hospitalizations (14.55 ± 9.75 days, p < 0.05), higher severity of hepatic disease quantified by the MELD and MELD-Na scores (17.62 ± 12.83 vs. 16.17 vs. 12.83 p < 0.05) and higher in-hospital, 28 and 90-day mortality when compared to patients without AKI (23.4 ± 6.2% vs. 9.3%, p < 0.05, 42.9 ± 23.7%, p < 0.05). There was a statistically significant association between the presence of infection and the development of AKI (p < 0.05). The ICA-AKI area under the curve (AUC) to predict in-hospital, 28 and 90-day mortality was significantly higher than the AUC of conventional criteria (0.682 ± 0.533 vs. 0.678 ± 0.588 vs. 0.618 ± 0.509, p < 0.001). ICA-AKI criteria in the prediction of mortality.

Conclusion: This is the first reported case-control study of HE in Taiwan. The study provides further evidence that infections are strongly associated with HE death. The study can be used to assist in the management of patients with HE. The study can be used to define the ICU population, since patients admitted to the ICU have higher rates of infection and HE. The study can be used to define the ICU population, since patients admitted to the ICU have higher rates of infection and HE. The study can be used to define the ICU population, since patients admitted to the ICU have higher rates of infection and HE. The study can be used to define the ICU population, since patients admitted to the ICU have higher rates of infection and HE.}

References
Aims & Methods: The aim of this study was to evaluate the efficacy of carvedilol versus propranolol on the prognosis of variceal bleeding in cirrhotic patients with occlusive portal vein thrombosis. Between January 2014 and December 2015, cirrhotic patients with occlusive non-malignant PVT were enrolled in a tertiary center. PVT was suspected by Doppler ultrasound and confirmed by computed tomography. Cirrhotic patients with esophageal varices and no previous variceal bleeding were randomized to carvedilol 6.125 mg daily or Propranolol 40 mg daily. End points were esophageal variceal bleeding or death.

Results: During the study period forty eight patients were evaluated. Twenty one and twenty seven patients were randomized in carvedilol and propranolol arms respectively. Mean age was 49 ± 12.2 years: 33 (68.7%) were males; 60.4% had viral cirrhosis; mean Child-Pugh score was 7.2 ± 2.6 and mean follow up was 12.3 ± 9.1 months (range 1–29 months). All the patients had occlusive non-malignant PVT, most of them involving only the trunk, and grade 2 or 3 esophageal varices. Both carvedilol and propranolol groups had comparable variceal bleeding rates (14.2% vs. 14.8%, P = 0.002), bile related mortality (9.5% vs. 11.1%, P = 0.027) and overall mortality (23.8% vs. 22.5%, P = 0.044) respectively. Adverse events in carvedilol group were hypotension (n = 2), requiring cessation of therapy, while and dyspnea (n = 3) resolved spontaneously. In the propranolol group there was 1 adverse event that required discontinuation of treatment (grade 2 atio-ventricular block).

Conclusion: Our study suggests that carvedilol is probably not superior to propranolol in preventing first variceal bleeding in cirrhotic patients with occlusive PVT, and they both can be used as primary prophylaxis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0691 A SUBCLINICAL HIGH TRICUSPID REGURGITATION PRESSURE GRADIENT IS A RISK FACTOR FOR SURVIVAL AFTER LIVING DONOR LIVER TRANSPLANTATION

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Introduction: Portopulmonary hypertension (POPH) is characterized by pulmonary hypertension (mPAP) measured after general anesthesia with FIO20.6 (mPAP-FIO20.6) was hypertensive patients and mild HPS patients may be more common. It might result in a strong congestive impact on the LDLT grafted liver.

Discussion of Interest: All authors have declared no conflicts of interest.

Reference

P0694 ASSESSMENT OF PROGNOSTIC PERFORMANCE OF ALBI, PROPRANOLOL AND MELD SCORES IN PATIENTS WITH LIVER CIRRHOSIS COMPPLICATED WITH ACUTE UPPER GASTROINTESTINAL BLEEDING

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Introduction: The ALBI score was recently developed to assess the severity of liver dysfunction, taking into account albumin and bilirubin levels. We aimed to assess its prognostic performance in patients with liver cirrhosis complicated with upper gastrointestinal bleeding (UGIB) while comparing it with Child-Pugh (CP) and MELD scores.

Aims & Methods: Retrospective uncenter study, including consecutive adult patients with cirrhosis admitted for UGIB between January 2011 and November 2015. Clinical, analytical and endoscopic variables were assessed and ALBI, CP and MELD scores at admission were calculated. Statistical analysis was performed using SPSS v21.0 and MedCalc v16.4.3, and a two-tailed p value < 0.05 was defined as indicating statistical significance.

Results: Included 111 patients with a mean age of 57.14 years, 76.6% were males. Liver cirrhosis was most frequently alcoholic (89.2%) and the most common etiology for UGIB was variceal hemorrhage, in 75.5% of patients. During the first 30 days of follow-up 12 patients (10.8%) died, and during the 1st year of follow-up another 10 patients died (1st year mortality of 19.8%). When comparing the three scores, regarding in-stay and 30 days mortality, only ALBI score showed statistical significant results, with an area under the curve (AUC) of 0.82 (p < 0.001) for both outcomes. Regarding 1st year mortality, AUC for ALBI, CP and MELD scores, were 0.71 (p < 0.02), 0.64 (p < 0.05) and 0.66 (p = 0.02), respectively, while for global mortality AUC were 0.75 (p < 0.01), 0.72 (p < 0.01) and 0.72 (p < 0.01), respectively. When comparing the AUC of the three scores, no significant differences were found regarding 1st year mortality and global mortality.

Conclusion: In our series, ALBI score accurately predicted both in-stay and 30 days mortality (0.82 (p < 0.001)), while CP and MELD scores weren’t able to predict these outcomes. All scores showed a fair prognostic prediction performance regarding 1st year and global mortality. These results suggest that ALBI score is particularly helpful in the assessment of short term outcomes, with a better performance than the most commonly used scores, and may assist the clinician in the stratification of care at admission and maybe even in the referral to liver transplant.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0693 CARVEDIOL VERSUS PROPRANOLOL EFFECT IN THE PRIMARY PROPHYLAXIS OF VARICEAL BLEEDING IN CIRRHOTIC PATIENTS WITH PORTAL VEIN THROMBOSIS

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Introduction: Portal vein thrombosis (PVT) is recognized as an independent factor of variceal bleeding. Beta blockers are the mainstay treatment to prevent variceal bleeding in cirrhotic patients. Carvedilol has been shown to be equal to propranolol in preventing first bleeding in cirrhotic patients, however, the efficacy of this policy in patients with PVT is unknown.

Disclosure of Interest: All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0605 PROTON PUMP INHIBITORS IN CIRRHOTIC PATIENTS: IT’S URGENT TO RETHINK THEIR USE!

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Introduction: Despite the progress in the treatment of cirrhosis, infections remain a common problem, being responsible for the great majority of morbidity and mortality in these patients.

Aims & Methods: The aim of this study was to identify predictive factors for infection in the first hospitalization for decompensated cirrhosis (DC).

Retrospective analysis of patients with the first hospitalization for DC between January of 2009 and March of 2016. Demographic, clinical and biochemical data was compared between patients with and without infection in the first hospitalization for DC.

Results: From the 179 patients with a first hospitalization for DC, 6% had ascites on admission, 45.8% had upper gastrointestinal bleeding, 38.5% had jaundice, and 28.5% had hepatic encephalopathy. Regarding medication, 29.6% of the patients were taking proton pump inhibitors (PPI), 22.3% had beta-blockers prescribed, and 1.7% were on prophylactic antibiotic. In those 53 patients with proven infection, spontaneous bacterial peritonitis was the most common infection (34%), followed by urinary tract infection (30.2%) and pneumonia (13.2%). Infected patients presented with jaundice (p = 0.03), severe ascites (p = 0.039), use of PPI (p = 0.003) and acute-on-chronic liver failure (p = 0.006) more frequently than those without infection. Additionally, infected patients presented with significantly increased values of C-reactive protein (p < 0.001), INR (p = 0.04), creatinine (p = 0.04), and MELD scores (p = 0.001). Mortality rates were higher in infected patients at 30-day (4.0% vs. 9.4%), 3 months (7.9% vs. 18.9%), 6 months (12.7% vs. 24.5%) and 1 year (22.2% vs. 26.5%). In the multivariate analysis, the use of PPI was independently associated with an increased risk of infections (OR = 2.3; 95% CI 1.052–5.173).

Conclusion: Almost a third of patients will develop infections right at the first hospital admission for decompensated cirrhosis, which are associated with higher short and long-term mortality rates. As PPI more than double the risk of infections, the indication for the use of these drugs should be strictly reviewed and their interruption considered in cirrhotic patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0607 CRITICAL FLICKER FREQUENCY TEST PREDICTS THE FIRST EPISODE OF OVERT HEPATIC ENCEPHALOPATHY IN PATIENTS WITH COMPENSATED LIVER CIRRHOSIS

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Introduction: Critical flicker frequency (CFF) values ≤39 Hz identify cirrhotic patients with minimal hepatic encephalopathy (mHE) and predict their risk of developing overt hepatic encephalopathy (oHE). However, these results have been obtained in cirrhotics with advanced liver disease suffering a previous episode of oHE. Cirrhotic patients should be routinely screened by CFF to identify patients at risk of oHE.

References:

All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0609 A RANDOMIZED DOUBLE BLIND CONTROLLED TRIAL TO INVESTIGATE THE EFFECT OF LACTOBACILUS RUMINANS GG IN PATIENTS WITH MINIMAL HEPATIC ENCEPHALOPATHY

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Introduction: Probiotics has been recently used to treat cirrhotic patients with any grade of acute or chronic hepatic encephalopathy (HE). Herein, we evaluated the efficacy of Lactobacillus Ruminans GG (LRGG) on the treatment of minimal HE (mHE) in compensated cirrhotics.

Aims & Methods: 134 patients were screened by critical flicker frequency (CFF) to diagnose mHE. Among them, 41 patients were CFF+ (≤39Hz) and were
randomized to placebo or LRGG treatment, for 2 months. In all intention to
treat analyses, the patient demographics, laboratory test, model for end-stage liver disease (MELD) score, and Child-Pugh class were evaluated.

Results: CFF value increased in both LRGG and placebo groups at the end of
study compared to baseline (p < 0.05). The same results was also reported in the male subpopulation as the same
allele was found to be significantly higher in both HCV spontaneous clearance (SVC) and control groups when compared to chronic HCV group [OR 0.42 (95% CI 0.21 to 0.82, Pc < 0.0372) and OR 0.40 (95% CI 0.23 to 0.71, Pc < 0.0054)] respectively. The same result was also reported in the male subpopulation as the same
allele was found to be significantly higher in both HCV spontaneous clearance (SVC) and control groups when compared to chronic HCV group [OR 0.42 (95% CI 0.21 to 0.82, Pc < 0.0372) and OR 0.40 (95% CI 0.23 to 0.71, Pc < 0.0054)] respectively.

Conclusion: The risk of development of chronic HCV infection was associated with T allele carriage of TLR3rs3775291 SNP. While the carriage of C allele of TLR7r3853839C allele was associated with spontaneous HCV clearance in both male and female subpopulations in Egyptian families.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0700 ASSOCIATIONS OF GENETIC POLYMORPHISM OF TOLL-LIKE RECEPTOR 3 (TLR-3) AND SEX-LINKED TOLL-LIKE RECEPTOR 7 (TLR-7) ALLELES WITH THE HEPATITIS C VIRUS INFECTION OUTCOME IN EGYPTIAN POPULATION: A MULTICENTRE FAMILY-BASED STUDY

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Multicentre Family-Based Study

Multicentre Family-Based Study

Disclosures of Interest:

P0701 ACTIVATED HEPATIC STELLATE CELLS CAN DIRECTLY INDUCE PATHOGENIC TH17 CELLS IN CHRONIC HEPATIS B VIRUS INFECTION

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Introduction: Th17 cells are involved in liver fibrosis by activating hepatic stellate cells (HSCs). We aimed to investigate whether HSCs could regulate the function of Th17 cells and the relevant mechanism. Aims & Methods: Sixty-five patients diagnosed with chronic hepatitis B (CHB) were enrolled in this study. To unravel the effect of HSCs on T cells, naïve CD4+ T cells and Th17 cells were sorted from CHB patients and cultured with activated-HSCs. The expression of cytokines and genes transcription were analyzed. In addition, the regulatory mechanism of HSCs was also investigated.

Results: ELISA and qRT-PCR showed that Th17 cells from CHB patients were more pathogenic via the expression of IL-17A, IL-23R, RORC, CCL20 and CCR6, and meanwhile, they could activate the primary HSCs. The co-culture experiment indicated that activated HSCs dramatically promoted the proliferation of CD4+ T cells in a time- and dose-dependent manner. In addition, they could also induce the naïve CD4+ T cells into Th17 cells which had a more pathogenic phenotype. Moreover, activated-HSCs-mediated induction of Th17 cells might depend on IL-1β and IL-6 release as well as COX-PGE2 pathway. Conclusion: Th17 cells cooperated with HSCs in a proinflammatory feedback loop provide us a more understanding of the pathogenic role of Th17 cells in the chronicity of HBV infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

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References

P0702 EFFICACY AND SAFETY OF DIRECT ACTING ANTIVIRAL DRUGS IN EARLY TREATMENT OF HCV GENOTYPE 4 POST-LIVING DONOR LIVER TRANSPANTATION

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Introduction: Living donor liver transplantation (LDLT) has become the only life-saving treatment option for patients with end stage liver disease secondary to HCV infection in Egypt, unfortunately recurrence of infection is nearly universal,
resulting in cirrhosis and graft failure within 5 years after transplant. Different studies are studying the efficacy and safety of direct acting antiviral (DAI) drugs in treatment of HCV infection post-liver transplantation. We aimed to evaluate the efficacy and safety of treatment with DAA drugs early post-transplant period in LDLT recipients with HCV genotype 4.

Aims & Methods: This study was descriptive retrospective analysis on twenty-six LDLT patients with HCV genotype 4 treated with DAA drugs (fifteen patients received Sofosbuvir 400 mg and weight based Ribavirin dose for 24 weeks, eight patients received Sofosbuvir 400 mg and Daclatasvir 60 mg for 24 weeks and three patients received Sofosbuvir 400 mg and Simprevir 150 mg for 12 weeks) in the early post-transplant period who were transplanted during the period from January 2014 till December 2015 at Egyptian tertiary center for organ transplantation.

Results: Twenty-six patients completed the treatment course, sustained virological response (SVR) at week 12 was achieved in 80.8% (21/26) of recipients, 100% (11/11) for Sofosbuvir- Daclatasvir and Sofosbuvir- Simeprevir group versus 66.7% (10/15) for Sofosbuvir-Ribavirin group (p < 0.05). No major side effects had been reported, anemia developed in patients received ribavirin respond to treatment with erythropoietin and reduction of the ribavirin dose.

Conclusion: Use of Daclatasvir/Sofosbuvir or Simeprevir/Sofosbuvir in early treatment of HCV genotype 4 post living donor liver transplant recipient achieved higher rates SVR than Sofosbuvir/Ribavirin.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0703 O ptimization of DAA Treatment Schedule: Focus on HCV Genotype 3

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11Clinics of Infectious Diseases 3 would constitute the best option.

Twenty-four Italian centers were involved in this real-life study where HCV genotype 3 patients treated with DAA. To expand the number of cases, we conducted a systematic review of literature on the outcome of genotype 3 patients treated with DAA.

Results: A total of 233 patients with HCV genotype 3 were enrolled. Cirrhotic patients accounted for 83.7%. Overall, the SVR12 rate was achieved by 205 (88.4%) patients with compensated advanced chronic liver disease (cACLD), the meta-analytic approach suggests to extend therapy at 24 weeks.

for these patients appears to be the combination sofosbuvir/daclatasvir, adminis-
t ended over the cut-off point which has a Sensitivity of 0.76 and Specificity of 0.81. NPV = 78.12, PPV = 78.57. 32 patients with highly suggestive cACLD (LS > 15 kPa) underwent upper endoscopy (UE): 10 (32%) had varices (5 small EV and 5 big EV).17 (53%) fulfilled the Baveno VI criteria (3 with small EV and 4 with medium EV). There were only 3 cases of EV misdiagnosed by Baveno VI.

Conclusion: We did not find any significant differences in platelet levels or in the regression of varices. All authors have declared no conflicts of interest.

Characteristics

Main Cohort

n = 84

Age mean (st) 60 (9.8)

Male-sex (%) 49 (58.3%)

Aetiology of liver disease (%) HCV 100%

Platelet count × 103/mm3 Baseline mean (st) 149.21 (59.62)

Platelet count × 103/mm3 SVR 54 mean (st) 168.15 (60.33)

Fibrosis Stage F0–1 in SVR 54 n (%) 8 (12.7%)

Fibrosis Stage F2 in SVR 54 n (%) 12 (19.5%)

Fibrosis Stage F3 in SVR 54 n (%) 15 (23.8%)

Fibrosis Stage F4 in SVR 54 n (%) 30 (47.62%)

Liver Stiffness (kPa) Baseline [n = 84]mean (st) 23.86 (12.63)

Liver Stiffness (kPa) SVR 24 [n = 59] mean (st) 15.6 (12.14)

Liver Stiffness (kPa) SVR 54 [n = 63] mean (st) 16.18 (10.99)

Patients who underwent Upper Endoscopy n (%) 32 (38.01%)

Patients with varices (VE) (any size) [n = 32] n (%) 10 (31.25%)

Patients fulfilling Baveno criteria [n = 32] n (%) 17 (53.15%)

Patients with high-risk VE [n = 32] n (%) 5 (15.6%)

Patients fulfilling Baveno criteria with high-risk VE [n = 32] n (%) 4 (12.5%)

Conclusion: There is a significant improvement in LS data after treatment with DAA both at SVR24 and SVR > 54. This improvement seems to be more likely due to the early response of patients with lower TE values in our study 17.9 kPa. We did not have enough available data in our study to support that this improvement in LS measured by TE has a relevant impact on the clinical management of the patient. The Baveno VI criteria are a useful tool in daily practice to avoid unnecessary UE. Further investigation with larger samples is needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

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sion: Report of the Baveno VI Consensus Workshop: Stratifying risk and

P0704 Improvement of Liver Stiffness Values Measured by Transient Elastography after Chronic Hepatitis C Treatment with Direct-Acting Antivirals and Evolutive Correlation of Thrombocytopenia and Presence of Esophageal Varices

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Introduction: One improvement in liver stiffness (LS) measured by transient elastography (TE) has been observed in patients with chronic hepatitis C treated with direct action antivirals (DAA).1,2 The Baveno VI guidelines1,2 propose that patients with compensated advanced chronic liver disease (cACLD), LS measurement < 20 kPa and a platelet count > 1500000 can avoid screening endoscopy as their combination is highly specific for excluding clinically significant oeso-
phageal varices (EV). These patients have been validated recently.1,3

Aims & Methods: The aim of this study was to quantify LS regression both quantitatively (measured in Kilopascals) and qualitatively (Stages of F0-F4 fibrosis) in a stationary phase after the sustained virological response (SVR) in patients with cACLD (14). The secondary objective was to assess whether this improvement in LF measurements has a clinical correlation with changes in platelet numbers and the presence of varices according to Baveno VI criteria.

Results: 84 patients (49 men and 35 women) with cACLD were included in the study. Median TE on baseline (BL) prior to DAA treatment was [mean(range), 23.86 (12.5–75) kPa] and decreased to [mean(range), 15.6 (4.8–75) kPa] at SVR 24 and [mean range], 16.19 (3.627) kPa] at SVR > 54. Both were statistically significant showing a decrease in LS about 30% between BL and SVR 24 and about 33% between BL and SVR > 54. We did not find statistically significant differences between SVR 24 and SVR > 54. Regarding the probability of qualitative improvement of the LS (improve from F4 to F3 or less) the AUC was 0.8 with 17.9 kPa as the cut-off point, which has a Sensitivity of 0.76 and Specificity of 0.81. NPV = 78.12, PPV = 78.57. 32 patients with highly suggestive cACLD (LS > 15 kPa) underwent upper endoscopy (UE): 10 (32%) had varices (5 small EV and 5 big EV). 17 (53%) fulfilled the Baveno VI criteria (3 with small EV and 4 with medium EV). There were only 3 cases of EV misdiagnosed by Baveno VI.

Conclusion: We did not find any significant differences in platelet levels or in the regression of varices. All authors have declared no conflicts of interest.
P0705 8 VERSUS 12 WEEKS OF LEDIPASVIR/SOFOSBUVIR REGIMEN IN PATIENTS WITH CHRONIC HEPATITIS C GENOTYPE 1 INFECTION


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Introduction: The therapeutic regimens for chronic hepatitis C are now tending to be shorter and ribavirin free, more cost-effective and with fewer adverse effects.

Aims & Methods: We aimed at comparing the 8 weeks versus the 12 weeks regimen of ledipasvir plus sofosbuvir in patients with hepatitis C virus (HCV) genotype 1 infection without cirrhosis, treatment naïve, HCV RNA >6000000 U/mL. We included 281 patients (pts) with genotype 1 and HCV RNA >6000000 U/mL treated with ledipasvir plus sofosbuvir in the recommend dose: 120 pts - 8 weeks (group 1) and 161 pts - 12 weeks (group 2). The fibrosis stage was evaluated by transient elastography (Fibroscan®, Echosens, Paris) considering F4 > 12.5 kPa. Patients with undetectable RNA after 12 weeks of treatment were considered cured - sustained virologic response (SVR).

Results: No significant demographic and clinical differences were found between the two groups with the exception of the fibrosis stage (table). Two hundred and forty-four patients concluded the treatment; the SVR was 99% in group 1 and 100% in group 2, without differences between the two groups (p = 0.275). Thirty three patients are still in follow up: group 1-15 pts and group 2-18pts. The reported adverse effects were mild in both groups (fatigue, insomnia, headache and pruritus) but more frequent in group 2 (p = 0.0064).

Conclusion: In patients with chronic HCV genotype 1 infection and RNA >6000000 U/mL, the 8 weeks regimen of ledipasvir plus sofosbuvir without ribavirin has similar high cure rates with less adverse effects.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0706 CLINICAL FEATURES OF PATIENTS DEVELOPING HCC AFTER ACHIEVING SVR WITH DAAS AGAINST CHRONIC HEPATITIS C


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Introduction: Although the conventional IFN-based therapy has made a significant achievement in treating patients with hepatitis C virus (HCV), including the preventive effect of hepatocarcinogenesis after achieving sustained virological response (SVR), patients intolerant of IFN, such as those with advanced age or liver cirrhosis (LC), could not navor its privilege. The appearance of direct-acting antivirals (DAAs) provided almost every patient with the chance to receive the treatment without any serious adverse effects (AEs). In addition, SVR could be highly expected in more than 95% of patients treated with DAAs. However, the preventive effect for the future hepatocarcinogenesis following eradication of HCV remains unknown. In our facility, the administration of DAAs to patients with chronic hepatitis C virus (HCC) within 2 years after achieving SVR.

Aims & Methods: We evaluated the clinical features of patients developing HCC after achieving SVR with DAAs against hepatitis C virus. One hundred and fifty-three patients achieving SVR defined as negative HCV-RNA 12 weeks after cessation of DAAs were enrolled in this study (Age 69.2±10.8 years, male/female 71/29, genotype2/1 122/31, chronic hepatitis/LC 124/29, PLT 15.3±5.0×10^9/L, ALT 14.9±6.8 IU/L, AST 10.0±2.4 IU/L, Alb 4.1±0.5 g/dL, WFA(-M2BP, FIB-4 index 5.7±0.1 g/dL, APRI 1.3±0.8, Wisteria floribunda agglutinin positive Mac-2-binding protein (WFA(+)-M2BP) 3.3±0.5 ng/mL, COI, AFP 12.1±2.4 ng/mL, PIVKAII 2.8±2.3 μg/mL). All patients were divided into 2 groups (A: 9 patients with HCC developing after SVR achievement, B: 144 without HCC after achieving SVR). Serum parameters (PLT, WFA(+)-M2BP, AFP index, APRI, ALT, Alb, AFP, PIVKAII) and age were evaluated between 2 groups.

Results: In group B, significant declining (pre-DAA treatment/the time of achieving SVR) was observed in ALT(44.8±3.6/3.5 IU/L, p<0.001), AFP(19.9±3.1/0.3 ng/mL, p<0.001), WFA(+)-M2BP(3.2±0.5/1.9 COI, p<0.001), COI index(3.7±0.2/5.0, p=0.004) and APRI(2.1±0.1/0.7, p=0.005). The significant increase in Alb(4.3±0.1/0.1 COI, p<0.001), APRI(1.2±0.1/0.4, p=0.001) and PLT(5.4±1.9/0.2×10^9/L, p<0.001) was significant in group A, significant declining was observed only in ALT (45.1±10.9/6.7, p=0.0001). This result indicates that DAA treatment significantly ameliorates parameters related with hepatic fibrosis as well as hepatic inflammation in genotype 1, however, it led to the significant amelioration only in some patients with hepatic inflammation in group A. Next, focusing on parameters after achieving SVR, WFA(+)-M2BP(3.4±0.6/0.7, p<0.001) and COI index(5.7±1.6/3.0, p<0.001) were significantly higher and Alb(3.8±0.2/4.3, p<0.001) was significantly lower in group A comparing with group B. When dividing group A into 2 groups (C: new occurrence/D: recurrence), AFP(3.0±1.3/6.2±1.8 ng/mL), WFA(+)-M2BP(2.0±0.8/3.7±0.7 COI), FIB-4 index(3.6±2.4/1.3, p<0.001) and APRI(0.6±0.4/1.1, p<0.001) were higher and Alb(4.3±0.1/0.3 ng/mL) and PLT(20.9±13.2/13.4, p<0.001) were lower in group D than group C, although no significant difference was seen between 2 groups. This result suggests that there might be more patients with progressive hepatic fibrosis in group D comparing with group C. Finally, while univariate analysis showed WFA(+)-M2BP, FIB-4 index and Alb were significantly associated with the development of HCC after achieving SVR with DAAs against HCV, multivariate analysis revealed only Alb was the significantly independent factor contributing to HCC development after achieving SVR.

Conclusion: Low level of serum albumin as well as the progression of hepatic fibrosis could be associated with the development of HCC after confirming SVR with DAAs to HCV. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0707 EARLY OCCURRENCE OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH HEPATITIS C VIREMA TREATED WITH DIRECT-ACTING ANTIVIRALS


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Introduction: Direct-acting antivirals (DAAs) are novel antiviral drugs for hepatitis C virus (HCV) and have enabled the achievement of a high rate of sustained

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Introduction: Direct-acting antivirals (DAAs) are novel antiviral drugs for hepatitis C virus (HCV) and have enabled the achievement of a high rate of sustained...
virological response (SVR) [1]. However, the impact of DAAs on the occurrence of hepatocellular carcinoma (HCC) and HCC recurrence after curative hepatic resection of HCC has been recently discussed [2, 3], but remain unclear.

Aims & Methods: The clinical data of 97 patients who underwent curative hepatic resection for primary HCC with HCV at our department between January 2012 and December 2017 were reviewed to clarify the impact of DAAs on HCC occurrence and recurrence. SVR was defined as no detection of HCV RNA in the serum at 24 weeks after the cessation of antiviral therapy.

Results: SVR was achieved in 21 patients treated with interferon (IFN)-based regimens and 35 patients treated with DAAs at hepatocytectomy. Between the two groups, there were no significant differences in the clinical characteristics, including the age, prevalence of diabetes mellitus, drinking history, preoperative liver function, operative procedures, tumor size and presence of liver cirrhosis, but the median duration from the date of SVR to the date of HCC incidence was significantly shorter in patients treated with DAAs (14 days, range: 123 to 235 days) than in those treated with IFN-based regimens (324 days, range: 35 to 4190 days). In particular, HCC was detected within 24 weeks after the cessation of antiviral therapy in 3 patients treated with DAAs. After hepatocytectomy, SVR was achieved in 21 (DAAs: 16 patients, IFN-based regimens: 5 patients) of the 67 patients without SVR when hepatocytectomy was performed, and the 1- and 3-year disease-free survival (DFS) rates were 93.3% and 83.0% in patients after SVR treated with DAAs (n = 251), 99.0% and 71.8% in patients with IFN-based regimens (n = 26) and 57.8% and 19.7% in patients without SVR (n = 46), respectively, regardless of the timing of hepatocytectomy, respectively. The DFS rate was significantly higher in patients with SVR than in those without SVR (p < 0.001), but was not markedly different according to the antiviral treatments (p = 0.504).

Conclusion: While DAAs were able to reduce the DFS rate, the early occurrence of HCC in patients after SVR treated with DAAs is more frequent than that among patients treated with IFN-based regimens. Therefore, careful follow-up with imaging series is needed even for patients with SVR treated with DAAs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P0708: EFFICACY AND SAFETY OF SOFOSBUVIR AND RIBAVIRIN IN HCV POSITIVE PATIENTS WITH RENAL IMPAIRMENT

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Introduction: Hepatitis C virus infection is a leading cause of chronic liver disease affecting more than 170 million people worldwide. HCV infection in the setting of renal impairment is not uncommon. Despite the major developments in the treatment of HCV, this sub-group of patient with impaired renal function is still a challenge.

Aims & Methods: The aim of this study is to determine the efficacy and safety of sofosbuvir and ribavirin in HCV positive patients with renal impairment. All consecutive patients of HCV related liver disease with creatinine clearance less than 50 ml/min were included in the study. Data was collected for tolerability, efficacy and on treatment adverse events. All the patients received Sofosbuvir and Ribavirin in divided doses.

Results: A total of 31 patients were included in the study. 31 patients were 17 (54.8%) male. Mean age was 52.3 ± 17.6 years while the mean BMI was 25.0 ± 4.3 kg/m². 10 (32.2%) patient were on regular hemodialysis. 26 (83.9%) patients had CTP-A while 5 (16.1%) had CTP-B disease. Majority of the patients were genotype 3 while 7 (22.6%) were genotype 1. 24 (77.4%) patients were treatment naive, while those who were treatment experienced. 3 patients received each Interferon and Peg Interferon therapy. Treatment was stopped in 2 (6.5%) patients because of disease decomposition while 3 (9.7%) were lost to follow up. ETR was achieved in 25 (96.1%) out of 26 patients who completed treatment. Similarly 12 (80 %) out of 15 patients have achieved SVR-12 so far. During the therapy 10 (32.3%) patients had adverse events, 6 (19.4%) suffered from depression while 4 (12.9 %) developed grade II anemia.

Conclusion: In resource constraint population where newer DAAs are not available an immediate combination of sofosbuvir and low-dose ribavirin in patients with renal impairment seems to be better tolerated and efficacious in terms of achieving the virological response.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0709: CHRONIC HEPATITIS C A MAJOR HEALTH – RELATED QUALITY OF LIFE BURDEN IN COMPASSIONATED CIRRHOTIC PATIENTS

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Introduction: Chronic hepatitis C infection is a systemic disease, one of the leading causes towards cirrhosis and hepatocellular cancer and it is to be considered nowadays a major health-related quality of life (HRQoL) burden.

Aims & Methods: The aim of this study was to assess HRQoL impairment of hepatitis C virus (HCV) infection among a broad sample of compensated HCV cirrhotic patients. We conducted a prospective study between January 1st 2016 to January 31, 2017, in a tertiary center, in which we included 110 patients with compensated HCV cirrhosis, aged between 50 and 75, with no history of neuropsychiatric illness but associated comorbidities (diabetes type 2, hypertension, dyslipidemia). The patients were completely evaluated according to the national protocol. Health status and fatigue of our patients were evaluated using the FACIT- F (version 4) and SF-36 survey. Respondents with HCV compensated cirrhosis were compared with a control group matched for age and sex with no prior history of HCV infection on the Mental (MCS) and Physical (PCS) Component Summary scores.

Results: Unadjusted comparisons between subjects infected with HCV (n = 110) and controls (n = 60) revealed that HCV patients had lower FACIT- F utility scores (43.2 ± 28.5 vs 49.5 ± 20.5, p < 0.05). Severe fatigue was present in 30% (33 patients) of the HCV group compared to 11.6% (5% patients) in controls. Subgroup analyses of respondents age 60 years and older revealed lower MCS score in HCV patients compared to controls (41.95 vs. 49.72, p < 0.05). Control group registered higher PCS score (53.30 vs 45.2, p < 0.05) compared to the study group.

Conclusion: Although the results were obtained on a small group we observed that in untreated patients with chronic HCV infection, HRQoL is significantly impaired due to fatigue severity and age. Our result underline the need for effective antiviral treatment to decrease the burden of fatigue in this segment of population.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0710: SOFOSBUVIR IN COMBINATION WITH RIBAVIRIN IN GENOTYPE 3 HEPATITIS C PATIENTS WITH CIRRHOSIS. AN EXPERIENCE FROM TERTIARY CARE HOSPITAL

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Introduction: Hepatitis C virus (HCV) is the most common cause of cirrhosis in this part of the world. Advent of Directly acting antivirals (DAAs) like Sofosbuvir (SOF) has dramatized the treatment and is the corner stone in treatment of (HCV). Most trials have been conducted in HCV genotype 1 and data for Interferon free regimens in genotype 3 (GT-3) is limited especially in cirrhosis.

Aims & Methods: We aimed to evaluate the safety and efficacy of SOF plus Ribavirin (RIB) in patients with compensated and decompensated cirrhosis. This is a prospective real-world cohort study of HCV with compensated or decompensated cirrhosis. Efficacy was assessed by Sustained Viral Response after 6 months of completion of treatment. Adverse events were recorded on designed proforma on serial follow-up visits.

Results: The cohort consisted of 9 1consecutive patients out of which 41 were compensated cirrhotics and 50 had decompensated cirrhosis. The mean age was 53.4 ± 11years. Males were 47 (51.6%) and females were 44 (48.4%). Mean CTP and MELD score were 7.71 and 9.21 respectively. In compensated cirrhosis, SVR was achieved in 25 (84.4%) treatment naive patients compared to treatment experienced patients where 5 (80%) achieved SVR. In decompensated cirrhosis SVR was achieved in 22 (77.3%) treatment naive patients, whereas 13 (76.9%) patients achieved SVR in treatment experienced group. In 72% patients with cirrhosis, there were no side effects whereas most common adverse event was fatigue and drop of Hemoglobin by 1.0 gm/dl. Furthermore, CTP and MELD scores decreased to 6.9 and 8.7 respectively after treatment.

Conclusion: Sofosbuvir in combination with Ribavirin in GT-3 HCV patients achieved good SVR in compensated cirrhosis than decompensated cirrhosis whereas fatigue and drop of Hb were the most common adverse effects.

Disclosure of Interest: All authors have declared no conflicts of interest.
4. Reig M, Prada2, C. Baicu3, C. C. Popsescu2, M. Mannu2, C. C. S. Pop2, T. Voitoa2, E. Ceausa2, M. Diculescu, A. Opresu1

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Introduction: New direct-acting antivirals (DAA) have changed the management of HCV infection by being effective in more than 90% of cases [1, 2]. Unfortunately, it has been reported an unexpected high rate of HCC early recur-rence following DAA treatment, but more data are needed [3-5].

Aims & Methods: From a national prospective cohort, enrolling 3717 Romanian patients with hepatitis C virus compensated liver cirrhosis who received reim-bursed DAA treatment (Obinutuzumab/Ombitasvir/Ritonavir, Ombitasvir/Paritaprevir/OMBITASVIR/RITONAVIR, OBV/PTV+r + DSV + RBV) for 12 weeks, from December 2015 to August 2016, we analyzed 21 patients with previous HCC. Most of them were treated through surgical resection (9/21), followed by radiofrequency ablation (RFA) 6/21, trans-arterial chemoembolisation (TACE) 5/21 and only one percutaneous ethanol injection (PEI). The patients received DAA treatment only if they had no cancer relapse 6 months after their last therapy session for HCC. All these patients were evaluated through CT scans 

Early recurrence rate of HCC in treated patients with compensated liver cirrhosis that received DAA with OBV/PTV/r + DSV + RBV was 12% (21/175). In our cohort, the early recurrence rate was significantly increased compared to the natural recurrence rate. This rate is higher in males (40%) than females (10%), higher in patients treated with TACE (40%) than in those with hepatic resection (33%), and the lowest risk of recurrence was reported in RFA (14%) and TACE (7%)

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0712 SHEAR WAVE ELASTOGRAPHY FOR THE DIAGNOSIS OF ESOPHAGOGRADIC VARIANCES

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Introduction: Shear wave elastography (SWE) has been used in clinical practice as a noninvasive method to diagnose liver fibrosis by measuring tissue stiffness. Shear wave elastography (SWE) has been used in clinical practice as a noninvasive method to diagnose liver fibrosis by measuring tissue stiffness. Shear wave elastography (SWE) has been used in clinical practice as a noninvasive method to diagnose liver fibrosis by measuring tissue stiffness. Shear wave elastography (SWE) has been used in clinical practice as a noninvasive method to diagnose liver fibrosis by measuring tissue stiffness. Shear wave elastography (SWE) has been used in clinical practice as a noninvasive method to diagnose liver fibrosis by measuring tissue stiffness.

Aims & Methods: The usefulness of SWE in the diagnosis of esophageogastroduodenal varices (EGV) associated with portal hypertension was evaluated. 550 patients who underwent measurements of liver stiffness (LS), spleen stiffness (SS) and EGV evaluation between January 2011 and July 2016 were included (no varices, n = 340; esophageal only, n = 107; stomach only, n = 14; esophageal and stomach, n = 89). Virtual Touch Quantification (VTQ) was used for measurements of LS and spleen stiffness. The spleen index (SI) was evaluated according to forms and red colour sign (RC sign) based on the General Rules for Study of Hypertension in Japan.

Results: LS, SS and SI showed significant increase in accordance with the severity of portal hypertension (p < 0.01). The area under the receiver operating characteristic curve (AUROC) of LS, SS and SI for detecting EGV's was 0.8526, 0.9048, 0.8199, with the cut off values 1.67 m/s, 2.81 m/s, 18.5cm², respectively, and SS showed use-fulness in detecting EGVs. When LS, SS and SI were compared for their ability to detect EGVs which were > -2 or with RC sign positive, LS, SS and SI were significantly higher for EGVs which require treatment (p < 0.001). The AUROC of LS, SS and SI for detecting EGVs which require treatment was 0.8131, 0.8693, 0.8270, respectively. All modality showed good detecting ability, and SS particularly showed better performance. When each modality was compared in detection of gastric varices, LS and SS were significantly higher with the presence of gastric varices, but SI did not show a significant difference. The AUROC of LS, SS and SI for detecting gastric varices were 0.7359, 0.8611, 0.8470, respectively, and SS showed a superior detecting ability while LS and SI showed decreased abilities.

Conclusion: LS, SS and SI were all useful in detecting EGVs and predicting the presence of EGVs which require treatments. SS particularly showed the highest level of performance.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0714 UTILITY OF A NEW FUNCTION IN 3D SIM-NAVIGATOR: ELECTRIC FIELD, WHICH INDICATES THE PREDICTED ABLATIVE AREA


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Introduction: New direct-acting antivirals (DAA) have changed the management of HCV infection by being effective in more than 90% of cases [1, 2]. Unfortunately, it has been reported an unexpected high rate of HCC early recur-rence following DAA treatment, but more data are needed [3-5].

Aims & Methods: From a national prospective cohort, enrolling 3717 Romanian patients with hepatitis C virus compensated liver cirrhosis who received reim-bursed DAA treatment (Obinutuzumab/Ombitasvir/Ritonavir, Ombitasvir/Paritaprevir/OMBITASVIR/RITONAVIR, OBV/PTV+r + DSV + RBV) for 12 weeks, from December 2015 to August 2016, we analyzed 21 patients with previous HCC. Most of them were treated through surgical resection (9/21), followed by radiofrequency ablation (RFA) 6/21, trans-arterial chemoembolisation (TACE) 5/21 and only one percutaneous ethanol injection (PEI). The patients received DAA treatment only if they had no cancer relapse 6 months after their last therapy session for HCC. All these patients were evaluated through CT scans 

Early recurrence rate of HCC in treated patients with compensated liver cirrhosis that received DAA with OBV/PTV/r + DSV + RBV was 12% (21/175). In our cohort, the early recurrence rate was significantly increased compared to the natural recurrence rate. This rate is higher in males (40%) than females (10%), higher in patients treated with TACE (40%) than in those with hepatic resection (33%), and the lowest risk of recurrence was reported in RFA (14%) and TACE (7%)

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P0715 ATTENUATION COEFFICIENT MEASUREMENT (ACM) AS NOVEL REAL TIME ULTRASOUND ALTERNATIVE TO CAP (FIBROSCAN)

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Introduction: The presence of fat droplets in the hepatocytes (micro- or macrovesicular hepatic steatosis) under condition of chronic diffuse liver disease (CCDL) increases the attenuation of ultrasound (US). A group of Ukrainian scientists proposed an original algorithm for real-time US attenuation measurement (attenuation coefficient measurement – ACM). We aim to compare ACM to FIBROSCAN.

Aims & Methods: From total of 3274 patients who underwent to comprehensive abdominal US in our clinic: 979 focal liver lesions (FLLs) were diagnosed with cirrhosis (LC), according to Hamaguchi criteria. All these patient we provide ACM (dB/cm) measurement on SonoPQ device (Ultrasound, Ukraine), with a 1–6 MHz convex transducer in the right and left lobes. For diagnostic accuracy assessment (used CEUS as standard of reference and with CAP measured by Fibroscan (Echosens, France) we included 142 patients for subanalysis. Evaluation of diagnostic accuracy of ACM performed using ROC-analysis.

Results: Depend on the stage of steatosis according to B-mode median, 25 and 75% percentiles were as follows: control group 1.57 (1.32–2.11; 0.42–2.76); 1.16 (1.05–1.86). A correlation coefficient was 0.34 (p = 0.001). On ACM with CAP measured by Fibroscan (Echosens, France) we included 142 patients for subanalysis. Evaluation of diagnostic accuracy of ACM performed using ROC-analysis.

Conclusion: The correlation coefficient was 0.34 (p = 0.001). On ACM with CAP measured by Fibroscan (Echosens, France) we included 142 patients for subanalysis. Evaluation of diagnostic accuracy of ACM performed using ROC-analysis.

References
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Introduction: CUXI (CUTL) is a transcription factor able to promote the expression of several genes implicated in cellular proliferation, differentiation and demise. In normal adult cells, it preferentially favors the expression of proapoptotic genes. Its aberrant expression in tumor turns its role as foe. It favors the proliferation of cancer cells, in stress and nutrient deprived conditions, thus supporting tumorgenesis.

Aims & Methods: Here, we show CUX1 activity during hypoxia in liver cancer cells. CUX1 was knocked down and its targets were analysed by RT–qPCR in Hep3B cells under hypoxic and/or normal culture condition. The hypoxia condition was established by 24h treatment with 150 μM CoCl2 or with 0.5% O2 atmosphere. Hypoxia markers and CUX1 were analysed by RT–qPCR. Transfection qth plasmid expressing a reporter sequence for HIF1alpha was performed in combination with CUX1 knockdown.

Results: Hypoxia determined the up-regulation of HIF1-alpha (Hypoxia inducible factor1-alpha) and a stable or up-regulated expression of its inhibitor FH1 (SLC2A1) up to 24h prolonged hypoxia. VEGFA was significantly
overexpressed. Knock-down of CUX1 determined a significant down-regulation of HIF-1alpha, FIH-1 and VEGFA. Interestingly, the expression of CDKN1A was only attenuated after CUX1 knock down and hypoxic stress. HIF1alpha transcriptional activity is dependent by CUX1 expression.

Conclusion: CUX1 exerts an oncogenic role in liver cancer by sustaining the survival mechanisms of hypoxia. CUX1 silencing results in suppression of the hypoxia inducible factor and its target VEGFA causing a block of cell cycle in liver cancer cells modulated by the stable expression of CDKN1A.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Kim JU, Shariff MI, Crossey MM, Gomez-Romero M, Holmes E, Cox IJ, et al. Aims & Methods: The chromatin remodeler complex SWI/SNF plays an important role in the regulation of cell cycle pathway significantly by the KEGG and GO Pathway enrichment analysis. Through the construction of protein-protein interaction network, we observed the module associated with cell cycle is in the middle of the whole network. All these results implied that cell cycle pathway may play a very important role in the regulation of SAMe effect on HepG2 cells. Then the RNA-Seq characterized genes involved in cell cycle (MCM3, MCM4, and E2F1) were confirmed by Western Blot and q-RT-PCR in HepG2 and AML12 cells. MTS analysis showed that SAMe could diminish cell proliferation. And flow cytometry-based assays indicated that treatment with SAMe altered cell cycle kinetic significantly.

Conclusion: Altogether, our data enforce the evidence of SAMe possessing of antiproliferative action in liver cells, capable of up-regulating MCM3, MCM4 and H3F4A, related to cell cycle inhibition, and provide an important theoretical basis for the clinical chemoprevention and treatment in HCC of SAMe.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Conclusion: Our results support the hypothesis that overexpression of BRG1 increases cell growth and cell invasion in HCC. Furthermore, the data highlight genes promoting proliferation and invasion that are being regulated by BRG1 during hepatocarcinogenesis. In particular, CyclinB, D, E and MMP7 appear to play a major role in this context and might be an important link between BRG1 expression and HCC development.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0720 PROGNOSTIC ROLE OF NEUTROPHIL-TO-LYMPHOCYTE RATIO IN HEPATOCELLULAR CARCINOMA (HCC)

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Introduction: Inflammation may play an important role in progression, and a high neutrophil-to-lymphocyte ratio (NLR) has been reported as a poor prognostic indicator in several malignancies.

Aims & Methods: This study was aimed to investigate the prognostic value of NLR in patients with HCC. We performed a retrospective study including patients with hepatocellular carcinoma admitted in the hepatogastroenterology department of Sousse between January 2010 and December 2015.

Results: A total of 76 patients were included in this study. Mean age was 59.8 (33–87 years). The sex ratio was 3.22 (M/F = 58/18). Hepatocellular carcinoma occurred on a liver of cirrhosis in the majority of cases (90.7%). The main causes of cirrhosis were hepatitis B virus infection (11 patients-16%), non alcoholic steatohepatitis (6 patients-8.6%) and alcohol consumption (5 patients-7.2%). Our results showed that high NLR was associated with poor overall survival (OS) in HCC regardless of therapeutic choice (P < 0.05). Otherwise, high NLR was significantly correlated with the presence of vascular invasion (P = 0.002), lymph node metastasis (P = 0.04), tumor multifocality (P = 0.01) and higher incidence of AFP > 200 ng/ml (P = 0.04).

Conclusion: Elevated NLR indicates a poor prognosis for patients with HCC. The NLR is a readily available and inexpensive biomarker, and its addition to established prognostic scores for clinical decision making warrants further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0721 REIC/DKK-3 PROTEIN CONCENTRATION INDUCE THE POSITIVE EFFECT TO THE MORTALITY OF HEPATOCELLULAR CARCINOMA

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Introduction: The Wnt/b-catenin plays essential roles in the growth of hepatocellular carcinoma (HCC). The Dickkopf (Dkk) protein family (Dkk1-4) is known as Wnt signal antagonists, and reduced expression in immortalized cells (REIC)/Dkk-3 over-methylated is associated with poor prognosis in HCC patients. But the roles of REIC/Dkk-3 in inhibiting Wnt signaling remains still unclear.

Aims & Methods: In our previous study, REIC/Dkk-3 protein induced significant production of interferon gamma from lymphocytes incubated with pancreatic cancer cells, indicating that REIC/Dkk-3 protein might activate cancer immunity in the tumor-bearing patients. We hypothesized that REIC/Dkk-3 expression was correlated with cancer immunity in HCC patients. Thus, we investigated the correlation between serum REIC/Dkk-3 protein level and the prognosis in HCC patient. We retrospectively studied 58 HCC patients who underwent primary liver resection for HCC admitted to out unit from 2008 to 2017. Patient serum was gathered before resection. Serum REIC/Dkk-3 protein level was measured by an enzyme-linked immunosorbent assay.

Results: 58 HCC patients were divided into two groups, 41 REIC/Dkk-3 high concentration group (protein level > 800) and 17 Dkk-3 low concentration group (protein level < 800), according to the presence of REIC/Dkk-3 proteins in the blood, as detected by ELISA spectrometry. There was no significant difference in age, sex, Child-Pugh score and HCC stage in the patient groups. REIC/Dkk-3 Protein tended to be declining in liver cancer patients with poor prognosis. (p = 0.186)

Conclusion: Our results demonstrated that the serum Dkk-3 protein levels might be a prognosis maker in HCC patients. Further study is necessary with more number of HCC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0722 SURGICAL OUTCOME OF PATIENTS WITH FIBROLAMELLAR HEPATOCELLULAR CARCINOMA. DOES IT DIFFERS FROM COMMON HEPATOCELLULAR CARCINOMA?

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Introduction: Fibrolamellar hepatocellular carcinoma (FL-HCC) has conventionally been considered to be a histologic variant of hepatocellular carcinoma (HCC), with distinct clinicopathologic features. It is a rare primary hepatic malignancy that was first described as a pathological variant of HCC by Edmondson in 1956 [1]. The etiology of FL-HCC remains unclear. It typically occurs in normal livers without underlying liver fibrosis or cirrhosis [2]. In contrast to HCC which usually found in the presence of cirrhosis or chronic hepatitis [3], FL-HCC has been reported to occur in association with focal nodular hyperplasia (FNH) a type of benign liver lesion. Many series have mentioned that FL- HCC is less aggressive than conventional HCC [4]. However, other studies have failed to confirm the observation of a better outcome in FL-HCC [5]. Other studies reported that the survival was similar between common HCC and FL-HCC, and that may be related to the higher resectability rate which improve the survival of patients with FL-HCC [6].

Aims & Methods: The aim of this study was to evaluate the clinicopathological features and the surgical outcomes of patients with FL-HCC who were referred to our tertiary referral center over a 15-year period. This is a retrospective study including 22 patients with a pathologic diagnosis of FL-HCC who underwent hepatectomy over a 15-year period. Tumor characteristics, survival and recurrence were evaluated.

Results: There were 11 male and 11 female with a median age of 29 years (range from 21 to 58 years). Two (9%) patients had hepatitis C viral infection and only 2 (9%) patients had alpha-fetoprotein level > 200 ng/mL. The median size of the tumors was 12 cm (range from 5–20 cm). Vascular invasion was detected in 5 (23%) patients. Four (18%) patients had lymph node metastases. The median follow up period was 42 mo and the 5-year survival was 65%. Five (23%) patients had a recurrent disease, 4 of them had a second surgery with 36 mo median time interval. Vascular invasion is the only significant negative prognostic factor.

<table>
<thead>
<tr>
<th>FL-HCC (n = 22)</th>
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<tbody>
<tr>
<td>Number</td>
</tr>
<tr>
<td>Single</td>
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<tr>
<td>Multiple</td>
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<tr>
<td>Size (cm)</td>
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<td>Location</td>
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<td>Hepatic resection</td>
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<td>Hepatectomy</td>
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<td>Extended hepatectomy</td>
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<td>Localized resection</td>
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<td>Stage</td>
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<tr>
<td>Nodal metastases</td>
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<tr>
<td>Vascular invasion</td>
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<tr>
<td>Positive safety margin</td>
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<td>Repeated hepatectomy</td>
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Factor | No. (%) | Overall survival (month) | p. value |
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<tr>
<td>Age (year)</td>
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<td>&lt;40</td>
<td>16(73%)</td>
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<tr>
<td>≥40</td>
<td>6(27%)</td>
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<tr>
<td>Gender</td>
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</tr>
<tr>
<td>Female</td>
<td>11 (50%)</td>
<td>84</td>
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<tr>
<td>Male</td>
<td>11(50%)</td>
<td>79</td>
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<tr>
<td>Tumor size (cm)</td>
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<tr>
<td>&lt;10</td>
<td>8(36%)</td>
<td>82</td>
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<td>≥10</td>
<td>14(64%)</td>
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<td>&lt;1</td>
<td>19(86%)</td>
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<td>≥1</td>
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<tr>
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(continued)
Conclusion: FL-HCC has a favorable prognosis than common HCC and should be suspected in young patients with non-cirrhotic liver. Aggressive surgical resection should be done for all patients. Repeated hepatectomy or excision of recurrent disease should be considered for these patients as it has a relatively indolent course.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0725 METABOLIC DISORDERS ACROSS HEPATOCELLULAR CARCINOMA IN ITALY

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Introduction: Metabolic disorders, such as obesity and diabetes, are well known risk factors for hepatocellular carcinoma (HCC). Conversely, their impact on the natural history of HCC patients is not established.

Aims & Methods: This study aimed at evaluating the impact of metabolic disorders on clinical features, treatment and survival of HCC patients regardless of its etiology. We analyzed the Italian Liver Cancer (ITA.L.I.CA) database regarding 839 HCC patients prospectively collected from 2009 to 2014. The following metabolic features were analyzed: BMI, diabetes, arterial hypertension, hypercholesterolemia and hypertriglyceridemia. According to these features, patients were divided into 3 groups: 0–1 metabolic features, 2 metabolic features, 3–5 metabolic features.

Results: As compared with patients with 0–1 metabolic features, patients with 3–5 features showed lower percentage of HCC diagnosis on surveillance (p 0.021), larger tumors (p 0.038), better liver function (higher percentage of patients with Child-Pugh A p [0.007] and MELD < 10 p [0.003]), higher percentage of metastases (p 0.024), and lower percentage of portal vein thrombosis (p 0.010). The BCLC stage and treatment options were similar among the 3 groups, with the exception of a less frequent access to locoregional therapies for BCLC stage B patients with 3–5 features (p 0.012). Overall survival and survival according to BCLC stage and/or treatment did not significantly differ among the 3 groups. Diabetic patients showed a lower survival (p 0.046). MELD score, HCC
LIVER VOLUME AS A PREDICTOR OF RISK FOR HEPATOCELLULAR CARCINOMA IN CHRONIC HEPATITIS C PATIENTS
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Introduction: Chronic hepatitis C virus (HCV) infection pose risk for develop- ment of hepatocellular carcinoma (HCC), even after viral eradication with effective antiviral therapy. Therefore, risk prediction is clinically important for effective surveillance of chronic hepatitis C (CHC) patients, but insufficient compared to chronic hepatitis B. The liver volume has been reported to correlate with the severity of liver cirrhosis, but it is not known whether decreased liver volume predicts the HCC risk in CHC.

Aims & Methods: The aim of this study was to assess the significance of liver volume in the prediction of HCC risk in CHC patients. A retrospective cohort of 101 CHC patients who received 4-phase dynamic CT imaging studies during surveillance was analyzed for liver volume and outcome of surveillance. Liver volumes were measured on portal venous phase of CT image and corrected for body weight and height: liver volume index (LVI) = ratio of the expected standard volume to the measured liver volume. Kaplan-Meier analysis with the log-rank test was used to compare HCC. Cox proportional hazard analysis was used to identify the independent predictors of HCC risk.

Results: The cumulative incidence of HCC was 2.1%, 16.2% and 46.1% at 1, 4 and 8 years, respectively. The risk of HCC was significantly higher in patients with a decreased liver volume index (LVI) < 0.85. Presence of liver cirrhosis was also associated with higher risk for HCC. (P < 0.001), whereas age, sex, alpha-fetoprotein and HCV RNA level were not significant predictors of HCC. Multivariate analysis show that LVI > 1 and presence of LC were independent predictors of HCC (HR: 63.53, CI: 1.24-1244.28, P < 0.001; HR: 3.10, CI: 1.26-7.51, P = 0.012, respectively).

Conclusion: Decreased liver volume is an independent predictor of HCC in chronic hepatitis C. Liver volume index is useful in predicting risk of HCC in CHC.

Disclosure of Interest: All authors have declared no conflicts of interest.

HAND AND FOOT SYNDROME AS A PREDICTOR OF OUTCOME IN PATIENTS WITH HEPATOCELLULAR CARCINOMA TREATED WITH SORAFENIB
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Introduction: Sorafenib is a multi-thyrosine kinase inhibitor classified as a neo- vascularization inhibitor. A previous study indicated that the administration of a thionine kinase inhibitor, cetuximab, significantly prolonged the survival of patients with dermal disorder1. However, few studies have reported the efficacy of sorafenib in patients with a dermal disorder. A previous study indicated that the administration of a vascularization inhibitor. A previous study indicated that the administration of a vascularization inhibitor.

Aims & Methods: In this study, we investigated the prognostic of sorafenib-treated patients with HFS. HFS grading was conducted according to the Common Terminology Criteria for Adverse Events (CTCAE) v.4.0. Patients with grade 1 or higher dermal disorder were regarded as having HFS, and grade 0 patients as not having HFS. For HFS evaluation, a double-check system was adopted: primary evaluation based on a specific evaluation sheet at the Pharmacists’ Outpatient Clinic and final evaluation by physicians at the outpatient clinic. We examined the influence of HFS on the effects of treatment after the introduction of sorafenib in 42 patients with a history of multidisciplinary treatment, such as transcatheter arterial chemoembolization (TACE), between May 2009 and March 2017.

Results: Grade 1 or higher HFS was observed in 22 patients (53%), and it was absent in 20 (47%). Overall, the median sorafenib administration period was 2.1 months. In the HFS-free and HFS groups, it was 0.9 and 2.7 months, respectively (p < 0.001). Survival analysis was performed using the Kaplan-Meier method. Overall, the median survival was 5.2 months. In the HFS-free and HFS groups, it was 3.0 and 7.8 months, respectively (p = 0.001). Multivariate analysis showed that grade of HFS observed during visits at HFS observed during visits, mainly from surgery (hazard ratio 0.41; 95% CI, 0.19 to 0.88; p = 0.023) and administration period (hazard ratio, 0.45; 95% CI, 0.20 to 0.98; p = 0.045) were significant predictive factors. The following were not significant predictive factors: age, BCLC staging, dosage, and tumor markers.

Conclusion: The prognosis of hepatocellular carcinoma patients receiving sorafe- nib treatment was closely related to the presence of HFS and administration period. HFS was a predictor of outcome in patients with hepatocellular carci- noma treated with sorafenib. This study indicated that a multi-thyrosine kinase inhibitor, sorafenib, prolonged survival in patients with HFS, as demonstrated for cetuximab. HFS reduces the quality of life (QOL), and is a sorafenib admin- istration-inhibiting factor. In our hospital, a system for patients to initially con- sult the Pharmacists’ Outpatient Clinic, followed by the feed-back of grade-based HFS control strategies to physicians at the outpatient clinic, was established. Skin cancers of patients treated with HFS may have prolonged the administration period, improving the prognosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Epidemiological Study of Histologically Proven Advanced Hepatocarcinoma: An AGED MULTICENTER RETROSPECTIVE STUDY IN FRANCE
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Introduction: Hepatocarcinoma is a rare primary hepatic tumor com- bining features of both, cholangiocarcinoma and hepatocellular carcinoma (chCC-ICC). Few data concerning the epidemiology of chCC-ICC have been reported, mainly from surgically treated cases in Asian and American populations.

Aims & Methods: The main objective of this retrospective multicenter study was to evaluate epidemiological features and overall survival of histologically proven advanced CHCC patients in a French population. Data from patients treated for histologically proven chCC-ICC in six French university hospitals between 2008 and February 2017, were retrospectively collected. The main clinical, biological, therapeutic features and OS were reported. Statistical analysis was performed using Graph Pad Prism 6.

Results: Thirty patients were included (76.6% of men, median age 64 years [extreme 37–88]. Cirrhosis was associated in 33.3% of cases (Child-Pugh score A: 70%). Positive serology for hepatitis B virus and C was found in respectively,
5 (16.6%) and 2 (6.6%) patients; and 1 co-infection was observed. Chronic alcoholism was present in 33.3%, diabetes and obesity (body mass index \( \geq 30 \text{kg/m}^2 \)) were both present in 26.6% of cases. Alpha-fetoprotein, Carbohydrate Antigen 19-9 and carcinoembryonic antigen serum levels were above normal in respectively 39% (median = 5.3 \mu\text{g/L} [2-21 479]), 50% (median = 21.8 \mu\text{IU/mL} [4.5-20 000]) and 14% (median = 2.4 \mu\text{g/L} [2-88]) of cases. Six patients (20%) were initially treated by surgical resection. At the diagnosis of advanced non resectable disease, 66.6% of patients presented a multifocal hepatic lesions, 50% presented distant metastases (bones metastases (21.3%), lung metastases (20%) and peritoneal metastases (13.3%). Twenty-seven patients (90%) received first line of systemic treatment. Twenty-four patients were treated by chemotherapy: Gemcitabine (Gem) alone (n = 1), Gem + oxaliplatin (n = 12), Gem + oxaliplatin + bevacizumab (n = 9), Gem + cisplatin (n = 2). Two patients were treated by chemoembolization and 1 patient received sorafenib. Twenty-one (70%) and 4 (13.3%) patients received a second and third line of treatment, respectively. Median overall survival was 14.5 months.

Conclusion: Advanced eHCC-ICC appear to be aggressive tumors with a poor prognosis. Cirrhosis was associated in one third of patients. Systemic treatments are not standardized and must be evaluated in a dedicated study. Disclosures of Interests: All authors have declared no conflicts of interest.

Aims & Methods: The aim of this study was to evaluate the clinical manifestations and the prognosis of Hepatocellular carcinoma (HCC) in patients with Hepatitis B and none had Hepatitis C. The majority (94.4%) had symptoms at the time of diagnosis, with fatigue (83.3%), night sweats (61.1%) and loss of weight (61.1%) being the most common. The imaging presentation was of a single mass in 47.2% of cases, multiple masses in 30.6% and infiltrative mass in 22.2%. The most common lymphoma subtypes were diffuse large B-cell lymphoma (52.8%), MALT lymphoma (11.1%) and Hodgkin’s lymphoma (11.1%). Survival at the end of 3 years was 63.8% and 27.8% at 5 years. Age > 60 years (p = 0.004) was the only factor that was significantly associated with higher mortality.

Conclusion: Hepatic lymphomas are rare entities that may occur in different ways, to diffuse large B-cell lymphoma being the most common subtype. They presented a 3-year survival of only 27.8% and the age over 60 years was the only factor significantly associated with mortality.

Disclosures of Interests: All authors have declared no conflicts of interest.

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Introduction: Primary tumors of the liver, beyond hepatocarcinoma, are distinct entities that characterize and are associated with poor prognosis. Hepatic involvement in the lymphomatous process is uncommon and primary hepatic lymphomas are rare. The etiology is not yet known but it is thought that hepatitis B and C may be risk factors. The therapeutic approach is not yet fully defined.

Aims & Methods: The aim of this study was to evaluate the clinical manifestations and the prognostic factors of advanced hepatocellular carcinoma (HCC) in patients with Hepatitis B and Hepatitis C. All authors have declared no conflicts of interest.

References
Introduction: Inhibition of microRNA-21 (miR-21) prevents necrosis in the mouse pancreas. In turn, we recently showed that necroptosis contribute to hepatic necro-inflammation in the common bile duct ligation (BDL) mouse model.

Aims & Methods: We aimed to evaluate the role of miR-21 in mediating deleterious processes associated with cholestasis. The functional crosstalk between miR-21 and necroptosis was investigated in vitro. miR-21 expression was evaluated in the liver of primary biliary cholangitis (PBC) patients. C57BL/6 wild-type (WT) or miR-21-deficient (miR-21−/−) mice were subjected to BDL or sham surgeries, with biochemical, molecular and histological analysis of hepatic damage, fibrosis, necroptosis and bile acid metabolism, after either acute (3 days) or chronic (14 days) injury.

Results: Studies in miR-21−/− primary mouse hepatocytes established a functional link between miR-21 and necroptosis through cyclin dependent kinase 2 (CDK2AP1). miR-21 expression increased in the liver of PBC patients. C57BL/6 wild-type (WT) or miR-21-deficient (miR-21−/−) mice were subjected to BDL or sham surgeries, with biochemical, molecular and histological analysis of hepatic damage, fibrosis, necroptosis and bile acid metabolism, after either acute (3 days) or chronic (14 days) injury.

Conclusion: miR-21 ablation ameliorates liver damage and necroptosis in BDL mice; as such, inhibition of miR-21 should arise as a promising approach to treat cholestatic liver diseases. Supported by FCT, Portugal through grants PTDC/IM-MEC/0895/2014 and U1/DTP/0413/2013, and fellowships SFRH/BD/9119/2012 (MBA), SFRH/BD/88212/2012 (FMR), and SFRH/BD/104160/2014 (ALS).

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P9073 MI-RNA-21 IS OVEREXPRESSED IN PRIMARY BILIARY CHOLEANGITIS AND MEDIATES LIVER INJURY AND NECROTOPSIS IN EXPERIMENTAL CHOLESTASIS

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Introduction: Inhibition of microRNA-21 (miR-21) prevents necrosis in the mouse pancreas. In turn, we recently showed that necroptosis contribute to hepatic necro-inflammation in the common bile duct ligation (BDL) mouse model.

Aims & Methods: We aimed to evaluate the role of miR-21 in mediating deleterious processes associated with cholestasis. The functional crosstalk between miR-21 and necroptosis was investigated in vitro. miR-21 expression was evaluated in the liver of primary biliary cholangitis (PBC) patients. C57BL/6 wild-type (WT) or miR-21-deficient (miR-21−/−) mice were subjected to BDL or sham surgeries, with biochemical, molecular and histological analysis of hepatic damage, fibrosis, necroptosis and bile acid metabolism, after either acute (3 days) or chronic (14 days) injury.

Results: Studies in miR-21−/− primary mouse hepatocytes established a functional link between miR-21 and necroptosis through cyclin dependent kinase 2 (CDK2AP1). miR-21 expression increased in the liver of PBC patients. C57BL/6 wild-type (WT) or miR-21-deficient (miR-21−/−) mice were subjected to BDL or sham surgeries, with biochemical, molecular and histological analysis of hepatic damage, fibrosis, necroptosis and bile acid metabolism, after either acute (3 days) or chronic (14 days) injury.

Conclusion: miR-21 ablation ameliorates liver damage and necroptosis in BDL mice; as such, inhibition of miR-21 should arise as a promising approach to treat cholestatic liver diseases. Supported by FCT, Portugal through grants PTDC/IM-MEC/0895/2014 and U1/DTP/0413/2013, and fellowships SFRH/BD/9119/2012 (MBA), SFRH/BD/88212/2012 (FMR), and SFRH/BD/104160/2014 (ALS).

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P9074 CHOLEDOCHOLITHIASIS ALWAYS NECESSARY IN EXTREMELY ELDERLY PATIENTS?


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Introduction: Endoscopic sphincterotomy, endoscopic papillary balloon dilation, and endoscopic retrograde cholangiopancreatography (ERCP) are widely recognized as safe and effective treatments of cholelithiasis. However, endoscopic stone removal does have some complications. Although the life expectancy of elderly patients has increased dramatically worldwide, little information is available on the necessity of complete endoscopic stone removal in extremely elderly patients.

Aims & Methods: The aim of this study was to evaluate the safety and efficacy of complete endoscopic stone removal in extremely elderly patients. We retrospectively evaluated all extremely elderly patients (older than 90 years) who had undergone complete stone removal for cholelithiasis at Ise Red Cross Hospital between January 2012 and December 2016. Included patients were divided into complete stone removal and incomplete stone removal (failure to achieve complete stone removal and insertion of a plastic stent) groups. We compared the complication rate, overall survival (OS), and disease-specific survival (DSS) rate between the two groups.

Results: In total, 67 patients were included this study; 36 (54%) had complete stone removal and 31 (46%) had incomplete stone removal. The median age of the patients was 92 years (range 90-100 years), median follow-up period was 462 days (range 6-1449 days) and the male-to-female ratio was 15:52. Baseline characteristics (age, body mass index, performance status, and comorbidities), rate of complications (pervaporation, bleeding, hypoxemia, or decreased blood pressure during the endoscopic procedure), and total number of endoscopic procedures did not significantly differ between the two groups. The median number of stones was one (range 0–5) and two (range 1–5) (P = 0.013), while the median diameter of the largest stones was 9 mm (range 0–27) and 14 mm (range 5–32) (P = 0.001) in the complete and incomplete stone removal groups, respectively. During the follow-up period, OS was 33.5% and 41.9% and DSS was 5.56% and 3.22% in the complete and incomplete stone removal groups, respectively. Kaplan-Meier analysis found no significant difference in OS and DSS between the two groups (P = 0.187 and P = 0.581, respectively).

Conclusion: Patients in the incomplete stone removal group tended to have more numerous and larger stones. This single-centre retrospective study revealed no significant difference in OS and DSS between the two groups. Complete stone removal might not be always necessary in extremely elderly patients aged 90 years and older.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P9075 THE RENDEZVOUS PROCEDURE FOR THE MANAGEMENT OF BILIARY TRAUMA AFTER CHolecystectomy: SHORT AND LONG-TERM OUTCOMES AND PREDICTORS FOR SUCCESS

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Introduction: Bile Duct Injury (BDI) following laparoscopic cholecystectomy is a persisting problem. The rendezvous procedure (RV) provides a combined endoscopic and percutaneous approach in order to re-establish bile duct continuity in complex BDI.

Aims & Methods: The aim of this study is to assess short-term and long-term outcomes of the RV. All consecutive patients with BDI referred to our tertiary center were analyzed retrospectively. RV procedure was performed when endoscopic stenting or PTCD failed and when deemed feasible by a dedicated multidisciplinary team including a hepatopancreato-biliary surgeon, gastroenterologist and interventional radiologist. Classification of BDI, technical success of RV, procedure-related complications and outcomes were assessed.

Results: Among a total of 812 patients, RV was performed in 47 (5.8%) patients, of which 31 (66%) were diagnosed with complete transaction of the bile duct (type D;Strasberg type E injury). Primary success rate of RV was 94% (44/47 patients). Reasons for failure (N = 3) were inability to pass a stricture and inability to make contact between the two wires. In 26/47 patients (55%) RV was the final successful treatment. In 17/47 patients (36%) RV acted as a bridge to
surgery; although the RV was initially successful, late complications (stenosis, stent dysfunction) required elective hepaticojejunostomy (HJ). Procedure-related adverse events occurred in 10 patients (18%) with cholangitis being the most frequent complication (N=4.7%). No life-threatening adverse events and no 30-day mortality occurred.

Conclusion: In experienced hands, RV is safe with a final non-surgical success rate of 55%. When endoscopic stenting fails in patients with complex BDI, RV can be considered as a viable treatment option before surgical repair.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0739 TRANRECTAL GALLBLADDER PRESERVING 
CHOLECYSTOLITHOTOMY AND POLYECTOMY BY PURE NOTES
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Introduction: Transcolonic and transrectal NOTES in human cases was greatly 
restricted by the fact of fecal contamination. We developed a detachable intra-
colonic balloon to help keep the colon sterile by blocking the colonic lumen. 
Although cholecystectomy is widely used for treating gallbladder polyps and 
gallstones, there is still a controversy about whether or not the gallbladder 
should be preserved. However, postcholecystectomy syndromes, such as bile 
duct injury and the correlation with colon cancer, remind us of the importance 
of gallbladder preservation.

Aims & Methods: Approved by the Independent Ethics Committee, we’ve com-
pleted 8 transrectal gallbladder preserving cholecystolithotomy (TRGCP) and 3 
transrectal gallbladder preserving polypectomy (TRGPP) and 2 combined cases 
by pure NOTES. Moreover, 1 case of TRGCP was done by hybrid NOTES. As 
the figures show, the balloon was placed in the transverse colon to block the 
colic lumen, and the distal colon cavity was disinfected with povidone-iodine 
solution. An incision was made on the anterior rectal wall 12–17cm from the 
anus. The endoscope was advanced into the peritoneal cavity with liver and 
gallbladder identified. The bile was aspirated before an incision on the gallblad-
ner wall was made. Stones and/or polyps were found inside of the gallbladder. 
Stone extractor and biopsy forceps were used to take out the stones. The 
polyps were coagulated and removed by electric biopsy forceps. The muscular layer 
and the adventitial layer were successively closed with endolips. Peritoneal cavity 
lavage was performed with sterile saline. The rectal incision was closed with 
endoclips and endoloops tightly. At the end of the procedure, the balloon was 
pulled out after being deflated.

Results: The mean operation time (from incision making till the last clipping) was 
180.5 min. (89–467 min.). 6 hours after anesthesia, the patients could drink water, 
and liquid diet was resumed 24 hours later. Postoperatively, 4 of the 14 patients 
felt mild abdominal distention which disappeared within 12 hours when they 
were able to get off the bed. For 1 patient with acute cholecystitis, a hybrid 
NOTES with laparoscopy was performed. Moreover, gallbladder drainage and 
peritoneal lavage were used, and the abdominal pain relieved soon. All 
the patients were discharged without any adverse events and all felt good during 
the follow-ups.

Conclusion: The usage of the detachable balloon can prevent the operative field 
from fecal contamination effectively. TRGCP and TRGPP by pure NOTES are 
suitable for both males and females. Transrectal route provides a novel alterna-
tive approach for the treatment of gallbladder polyps and gallstones. To our 
knowledge, this is the first human case series of transrectal gallbladder preserving 
cholecystolithotomy and polypectomy by pure NOTES. However, multcentered, 
prospective, controlled researches with more cases are needed in the future.

Disclosure of Interest: All authors have declared no conflicts of interest.
61.5 years old. There were 17 patients (38.6%) with intrahepatic cholangiocarcinoma, 9 patients (20.5%) with perihilar cholangiocarcinoma, 7 patients (15.9%) with extrahepatic cholangiocarcinoma and 11 patients (25.0%) with gallbladder cancer. All patients had stage IV disease and median number of prior anticancer treatments of patients was 2 (range 1–5). After an average of 1.5 months of treatment (range 0.5–10.0 months), three patients (6.8%) presented progressive disease as best overall response, 23 patients (52.3%) presented progression and 18 patients (40.9%) could not survive until response evaluation. Median progression free survival was 1.7 months (interquartile range (IQR) 0.8–2.3 months) and median overall survival from study enrollment was 2.5 months (IQR 1.4–4.9 months). During treatment, 25 patients (55.6%) could maintain tolerable general condition without increasing ECOG PS, and 35 patients (79.6%) could maintain or decrease the requirement for morphine as pain killer. During treatment, there were 12 cases (12/44, 27.3%) of severity grade 3 adverse events (AE) and no cases of grade 4 AE. Most common AE was ALT/AST elevation (11/44, 25%) followed by anemia (10/44, 22.7%). The major causes of the drop outs from study were due to disease progression or patient’s death (30 cases, 66.7%), and there were only five cases (11.5%) who dropped out due to adverse drug reactions or severe AE.

Table 1: Treatment outcomes

<table>
<thead>
<tr>
<th>Study period, mean, mo (range)</th>
<th>1.5 (0.5–10.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progression free survival, mo (IQR)</td>
<td>1.7 (0.8–2.3)</td>
</tr>
<tr>
<td>Survival from study-enroll, mo (IQR)</td>
<td>2.5 (1.4–4.9)</td>
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<tr>
<td>Best response, n (%)</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>3 (6.8%)</td>
</tr>
<tr>
<td>PD</td>
<td>23 (52.3%)</td>
</tr>
<tr>
<td>Not evaluated</td>
<td>18 (40.9%)</td>
</tr>
<tr>
<td>Morphin requirement, n (%)</td>
<td></td>
</tr>
<tr>
<td>increased</td>
<td>8 (18.6%)</td>
</tr>
<tr>
<td>decreased</td>
<td>4 (9.3%)</td>
</tr>
<tr>
<td>Adverse event, n (%)</td>
<td></td>
</tr>
<tr>
<td>Grade 1</td>
<td>16 (36.4%)</td>
</tr>
<tr>
<td>Grade 2</td>
<td>29 (65.9%)</td>
</tr>
<tr>
<td>Grade 3</td>
<td>12 (27.3%)</td>
</tr>
<tr>
<td>Grade 4</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Drop out cause, n (%)</td>
<td></td>
</tr>
<tr>
<td>- drug reaction</td>
<td>1 (2.3%)</td>
</tr>
<tr>
<td>- Adverse event</td>
<td>4 (9.1%)</td>
</tr>
<tr>
<td>- Patient’s death</td>
<td>7 (15.9%)</td>
</tr>
<tr>
<td>- Disease progression</td>
<td>22 (50.0%)</td>
</tr>
<tr>
<td>- Withdrawal consent</td>
<td>5 (11.4%)</td>
</tr>
<tr>
<td>- Loss of follow-up</td>
<td>2 (4.5%)</td>
</tr>
<tr>
<td>- Poor general condition</td>
<td>3 (6.8%)</td>
</tr>
</tbody>
</table>

Conclusion: KML001 was safe and well tolerated in respects of adverse events. KML001 was also shown promising result in disease control and pain control. KML001 can be another palliative treatment option for patients with advanced biliary tract cancers who non-respond to gemcitabine based chemotherapy.

Disclosure of Interest: All authors have declared no conflicts of interests.
differentiating between (pre)malignant and benign polyps (p = 0.174 and p = 0.589 respectively).

Conclusion: Diagnostic accuracy of TAUS for diagnosis gallbladder polyps is moderate and decreases further when differentiating between polyp types. TAUS would regularly provide false positive results, leading to unnecessary surgery. There was no evidence that diagnostic test accuracy of EUS was better than TAUS. Further studies of high methodological quality are needed to determine diagnostic accuracy of EUS and TAUS for differentiating between polyp types.

This abstract is based on a pre-peer review draft of a Cochrane Review.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

**P0743** DIAGNOSTIC VALUE OF CONTRAST-ENHANCED ULTRASONOGRAPHY IN HIGH MECHANICAL INDEX CONTRAST MODE FOR POLYPOID LESIONS OF THE GALLBLADDER

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Introduction: In its early stages, gallbladder cancer is an asymptomatic disease, and is associated with a poor prognosis if found in an inoperable condition. Several investigators have reported the utility of contrast-enhanced ultrasonography (CEUS) in low mechanical index (MI) contrast mode using a microbubble contrast agent for gallbladder lesions. However, CEUS images with low MI setting are influenced by the echogenicity of background B-mode and cannot depict precise vessel images, in contrast with high MI contrast mode.

Aims & Methods: The aim of this study was to assess the diagnostic value of CEUS in high MI contrast mode for characterizing polypoid lesions of the gallbladder (PLG). Thirty-six patients with PLG, including 17 with gallbladder cancer and 19 with benign polyps, who underwent CEUS were enrolled. The institutional review board approved this study and informed consent was obtained. Perfluorobutane-based contrast agent and high MI contrast mode was used for CEUS. Two blinded readers retrospectively evaluated images obtained in B-mode and CEUS. Kappa values, which reflect inter-observer agreement. Subsequently, patients were stratified according to lesion size at the largest diameter, and the diagnostic accuracy for gallbladder cancer in B-mode and CEUS were assessed.

Results: Two patients with malignant PLG could not be evaluated in B-mode due to sludge. Kappa values for CEUS were graded as good or excellent, and were better than B-mode. Age and size of malignant PLGs were significantly larger than benign lesions. In B-mode, 80% (12/15) of malignant PLGs exhibited heterogeneity (p < 0.01). On CEUS, malignant PLGs exhibited sessile-shape (76% [13/17]), dilated vessels (71% [12/17]), irregular vessels (82% [14/17]), and heterogeneous enhancement (59% [10/17]) (p < 0.01). Except for heterogeneous enhancement, all features remained significantly different after stratification according to size of PLG between 11 mm and 20 mm on CEUS. The sensitivity, specificity, and accuracy for diagnosis of gallbladder cancer was 80% (12/15), 79% (13/19), and 73% (25/34) in B-mode, 94% (16/17), 89% (17/19), and 92% (33/36) on CEUS, and 88% (7/8), 91% (10/11), and 89% (17/19) on CEUS after stratification according to size, respectively.

Conclusion: CEUS in high mechanical index contrast mode was a useful modality for differentiating gallbladder cancer and benign PLGs.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0744** ASSOCIATION OF CIRCULATING ADIPONECTIN LEVELS AND TUMOR STAGE IN BILIARY TRACT CANCER

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Introduction: Multiple recent studies have indicated that some of adipose tissue-derived hormones may significantly influence the growth and proliferation of GI tumors including liver cancer (1, 2). However, the role of adipokines such as adiponectin and leptin in biliary tract cancer have not been well studied before. The aim of the study was to analyze plasma concentrations of adiponectin and leptin in cholangiocarcinoma (CC) patients and to compare these concentrations to clinicopathological parameters.

Aims & Methods: Baseline levels of adiponectin and leptin were determined in 38 consecutive patients with newly diagnosed cholangiocarcinoma and 38 healthy control subjects. The association between adiponectin and leptin and tumor stage was evaluated using nonparametric Spearman’s correlation test. Control subjects were matched to case patients by age, sex and BMI. Survival analysis used the Kaplan-Meier curve and the Cox proportional hazards model.

Results: Overall median adiponectin concentrations were lower in CC patients versus control subjects (5.1 vs 9.3 mg/mL, P = 0.001). In CC patients with T stage 2–4 (n = 22) median adiponectin concentrations were significantly lower than in CC patients with T stage 1 (n = 16) (3.8 vs 6.6 mg/mL, P = 0.001). The mean leptin levels were not significantly decreased in CC patients (P = 0.45). Adiponectin concentrations were inversely correlated with tumor T stage (r = –0.811, P = 0.01) of CC patients. Higher adiponectin levels at baseline were associated with increased overall survival in T stage 2–4 patients (Cox F test = 2.139, P < 0.05).

Conclusion: This study identified an association between adiponectin levels and tumor stage suggesting a potential role for adiponectin in progression of cholangiocarcinoma. Furthermore these results suggest, for the first time, that serum adiponectin levels might represent a prognostic indicator in patients with CC. Our results support the hypothesis linking adipose-tissue derived hormones levels to growth of obesity-associated cancers (3). Adipokines appear to play an important role in risk prediction and management of cholangiocarcinoma patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

**P0742** Table 1: Results of meta-analysis and post-test probabilities

<table>
<thead>
<tr>
<th>Index Test</th>
<th>Target condition</th>
<th>Number of studies (patients)</th>
<th>Summary sensitivity (95% CI)</th>
<th>Summary specificity (95% CI)</th>
<th>Minimum, median and maximum prevalence of target condition = pre-test probability</th>
<th>Positive post-test probability (95% CI)</th>
<th>Negative post-test probability (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAUS</td>
<td>Gallbladder polyp</td>
<td>6 studies (16260 patients)</td>
<td>0.80 (0.55–0.98)</td>
<td>0.97 (0.95–0.98)</td>
<td>Minimum: 0.4% (n = 19), Median: 6.4% (n = 19), Maximum: 53.3% (n = 19)</td>
<td>0.00 (0.00–0.00)</td>
<td>0.01 (0.01–0.04)</td>
</tr>
<tr>
<td>TAUS</td>
<td>True gallbladder polyp</td>
<td>7 studies (1272 patients)</td>
<td>0.77 (0.48–0.92)</td>
<td>0.78 (0.59–0.90)</td>
<td>Minimum: 9.1%, Median: 20.2%, Maximum: 60.0%</td>
<td>0.26 (0.16–0.39)</td>
<td>0.03 (0.01–0.07)</td>
</tr>
<tr>
<td>EUS</td>
<td>True gallbladder polyp</td>
<td>4 studies (267 patients)</td>
<td>0.84 (0.54–0.96)</td>
<td>0.84 (0.70–0.92)</td>
<td>Minimum: 9.1%, Median: 20.2%, Maximum: 60.0%</td>
<td>0.35 (0.20–0.53)</td>
<td>0.02 (0.01–0.07)</td>
</tr>
<tr>
<td>EUS</td>
<td>Dysplastic polyp/carcinoma</td>
<td>4 studies (1637 patients)</td>
<td>0.60 (0.22–0.89)</td>
<td>0.89 (0.76–0.96)</td>
<td>Minimum: 4.1%, Median: 20.1%, Maximum: 55.6%</td>
<td>0.19 (0.07–0.46)</td>
<td>0.02 (0.01–0.05)</td>
</tr>
<tr>
<td>EUS</td>
<td>Dysplastic polyp/carcinoma</td>
<td>3 studies (350 patients)</td>
<td>0.85 (0.56–0.96)</td>
<td>0.91 (0.75–0.97)</td>
<td>Minimum: 4.1%, Maximum: 9.7%</td>
<td>0.02 (0.00–0.02)</td>
<td>0.04 (0.01–0.13)</td>
</tr>
</tbody>
</table>
P0745 PRETREATMENT BODY MASS INDEX AND WEIGHT CHANGE DURING PERIOPERATIVE CHEMOTHERAPY AFFECT SURVIVAL OUTCOME IN ADVANCED BILIARY TRACT CANCER PATIENTS

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Introduction: Recent studies have been conducted to investigate the association between obesity and survival in cancer patients. Cancer has a significant influence on the nutrient status of patients and obesity can affect the pharmacokinetics of anti-cancer drugs. The impact of obesity on survival is known to vary in different cancers. Biliary tract cancer was less frequently analyzed and most of the studies were on the relationship between obesity and cancer incidence.

Aims & Methods: We performed this study to investigate the association between BMI and survival in advanced biliary tract cancer patients with chemotherapy. Between January 2005 and December 2015, two hundred and eighty-four patients who underwent chemotherapy for biliary tract cancer were retrospectively reviewed. The relationship between BMI (kg/m²) and overall survival (OS) was assessed. Based on World Health Organization BMI category and 2014 Clinical Practice Guidelines for Overweight and Obesity in Korea, BMI was classified as follows; underweight, <18.5 kg/m²; normal, 18.5-22.9 kg/m²; overweight, 23.49-24.9 kg/m²; obese, ≥25 kg/m².

Results: Median OS was 12.1 months for underweight patients, 10.5 months for normal patients, 16.1 months for overweight group, 13.6 months for obese patients, respectively. (p = 0.047) Univariate analysis showed that BMI, local status of disease, operation, radiotherapy and ECOG performance were significantly associated with better survival. Compared with normal patients, overweight patients (BMI 23-24.9 kg/m²) had a reduced risk of mortality in multivariate analysis (HR 0.491, CI 0.334-0.721; 95% p = 0.036). In the additional analysis for the effect of change in body weight and BMI to the overall survival, larger amount of change in body weight was associated with further decrease in overall survival.

Conclusion: Slightly overweight status and the maintenance of body weight during the initial period of chemotherapy is independent predictor of better overall survival in advanced biliary tract cancer patients with good performance status.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0746 THROUGH THE CATHETER BIOPSY METHOD FOR BILIARY CARCINOMA

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Introduction: To perform curative operation of biliary carcinoma, the pre-operative identification of exact proximal and distal margins is important. A biopsy forceps is conventionally inserted to common bile duct via duodenal ampulla by an antecedent guide wire. Cannulation of the bile duct with the biopsy forceps may sometimes be difficult in cases where no sphincterotomy is performed, placing the patient at risk of post-ERC pancreaticitis after multiple attempts to advance the forceps into the duct. Pancreato-biliary endoscopists have reported the biopsy methods.

Aims & Methods: The aim of this study was to assess the feasibility and safety of this new method. To assess the feasibility and safety of this new method, we conducted a retrospective review of biliary duct biopsies with this new method conducted in Sendai Kousei hospital from February 2015 to October 2016. All patients who had biliary stenosis were included. Patients' demographic data, technical success, adverse events and the diagnostic accuracy were evaluated.

Results: A total of 95 biopsy procedures were performed in 40 patients. The technical success rate was 95% (90/95). Post-ERC pancreaticitis occurred in 1 of 40 patients (2.5%, 1 grade 1 patient). There were no other adverse events like perforation or bleeding. The diagnostic yield of biopsy procedures was 100% (7 of 7 patients).

Conclusion: The new biopsy methods to biliary stricture were feasible and safe. It opens up exciting possibilities for endoscopic preoperative diagnosis of the biliary carcinoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0747 THE DEVELOPMENT OF A RISK SCORE TO PREDICT ADVERSE OUTCOMES OF EXPLORATORY SURGERY IN PATIENTS WITH PERIHILAR CHOLANGIOCARCINOMA

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Introduction: Patients with perihilar cholangiocarcinoma (PHC) have few treatment options and a poor prognosis. Most staging models for patients with PHC have been developed for the minority of patients with potentially resectable disease and are not applicable to the vast majority of patients.

Aims & Methods: The aim of this study was to develop a prognostic score for all PHC patients using variables available at presentation. All consecutive patients with PHC (regardless of tumor stage and treatment) in two tertiary referral centers between 2002 and 2014 were identified. Baseline patient and tumor characteristics were collected and a retrospective outcome analysis was performed. In total, 331 patients underwent exploratory laparotomy with a median OS (95% confidence interval) of 20.7 (17.8-23.6) months. Adverse outcomes were found in 229 patients (69.2%): 145 patients (43.8%) had preoperative adverse outcomes of the exploratory surgery, 53 (16%) patients had postoperative adverse outcomes and 31 (9.4%) patients experienced both peri- and postoperative adverse outcomes. Median OS for patients with an adverse outcome was 13.1 months (11.3-15.0) compared to 50.9 months (39.6-62.2) in patients without adverse outcomes (p = 0.0049). CA 19.9 serum level (HR 1.22 (95% CI 1.07-1.38), tumor size (HR 1.33 (95% CI 1.14-1.56), WHO performance status 3–4 (HR 1.48 (95% CI 1.10–1.95), hepatitis involvement (hazard ratio (HR) 2.38, 95% CI 1.16–4.99, p = 0.0422), CA 19-9 above 1000 U/mL (HR 3.26, 95% CI 1.14–11.8, p = 0.0195), and tumor involvement of the hepatic artery on imaging (HR 2.07, 95% CI 1.01–4.33, p = 0.0492) were independent prognostic factors for an adverse outcome at exploratory laparotomy. A risk score based on these factors is defined in this study as the following. A risk score based on these factors identified patients with a substantial (49%), high (66%), and very high (87%) risk of adverse outcome.

Table 1: Calculation of prognostic score

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA 19.9 (U/mL) ≥1000 U/mL</td>
<td>1</td>
</tr>
<tr>
<td>Cholangitis before or at presentation in referral center*</td>
<td>1</td>
</tr>
<tr>
<td>Hepatic artery involvement *</td>
<td>1</td>
</tr>
<tr>
<td>Risk group Substantial Total score</td>
<td>Number of patients 41 74 69</td>
</tr>
<tr>
<td>High Very high</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion: PHC patients undergoing exploratory laparotomy have a high risk of an adverse outcome. A preoperative risk score for adverse outcome may help clinicians to inform patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0748 A NEW PROGNOSTIC MODEL FOR PATIENTS WITH PERIHILAR CHOLANGIOCARCINOMA

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Introduction: Patients with perihilar cholangiocarcinoma (PHC) have few treatment options and a poor prognosis. Most staging models for patients with PHC have been developed for the minority of patients with potentially resectable disease and are not applicable to the vast majority of patients.

Aims & Methods: The aim of this study was to develop a prognostic score for all PHC patients using variables available at presentation. All consecutive patients with PHC (regardless of tumor stage and treatment) in two tertiary referral centers between 2002 and 2014 were identified and included. Baseline patient and tumor characteristics were collected from medical records. Cox proportional hazards regression was used for multivariable analysis. Age, BMI, bilirubin, CA 19-9, and tumor size were modeled as continuous covariates.

Results: A total of 674 patients were included of whom 342 (50.8%) had unresectable disease at presentation and 176 (26.2%) underwent exploratory laparotomy. Multivariable analysis identified age (HR 1.41 (95% CI 1.23–1.63)), BMI (HR 1.11 (95% CI 1.05–1.17)), serum bilirubin level (HR 1.45 (95% CI 1.21–1.71)), CA 19-9 serum level (HR 1.22 (95% CI 1.07–1.38), tumor size (HR 1.33 (95% CI 1.14–1.56), WHO performance status 3–4 (HR 1.48 (95% CI 1.10–1.95), suspected distant metastases on imaging (HR 1.69 (95% CI 1.29–2.08), unilateral HA involvement (HR 1.28 (95% CI 1.01–1.57), and main/bilateral HA involve- ment: (HR 1.61 (95% CI 1.21–2.14) as independent prognostic parameters. Based on these factors, a prognostic score was created to predict survival for patients with PHC from the time of presentation. Discrimination using Kaplan-
Meier curves, and calibration curves revealed good predictive abilities. The risk score identified patients with a 1-year survival probability ranging from 15% to 73%.

**Conclusion:** We developed a prognostic score to predict overall survival for PHC patients using eight independent poor prognostic factors available at presentation. This score may help to inform patients and guide individualized treatment decision making.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0749 THE OUTCOMES OF ERCP FOR THE PALLIATION OF MALIGNANT JAUNDICE IN ENGLAND BETWEEN 2001 AND 2015**

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**Introduction:** Malignant biliary obstruction has a poor prognosis unless secondary to a resectable primary cancer. Recent data on PTC for the relief of malignant obstruction in a palliative setting demonstrated a high early mortality. We have therefore examined outcomes of ERCP in inoperable malignant obstruction.

**Aims & Methods:** The Hospital Episode Statistics (HES) database contains diagnostic and procedural data for all hospital attendances in England. HES is linked to the Office for National Statistics (ONS) to provide mortality data. All subjects from April 2001 to April 2015 in England with an ICD10 code for cancer 2 years prior to ERCP or in the following 6 months were examined. Subjects undergoing a curative surgical procedure were excluded. Associations between demographics, co-morbidities, unit ERCP volume and mortality were examined by logistic regression.

**Results:** 49055 subjects were included in the study of whom 48.7% were male, median age 74.5 years (range 19–104). Pancreatic cancer was the most common aetiology (63.5%). Followed by liver and intrahepatic bile duct malignancy (19.4%). Mortality was 4.16%, 10.9% and 19.4% for 7 day, in hospital and 30 day respectively. In multivariate analysis male gender (OR 1.14, (95% CI 1.08–1.20) p=0.001), increasing by age quintile 64–71 (1.34, (1.23–1.47) p<0.001), 72–78 (1.44–1.72) p<0.001, 78–83 (1.68–2.00) p<0.001), p=0.001, 530 (2.78, (2.55–3.03), p<0.001); most deprived quintile (1.22, (1.12–1.33), p=0.001); increasing co-morbidity score 1 to 5 (1.09, (1.02–1.16), p=0.012), 6 to 10 (1.12, (1.12–1.35), p<0.001) 11 to 15 (1.49, (1.33–1.66), p<0.001), 16 to 20 (1.71, (1.55–1.88), p<0.001); 21 to 25 (2.08, (1.69–2.55), p<0.001); advancing year of ERCP 2013/14 (0.78, (0.69–0.98), p=0.001), 2014/15 (0.85, (0.74–0.98) p=0.028); and previous renal failure (1.92, (1.77–2.09), p<0.001) were associated with increasing 30 day mortality. Asian ethnicity (0.82, (0.67–0.99), p=0.036). Cancer of extraplacental and unspecified parts of biliary tree (0.60, (0.55–0.65), p<0.001) and upper tertile of unit ERCP activity (>230) per annum (0.86, (0.80–0.93), p<0.001) were negatively associated with 30 day mortality.

**Conclusion:** Short-term mortality in subjects with malignant biliary obstruction following ERCP was high. A better prognosis was observed in; high-volume ERCP units, Asian ethnicity and extrahepatic primary cancers. Male gender, advancing age, increasing co-morbidity score, greater deprivation and previous renal failure predicted death at 30 days. 

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0750 EARLY DEVELOPMENT OF NONALCOHOLIC FATTY LIVER DISEASE IN GENETICALLY PREDISPOSED CHILDREN: WHETHER LIVER PATHOLOGY AND CARDIOMETABOLIC DISTURBANCES COINCIDE IN CARRIERS AND NON-CARRIERS OF THE RISK ALLELES.**

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**Introduction:** Non-alcoholic fatty liver disease (NAFLD) is a common chronic liver disease and in particular a health threat in obese children. Single nucleotide polymorphisms in genes encoding PNPLA3 (rs738409) and TM6SF2 (rs58542926) contribute to the development of NAFLD. It is however unknown whether liver parameters and cardiometabolic disturbances coincide in carriers and non-carriers of these risk alleles in an at-risk obese pediatric population. Therefore, we assessed cardiometabolic derangements, genetic predisposition for NAFLD and liver transaminase levels in children with overweight and obesity.

**Aims & Methods:** One hundred and seventy-four children (49% boys) from the Centre for Overweight Adolescent and Children’s Healthcare (COACH) at the Maastricht University Medical Centre were genotyped for PNPLA3 C148M and TM6SF2 E167K. Anthropometric, cardiometabolic risk and liver-related parameters were determined.

**Results:** Anthropometric parameters did not differ significantly between carriers and non-carriers of the risk alleles. ALT and AST were significantly higher in PNPLA3 G allele carriers as compared to the C allele carriers (ALT; CC 21, (19.93–22.84); GG 26, 50 (19.34, 50); GG 27, 50 (21, 00, 40, 00); GG 30, 60 (26, 03, 60, 00) (p=0.004)). The odds ratio for having ALT levels above the cut-off values increased for every PNPLA3 G allele, with an OR of 2.51 (1.22;5.18; p=0.004) for the PNPLA3 CG genotype and 5.54 (1, 53;20, 02; p=0.009) for the GG genotype, compared to the CC genotype. Carriers of the PNPLA3 risk allele did not show a deteriorated metabolic profile compared to non-carriers. The TM6SF2 T allele carriers also showed a tendency increased transaminase levels, but a significantly healthier cardiometabolic profile compared to non-carriers. The metabolic syndrome was more prevalent in risk allele carriers. These results suggest that hepatic aberrations and metabolic disturbances apparently do not develop concordantly in this specific population. Furthermore, these children with a high liver risk may not be identified by measuring cardiometabolic parameters.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0751 TWO-DIMENSIONAL SHEAR WAVE ELASTOGRAPHY IN CHILDREN: WHAT IS THE REPRODUCIBILITY?**

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**Introduction:** Pediatric chronic liver diseases are becoming a public health issue. Ultrasound based elastographic techniques have emerged as non-invasive methods of pediatric liver fibrosis assessment. The most recent are two dimensional elastographic (2D) techniques. While they are non-invasive and highly reproducible in children, there is still no consensus regarding the number of measurements to be performed for a high-quality evaluation.

**Aims & Methods:** We aimed to investigate the number of liver stiffness measurements (LSM) needed for a high-quality evaluation using this 2D SHE technique. We conducted a prospective study which included 73 children (age range: 3–17 years, mean age 11.73±3.55 years, 37% girls, mean body mass index (BMI) 23.12±7.38 kg/m2). We used the 2D-SWE.GE (Logiq E9, GE Healthcare, Chalfont St Giles - UK), with a C1-6-D probe. One examiner performed 10 LSM for each child. We randomly extracted 1 LSM, 2 LSM, 3 LSM and 5 LSM from all 10 and calculated their respective medians. We employed the Friedman test to compare the medians of 1, 2, 3, 5 and 10 LSMs. We used the interclass correlation coefficients (ICC) to assess the agreement between the medians of 1, 2, 3, 5 and 10 LSMs.

**Results:** Medians calculated from 1, 2, 3, 5 and 10 LSMs were similar (4.22±0.91 kPa vs 4.22±0.91 kPa, 4.23±1.03 vs 4.22±0.99 kPa vs 4.19±0.99 kPa, p=0.94). Furthermore, the agreement between medians calculated from 1, 2, 3, 5 and 10 LSMs was excellent (ICC =0.960, 95% confidence interval: 0.944-0.974).

**Conclusion:** We suggest obtaining 5 LSM for a high-quality evaluation using this 2D SHE technique.

**Disclosure of Interest:** S.A. Popescu: I hereby confirm that I have received financial support (Congress travel grants, speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Zentiva.

All other authors have declared no conflicts of interest.

I. Sporea: I hereby confirm that I have received financial support (Congress travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb.

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**P0752 PERCUTANEOUS EMBOLIZATION OF VISCERAL ARTERY PSEUDO-AnEURYSMS - A TERTIARY CENTER EXPERIENCE**

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**Introduction:** Visceral artery pseudo-aneurysms are rare, but potentially fatal if rupture. Pseudoaneurysm usually occurs most frequently after pancreatitis. Angiembolization with conventional trans-catheter approach is the standard treatment. Direct percutaneous embolization has been commonly used for treatment of peripheral artery pseudoaneurysm when trans-catheter approach is not feasible. However, very limited data is available regarding its safety and efficacy in visceral artery pseudoaneurysm.
Results: 23 patients (18 male) with mean age of 34.47 ± 21.28 (7–72) years, underwent direct percutaneous embolization for visceral pseudoaneurysm. Most common aetiology for pseudoaneurysm was pancreatitis (16) followed by erosions obstructing view of feeding artery in 5 patients, and recurrence after previous embolization in 6 patients. Agents used for embolization—glue with lipiodol (21), coil (1) and coil with glue (1). Mean procedural time was 11.3 ± 2.11 (8–16) minutes and fluoroscopy exposure time was 2.4 ± 1.34 (1–6) minutes. Percutaneous embolization was successfully performed in all patients (technical success 100%). Mild adverse events included— local site pain in 19 (80%) patients. Moderate adverse event included— splenic infarct in 5 patients, all of which responded to conservative management. There were no major adverse events and no occurrence of distant embolization. At median follow up of 90 days (30–3186) there was no recurrence of pseudoaneurysm (clinical success 100%).

Conclusion: Percutaneous embolization is safe and effective for treatment of visceral artery pseudoaneurysm. Percutaneous technique may be considered as an alternative to trans-catheter embolization in cases of challenging anatomy, multiple collaterals and recurrence after previous embolization precluding trans-catheter embolization.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0753 DEVELOPMENT OF AUTOIMMUNE PANCREATITIS IS INDEPENDENT OF P21 MEDIATED PANCREATIC INFLAMMATION

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Introduction: Chronic (CP) and autoimmune pancreatitis (AIP) are characterized by intraductal inflammation and proliferation of ducts. Whether CP is proinflammatory to autoimmunity is still unclear. AIP is considered mostly a T-cell mediated disease; however, in induction of chronic pancreatitis macrophages play a pivotal role. Cyclic dependent kinase (cdk) inhibitors are critical regulators in inflammatory disease as they influence differentiation, activation and proliferation of immune cells, and apoptosis. In particular, p21 has been described as a mediator of inflammation and various autoimmune diseases by regulating T-cell activation and promoting macrophage development. We therefore examined the role of p21-mediated inflammation in AIP.

Aims & Methods: Human pancreas samples from CP and AIP patients were evaluated for p21 expression. To investigate the effects of p21 in pancreatitis, we intercrossed lymphotxin overexpressing mice (Tg(Ela1-LTa, b)) – a model to study CP and AIP – with p21 deficient (p21−/−) mice. Infiltrating cells were visualized by immunohistochemistry, supported by gene expression analysis in an early and a progressive phase. Circulating autoreactive and the presence of tertiary lymphoid organs (TLOs) were analysed to assess autoimmunity.

Results: p21 was upregulated in human CP patients but remained unchanged in AIP patients, p21 deficiency in LT mice (Tg(LTa, b)) prevented early pancreatic injury. LTp21−/− mice had normal serum amylase, reduced inflammatory gene expression and cell influx. In acinar cells diminished proliferation and aborted activation of non-canonical NF-kB pathway was observed. In contrast, 12 months old LT mice with and without p21 had similar inflammatory gene expression and T & B cell infiltration. Interestingly, LT and LTp21−/− mice had comparable tertiary lymphoid organs (TLOs), autoreactive antibodies and elevated IgG levels. However, acinar cell proliferation, acinar-to-ductal metaplasia and acinar non-canonical NF-kB pathway activation remained impaired in LTp21−/− pancreata.

Conclusion: Our findings indicate that p21 is crucial for pancreatitis in LT-driven pancreatic injury. p21 is involved in early acinar secretion of inflammatory mediators that attract innate immune cells. However, p21 is not essential for humoral immune response, accountable for autoimmunity and lack of p21 does not rescue AIP. Consequently, p21 interplays in the pathogenesis of pancreatitis and renders acinar cells less susceptible to proliferation and transdifferentiation. We therefore suggest that chronic and autoimmune pancreatitis follow different inflammatory processes.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0754 GRANULOCYTES DRIVE PANCREATITIS IN A NOVEL MODEL OF INTERLEUKIN-17A-INDUCED PANCREATITIS VIA PEPTIDYL ARGININE DEIMINASE-DEPENDENT EXTRACELLULAR TRAP FORMATION

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Introduction: Various forms of pancreatitis (e.g. severe acute pancreatitis, auto-immune pancreatitis type 2) are characterized by an infiltration of neutrophil granulocytes. Yet, despite sharing the feature of granulocytic infiltration, these diseases take opposing natural courses of disease. A novel function of granulocytes, the formation of aggregated neutrophil extracellular traps (agNETs), has been described and called for a reevaluation of the specific role of neutrophils in pancreatitis. We were interested in the specific function of granulocytes in various models of pancreatic inflammation.

Aims & Methods: Experimental models of pancreatic inflammation were employed including caerulein-induced pancreatitis and a novel model of IL-17A-induced pancreatitis. The susceptibility of disease was characterized by immunohistochemistry, RNA expression and flow cytometric analyses.

Results: Transgenic systemic delivery of IL-17A alone can induce granulocytosis and neutrophil infiltration to the pancreas. Interestingly, neutrophils do not recruit into the pancreatic ducts with and forms aggregates in the ducal lumen. Our experimental models further indicate that peptidyl arginine deiminease 4 (PAD4) is critical for intraductal aggregate formation and that PAD4-deficiency abrogates disease progression. Mechanistically, we identify the pancreatic juice as a strong instigator of neutrophil extracellular matrix. Characteristic single components of pancreatic juice, such as baccarionate ions and calcium carbonate crystals, induce aggregated NET formation.

Conclusion: Granulocytes aim to contain an inflammatory focus and enter pancreatic ducts with potentially detrimental consequences to dependent areas of the organ.

Disclosure of Interest: M. Leppkes: M.L. has received a research scholarship from MSD Sharpe & Dohme GmbH, Germany. No financial or non-financial conflict of interest exists related to this study.

All other authors have declared no conflicts of interest.

P0755 MITOCHONDRIAL FUNCTION AND DISTRIBUTION IN PANCREATIC DUCTAL EPITHELIAL CELLS

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Introduction: Mitochondrial dysfunction is a hallmark of several disease pathogenesis including acute pancreatitis (AP). Our results suggest that mitochondrial damage is crucial in bile acid induced inhibition of pancreatic ductal HCO3− secretion, however the details of mitochondrial function and dysfunction in pancreatic ductal epithelial cells (PDEC) is not known yet.

Aims & Methods: The aim of our study was to characterize the mitochondrial distribution and function in PDECs under physiological and pathophysiological conditions. Guine pig and Cyclophilin D WT and knock out (KO) mouse pancreatic ducts were used. Mitochondrial distribution was studied by electron microscopy (EM). Mitochondrial membrane potential (ΔΨm) was measured by confocal microscopy and pancreatic ductal HCO3− secretion by microfluorometry.

Results: EM measurements revealed that the mitochondrial density is significantly higher on the apical side of the guinea pig PDEC compared to the middle or the basal segment in HEPES solution. The apical mitochondrial density increased further in CO2/HCO3− buffered solution, or during the administration of 5 mM forskolin. This was also confirmed by the ΔΨm measurements as we detected increased TRMM fluorescence on the apical side of the PDEC during stimulation. The genetic KO of cyclophilin D significantly reduced the loss of ΔΨm and protected pancreatic ductal HCO3− secretion during the administration of 300 μM chenodeoxycholic acid.

Conclusion: Our results revealed that mitochondrial function has a central role in the function of PDEC presumably by providing ATP for fluid and ion secretion. On the other hand the opening of MPTP seems to be crucial in the bile acid induced toxicity offering a potential therapeutic target in AP.

Disclosure of Interest: All authors have declared no conflicts of interest.
P0756 RELATIONSHIP BETWEEN NUCLEOTIDE-BINDING OLIOMELICERATION-TRAINING PROTEIN 2 VARIANTS AND SEVERITY OF ACUTE PancreatITIS

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Introduction: Infectious complications are main causes of mortality in severe acute pancreatitis. Most infections in AP are intestinal origin (2). The Nucleotide oligomerization domain 2 (NO2) is a NO-like receptor family member that senses and responds to bacterial wall peptides (3). Guenther et al. reported that p.R702W mutation was found to be associated with multiple organ failure and mortality in patients with AP (4). We aimed to investigate whether there is a correlation between NO2 variants and AP severity in this study.

Aims & Methods: Group 1 (n = 27) was healthy. Group 2 (n = 36) and Group 3 (n = 32) were composed of mild and severe pancreatitis patients according to the Atlanta 2012 classification (5). Four NO2 variants and sex interquartile (IL-6), Tumor Necrosis Factor-α (TNF-α) and lipopolysaccharide-binding protein (LBP) levels were studied.

Results: We detected p.R702W variant in 3 patients (3/32, 9.4%) in severe pancreatitis group, but this variant was not seen in the other two groups. 1007fs variant was found in 3, 3 and 1 patient in mild (3/36, 8.3%) and severe pancreatitis (3/32, 9.4%) groups, and in healthy group (1/27, 3.7%), respectively. There was no significant difference in the frequencies of NO2 variants between groups. Serum IL-6, TNF-α and LBP levels were significantly higher in the severe pancreatitis group than in the healthy group and mild pancreatitis group (all p < 0.001). However, there was no significant difference between these cytokine levels and NO2 variants.

Conclusion: Our results suggest that there may be a relationship between the presence of p.R702W variant and severe pancreatitis.}

References

P0757 DETERMINANTS OF SEVERITY IN ACUTE Pancreatitis - A NATION-WIDE PROSPECTIVE MULTICENTER STUDY

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Introduction: Acute pancreatitis (AP) has a wide clinical spectrum, ranging from mild cases with transient organ failure (TOF) to cases with multiple organ POF/TOF, with POF further categorized into multiple vs single POF, toOF, with POF further categorized into multiple vs single POF. There is no effective treatment for late (7–17 days) or early severe (≤7 days) AP. The aim of this study was to analyze which complications were independently associated to worse outcomes (time to oral refeeding, invasive treatment, ICU admission, hospital stay and mortality). Patients with AP were prospectively enrolled at 23 centers, 60% had biliary etiology, 17% necrotizing AP and 14% vascular complications. Associations between possible determinants and outcome variables were assessed through binary logistic regression analysis (with adjustment for sex, etiology, Charlson comorbidity score (including age) and recurrent AP in the model).

Results: Among 1753 patients, 1065 patients were included. Independent determinants of increased morbidity and mortality (vs category with lower risk) were: persistent organ failure (POF) vs transient organ failure (TOF), all local complications (especially combined periampullary and pancreatic necrosis) vs no local complications, infected necrosis vs sterile necrosis and multiple-organ POF vs single-organ POF. We found no independent effect for late (7–17 days) or early POF nor POF associated to infected necrosis vs sterile POF.

Conclusion: Results of this study suggest that any determinants of severity should be included in a future classification of severity of AP are 1) local complications, where necrosis should be further categorized into infected vs sterile and 2) POF/TOF, with POF further categorized into multiple vs single POF.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Introduction: Endoscopic ultrasound-guided transmural drainage (EUS-TD) has been shown to be a safe and effective minimally invasive treatment for walled-off necrosis (WON). However, in some cases, simple drainage is not sufficient to manage the symptoms of WON and step up approaches such as direct endoscopic necrocectomy (DEN) and surgical necrocectomy may be required. The associations between WON drainage and patient outcomes have been published in some small studies, but the relationship between oncological outcomes and step-up approaches remains unclear. We aimed to retrospectively correlate the clinical characteristics including morphology and extent of WON with oncological outcomes.

Aims & Methods: We performed a retrospective study of 489 patients with a first episode of acute pancreatitis from September 2012 to September 2015. We collected relevant information of disease course and follow up until June 2016. We retrospectively classified these patients according to etiology, explore the relevant characteristics of WON associated with step up approach, and performed univariate and multivariate regression of the mechanism of the acute renal injury following acute necrotizing pancreatitis.

Results: The mean size of WON was 126.63 ± 46.79 mm. WON-TD was technically successful in 48.87% (76/157) patients and 26.54% improved with EUS-TD alone while step-up approach was used in 19 patients. WON-TD was attempted step-up approach in 96 patients (38 males; mean age 60.79 ± 13.44) with symptomatic WON treated by an attempted EUS-TD initially were enrolled in this study. The relationship between the outcome of treatment and the clinical characteristics including morphology and extent of WON was evaluated.

Conclusion: The step up approach is safe and effective for the treatment of WON. Multi-locular, large size and extensive WON were important predictors for performing a step up approach. Gas bubbles sign within necrotic tissue after EUS-TD may help to perform necrocectomy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

CrossTalk Between Inflammation and Coagulation in Pancreatitis-Induced Acute Renal Failure
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Introduction: Clinical data has indicated that severe acute pancreatitis is a serious inflammatory disease with a systemic inflammatory response and multiple organ dysfunction. Acute renal injury caused by acute pancreatitis is a common complication that is associated with a high rate of mortality. Although the pathogenesis of acute necroizing is not completely clear, the activation of inflammatory cytokines and coagulation are keys in the etiology.

Aims & Methods: We examined 155 patients with acute necrotizing pancreatitis. According to the international classification in 98 patients we diagnosed the moderate severe AP, and in 57 patients the severe AP. Disorders of kidney function were in 48 patients. We determined the creatinine level, indicators of hemostasis and inflammation.

Results: Analysis of the relationship of inflammation and hemostasis in patients with severe pancreatitis and renal dysfunction is accompanied by decreased of activated partial thrombin time (FV = 25.22, p < 0.0001), increased of thrombin time (FV = 19.428, p = 0.00004), fibrinogen concentration (FV = 6.046, p = 0.03588), D-dimers level (FV = 2.8456, p < 0.0001), and level of soluble fibrin-monomer complexes (FV = 34.015, p < 0.0001), lack of activity of anti- thrombin III (FV = 42.123, p = 0.0001), increased synthesis of C-reactive protein (FV = 15.591, p = 0.0002), excessive production of proinflammatory cytokines (FV = 1.997, p < 0.0001), IL-6 (FV = 21.076, p = 0.00002), and TNF-α (FV = 25.643, p < 0.0001). In acute pancreatitis patients with renal dysfunction was shown a direct correlation between severity of renal failure (SOFA score) and concentrations of IL-6 (R = 0.41484, p = 0.000584), CRP (R = 0.510742, p = 0.0002), D-dimers (R = 0.324169, p = 0.008456), soluble fibrin-monomer complexes (R = 0.290750, p = 0.017868), and duration of thrombin time (R = 0.29607, p = 0.018514).

Conclusion: The mechanism of the acute renal injury following acute necrotizing pancreatitis is complicated by the inflammatory cascades and hypercoagulable state is initiated this pathological process.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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Introduction: Acute Pancreatitis (AP) may be severe in up to 20% of patients with substantial morbidity and mortality, which is related to a generalized inflammatory response. In some patients, this severe inflammatory response is down-regulated; in others it escapes control. Our group has previously described a TH1 profile associated with poor prognosis in AP, and a TH2 profile associated with a mild or moderate condition.

Aims & Methods: Our aim was the development of an index for an early assessment of prognosis in AP. We analyzed 12 cytokines in 117 patients, upon
admission to hospital. A receiver operating characteristic (ROC) analysis was built at day 0 for the multiple discriminant analysis was performed, using the Wilks lambda test, to identify the variables that differ most between patients with mild AP and moderate/severe AP. A ratio calculated using the most discriminant cytokines was studied in relation to severity and mortality.

Results: ROC curves showed that TH1 cytokines IL6, IFN-γ and TNF-α can be measured for the prediction of severe AP, while TH2 cytokines IL4, IL13, GMI-CSF, for the prediction of a mild or moderate condition. A stepwise analysis showed that IL13 and IFN-γ were the biomarkers which contributed most to the discrimination between mild and moderate/severe AP (Wilks’ lambda = 0.855, p < 0.0001; Wilks’ lambda = 0.747, p < 0.001, respectively). We calculated the IL13:IFN-γ index. This ratio was significantly higher in patients with mild AP when compared between groups (p = 7.36 × 10-8). This difference was also observed between severe AP and the rest of the patients (p = 0.007). The ROC curve was also modified, increasing the area under the curve (AUC), the sensitivity and the specificity, in relation to AP severity. Calculating an IL13:IFN-γ ratio that could be of great interest in the assessment of prognosis in AP. A high value of the IL13:IFN-γ ratio at hospital admission is associated with a good prognosis of AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0763 CORRELATION BETWEEN POST-ERCP SERUM AMYLASE LEVELS AND CT FINDINGS IN ERCP-INDUCED PANCREATITIS: A PROSPECTIVE MULTICENTER OBSERVATIONAL STUDY

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Introduction: According to the diagnostic criteria by Cotton et al. post-ERCP acute pancreatitis is defined as the persistence of serum amylase levels three times or higher than the upper limit of the standard for 18 hours. The accurate diagnosis of early pancreatic inflammation is strongly recommended, in order to prevent the progression to severe acute pancreatitis. We investigated the cutoff serum amylase level that suggested ERCP-induced pancreatitis in a prospective multicenter study.

Aims & Methods: In Japan, we performed a high-volume center study, 2078 patients examined by ERCP during April 2015 and May 2016 were prospectively followed. CT was performed in patients whose serum amylase level exceeded the institutional upper limit on the day after ERCP (after 12-20h) to investigate the presence of or absence of pancreatic necrosis. Two expert radiologists independently judged the images blinded and judged the presence or absence of pancreatitis based on the Balthazar grade. Patients with a preexisting high amylase level, clinically demonstrated infection or inflammation due to malignant lymphoma, or CT showed persistent upper abdominal pain for 4 h or longer. However, the criterion of acute pancreatitis was also modified, increasing the area under the curve (AUC), the sensitivity and the specificity, in relation to AP severity.

Results: Amylase levels increased on the following day in 402 (21.5%) of the 1868 patients included, and 340 patients examined by CT were included in the analysis. ERCP-induced pancreatitis was diagnosed based on imaging in 204 patients (10.9%). The cutoff amylase level for judging the presence or absence of pancreatitis on the following day was 2.73 times higher than the institutional upper limit (sensitivity: 73.3%; specificity: 90.0%; positive likelihood ratio: 3.48, negative likelihood ratio: 0.34) with an AUC of 0.80. The cutoff level after 2h was 2.73 times higher than the institutional upper limit (sensitivity: 45.6%; specificity: 79.7%; positive likelihood ratio: 2.24, negative likelihood ratio: 0.68) with an AUC of 0.63. Abdominal pain under 4h was noted in 36 of the 204 patients in the pancreatitis group, and 12 of 136 patients in the non-pancreatitis group with a sensitivity of 17.7%; specificity, 91.1%; positive likelihood ratio, 1.99; and negative likelihood ratio, 0.90. Abdominal pain that persisted longer than 4h occurred in 75 patients in the pancreatitis group and 12 in the non-pancreatitis group with a sensitivity of 36.7%; specificity, 91.1%; positive likelihood ratio, 4.12; and negative likelihood ratio, 0.69.

Conclusion: The appropriate cutoff serum amylase level for judging ERCP-induced pancreatitis on the day following ERCP is 2.73 times higher than the institutional upper limit. The diagnostic value of serum amylase levels 2h after ERCP persisting abdominal pain persisting for longer than 4h, then sensitivity was high but the specificity was low. Therefore, setting a cutoff serum amylase level on the day after ERCP is very useful to diagnose ERCP-induced pancreatitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Table 1 Continued

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| Adverse events | 20 (43.5) |
| Bleeding | 10 |
| Migration | 10 |
| Outcomes | Duration of hospital stay (days) |
| | 64 (33) |
| Duration of stent insertion (week) | 10 (4.5) |
| Clinical success | 43 (93.5) |
| Recurrence | 3 (6.5) |

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

Introduction: Post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PEP) is a common and serious adverse event following ERCP, with a reported incidence of 9.7% in unselected patients [1]. Given huge economic and clinical burden, effective approaches for post-ERCP pancreatitis prophylaxis remains a major priority for research. Nonsteroidal anti-inflammatory drugs (NSAIDs) have also been shown the potential efficacy in prophylaxis PEP across high-risk patients, especially for diclofenac or indomethacin [3–5]. Recently, a prospective, double-blind, controlled trial conducted by Levenick [6] and colleagues in the USA showed that the reduction in PEP using indomethacin was not as significant as previously reported. In fact, even group cases of pancreatitis occurred in indomethacin group compared with placebo group. Subsequently, a high-quality meta-analysis also concluded that there is no prophylaxis for the prevention of PEP among average-risk patient[s] [7]. These findings raised the question that whether administration of rectal indomethacin should be recommended in average-risk patients.

Aims & Methods: We aimed to determine the effective benefit of rectal indomethacin in the prevention of post-ERCP pancreatitis in average-risk of patients. We systematically searched on EMBASE, Medline, Cochrane Central Register of Controlled Trials and CINAHL library before October 2016. Studies that evaluated rectal administration of indomethacin in the prevention of post-ERCP pancreatitis were included in the analysis. We adopted a random-effects model to calculate overall relative risk (RR) and 95% confidence interval (CI).

Results: We identified ten randomized clinical trials from initial search and finally included in the meta-analysis. Administration of rectal indomethacin significantly reduced the incidence of PEP in combined population (RR, 0.63; 95% CI, 0.50–0.77). There was no significant heterogeneity across included studies (I2 = 14.2%, P = 0.31). In subgroup analysis, rectal indomethacin was effective in both high-risk (RR, 0.49; 95% CI, 0.35–0.71) and average-risk (RR, 0.69; 95% CI, 0.55–0.86) patients and reduced the risk of mild and moderate to severe pancreatitis. The overall results remained unchanged and robust in sensitivity analysis. There was no evidence of significant publication bias among this meta-analysis.

Conclusion: Rectal administration of indomethacin is an effective approach to prevent the incidence of post-ERCP pancreatitis both in high-risk and average-risk population undergoing ERCP. Moreover, how much effective randomized controlled trials are needed to further investigate the optimal timing for administration of indomethacin.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P0765 RECTAL INDOMETHACIN IS PROTECTIVE AGAINST POST-ERCP PANCREATITIS IN HIGH-RISK AND AVERAGE-RISK POPULATION: A SYSTEMATIC REVIEW AND META-ANALYSES
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Introduction: Acute pancreatitis (AP) is one of the most common gastrointestinal diseases requiring hospitalization with an annual incidence of 13–50 cases per 100,000 persons. It is a potentially fatal disease with an overall mortality ranging from 2 to 8%. Both epidemiology and outcomes are variable according to the different countries. Furthermore, few studies have considered the impact of hospital units on AP outcomes.

Aims & Methods: To evaluate both the trend and outcomes of acute pancreatitis according to the admitting hospital units: Surgery, Internal/General Medicine, Gastrointestinal (GI) Unit, Intensive Care Unit (ICU). This is a retrospective
cohort study based on the anonymous computerized database of hospital discharges in Veneto Region (North-East of Italy). The principal diagnosis of AP according to the International Classification of Diseases 9th revision, Clinical Modification (ICD 9-CM, code 577.0) of the hospital discharges was selected. The period from January 2001 to December 2015 was analysed. Veneto population was considered as the reference population (in the period, it varied from 4,529,823 to 4,927,527 inhabitants, with 51% females). Hospitalization, Length of stay (LOS), in-hospital mortality, need for surgery (according to the DRG 191–194, 199–201 which identified bilio-pancreatic surgery) were reported according to hospital Units. Statistics: Chi squared for trend and Odds Ratio (OR) were applied.

Results: During the analysed period, 23,389 overall hospitalizations for AP, annual hospitalization of 32 patients/100,000 inhabitants and in-hospital mortality of 3.2% were observed. Characteristics of the patients were: mean age: 62.2 +/−19.3y, 54% Males (M); Female (F) mean age: 65y +/−19.3y, male age: 39.4+/−19.3y (p < 0.05). Hospitalizations was higher in males (M: 35.4, F: 28.4, OR 1.24 (95% CI: 1.20–1.27, p < 0.05) and it increased in a stepwise progression from youngest to oldest patients (from 4.4 to 151.2 p < 0.05). A similar trend was observed when considering in-hospital mortality (from 0.5 to 10.3%, p < 0.05). From 2001 to 2015, hospitalization (32.4 to 29.5, p = 0.04), in-hospital mortality (1.41 to 0.79, p < 0.05) and need for surgery (NFS: 5.6% to 3.0%, p < 0.05) trends decreased. Conversely, admission trends increased during the analysed period both in General Medicine (from 36 to 63, p < 0.05) and Gastrointestinal (GI) units (from 14 to 29, p < 0.05). The Overall in-hospital mortality was the lowest in GI Units with a NFS of 3.6% (see Table). In comparison to General Medicine Units, GI units were associated with a low in-hospital mortality (OR: 0.37, CI 95%: 0.28–0.49, p < 0.001) whereas ICU requirement was seen in significantly more patients in AP group (59; 37%) than in ACP (5; 11%) and RAP (0%; p < 0.001). 41 (26%) of AP, 2 (4%) of ACP, but none of patient with RAP needed ventilatory support (p < 0.001), while 13 (8%) of AP patients, 1 (2.2%) of ACP and none with RAP required dialysis (p < 0.05). Mortality in AP, ACP and RAP was 29 (18%), 2 (4.4%), 0 (0%) respectively (p < 0.05).

Conclusion: The present study showed that patients with more severe disease course as compared to both ACP, while those with RAP had the least severe course.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0770  IMAGING IN CHRONIC PANCREATITIS – DATA FROM THE SCANDINAVIAN BALTIC PANCREAS CLUB DATABASE

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Introduction: The Scandinavian-Baltic Pancreas Club database collects data from patients with chronic pancreatitis (CP) in Nordic countries. Grading of structural changes is important in the description of a CP cohort.

Aims & Methods: We aimed to characterise structural changes of the pancreas in patients with CP. Subjects with definitive or probable CP according to the M-ANNHEIM diagnostic-criteria were included. Structural changes were graded according to the M-ANNHEIM-classification. A subgroup was also scored by the modified Cambridge score. Clinical data on disease-duration, nutrition, exocrine function, pain, alcohol/smoking habits and frequencies of malnutrition and diabetes were collected. A grouping of the M-ANNHEIM score (A: Normal = 0, B: Minimal change = 1 + 2 and C: Moderate/marked = 3 + 4) was performed for correlation to the clinical data.

Results: The database contains 932 patients (623 men). The M-ANNHEIM-score was present from 446 subjects and both imaging scores from 93 subjects. According to M-ANNHEIM subjects were graded as: 0: Normal (8.1%), 1: Equivocal (22.9%), 2: Mild (12.1%), 3: Moderate (17.9%) and 4: Marked (17.9%). According to M-ANNHEIM subjects were graded as 0: Normal (8.1%), 1: Equivocal (22.9%), 2: Mild (12.1%), 3: Moderate (17.9%) and 4: Marked (17.9%).

Conclusion: Subjects with marked structural changes had the highest lifetime smoke-doses. There was poor correlation of structural changes to the clinical features. The two imaging scores demonstrated acceptable correlation and agreement. Poor agreement in normal/minimal-change groups may reduce the value of the scores where they are most needed. The results are presented on behalf of the SBPC study group.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0771  NATURAL HISTORY OF PANCREATITIS ASSOCIATED WITH SPINK1 MUTATIONS

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Introduction: SPINK1 is a gene coding for the inhibitor of the cationic trypsinogen. Heterozygous mutations prevalence is estimated at 2%. They are recognized as a risk factor for chronic pancreatitis. However few data are available regarding the natural history and the risk of complications in these patients.

Aims & Methods: A prospective monocentric study was carried out from 2000 to 2016 to describe the natural history of SPINK1 mutation related pancreatitis. All patients referred for idiopathic acute and/or chronic pancreatitis with a SPINK1 mutation, were included and followed annually. Epidemiological, genetic, clinical and morphological data were collected.

Results: We included 158 patients. Mutations of SPINK1 were: heterozygous (65%), homozygous (8%) NS4S, others (27%). Median age at first symptoms was 40 years (22-71). Diagnosis was 20 [2-73] and 29 years [3-76]. During follow-up (median length:7 years), clinical manifestations were pancreatic pain (73%), pseudo-cyst (1%), acute pancreatitis (77%), cholestasis (6%), exocrine pancreatic insufficiency (EPI) (33%), diabetes (15%) and pancreatic adenocarcinoma (n = 6.4%). Calciifications and ductal abnormalities were found in 56% and 62%. Endoscopic treatment and surgery were performed for 16% and 14% of the patients. Four patients died (including 3 due to pancreatic cancer). The risk of pancreatic cancer at 55, 60, 70 and 75 years was 9.4%, 14.7%, 28.9% and 46.7%. Risk factors of cancer were calcifications (p = 0.03) and EPI (p = 0.04).

Conclusion: SPINK1 mutations should be searched for in young patients with idiopathic pancreatitis. Risk of pancreatic cancer is probably underestimated.

References

P0772  NATURAL HISTORY OF PANCREATITIS ASSOCIATED WITH SPINK1 MUTATIONS

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Introduction: SPINK1 is a gene coding for the inhibitor of the cationic trypsinogen. Heterozygous mutations prevalence is estimated at 2%. They are recognized as a risk factor for chronic pancreatitis. However few data are available regarding the natural history and the risk of complications in these patients.

Aims & Methods: A prospective monocentric study was carried out from 2000 to 2016 to describe the natural history of SPINK1 mutation related pancreatitis. All patients referred for idiopathic acute and/or chronic pancreatitis with a SPINK1 mutation, were included and followed annually. Epidemiological, genetic, clinical and morphological data were collected.

Results: We included 158 patients. Mutations of SPINK1 were: heterozygous (65%), homozygous (8%) NS4S, others (27%). Median age at first symptoms was 40 years (22-71). Diagnosis was 20 [2-73] and 29 years [3-76]. During follow-up (median length:7 years), clinical manifestations were pancreatic pain (73%), pseudo-cyst (1%), acute pancreatitis (77%), cholestasis (6%), exocrine pancreatic insufficiency (EPI) (33%), diabetes (15%) and pancreatic adenocarcinoma (n = 6.4%). Calciifications and ductal abnormalities were found in 56% and 62%. Endoscopic treatment and surgery were performed for 16% and 14% of the patients. Four patients died (including 3 due to pancreatic cancer). The risk of pancreatic cancer at 55, 60, 70 and 75 years was 9.4%, 14.7%, 28.9% and 46.7%. Risk factors of cancer were calcifications (p = 0.03) and EPI (p = 0.04).

Conclusion: SPINK1 mutations should be searched for in young patients with idiopathic pancreatitis. Risk of pancreatic cancer is probably underestimated.
Cancer screening should be discussed especially in case of pancreaticitits with calcifications.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0773 EXOCRINE FUNCTION, NUTRITION AND ENZYME TREATMENT IN THE SCANDINAVIAN BALTIC PanCREAS CLUB DATABASE - PRELIMINARY DATA

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Introduction: The Scandinavian-Baltic-Pancreatic-club database collects patients with chronic pancreatitis (CP) from Nordic countries. Description of exocrine pancreatic insufficiency (EPI) and consequences is important in characterization of CP cohorts.

Aims & Methods: Characterise EPI from CP in a Northern European cohort. Patients with definitive or probable CP (M-ANNHEIM diagnostic criteria) were included from nine centres. Demographic data, body-mass index (BMI), faecal elastase (FE), enzyme-doses and lab-parameters were collected. Values: Mean (SD) unless otherwise stated. EPI-classification grouped patients as follows: A: Normal; B-Mild: EPI not requiring enzymes, C-Proven: EPI requiring enzymes.


Clinical parameter (A) (B) (C) Proven (%)

Exocrine pancreatic function (%) 33 16 51

Faecal Elastase (µg/g) (mean (SD)) p < 0.001

368 (161) 128 (144) 51 (69)

Nutrition: BMI (kg/m²) (mean (SD)) p < 0.001

24.6(4.9) 23.7(4.3) 22.6(4.3)

Frequency BMI < 18.5 (%) p < 0.005

5 16

Vitamin D: Frequency <25µg/L (%)(I vs II) p < 0.005

7.4 23.7 17.6

Enzyme Treatment (lipase-units/day) (median [IQR range])

0-75000 [7500-15000]

Hemoglobin: (median [IQR range]) p < 0.05

11.8(2.7-3.0) 10.7(2.8)

Faecal Elastase and disease duration (years)**

<10: 143(175) > 10: 91(18)

*p < 0.001. 9% received <5000 lipase-units/day. 14 subjects having FE > 200 received enzymes, 48 subjects with FE < 100 received no enzymes.

**no age/sex differences in EPF

Conclusion: In our material frequency of EPI is higher than reported in the NAPS2 study (31%). Consequences of EPI were lower BMI, more frequent underweight, higher enzyme-doses and lower haemoglobin. Need for vitamin D supplements was highest in the group with mild EPI not receiving enzymes. Exocrine function was correlated with disease duration, but neither with age nor gender.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0774 FLUID AND HCO3− SECRETION AND CFTR ACTIVITY IS INHIBITED BY CIGARETTE SMOKE EXTRACT IN GUINEA PIG PANCREATIC DUCTAL CELLS

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Introduction: Smoking represents an independent risk factor for the development of chronic pancreatitis (CP). It is well documented that secretion of pancreatic ductal alkaline fluid (which is regulated mostly by the anion exchanger and CIC) is diminished in CP.

Aims & Methods: In this study we would like to understand whether smoking has any effects on pancreatic ductal fluid and HCO3− secretion. Guinea pigs were exposed to cigarette smoke four times a day for 30 min for 6 weeks. The CFTR expression was analysed by immunohistochemistry. Pancreatic ducts were isolated from guinea pig pancreas. Cigarette smoke extract (CSE) was prepared by smoking of 15 cigarettes into 10 ml distilled water by a smoking machine. Intracellular Ca2+ concentration and pH were evaluated by microfluorometry. Flow secretion was measured by video microscopy. CFTR currents were detected by whole cell configuration of patch clamp technique.

Results: Cigarette smoking significantly diminished the expression of CFTR and the fluid and HCO3− secretion in guinea pig pancreas. CSE dose dependently decreased fluid and HCO3− secretion in guinea pig pancreatic ducts via inhibition of anion exchanger, Na+-H+ exchanger and Na+-HCO3− cotransporter and also forskolin-stimulated Cl− current of CFTR Cl− channel. CSE incubation altered the pattern of carbobach-induced Ca2+ signal in pancreatic ducts suggesting that some of the inhibitory effects may be regulated by calcium signalling.

Conclusion: Cigarette smoking and CSE inhibits pancreatic ductal fluid and HCO3− secretion and the activity of the CFTR which may play role in the smoke-induced pancreatic damage. This study was supported by OTKA, MTA, SZTA and UNKp.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0775 HISTOLOGICAL DIAGNOSIS WITH RAPID ON-SITE EVALUATION IN ENDOCOSCOPIC ULTRASOUND-GUIDED FINE-NEEDLE ASPIRATION OF PANCREATIC SOLID LESIONS

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Introduction: Rapid on-site cytologic evaluation (ROSE) for determining the suitability of a specimen often provides high efficacy of endoscopic ultrasound-guided fine needle aspiration (EUS-FNA). In our center, we propose an additional role of ROSE in histological diagnosis aimed at improving diagnostic accuracy.

Aims & Methods: From January 2009 and December 2015, 215 patients were evaluated who underwent both EUS-FNA for pancreatic solid lesions and surgery. Aims & Methods: From January 2009 and December 2015, 215 patients were evaluated who underwent both EUS-FNA for pancreatic solid lesions and surgery. We retrospectively compared the diagnostic performance of ROSE during EUS-FNA with the final diagnosis confirmed by surgically resected specimens. Diagnosis by ROSE using Diff-Quik® was carried out by both a cytopathologist and an endoscopist.

Results: The median of needle passes required for ROSE was 1 (range, 1–5). Final diagnoses for the 215 lesions were pancreatic ductal adenocarcinoma (PDAC; n = 102), pancreatic ductal endosomouscaroma (PDASC; n = 9), pancreatic neuroendocrine tumor (pNET; n = 30), solid pseudopapillary neoplasm (SPN; n = 9), metastatic tumors (n = 4), and acinar cell carcinoma (ACC; n = 1). Primary lesions for metastatic tumors in the pancreas were renal cell cancer (RCC; n = 2), small cell lung cancer (SCLC; n = 1), and colon cancer (n = 1). ROSE could not diagnose 14 cases. When adenocarcinoma (excluding mucinous) was suspected by ROSE, ROSE diagnosed 94.6% (159/168) of adenocarcinomas. When special type tumor (pNET, SPN, RCC, SCLC) was suspected by ROSE, ROSE diagnosed 96.4% (27/28) of special type tumor.

Conclusion: All adenocarcinomas suspected by ROSE were malignant tumors. When special type tumor (pNET, SPN, RCC, SCLC) was suspected by ROSE, Diagnostic accuracy of ROSE was 96.4%. Diagnostic accuracy using ROSE is high agreement in final histological diagnosis. It is suggested that ROSE may also be useful for diagnosis of special type tumor.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**P0777 THE NOVEL ROLE OF GASTROKINE, A GASTRIC TUMOR SUPPRESSOR PROTEIN, IN PANCREATIC CARCINOGENESIS**

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**Introduction:** Pancreatic ductal adenocarcinoma (PDAC) has one of the most dismal prognoses of all cancer types. Diagnostic techniques for early malignant lesions are limited, which shows an evident need to understand the pathomechanism leading to PDAC and find a suitable marker for early detection. Initial processes in PDAC development involve acinar to ductal metaplasia (ADM) with further neoplastic progression into four pancreatic intraepithelial neoplastic (PanINs) stages. After accumulation of mutations, these lesions will further evolve into PDAC. Gastrokine 1 & 2 (GKN1 & GKN2) are secreted proteins found only in the stomach where they are involved in gastric epithelial homeostasis. While current research focuses on the exploration of tumor-suppressive properties of GKN1 in gastric tumors, nothing is known about GKN function in other organs. A whole genome microarray of KrasG12D Ptf1aCre (KC) mice, a mouse model with predisposition to pancreatic cancer, revealed strikingly high gastrokine expression. We will further analyze the involvement of GKNs in the development and progression of PDAC and explore the possibility to use them as biomarkers.

**Aims & Methods:** GKN2 expression was confirmed by qPCR in human and mouse pancreas samples. The presence of GKN1 was verified by western blot and immunohistochemistry (IHC) in mouse pancreas. Mouse pancreatic juice and serum were analyzed by proteomic analysis. To investigate the role of GKNs in carcinogenesis in vivo, we established mouse models by intercrossing KC mice with Gkn1-/- and Gkn2-/- mice respectively. The capacity of acinar cells lacking Gkn1 and Gkn2 to transdifferentiate into ductal lesions in vitro was tested.

**Results:** GKNs were upregulated during early stages of pancreatic carcinogenesis in mouse and peri-tumoral human pancreas. GKNs were absent in healthy pancreas and tumor tissue. IHC showed specific GKN1 expression in premalignant PanIN lesions, while GKN2 positive cells were also localized in the stroma. ELISA and proteomic analysis in mice confirmed the secretion of GKNs into pancreatic juice. Preliminary results from the first timepoint of analysis showed accelerated tumor development in GKN1-/- and GKN2-/- mice. Wild type acinar cells transdifferentiated into ductal lesions only in the presence of TGFα. On the contrary, Gkn1-/- and Gkn2-/- acinar cells transdifferentiated spontaneously, and resulted in a higher number of ADMs.

**Conclusion:** We identified for the first time specific gastrokine expression in pre-neoplastic lesions in human and mouse pancreatic tissue. The secretion into pancreatic juice during carcinogenesis could make gastrokine a potential biomarker for the detection of early pancreatic premalignant lesions. With our mouse models we will provide in vivo evidence on the role of GKNs as potential tumor suppressors in the pancreas.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0778 AUTOPHAGY IS ESSENTIAL FOR PANCREATIC CANCER DEVELOPMENT IN A NEW HUMANIZED GENETICALLY-MODIFIED ADULT MOUSE MODEL**

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**Introduction:** Pancreatic cancer is one of the deadliest malignancies and there are no effective therapies for it. According to a search of The Cancer Genome Atlas (TCGA) and recent studies in Kirsten rat sarcoma (K-RAS) tumors, tumour protein (TP53), Cyclin-dependent kinase inhibitor (CDKN2A) and Cyclin-dependent kinase inhibitor (CDKN2B) are the most frequent genetic aberrations in human pancreatic cancer (91%, 63%, 53% and 34% of cases, respectively). Macropautophagy (Large-scale removal of cytoplasmic components by autophagy) has been implicated in some of human diseases, and it plays a complex role in pancreatic cancer.

**Aims & Methods:** We aimed to investigate autophagy response in a new humanized genetically-modified adult mouse model of pancreatic cancer. To induce pancreatic tumours, control mice expressing oncogenic K-RAS (K-RAS) and ShRNA-targeting tumour suppressors Egr3, Cdkn2a and Cdkn2b (liverinhibitors-KTCC) were injected into pancreas of 9-week old adult mice. Autophagy was detected by immunofluorescence staining for autophagocytic protein light chain-3 (LC3-L) and Lysosomal-associated membrane protein 1 (LAMP-1). Additionally, the expression of autophagic protein LC3, autophagy related protein 7 (ATG7), LAMP-1 and P62 were determined by western blot. In vitro, pancreatic duct epithelial cells of normal mice were primary isolated, LC3 was determined by immunofluorescence staining in the liverinhibitors-KTCC infected primary cells.

**Results:** Mice developed pancreatic cancer ten weeks after liverinhibitors-KTCC injection, both in macrography and histopathology analysed. The mRNA levels of autophagic genes Atg7 and Atg12 were up regulated. In addition, the LC3-L/LAMP-1 positive area was significantly increased. And co-localization of LC3-L and LAMP-1 was found in pancreatic tumour sections. Moreover, the increased protein levels of ATG7, LC3, LAMP-1 and decreased P62 protein was observed in the pancreatic tumour tissues. In vitro, the protein level of LC3 in the liverinhibitors-KTCC infected primary cells was increased by 6 times when compared with that in the control primary cells (P = 0.0104).

**Conclusion:** An adult mouse model of pancreatic cancer can be generated by altering Kras, Tp53, Cdkn2a and Cdkn2b genes. Besides, increased autophagy was measured during the development of pancreatic cancer. These findings provide considerable insight into the role of autophagy in pancreatic cancer and autophagy inhibition might be a potential target in treating pancreatic cancer.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0779 HIPEC IN GI CANCERS. IS HYPERTHERMIA FRIEND OR FOE?**

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**Introduction:** Hyperthermia as a positive additive to chemotherapy is described in multiple studies. Despite controversial results hyperthermic intraperitoneal chemotherapy (HIPEC) is a standard treatment option for some types of gastrointestinal cancer that invades peritoneum. However, the results of clinical data and basic research are uneven. Moreover, there is a lack of fundamental knowledge on additive cytotoxic effect of hyperthermia on cancer cells of different origin.

**Aims & Methods:** Our aim was to analyse gastrointestinal cancer cell response to various hyperthermia levels, accomplished by chemotherapy, in a manner of cell cytotoxicity, apoptosis and intracellular cisplatin concentration. Cancer cell lines of gastric (AGS), pancreatic (T4M4) and colorectal (Caco-2) origin were exposed to cisplatin and different temperature regimens (37°C to 45°C) either in isolated manner, or in combination. Cells were treated for one hour, mimicking HIPEC timing in clinical setting. The intracellular concentration of cisplatin was measured immediately after experiment by mass spectrometry. 48 hours later changes of cell viability and apoptosis rates depending on temperature in addition to cisplatin treatment were evaluated by MTT and Annexin7 AAD flow cytometry respectively.

**Results:** Response of AGS to hyperthermia was as implied. Viability of the cells was gradually decreasing by raising the temperature. CACO-2 cells had no significant response to temperature rise up to 42°C, but at 43°C viability dropped by 14% constantly remaining at higher temperatures. T4M4 cells acted in unpredictable manner, whereas decreasing viability by 30% in the interval between 37°C to 42°C and 20% increase at 43°C was observed. Following simultaneous exposure to hyperthermia and cisplatin we observed no additive temperature effects in interval between 37°C to 45°C. However, at particular temperature regimes, we observed temporary proliferation increase: AGS – at 42°C (33%); T4M4 – at 43°C (32%). Higher temperatures dramatically inhibited AGS – by 70%, T4M4 - by 76%. There was the linear pattern of slight decrease (up to 26% at 45°C) of viability in CACO-2 cells. Isobologram analysis of combined hyperthermia and cisplatin treatment revealed strong antagonism of hyperthermia and chemotherapy in all analyzed cell lines. Nevertheless, hyperthermia of 43°C in addition to cisplatin promoted apoptosis of AGS cells by 33%, CACO-2 by 26%, T4M4 by 19%. Moreover, application of hyperthermia (43°C) could contribute to increase of intracellular cisplatin concentration by 30%, 20% and 18% AGS, CACO-2 and T4M4 cells respectively.

**Conclusion:** Our results indicate that there is no linear contribution of hyperthermia to chemotherapy in all analyzed cell lines. Therefore, in clinical setting it should be applied individually, regarding cancer type. Moreover, particular temperature can worsen the treatment and increase cancer cell growth.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0780 CACHEXIA INVOLVEMENT IN THE LOCAL SPREAD OF PANCREATIC DUCTAL ADENOCARCINOMA**

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**Introduction:** Cachexia is a debilitating wasting disease associated with cancer. It is a complex syndrome that affects multiple organ systems, and causes significant morbidity and mortality. In the case of pancreatic cancer, cachexia is one of the most important causes of death. Cachexia is characterized by a complex interaction between the tumor and the host, leading to a state of unexplained weight loss, anorexia, muscle wasting, and a low-grade inflammatory response. The cause of cachexia is multifactorial, involving both tumor-derived and host factors. The exact mechanisms that underlie cachexia in pancreatic cancer are not fully understood, but it is thought to be related to the immune response and the production of cytokines and other inflammatory mediators. The aim of this study was to investigate the involvement of cachexia in the local spread of pancreatic ductal adenocarcinoma.
Introduction: Cachexia is a multifactorial syndrome, characterized by the loss of skeletal muscle mass which is not fully reversible by nutritional support. Activin play a dominant role in the development and progression of cachexia and also in tumor cell growth in pancreatic adenocarcinoma via non-SMAD (MAPK, PI3K/Akt) pathways. Cachexia might be a keypoint in pancreatic ductal adenocarcinoma (PDAC) progression and is involved in cachexia in a subset of pancreatic cancer. The goal is to assess the significance of ezrin protein expression in PDAC related to the clinical stage and survival.

Methods: Our goal was to assess the significance of activin protein expression in PDAC related to the clinical stage and survival. There were included patients with histological proven of adenocarcinoma (n = 115) and a median follow-up of 24 months (range 3–124). The plasma levels of activin were analyzed using western blot. The t test was used to determine the differences between the two groups, Kaplan-Meier curve and log-rank tests were used to determine the differences in survival curves of studied patients.

Results: Activin was overexpressed more frequently in PDAC compared to controls (p = 0.001), and has been closely related to advanced clinical stage (stage III-IV), tumor size, location and with the presence of metastasis (p < 0.05). Activin expression was higher in patients with type 2 diabetes (p = 0.04). No relationship between activin level and the patients age, sex or tumor size, was noted. Patients with activin high expression had a shorter survival time than PDAC patients with activin low expression (Log-rank = 4.35; p = 0.03).

Conclusion: Activin pathway is related to cachexia and the local spread of PDAC, metastasis, the presence of diabetes and survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Discussion: The aim of this study was to assess QoL during chemotherapy in patients with advanced pancreatic cancer. Twenty-one Japanese patients with unresectable advanced pancreatic cancer and performance status 0–1 were included in this study. All patients were treated with FFX or GnP as first-line chemotherapy. QoL was assessed using the European Organization for Research and Treatment for Cancer Quality of Life Core Questionnaire (EORTC QLQ-C30), and anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS) at baseline and 2 weeks and every month after initiation of chemotherapy. Changes between score at baseline and median score after chemotherapy were compared using Wilcoxon signed-rank test. Continuous variables are presented as median (range).

Results: Thirteen male and 8 female patients were included, with a median age of 65 (59–72) years and BMI of 21.2 (16.0–26.2) kg/m². The chemotherapy regimens were FFX in 5 men and 2 women, modified-FFX in 4 men and 4 women, and GnP in 4 men and 2 women. Eight patients took opioids for pain, and 4 received celiac plexus neurolysis. Regarding global health status (GHS) and functional scales in QLQ-C30, baseline scores were: GHS: 50 (17–92%); physical: 87 (53–100%); role, 83 (33–100%); emotional: 67 (33–100%); cognitive: 83 (33–100%); and social: 67 (11–100%). After chemotherapy, role function scale was decreased significantly (p = 0.04), and nausea (p = 0.02) and diarrhea (p = 0.049) were more frequently observed, while global health status (p = 0.002). In analysis according to patients’ background, a lot of evaluation in patients with BMI < 21 kg/m² tended to be worse than in those with BMI ≥ 21 kg/m² after chemotherapy. Regarding HADS, in baseline, 5 patients reported depression, 7 borderline depression, 5 anxiety requiring intervention, and 5 anxiety requiring follow-up. There were no significant changes in HADS after chemotherapy.

Conclusion: In patients with advanced pancreatic cancer, GHS and mental status had already deteriorated at baseline. Although pain scale might be improved due to analgesic treatment, role function scale, nausea and diarrhea became worse during chemotherapy. In particular, QoL tended to deteriorate in lean patients. These results indicate that pain as well as QoL factors should always be considered to manage chemotherapy properly in patients with advanced pancreatic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.
treated by EUS-CPN. Clinical information was obtained retrospectively from the medical records and all patients reporting symptoms until the patient died or was lost to follow-up. Between November 2014 and March 2017, 70 patients with PC pain were enrolled. We performed EUS-CPN by injection of 5 ml of bupivacaine mixed with 15 ml of pure ethanol on the celiac plexus, and performed fine needle aspiration guided fine needle aspiration needle. Treatment response was assessed by self-reported pain relief and change in the daily dose requirement of morphine. Treatment response was defined as to decrease or stay of the same amount of morphine consumption after EUS-CPN, or achieve morphine dosage level within 4 weeks after EUS-CPN if morphine consumption temporarily elevated because of the delayed response of EUS-CPN. Pain evaluation was conducted at 1 week, 4 weeks, and 12 weeks after EUS-CPN and tumor disease progression. Repeat EUS-CPN was statistically significant and confidence intervals were two-sided; a p value at diagnosis or death. Survival probability was calculated with the Kaplan-Meier method. Jaundice was the leading presentation symptom in 74 (17%), weight loss in 164 (37.7%), pain in 105 (24%), new-onset diabetes in 43 (9.9%). Diagnosis was incidental in 24 cases (5.5%) or related with undetected complaints in other 24 (5.5%). The diagnostic delay was significantly shorter for patients with jaundice (mean 1.1 months) compared to those with pain (3.6), new-onset diabetes and cachexia (mean 3.6 months). PDAC independent risk factors for developing PDAC, such as smoking, obesity, alcohol intake, diabetes and PDAC family history, and diagnostic delay has not been explored specifically.

Aims & Methods: We aimed to investigate the association between presentation symptoms, diagnostic delay, risk factors for PDAC at stage at diagnosis and survival. This was a retrospective analysis of a single-centre cohort of prospectively evaluated PDAC patients with the above mentioned data recorded in a dedicated database. Fisher test for comparison of proportions for categorical variables and Student’s t-test for continuous variables were employed. Multiple logistic regression analysis was employed to investigate factors associated with metastatic stage at diagnosis or death. Survival probability was calculated with the Kaplan-Meier curve and Cox analysis was employed to calculate hazard ratios (HR). Tests of statistical significance and confidence intervals were two-sided; a p < 0.05 was considered to be statistically significant.

Results: In 434 PDAC patients the mean diagnostic delay was 4 months (95% CI 3.6–4.4). Jaundice was the leading presentation symptom in 74 (17%), weight loss in 164 (37.7%), pain in 105 (24%), new-onset diabetes in 43 (9.9%). Diagnosis was incidental in 24 cases (5.5%) or related with undetected complaints in other 24 (5.5%). The diagnostic delay was significantly shorter for patients with jaundice (mean 1.1 months) compared to those with pain (3.6), new-onset diabetes and cachexia (mean 3.6 months). PDAC independent risk factors for developing PDAC, such as smoking, obesity, alcohol intake, diabetes and PDAC family history, and diagnostic delay has not been explored specifically.

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Introduction: Pancreatic cancer is a lethal disease and the fifth most common cause of cancer-related death in Korea. Pancreatic cancer patients show dismal prognosis with a 5-year survival rate less than 10%, because the majority of patients are diagnosed in advanced stage. Since the late 1980s, gemcitabine-based chemotherapy has been used as a mainstream of metastatic pancreatic cancer (mPC) treatment and various combination therapies (such as combination with capcitabine or erlotinib) had been attempted to improve the patients’ survival, so far. Recently, MPACT trial, a randomized phase III trial showed that combination of gemcitabine and nab-paclitaxel had statistically significant survival benefit compared with gemcitabine monotherapy. Based on the results of this trial, gemcitabine with nab-paclitaxel combination therapy is currently being used as a standard therapy for pancreatic cancer patients. However, only 2% of the MPACT trial study population was Asian, and other researches on Asian population group are also lacking. Therefore, we investigated treatment efficacy and safety of gemcitabine plus nab-paclitaxel combination therapy for mPC treatment in Korean population.

Aims & Methods: Total 66 metastatic pancreatic cancer patients treated with gemcitabine (1000mg/m2) and nab-paclitaxel (125 mg/m2) regimen (on day 1, 8, 15 of a 28-day cycle) as the first line chemotherapy from February 2016 were identified using the Severance Hospital Pancreatic Cancer Cohort Registry. Treatment efficacy (overall survival (OS), progression-free survival (PFS), objective response rate) and treatment-related adverse events (AE) of patients (occurrence rate, severity grade and dose-intensity) were analyzed.

Results: The median follow-up period was 7.4 months (range 1.5–14.9 months); during this period, 21 (31.8%) patients died. Median cumulative dose of gemcitabine and nab-paclitaxel were 13,000 mg/m2 and 1487.5 mg/m2. The median OS, PFS and objective response rate were 12.0 months (95% confidence interval [CI] 9.515–14.485), 7.8 months (95% CI 5.021–10.579) and 48.5%, respectively. The incidence of neurotoxicity was 54.5% and 12 (18.2%) patients experienced grade $\geq$ 3 neurotoxicity. 30 (45.5%) patients showed grade $\geq$ 3 gastrointestinal AE was observed in 11 (16.7%) patients and 28 (42.4%) patients experienced dermatologic AE such as alopecia and skin eruption. About 59% of patients experienced treatment delays due to adverse events. Dose reduction was performed in 39 (59.1%) patients and 14 patients experienced treatment cessation due to severe AE.

Table 1: Treatment efficacy and treatment-related adverse events of gemcitabine with nab-paclitaxel

<table>
<thead>
<tr>
<th>Variables</th>
<th>Median (Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration of chemotherapy</strong></td>
<td></td>
</tr>
<tr>
<td>Cycles (28-day schedule)</td>
<td>5 (2–12)</td>
</tr>
<tr>
<td>Duration, days</td>
<td>141 (32–435)</td>
</tr>
<tr>
<td><strong>Efficacy of Chemotherapy</strong></td>
<td></td>
</tr>
<tr>
<td>Overall survival - months (95%CI)</td>
<td>12.0 (9.515–14.485)</td>
</tr>
<tr>
<td>Progression-free survival - months (95%CI)</td>
<td>7.8 (5.021–10.579)</td>
</tr>
<tr>
<td><strong>Adverse events</strong></td>
<td></td>
</tr>
<tr>
<td>Periphera neuropathy</td>
<td>36 (54.5%)</td>
</tr>
<tr>
<td>Grade $\geq$ 3 neuropathy</td>
<td>12 (18.2%)</td>
</tr>
<tr>
<td>Grade $\geq$ 3 Neutropenia</td>
<td>30 (45.5%)</td>
</tr>
<tr>
<td>Febrile neutropenia</td>
<td>10 (15.2%)</td>
</tr>
<tr>
<td>Administration of G-CSF</td>
<td>14 (21.2%)</td>
</tr>
<tr>
<td>Grade $\geq$ 3 adverse event</td>
<td>11 (16.7%)</td>
</tr>
<tr>
<td>General weakness</td>
<td>32 (48.5%)</td>
</tr>
<tr>
<td>Dermatologic adverse event</td>
<td>28 (42.4%)</td>
</tr>
<tr>
<td><strong>Dose reduction due to AE</strong></td>
<td></td>
</tr>
<tr>
<td>Gemcitabine</td>
<td>21 (31.8%)</td>
</tr>
<tr>
<td>nab-paclitaxel</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td><strong>Delay of administration due to AE</strong></td>
<td></td>
</tr>
<tr>
<td>n (%)</td>
<td>39 (59.1%)</td>
</tr>
<tr>
<td>Cessation of administration due to AE</td>
<td>14 (21.2%)</td>
</tr>
</tbody>
</table>

Conclusion: These results suggest that gemcitabine and nab-paclitaxel combination therapy is effective for metastatic pancreatic cancer treatment in East-Asian population group. Similar to previous studies, this combination therapy showed remarkable neurotoxicity and myelosuppression. Careful monitoring and proper management during chemotherapy is required.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
hENT1-positive patients (MST: 25 versus 25, respectively). We suspect that genetic factors may play a role in this observed variability.

**Aims & Methods:** In the present study, we evaluated hENT1 and dihydroxyproline-dine dehydrogenase (DPD: enzyme involved in the degradation of teaglutin) expression in EUS-FNA samples for evaluating and predicting the clinical effect of ES-WF (n=4) or pain (n=5) following EUS-FNA sampling. Prior to ES-CRT administration. In total, 95 formalin-embedded PDAC samples were obtained. In the samples determined to have sufficient material remaining following cytological-histological diagnosis (n=76), hENT1 expression was evaluated via immunohistochemistry (IHC) examination and DPD expression was observed using ddPCR analysis of hENT1, a further assessment of DPD expression was carried out in those samples determined to have sufficient material remaining (n=58).

**Results:** By reusing the EUS-FNA specimens after diagnosis of PDAC, hENT1 and DPD expression could be sufficiently assessed in 79.2% (76/95) and 61.1% (58/95) of these cases, respectively. In those sufficient for hENT1 testing, 67.1% (51/76) were found to be positive. And in those sufficient for DPD testing, 27.6% (16/58) were found to be positive. MST was significantly longer in hENT1-positive patients (20.8 versus 5.4 months, P < 0.001). As for DPD, MST was significantly longer in DPD-negative patients (33 versus 14 positive, P < 0.001). In the multivariate model including pretreatment clinical factors (age, sex, tumor location, tumor size, UICC-T classification, hENT1 expression, and DPD expression) and the clinical response after GS-CRT (response of GS-CRT, reduction rate in serum CA19-9 level, and distant metastasis after GS-CRT), only hENT1 expression (HR = 3.51; 1.54-7.98, P = 0.003) and DPD expression (HR = 0.232; 0.108-0.496, p < 0.001) were found to be significant independent prognostic factors.

**Conclusion:** hENT1 and DPD expression observed in EUS-FNA samples can be useful clinical predictors in PDAC cases treated with GS-CRT.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0790 STATIN USE DECREASES THE RISK OF PANCREATIC CANCER OCCURRENCE: A META-ANALYSIS**

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**Introduction:** Statins are widely prescribed both for primary and secondary prevention of coronary artery disease and for the treatment of dyslipidemia. Several studies evaluated the association between statin use and the onset of pancreatic cancer (PDAC) in order to evaluate a possible chemopreventive effect, with inconsistent results. Previous systematic reviews and meta-analysis evaluating researches published up to 2012 did not find any association to the risk, but the last few years of studies with interesting results have been published.

**Aims & Methods:** The aim of our study was to conduct a new systematic review and meta-analysis to clarify this association. A comprehensive literature search of PUBMED for articles published up to November 2016 and abstracts presented between 2012-2016 at the DDW and ASCO conventions was carried out. Eligible studies were case-control studies (CC), cohort studies (C) and randomized controlled trials (RCTs) assessing the effect of statin use on the risk of PDAC, compared with placebo or no treatment. Studies had to report Odds Ratio (OR), Relative Risk (RR), or Hazard Ratio (HR), estimates with 95% confidence interval (CI), or provide sufficient data for their calculation. Pooled adjusted ORs with corresponding 95% CIs were calculated using random effect model. Publication bias was assessed through Begg and Mazumdar test. Heterogeneity was assessed by means of the I² value.

**Results:** A total of 21 studies (12 CC, 6 C, 3 RCTs) contributed to the analysis. A total of 11833 PDAC patients and 2991084 controls were included. The pooled incidence of PDAC was 0.27% (3161/1167130) among statin users and 0.44% (8144/1835153) among the non-users. The overall pooled result for all studies evaluated a reduced risk of PDAC among statin users (OR 0.82; 95% CI 0.80–0.84; p = 0.0019), compared to non–statin users (a 28% protective effect). The protective effect was limited to case-control studies (OR 0.72; 95% CI 0.56-0.93) and not to cohort (OR 0.93; 95% CI 0.73–1.19) nor RCTs (OR 1.04; 95% CI 0.81–1.32). New publication bias was found.

**Conclusion:** This is the first meta-analysis showing that statins exert a protective effect on the incidence of PDAC. Further studies taking into account statin dose, duration and subgroups of patients are needed in order to clarify the association.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0791 AN IMPROVED DIGESTIVE POLYMERASE CHAIN REACTION PROTOCOL TO CAPTURE LOW-COPY KRAS MUTATIONS IN PLASMA CELL-FREE DNA BY RESOLVING "SUBSAMPLING" ISSUES**

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**Introduction:** Genetic alterations responsible for the initiation of cancer may serve as immediate biomarkers for early diagnosis. Plasma levels of circulating cell-free DNA (cfDNA) have been shown to be higher than those in healthy individuals; however, the major technical challenge for the widespread implementation of cfDNA genotyping as a diagnostic tool is the insufficient sensitivity and specificity of detecting early-stage tumors that shed low amounts of cfDNA. Droplet Digital PCR (ddPCR) has rather high precision and sensitivity for absolute quantification (0.01%). However, due to very low target concentrations of cfDNA in plasma, there may be an intrinsic error due to “subsampling” (Ref. 1). This is caused by limited cfDNA yield and missing targets at very low abundance during compartmentalization in ddPCR-based liquid biopsy assays. Such issues potentially result in large variations or errors in quantification, even when using highly accurate platform. Using ddPCR technology for early cancer diagnosis and risk stratification is still challenging.
Aims & Methods: In this study, we aimed to overcome the subsampling issue and to establish a ddPCR-based framework for quantification of rare tumor cell-derived mutant alleles for non-invasive diagnosis of gastrointestinal cancer. To establish more reliable ddPCR protocol for quantification of low-frequency alleles within a limited cDNA pool, two-step multiplex ddPCR targeting eight relevant mutant KRAS variants was examined using a Bio-Rad QX200 droplet digital PCR platform. Plasma samples from patients with colorectal (n=10) and pancreatic cancer (n=9) were evaluated, and cDNA from healthy volunteers (n=30) was utilized to calculate reference intervals.

Results: Limited cDNA yields in patients with resectable colorectal and pancreatic cancers did not meet the requirement for efficient capture and quantification of mutant KRAS. The subsampling issues and tic cancers did not meet the requirement for efficient capture and quantification of rare mutant alleles by ddPCR. To overcome the subsampling issues and achieve better assay specificity, we attempted pre-amplification of plasma cDNA using primers flanking KRAS exon 2 as the first-step PCR. Eight pre-amplification cycles followed by a second-run ddPCR were sufficient to approximate 5000-10,000 target alleles/ng cDNA, resolving the subsampling issue; furthermore, the signal-to-noise ratio for rare mutant alleles against the massive background was presented by the wild-type allele was significantly enhanced. The cut-off limit of reference intervals for mutant KRAS was determined to be ~0.09% based on samples from healthy individuals.

Conclusion: The modification introduced in the ddPCR protocol facilitated the quantification of low-copy alleles carrying driver mutations, such as oncogenic KRAS, in localized and early-stage cancers using small blood volumes, thus offering a minimally invasive modality for timely diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0793 RAPID ON SITE EVALUATION (ROSE): AN ESSENTIAL TOOL IN ECHO-ENDOSCOPIC (EUS) STUDY OF SOLID LESIONS OF THE PANCREAS
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Introduction: Rapid on site evaluation for endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) of the pancreas provides immediate information regarding cellular adequacy, avoiding repeated procedures.

Aims & Methods: The aim of this study was to evaluate the impact of ROSE in EUS-FNA of solid pancreatic lesions. Retrospective study of consecutive EUS-FNA of solid pancreatic lesions, in a tertiary center, between 2012 and 2016. A total of 259 EUS-FNA were performed in patients with mean age of 63.4 (+/-12.8) years. The anatomical distribution of the lesions was: 56.4% in the head, 17% in the body, 10% in the uncinate process and 5.8% in the tail. The mean number of passes were 3.3 (+/-1.4) and the needle size was 25G in 60.8% and 22G in 23.8%. ROSE was performed in 34.7% of the punctures (23.6% along with the initial EUS-FNA), with a mean number of passes 3.4 (+/-1.9). The diagnostic yield of initial EUS-FNA without ROSE was 44.8% vs 83.6% when ROSE was performed (p < 0.001). When not conclusive, there was no significant differences in the diagnostic yield of the repeated EUS-FNA (with and without ROSE). Beyond ROSE in the first puncture, higher levels of Ca 19.9 (199 vs 10 ng/mL, p = 0.001), size of the lesion (36.1 vs 29.8 mm, p < 0.001), invasion of adjacent structures (64.6% vs 43%), and malignancy (73.2% vs 25.4%, p < 0.001) were associated with EUS-FNA diagnostic accuracy. In multivariate analysis, ROSE (p = 0.001) and the size of the lesion (p = 0.023) were independent predictors of adequate diagnostic samples. In this regard, ROSE improves the definitive diagnosis in solid pancreatic lesions (duodenal adenocarcinoma 54.7%), benign in 25.8% and indeterminate in 9.3%.

Conclusion: In agreement with the reported evidence, ROSE along EUS-FNA improved the diagnostic yield in solid pancreatic lesions and should be considered whenever possible in the first procedure, until an overall adequate diagnostic yield (>80%) is achieved.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0794 ESOPHAGEAL FISTULA HEALING BY MESENCHYMAL STEM CELL-DERIVED EXTRACELLULAR VESICLES IN A THERMORESPONSIVE GEL: A PRE-CLINICAL STUDY
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5Anatómo-pathológico, Novel Hôpital Civil, Strasbourg/France
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Introduction: Postoperative digestive fistula remain a challenging condition associated with a high morb-mortality, unsatisfactory healing rates and high refractoriness. The limitation of current approaches highlights the need for a better therapeutical strategy in terms of both long-lasting efficacy and safety. Mesenchymal stem cell (MSCs) are strongly involved in tissue injury repair. MSCs feature an immune-privileged status while displaying pro-angiogenic,

Tuesday, October 31, 2017 09:00-17:00
Endoscopy and Imaging II - Hall Tapp
and antifibrotic properties. Increasing evidences point out MSC action via subcellular extracellular vesicles (EVs). MSC EVs recapitulate the therapeutic properties of their cellular counterparts while offering remarkable advantages in terms of safety (no proliferation, no differentiation, no vascular occlusion following administration) and shelf life stability. Herein, we evaluated, in vivo and in vitro, the healing potential of MSC EVs delivered through a thermoresponsive gel (Pluronic F127) allowing the administration in a sol state through a catheter and gelation in situ at body temperature to retain EVs at fistula site. 

Aims & Methods: Seventeen esophageal fistulas were surgically created by placing two plastic stents during 30 days into the neck of 9 pigs and randomized into control group (n = 6) and treated groups (gel alone n = 6 and gel-EVs n = 5). In the gel-EVs group, Pluronic F127 gel contained allogeneic EVs collected from the swine adipose stem cell conditioned medium. Cellular-to-nuclei ratio demonstrated enlarged, while cancer cells were characterized by irregular size and autofluorescence imaging in gastric tissue. Under MPM, gastric dysplasia tissue were completely and radiologically evaluated of fistula healing was performed at day 30 and day 45, before histological assessment.

Results: All fistulas were successfully induced at day 30. At day 45, the control group featured open internal and external fistula orifices in all pigs. For this group, radiological evaluation showed open fistula tracts, which were confirmed by histology. In the gel group and gel-EVs groups, radiological examination showed a complete fistula closure in 67% (4/6) and 100% (5/5) of the animals, respectively. In the gel group, histological analysis confirmed a complete fistula for 3 from 6 cases while a partial closure was observed for 1 case from 6. In the gel-EVs group, histological complete fistula closure was reported for 4 from 5 cases while a partial closure was evidenced in 1 from 5 cases. In comparison with control group, treated fistulas showed a reduced inflammatory infiltrate and fibrosis and an enhanced angiogenesis, especially in the gel-EVs group.

Conclusion: This study provides the first evidence in the literature that MSC-EVs may represent a promising treatment effect in a pre-clinical animal model. EVs were characterized and fully administered via a thermoresponsive Pluronic F127 hydrogel, gelling in situ to enable EV retention in the fistula tract. Besides, the gel further provided a proangiogenic and an anti-inflammatory effect. The combined action of MSC EVs and the gel enhanced the healing associated with an anti-fibrotic effect in the esophageal fistula model. This investigation paves the way towards a future subcellular localized fistula therapy merging safety and efficacy.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0795 REAL-TIME MULTIPHOTON MORPHOLOGICAL IMAGING FOR DIAGNOSING GASTRIC ATYPIAL HYPERPLASIA AND ADENOCARCINOMA

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Introduction: Compared with histopathology, real-time histology or virtual biopsy is important for clinical diagnosis, especially for endoscopic examination. Based on two photon fluorescence (TPEF), multiphoton microscopy (MPM) imaging were compared by the experienced pathologist. Cellular-to-nuclei ratio demonstrated enlarged, while cancer cells were characterized by irregular size and autofluorescence imaging in gastric tissue. Under MPM, gastric dysplasia tissue were completely and radiologically evaluated of fistula healing was performed at day 30 and day 45, before histological assessment.

Results: All fistulas were successfully induced at day 30. At day 45, the control group featured open internal and external fistula orifices in all pigs. For this group, radiological evaluation showed open fistula tracts, which were confirmed by histology. In the gel group and gel-EVs groups, radiological examination showed a complete fistula closure in 67% (4/6) and 100% (5/5) of the animals, respectively. In the gel group, histological analysis confirmed a complete fistula for 3 from 6 cases while a partial closure was observed for 1 case from 6. In the gel-EVs group, histological complete fistula closure was reported for 4 from 5 cases while a partial closure was evidenced in 1 from 5 cases. In comparison with control group, treated fistulas showed a reduced inflammatory infiltrate and fibrosis and an enhanced angiogenesis, especially in the gel-EVs group.

Conclusion: This study provides the first evidence in the literature that MSC-EVs may represent a promising treatment effect in a pre-clinical animal model. EVs were characterized and fully administered via a thermoresponsive Pluronic F127 hydrogel, gelling in situ to enable EV retention in the fistula tract. Besides, the gel further provided a proangiogenic and an anti-inflammatory effect. The combined action of MSC EVs and the gel enhanced the healing associated with an anti-fibrotic effect in the esophageal fistula model. This investigation paves the way towards a future subcellular localized fistula therapy merging safety and efficacy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

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P0796 IMPROVEMENT IN HEPATIC TRANSMISSIONS OVER 12 MONTHS AFTER SINGLE PROCEDURE DUODENAL MUCOSAL RESURFACING FOR TYPE 2 DIABETES PATIENTS


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12Internal Medicine, Catholic University, Rome/Italy

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Introduction: Type 2 diabetes is associated with fatty liver disease which are highly prevalent, often overlapping metabolic disorders where upstream insulin resistance is thought to be a common pathogenic driver. Simultaneous treatment of both conditions has been reported with insulin sensitizing interventions including oral or intravenous glucose receptor agonists, TZDs), and bariatric surgery. Duodenal Mucosal Resurfacing (DMR) is a minimally invasive endoscopic procedure that has demonstrated glycemically efficacy in patients with T2D seemingly via an insulin sensitizing mechanism. We report data supporting 12-mo durability of improved metabolic indices in patients with T2D after a single DMR procedure in a single-arm, open-label, multicenter study.

Aims & Methods: In this endoscopic DMR procedure, the duodenal mucosa was treated with hydrothermal ablation using a patented balloon catheter. Efficacy was analyzed in a modified intent-to-treat cohort (mITT, patients who received ≥1 ablation) stratified into baseline alanine aminotransferase (ALT) level tertiles: lowest (ALT ≤ 20 U/L), middle (20 < ALT ≤ 35 U/L), and upper (ALT > 35 U/L). Change from baseline (ALT) was examined across tertiles. The primary end point was change from baseline ALT level at 12-mo post-DMR. Change from baseline ALT level at 12-mo post-DMR was 0.72%; respective body weight changes were −1.5(4.9)% (P = 0.003), −1.0(7.0)% (P = 0.003), −0.3(1.1)% (P = 0.003), and −0.3(1.1)% (P = 0.003). In the middle and lowest tertiles, 12-mo ALT reductions were −4(6)% and −2(3)% U/L.

Conclusion: A single DMR procedure in patients with T2D produced significant reductions in HbA1c up to 12 months in the total cohort. In the highest baseline ALT tertile group, ALT was significantly lower at 12 months compared to baseline at 12 months accompanied by significant lowering of glycemia up to 12 months. Further studies are planned to quantify the efficacy, safety and durability of the hepatic and glycemic effects associated with DMR.}

Disclosure of Interest: All authors have declared no conflicts of interest.
**P0798 REBAMIPIDE SOLUTION AS A NOVEL SUBMUCOSAL INJECTION PROMOTES HEALING SPEED AND QUALITY OF ESD-INDUCED ULCER BY SUPPRESSING FIBROSION**


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Introduction: Peroral administration of rebamipide in additional to proton pump inhibitor (PPI) was reported to be effective to promote ulcer healing after endoscopic submucosal dissection (ESD). In this pilot study, we assessed the efficacy and safety of a novel rebamipide solution as a submucosal injection agent for ESD using in vivo porcine models.

Aims & Methods: The protocol was approved by the ethics review board of our animal experimental laboratory in advance (13055-0). ESDs of about 30 mm in diameter were performed at four sites in the stomachs of three pigs. An endoscope blinded to the test agents performed the ESDs with a 2 cm rebamipide solution at two sites (rebamipide group) and with base solution alone at the other two sites (control group). The safety and the treatment results of rebamipide group were assessed. The gastric ulcer stages were evaluated by endoscopy once weekly up to week 4 after the ESD to determine a healing score based on ulcer staging using the classification of Sakita and Miwa. A1 stage was defined as score 1. A2, H1, H2, S1, S2 were defined as healing score 2, 3, 4, 5, 6, respectively. The average scores of each week were compared in the rebamipide group and the control group, with a Wilcoxon test. One pig was sacrificed at 1 week after the ESD and the other two were sacrificed at 4 weeks, for pathological evaluation of ESD-induced ulceration and ulcer scarring by HE. The number of neutrophils and width of the fibrosis were measured from hematoxylin and eosin stained sections and from the HE stained sections under ×400 magnification and the average counts of the five fields. The width of the fibrosis was defined as the maximum diameter of the fibrotic tissue in the depth direction from the submucosa to the muscle layer at a site of ESD-induced ulceration or ulcer scarring.

Results: There were no adverse events related with the use of the rebamipide solution. The average healing score was significantly higher in the rebamipide group than in the control group (p=0.02). The healing score by endoscopy for evaluation of ulcer size and intra gastric fibrosis was significantly less extensive in the rebamipide group than in the control group at 4 weeks (p=0.02). In the evaluation of inflammation, the average number of neutrophils was significantly lower in the rebamipide group than in the control group at both 1 week and 4 weeks, but not to a significant extent.

Conclusion: The rebamipide solution appeared to be safe and effective as an injection material for promoting the healing of ESD-induced ulcers. It also seemed to smoothen the folds of the ulcer circumference after ESD by suppressing fibrosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0799 EFFECT OF ILAPRAZOLE ON THE HEALING OF ENDOSCOPIC SUBMUCOSAL DISSECTION-INDUCED GASTRIC ULCER: INTERIM ANALYSIS OF RANDOMIZED, MULTICENTER STUDY**


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Introduction: The optimal treatment regimen or duration of endoscopic submucosal dissection (ESD)-induced gastric ulcer has not been established. The aim of this study was to assess the efficacy of novel PPI, ilaprazole for the treatment of ESD-induced gastric ulcer.

Aims & Methods: This was a prospective, open-label, randomized multicenter study. Between June 2015 and April 2017, a total of 1034 patients who underwent ESD for gastric neoplasm were randomly allocated with ilaprazole 20 mg or rabeprazole 20 mg daily for 8 weeks. The primary outcome was ulcer healing rate at 4 and 8 weeks.

Results: In the intention-to-treat analysis, the ulcer healing rate of each treatment group was not significantly different at 4 or 8 weeks (ilaprazole vs. pantoprazole; 96.7% vs. 96.4%, P=0.80 at 4 weeks, 99.7% vs. 99.0%, P=0.19 at 8 weeks). There was no independent predictive factors for a high ulcer healing rate in the multivariate analysis.

Conclusion: According to this interim analysis of trial, ilaprazole and rabeprazole showed no significant difference in the healing of artificial gastric ulcer. Most of the ulcers achieved complete healing within 4-8 weeks.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0800 THE EFFECT OF VONOPRAZAN FOR ENDOSCOPIC SUBMUCOSAL DISSECTION-INDUCED ULCERATION AND POSTOPERATIVE BLEEDING**


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Introduction: ESD is the standard treatment for early gastric cancer and less invasive procedure compared with gastrectomy. Proton pump inhibitors (PPIs) have been widely used for the treatment of ESD-induced gastric ulcers. Many studies have reported that it is critical issues for ESD procedure to prevent postoperative bleeding. Vonoprazan, a potassium-competitive acid blocker (P-CAB), has a strong and continuous inhibition of gastric acid secretion, and is expected to improve effectively ESD-induced gastric ulcerations compared to the treatment with PPIs.

Aims & Methods: To determine whether vonoprazan can ameliorate more effectively ESD-induced gastric ulcerations and can reduce the incidence of postoperative bleeding than PPIs. We compared the healing rate of ulcerations and bleeding incidence in the patients treated with vonoprazan with those treated with PPI. 139 patients who underwent gastric ESD between January 2015 and December 2016 were enrolled in Nippon Medical School Hospital. 11 patients who were injected triamcinolone into mucosa preventing stricture of the prepylorus were excluded. 59 patients were treated with P-CAB for 4 weeks (P-CAB group) and 69 patients were treated with PPI (4 omeprazole, 22 esomprazole, 11 lanosoprazole or 32 rabeprazole) for 4 weeks (PPI group), and subsequently underwent ESD for gastric neoplasm. This study was to assess the efficacy of novel PPI, ilaprazole for the treatment of ESD-induced gastric ulcer.

Results: The incidence of postoperative bleeding was not significantly different between P-CAB group and PPI group. The incidence of delayed bleeding was not significantly different between P-CAB group and PPI group. There was no independent predictive factors for a high ulcer healing rate in the multivariate analysis.

Conclusion: Vonoprazan is superior to PPI in acid suppression, but there were no significant differences in ulcer healing and bleeding incidence between the two groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0801 EFFECT OF ANTIMICROBIAL THERAPY ON DELAYED BLEEDING AFTER GASTRIC ESD: A RETROSPECTIVE ANALYSIS IN 665 CASES**


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Introduction: The optimal treatment regimen or duration of endoscopic submucosal dissection (ESD)-induced gastric ulcer has not been established. The aim of this study was to assess the efficacy of novel PPI, ilaprazole for the treatment of ESD-induced gastric ulcer.

Aims & Methods: This was a prospective, open-label, randomized multicenter study. Between June 2015 and April 2017, a total of 1034 patients who underwent ESD for gastric neoplasm were randomly allocated with ilaprazole 20 mg or rabeprazole 20 mg daily for 8 weeks. The primary outcome was ulcer healing rate at 4 and 8 weeks.

Results: In the intention-to-treat analysis, the ulcer healing rate of each treatment group was not significantly different at 4 or 8 weeks (ilaprazole vs. pantoprazole; 96.7% vs. 96.4%, P=0.80 at 4 weeks, 99.7% vs. 99.0%, P=0.19 at 8 weeks). There was no independent predictive factors for a high ulcer healing rate in the multivariate analysis.

Conclusion: According to this interim analysis of trial, ilaprazole and rabeprazole showed no significant difference in the healing of artificial gastric ulcer. Most of the ulcers achieved complete healing within 4-8 weeks.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Immediate submucosal dissection (ESD) for superficial gastric neoplasms is gaining an acceptance as one of curative treatment options. However, delayed bleeding still exists as a major complication of ESD. On the other hands, the number of patients taking antithrombotic agents are increasing because of evidence of antithrombotic therapy for prevention of thrombotic events has been established and population aging advances, which is thought to be a serious problem related to increasing delayed bleeding after ESD.

Aims & Methods: To assess the influence of antithrombotic therapy on delayed bleeding rate during ESD, we retrospectively investigated the delayed bleeding rate after ESD among the continuation of antithrombotic agents, the cessation of antithrombotic agents and heparin bridge therapy. 735 lesions in 665 patients were treated with ESD from January 2006 to December 2016. We compared the delayed bleeding rate in 153 patients receiving antithrombotic therapy with 512 patients without that. Furthermore, we compared the delayed bleeding rate in the patients continuing antithrombotic therapy with that in the patients with the cessation of antithrombotic therapy or with heparin bridge therapy. The patients who were taking antithrombotic agents were treated with continuation aspirin or clopidogrel. The cessation period of antithrombotic therapy before ESD followed the guidelines for therapeutic endoscopy in antithrombotic agent—users from Japan Gastrointestinal Endoscopy Society. We defined delayed bleeding as a hematemesis, a melena, or a decrease of Hb > 2 g/dl.

Results: The delayed bleeding rate in the patients receiving antithrombotic therapy was 14.4% (22/153), which was significantly higher than that in the patients without antithrombotic therapy (5.7%: 29/512) (p = 0.0007). The median timing of delayed bleeding in patients receiving antithrombotic therapy and that in patients without antithrombotic therapy were 5.7 ± 4.6 days and 7.0 ± 6.8 days, respectively, without significant difference (p = 0.48). Of 153 patients taking antithrombotic therapy (13.1%: 13/122, continuation group and 39.5%: 45/114, antithrombotic agents but all of them were antiplatelet drugs) during ESD (continuation group), 38 discontinued antithrombotic therapy and resumed it after ESD (cessation group), and 30 switched to heparin therapy before ESD (heparin bridge group). One patient was excluded because of uncertain about the period of cessation. The delayed bleeding rate of continuation group, cessation group and heparin bridge group were 13.2% (5/38), 13.1% (11/84) and 20.0% (6/30), respectively, without significant difference (p = 0.63). The delayed bleeding rate of continuation group was not different compared to cessation group but heparin bridge group seemed to be high (20.0%), but there was no significant difference compared to that of total number of continuation and cessation group (13.1%: (16/122), p = 0.24). Deep vein thrombosis was observed in one patient in the cessation group.

Conclusion: Antithrombotic therapy increased the delayed bleeding rate. However, the delayed bleeding rate in the patients taking antithrombotic therapy during ESD was similar to that in the patients discontinuing antithrombotic therapy. Therefore, it is inappropriate that the patients with high risk of thrombosis continue antithrombotic therapy on gastric ESD, but the heparin bridge therapy requires a further examination.

Disclosure of Interest: All authors have declared no conflicts of interest.


P0084 TRANSLANTATION OF AUTOLOGOUS ESOPHAGUS MUCOSA TO PREVENT STRICURE AFTER CIRCUMFERENTIAL ENDOSCOPIC SUBMUCOSAL DISSECTION OF EARLY SQUAMOUS CELL

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Introduction: Esophageal submucosal dissection (ESD) to remove superficial esophageal neoplasms is gradually becoming the standard treatment for superficial esophageal cancer, but is associated with esophageal stenosis, particularly when ESD involves the entire circumference of the luminal. Many methods to prevent post-ESD stricture, such as repeated Endoscopic balloon dilatation (EBD), temporary stent insertion, and oral steroid and intralesional steroid injection, have been used in different institutions. In recent years, new techniques such as autologous oral mucosal sheets or extracellular matrix scaffold material have also been suggested to manage esophageal strictures. There are no standard guidelines to prevent stricture in a patient with circumferential mucosal defect after ESD. In this study, we aimed to assess the effectiveness and safety of endoscopic transplantation of autologous esophagus mucosa in preventing formation of strictures after ESD.

Aims & Methods: We performed a single-arm, single-institute study. Nine patients who underwent wholly circumferential ESD for superficially extended

Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: LDA increased gastric bile acid contents, which delayed the ulcer healing and increased the bleeding after ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:


P0080 LOW-DOSE ASPRIN DELAYS THE ULcer HEALING AND INCREASES THE RISK OF POSTOPERATIVE BLEEDING AFTER GASTRIC ENDOSCOPIC SUBMUCOSAL DISSECTION THROUGH THE INCREASED GASTRIC ACID REFUX

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Introduction: Endoscopic submucosal dissection (ESD) permits en bloc resection for early GI lesions. The number of the patients taking anti-thrombotic agents including low-dose aspirin (LDA) has increased. The Japanese guidelines recommended endoscopic procedures without interruption of LDA therapy in patients at high risk of thrombotic events who use LDA alone. And, aspirin also is known to cause gastric mucosal damage though the exact mechanisms are still unclear.

Aims & Methods: In this study, we aimed to clarify whether LDA treatment and gastric bile acid contents synergistically affect on postoperative bleeding and healing rate of ulcer after gastric ESD procedure. A total 224 patients with gastric neoplasms were treated with ESD at Nippon Medical Hospital, between January 2013 and June 2016. To investigate whether anti-thrombotic agents affect the ESD procedure-induced ulceration and ESD postoperative bleeding rate, we compared ulceration reduction rate (one month after ESD), postoperative bleeding rate and gastric bile acid contents among the patients treated with low dose aspirin, other anti-thrombotic agents and non-anti-thrombotic agents.

On the day of ESD and one day after ESD, gastric juice was taken in endoscopy and total bile acids were measured spectrophotometrically after the enzyme treatment of gastric juice. Results: LDA increased gastric bile acid contents, which delayed the ulcer healing and increased the bleeding after ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:


esophageal squamous cell carcinoma at the endoscopic center of Xinxiao Hospital, Third Military Medical University (Chongqing, China) from January 2015 to February 2017, were enrolled in this study. We collected specimens of autologous esophageal mucosal tissue from these patients. After undergone ESD, these mucosal specimens were the first to be fixed to the “ulcer surface” by hemoclips and then fixed by means of a covered metal mesh stent. The stent was removed on post-procedure day 7. All patients were monitored by endoscopy.

Results: In bloc ESD was safely achieved in all cases. The overall longitudinal diameter of resected specimens was 117.8 mm (range, 70 to 150 mm). Autologous esophageal mucosa was successfully transplanted to a “ulcer surface” using an endoscope. The number of mucosal patches ranged from 8 to 28. Complete re-epithelialization occurred within a median time of 8.6 days with a graft survival rate at 93.06%. Postprocedural stricture accompanied by dysphagia occurred in seven patients on post-procedure day 24.7 (range, 18–34 days). The median sessions of EBD and intralesional steroid injection was 3.3 (range 1–6). No other serious complications occurred in these patients, such as the overall bleeding and perforation. Eight patients were still alive during the mean follow-up period of 11.6 months (range, 2.5 to 21 months). One patient developed lung metastasis and died of the disease 15 months after ESD.

Conclusion: Transplantation of autologous esophageal mucosa appears to be a safe means of relieving the severity of esophageal stenoses following circumferential ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Hochberger J, Koehler P, Wedi E, Gluer S, Rothstein RI, Niemann H, 2012; mosis (6%) and duodenal bulb (6%). esophagus (28%), gastric body (16%), antrum (11%), esophagus-jejunal anastomosis (10%), gastrocolic fistula (6%) and after endoscopic procedure (n = 10). Mean fistula size was 5.8 mm (range, 1.5–13.7 mm). The clinical success rate was 67.8% (n = 16). The median follow-up period of post-procedural fistulas or perforations was 11.6 months (range, 2.5 to 21 months). One patient developed lung metastasis and died of the disease 15 months after ESD.

Conclusion: ESD can be safely and effectively used in patients presenting with post-surgical fistulas or perforations and, when feasible, may be more advantageous and less costly than surgery. Further research is required to characterize the determinants of long-term success and risk factors for failure.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Table 1: Results of the study

<table>
<thead>
<tr>
<th>Pattern or endoscopic feature</th>
<th>Pattern A</th>
<th>Pattern B</th>
<th>LBC</th>
<th>Pattern B + LBC + demarcation line</th>
<th>Pattern C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected outcome</td>
<td>Absence of intestinal metaplasia and neoplasia</td>
<td>Intestinal metaplasia</td>
<td>Intestinal metaplasia</td>
<td>Intestinal metaplasia</td>
<td>Neoplasia</td>
</tr>
<tr>
<td>Sensitivity (CI 95%)</td>
<td>0.94 (0.87–0.996)</td>
<td>0.84 (0.75–0.92)</td>
<td>0.54 (0.42–0.66)</td>
<td>0.97 (0.92–1.02)</td>
<td>0.87 (0.75–0.99)</td>
</tr>
<tr>
<td>Specificity (CI 95%)</td>
<td>0.88 (0.81–0.94)</td>
<td>0.94 (0.89–0.99)</td>
<td>1.00 (1.00–1.00)</td>
<td>1.00 (1.00–1.00)</td>
<td>0.99 (0.98–1)</td>
</tr>
<tr>
<td>Accuracy (CI 95%)</td>
<td>0.9 (0.85–0.95)</td>
<td>0.89 (0.85–0.94)</td>
<td>0.8 (0.75–0.87)</td>
<td>0.99 (0.98–1)</td>
<td>0.97 (0.94–1)</td>
</tr>
<tr>
<td>Positive predictive value (CI 95%)</td>
<td>0.83 (0.74–0.92)</td>
<td>0.9 (0.83–0.98)</td>
<td>1.00 (1.00–1.00)</td>
<td>0.96 (0.94–1)</td>
<td>0.96 (0.94–1)</td>
</tr>
<tr>
<td>Negative predictive value (CI 95%)</td>
<td>0.96 (0.91–0.998)</td>
<td>0.80 (0.83–0.95)</td>
<td>0.75 (0.67–0.83)</td>
<td>0.99 (0.98–1)</td>
<td>0.97 (0.94–1)</td>
</tr>
</tbody>
</table>
was reached in 290/301 (96%) procedures. A perforation occurred in 3/301 (1%) patients. CI 0.21–3.89]. Two perforations were closed with clips, all three patients received intravenous antibiotics and were admitted to hospital for 2, 3 and 9 days. Bleeding requiring intraprocedural hemostasis occurred during 15% of procedures. Significant post-procedural bleeding requiring intervention was observed in 5 cases (2%). Dysphagia requiring endoscopic dilation occurred in 7 patients (3%), after ER with a mean number of 4 ± 2.9 resected pieces. Mean total procedure time for ER using the new NBMB device was 33 ± 17.1 minutes.

Conclusion: The new NBMB device used in this study proved to be effective for resection of early neoplastic lesions in BE: successful ER was achieved in 96% of procedures. Perforations were seen in 1% and significant post-procedural bleeding in 2%, complications were effectively managed endoscopically.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0807 COST–EFFECTIVE ANALYSIS COMPARING STANDARD BIOPSY VS. DIGITAL BIOPSY BY CONFOCAL ENDOMICROSCOPY
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Introduction: Endoscopy has greatly influenced gastrointestinal diagnostics. However, most lesions can be suspected but not certainly diagnosed only on the basis of endoscopic findings and therefore, endoscopy is needed. On the other hand the reliability of detecting lesions histologically depends on the site, number, and size of biopsy (Bx) specimens with a 20–30% probability of sampling mistakes. Probe based Confocal Laser Endomicroscopy (p-CLE) allows endoscopic in-vivo mucosal cellular evaluation of the gastrointestinal (GI) tract with a high (90%) diagnostic accuracy. It allows to perform target Bx. Moreover, the NVP is >98%. There is no information in the literature regarding the economic impact of performing digital biopsies (DBx) by p-CLE.

Aims & Methods: The aim of this study is to perform a cost–effectiveness analysis comparing the diagnosis of upper GI tract pathologies using only standard Bx following the literature recommendations (LR) vs. the diagnosis with DBx using p-CLE. This was a retrospective study with prospective collection data of patients included from Jan 2014 to Nov 2016. The pathologies included for p-CLE evaluation are summarized in Table 1. The diagnosis costs using standard Bx was calculated following the literature recommendations (Table 2). The standard Bx costs included the histological process and physician honoraria per Bx (USD 50.00), and one biopsy forceps per patient (USD 38.00). The DBx costs by p-CLE included the probe, the processor and the physician honoraria (USD 500.00). Baseline characteristics, p-CLE indications, the diagnostic accuracy of p-CLE and costs were described.

Results: 78 patients were included, 51.2% were female. The mean age was 50.18 years old. p-CLE indications distribution was: esophagus 29 (37.2%), stomach 46 (59%) and duodenum 3 (3.8%) subgroups. Biopsies were performed in 71/78 patients. p-CLE indications distribution was: esophagus 29 (37.2%), stomach 46 (59%) and duodenum 3 (3.8%) subgroups. Biopsies were performed in 71/78 patients.

Table 1: Cost analysis following the Literature Recommendations (LR) for initial diagnosis and follow-up

<table>
<thead>
<tr>
<th>Pathology</th>
<th>No. of Bx by LR</th>
<th>No. of Total System</th>
<th>Total cost of Bx/(USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eosphageal Tumour</td>
<td>8</td>
<td>8</td>
<td>438.00</td>
</tr>
<tr>
<td>Barrett’s Esophag 3.3 cm A</td>
<td>4</td>
<td>4</td>
<td>238.00</td>
</tr>
<tr>
<td>Barrett’s Esophag 4 cm A</td>
<td>8</td>
<td>8</td>
<td>438.00</td>
</tr>
<tr>
<td>Gastric Tumour</td>
<td>5</td>
<td>13</td>
<td>688.00</td>
</tr>
<tr>
<td>Gastric Atrophy</td>
<td>12</td>
<td>12</td>
<td>638.00</td>
</tr>
<tr>
<td>Metaplasia</td>
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<td>12</td>
<td>638.00</td>
</tr>
<tr>
<td>Gastric Ulcer</td>
<td>8</td>
<td>13</td>
<td>688.00</td>
</tr>
</tbody>
</table>

Bx: biopsies; LR: Literature Recommendations. a. For initial diagnosis. b. For follow-up. c. Cost includes histological process and physician honoraria per biopsy (USD 50.00). and the Bx forceps per patient (USD 38.00).

Conclusion: In our population, the digital biopsy by p-CLE proved to be more cost-effective; when ≥10 biopsies were indicated, like in cases of a Barrett’s Esophagus ≥4 cm, a Gastric Tumor, or in the context of two or more suspected pathologies (e.g.: esophageal and gastric disease).

Disclosure of Interest: C. Robles-Medranda: KOL for Pentax Medical, Boston Scientic Consulting. US Endoscopy Consulting. All other authors have declared no conflicts of interest.

P0808 GASTRIC PER-ORAL ENDOSCOPIC PYLOROTOMY (G-POEM) IN THE TREATMENT OF REFRATORY GASTROPARESIS: EXPERIENCE OF THE FIRST 9 CASES IN A MEXICO
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Introduction: Gastroparesis is a syndrome characterized by a delayed gastric emptying absence of a mechanical obstruction. Reduction in QOL scores have been observed. Etiologies include: idiopathic, diabetic, post-surgical. Diagnosis is based on the combination of symptoms and a delayed gastric emptying scintigraphy(GES) of >10% after 240 min. Multiple treatments have been used: medical treatment results have been not promising, so new treatment options have been explored. G-POEM is a new endoscopic treatment which is based in the POEM treatment for achalasia patients and consist in a creation of a submucosal tunnel in order to perform an endoscopic pyloromyotomy. Initial results have been promising.

Aims & Methods: The aim of this study was to evaluate the safety and efficacy of G-POEM in a group of Mexican patients with refractory gastroparesis. This prospective study was carried out in a tertiary care center in Mexico city, between December 2016 and April 2017. We included patients with refractory gastroparesis defined as presence of symptoms such as: nausea, vomiting, early satiety with inability to finish a normal meal, bloating and upper gastrointestinal pain. These patients were on medical treatment and didn’t respond and have a positive gastroparesis cardinal symptom index (GCSI) score combined with a >10% of retention at 240 min in the GES study. Exclusion criteria were malignancy, peptic ulcer disease, normal GES and coagulation disorders. Procedure steps were following an POEM procedure, beginning 5cms below pyloric arch with an longitudinal incision, then submucosal tunnel creation, myotomy of the piloric arch up to the serosa and 2cms before this point and finally closure with clips. Follow-up included GCSI, endoscopy and GES at 3 months after procedure.

Conclusion: Characteristics, of procedure, and patients were documented. Student paired t-test was used for comparisons between groups and p < 0.05 was considered as statistically significant.

Results: There were 9 patients included in this initial study, the mean age was 42.4 ± 8.5years. 6 patients were female and 3 male. The most common etiology was postsurgical 4.9 (44.4%), followed by diabetic 3/9(33.3%) and idiopathic 2/9 (22.2%). The mean G-POEM time was 61.4 ± 7.8 min, and complications were self-limited and presented in only 4 patients. the GCSI score decreased 68% from the pre-procedure levels as well as the GES which decreased 67% compared with levels at 3 months after G-POEM (34.5 ± 5.1 vs. 13.1 ± 3.2 p = 0.003/ 20.74 ± 5.3 vs. 6.8 ± 1.78 p = 0.001 respectively). 7/9 (77.7%) normalized the GES(<10% at 240 min). Endoscopy at 3 months after procedure didn’t show any complication (Table 1).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0809 ENDOSCOPIC MANAGEMENT OF FOREIGN BODIES IN THE UPPER GASTROINTESTINAL TRACT: A RETROSPECTIVE STUDY OF 1294 CASES
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Introduction: Foreign body (FB) ingestion including food bolus impaction is frequently encountered in clinical practice. Few studies with large sample size
towards endoscopic management of FBs had been reported. No direct evidence has demonstrated the relationship between duration of FB impaction and outcomes of endoscopic management. Moreover, it remained unclear whether endoscopic management of FBs under general anesthesia could improve endoscopic outcomes when compared with topical pharyngeal anesthesia.

Aims & Methods: The aim of the present retrospective study is to analyze our endoscopic outcome and explores the best timing and anesthesia methods of endoscopic intervention in population with FB ingestion. All consecutive patients suspected of FB ingestion were enrolled. The demographic, clinical and endoscopic data were collected and analyzed.

Results: Totally, 1294 cases were recruited in this retrospective research. The ages ranged from 7 months to 94 years, with a median age of 47.0 (31–63) years. The majority of patients (1191/1294 cases, 92.0%) presented with some symptoms after FB ingestion, in order of frequency dysphagia (415 cases, 32.1%), foreign body sensation (340 cases, 26.3%) and sore throat (267 cases, 20.1%). The duration of FB impaction ranged from 4 hours to more than 2 years with a median of 1.03 (0.63–3) days. Bony FBs, juubei pit, food bolus and dental prosthesis were the most frequent FBs in population. Anatomically, FBs were mostly impacted in the oesophagus (n = 1025, 86.9%), especially in the upper oesophagus (n = 782, 79.5%), followed by stomach (n = 95, 8.1%), duodenum (n = 36, 3.0%) and pharynx (n = 24, 2.0%). Nearly half of the patients (49.9%) developed FB-related complications, mainly including mucosal injuries (356 cases, 27.5%) and ulcers (210 cases, 16.2%). The most common underlying pathologies were oesophageal stricture (35 cases, 39.3%) and oesophageal cancer (11 cases, 15.5%). As the duration of FB impaction increased, positive finding and successful removal of FB by endoscopy significantly decreased (p < 0.001). Furthermore, complication rate significantly increased with time (p < 0.001). Age (OR = 1.15, 95% CI: 1.20–1.91, p < 0.001), type and location of FBs (OR = 4.51, 95% CI: 2.95–6.90, p < 0.001; OR = 2.26, 95% CI: 1.48–3.46, p < 0.001), anaesthesia methods (OR = 1.35, 95% CI: 1.05–1.75, p = 0.02) and duration of FB impaction (OR = 1.74, 95% CI: 1.50–2.0, p < 0.001) were verified as risk factors for development of FB-related complication by logistic regression analysis. General anaesthesia could not improve positive FB detection (p = 0.181) or success rate of endoscopic management of FBs (p = 0.135), as well as decrease the complication rate when compared with topical pharyngeal anaesthesia (p = 0.52). VS 47.5%, p = 0.033).

Conclusion: FB-related complication rate increased with time, endoscopic management under general anaesthesia could not improve therapeutic effects when compared with topical pharyngeal anaesthesia. Overall, Patients suspected of FB ingestion should receive endoscopic management as soon as possible.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0810 CLINICAL OUTCOMES AFTER ENDOSCOPIC RESECTION FOR ESOPHAGEAL SQUAMOUS CELL CARCINOMA COMPARING THE CASES WITH MM AND SM1 INVASION

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Introduction: Recent advances in endoscopic resection (ER) provide us increasing chances for resecting esophageal squamous cell carcinoma (ESCC) with muscularis mucosae (MM) and SM1 invasion. As MM/SM1 invasive cancer is reported to have 8–20% of metastatic risks and is defined as relative indication for ER in guideline by Japan Esophageal Society. For these, we perform additional therapy such as chemo radiotherapy (CRT) or operation considering the risk of metastasis and patients’ condition.

Aims & Methods: To know the difference of metastatic risk and long time outcome, we retrospectively studied 121 cases of ESCC with pathological MM/SM1 invasion (MM/SM1:97/24) resected by ER from 2003 to 2013 in Cancer Institute Hospital. After pathological diagnosis of resected lesions, we performed additional therapy such as CRT, radiation therapy (RT) or operation, to the cases with lymphovascular invasion (LVI) or droplet infiltration (DI). Median observation period was 48 months.

Results: Enrolled cases included 112 males and 9 females and their median age was 66 (39–86). We resected ESCC by ESD in 71 cases and by EMR-C in 50 cases and their median size was 27 mm. Local recurrence was observed in 6 cases which were all after EMR (12%). As for local recurrence 5 cases were treated by re-EMR and 1 case by APC, resulted in no re-recurrence. Of 97 cases of MM, 15 cases (15.5%) had LVI, 10 cases (10.3%) had DI. We recommended additional therapy in 21 cases (21.6%). Additional therapy was performed in 15 cases (15.5%) (opc/RT/RT9/5/1). No case died of ESCC and 22 cases (22.7%) died of other diseases. Of 24 cases of SM1, 9 cases (37.5%) had LVI, 5 cases (20.8%) had DI. We recommended additional therapy in 12 cases (50.0%). Additional therapy was performed in 9 cases (37.5%) (opc/RT/RT:9/7/5). Three cases died of ESCC and 5 cases (20.8%) died of other diseases. Comparing both groups, tumor size and local recurrence rate were not different each other. The frequency of LVI was significantly higher in SM1 than in MM (p < 0.05) and the frequency of DI was higher in SM1, although not significant (p = 0.161). The metastatic recurrence was observed significantly frequent in SM1 than MM (16.7% vs 2.1%; p < 0.01). The 5-year overall survival (OS); disease specific survival (DSS);relapse free survival (RFS) were 81.7%/100%/94.1% for MM and 62.9%/87.9%/91.7% for SM1. OS and RFS were not different each other, however, CSS was superior in MM than in SM1 (p < 0.01).

Conclusion: ESCC with MM invasion was superior in metastatic recurrence and CSS than ESCC with SM1 invasion, although we treat MM/SM1 in the same way. Additional therapy should be considered more positively in cases of SM1 than in cases of MM, considering metastatic risk and patients’ conditions.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0811 GASTRIC ESD IN AN ANIMAL SURVIVAL MODEL USING THE ANUBIS-SYSTEM

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Introduction: ESD in generally is still under evaluation. The one-piece resection of lesions larger than 2 cm has many advantages against piece meal resection. One problem in ESD is to lift and prepare the specimen simultaneously. We used the ANUBIS-system for intragastric ESD.

Aims & Methods: The experimental study was conducted in a porcine model in general anesthesia. We started the study with 7 pigs in a survival model using the Anubisscope (Carl Storz, Germany). After insertion of the scope insufflations were done with the two arms of the scope using a grasper and a hook-needle. Also the grasper could use for coagulation. The specimen was removed with the scope after closing its valves.

Results: The procedure was successful in all animals with operation time ranging from 102 to 189 minutes with a learning curve. After weight gain in all cases, the animals were sacrificed after postoperative day 42 and the workup showed competent healing with a star-like scar.

Conclusion: The use of an operating platform like the Anubisscope has the advantage of flexible preparation in opposite position of the instruments in ESD. The disadvantages are the only two degrees of freedom of the flexible instruments and the rotation-like movements. Also, it is not possible to reach all regions of the stomach.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0812 USEFULNESS OF NARROW BAND IMAGING WITH MAGNIFYING ENDOSCOPY AS A SCREENING TEST FOR GASTRIC CANCER

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**Introduction:** Narrow band imaging with magnifying endoscopy (NBI-ME) is used to diagnose gastric cancer; however, whether NBI-ME is useful as a screening test for gastric cancers has not yet been determined. Additionally, it is important to consider the impact on the atrophy of the background gastric mucosa in gastric cancer screening because the incidence of gastric cancer depends largely on the degree of atrophy noted in the background gastric mucosa.

**Aims & Methods:** We aimed to determine the usefulness of NBI-ME as a screening tool for gastric cancer. We retrospectively studied 3515 patients who had undergone screening upper gastrointestinal endoscopy between April 2013 and March 2014. We excluded patients with advanced gastric cancer and those who had undergone gastrectomy. Thus, we studied 1080 patients who received NBI-ME and 2435 patients who had undergone conventional endoscopy. We classified the degree of atrophy of the background gastric mucosa using the Kimura-Takemoto classification. Severe atrophy was noted in 1620 patients (Group S), and mild atrophy in 1895 patients (Group M). We evaluated the biopsy rate, the detection rate of gastric neoplasms, and the accuracy of biopsy using NBI-ME compared to conventional endoscopy.

**Results:** The biopsy rate of NBI-ME and conventional endoscopy in Group M was 5.4 and 7.7%, respectively, while in Group S it was 14.9 and 14.8%, respectively. The biopsy rate did not differ significantly between those who received NBI-ME and those who had undergone conventional endoscopy. The detection rate of gastric neoplasms using NBI-ME and conventional endoscopy in Group M was 0 and 0.2%, respectively, while in Group S it was noted to be 4.2 and 1.8%, respectively. Thus, the detection rate of NBI-ME was significantly higher than that of conventional endoscopy in Group S (p < 0.01). The accuracy of biopsy with NBI-ME and conventional endoscopy in Group M was 0 and 3.2%, respectively, but in Group S it was noted to be 36.4 and 14.1%, respectively. Thus, the biopsy rate of NBI-ME is significantly superior to conventional endoscopy in Group S (p < 0.01).

**Conclusion:** NBI-ME as a screening test for gastric cancer is useful for patients with severe atrophy of the background gastric mucosa because this technique has shown a higher detection rate of gastric neoplasms and better accuracy of biopsy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
95% CI, 0.552–0.661). In the validation set, the model also showed good discrimination (area under the ROC curve 0.689; 95% confidence interval [CI], 0.630–0.748; P = 0.0002), and in-vivo biopsy (OR, 3.90; 95% confidence interval [CI], 1.48–9.09; P = 0.0029), anti-platelet agent (OR, 3.07; 95% CI, 1.44–6.05; P = 0.002), and en-bloc resection (OR, 3.83; 95% CI, 1.34–10.34; P = 0.0059) as significant risk factors (C-statistic = 0.687; 95% CI, 0.595–0.769). In the validation set, the model also showed good discrimination (C-statistic = 0.650; 95% CI, 0.583–0.717). Based on the scoring system of odds ratio, bleeding risk was 4.1% in the low risk set (score ≤ 4), 7.0% in the high risk set (score > 4, P = 0.003) (validation set).

Conclusion: Our study investigated a prediction scoring system of estimating the bleeding risk, including the patient, endoscopist factors. A risk score can be calculated before the procedure and the endoscopists can predict bleeding potency before the gastric ESD. Based on the scoring system, endoscopists may alter therapeutic plans such as prolongation of admission dates or medication schedules.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: We prospectively evaluated whether blue light imaging with white light imaging (BLI-ME) could be as efficient for diagnosis of EGC as blue laser imaging with magnifying endoscopy (BLM-1E). 43 patients with 45 tumorous lesions including 28 well-differentiated adenocarcinomas, two moderately differentiated adenocarcinomas, six poorly differentiated, and five adenomas that were diagnosed by biopsy specimens were enrolled in this study between December 2016 and May 2017. The patients with EGC underwent LED-BLM-1E observation, following BLM-1E observation in the same day. At first, an endoscopist evaluated a demarcation line and micromorphology in the part of EGC using LED-BLM-1E according to vessel and surface classification system. Then, the same endoscopist evaluated adenocarcinoma in the same part of EGC using BLM-1E. All of the EGCs were immediately resected by ESD after the observation of two modalities. All of the EGCs could be evaluated one-to-one correspondence between the endoscopic image and pathological finding in detail. Primary end point was to analyze the diagnostic accuracy of BLM-1E for EGC. Secondary end point was to compared the diagnostic accuracy and between LED-BLM-1E and BLM-1E. Our study was approved by the Ethical Review Committee of Kyoto Prefectural University of Medicine, and performed in accordance with the World Medical Association’s Declaration of Helsinki. In addition, this study has been registered in the University Hospital Medical Information Network Clinical Trials Registry (UMIN-CTR: http://www.umin.ac.jp/ctr/ctr_000025575/).

Results: The clinicopathological features in the patients were as follows; mean age was 71.9 ± 5.74, gender (male:female) was 31:14, location(U:M:L) was 9:15:21, macroscopic type (elevated: flat: depressed) was 18:1:26, median tumor size was 19.6 ± 19.6 mm, and final pathological diagnosis (well-differentiated adenocarcinoma: moderately differentiated adenocarcinoma: poorly adenocarcinoma) was 37:1:7, respectively. Diagnostic accuracy of demarcation line of EGC using LED-BLM-1E and BLM-1E were 91.1% (41/45) and 91.1% (41/45), respectively. The rate of high confidence for diagnosis of a demarcation line of EGC using LED-BLM-1E and BLM-1E were 84.4% (38/45) and 91.1% (41/45), respectively. There was no significant difference of diagnostic accuracy between two modalities. The consensus rate in the demarcation line, microscopic pattern, and microsurface pattern of EGC between LED-BLM-1E and BLM-1E was 80.0% (41/45), 97.8% (44/45), and 97.8% (44/45), respectively.

Conclusion: LED-BLM-1E were demonstrated the high diagnostic performance for diagnosis of EGC demarcation, similar to BLM-1E.

Disclosure of Interest: Y. Naito: Fujifilm Co. (collaboration research) I. Itoh: Fujifilm Medical Co. All other authors have declared no conflicts of interest.

References
P0818 RISK FACTORS OF COMPLICATION RELATED TO ENDOSCOPIC MANAGEMENT OF FOREIGN BODIES IN THE ESOPHAGUS: A PROSPECTIVE STUDY IN 595 CASES FROM MULTIPLE CENTERS IN CHINA

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Introduction: Foreign bodies (FBs) ingestion is a common medical emergency accounting for 4% of all emergency endoscopies, secondary only to the GI bleeding. 70% – 75% of FBs are located in the esophagus. The need of endoscopic management reached up to 63 – 76%. According to the latest guidelines from ESGE, emergent endoscopy is recommended for the impaction of sharp-pointed objects within 24 hours. However, there were still different opinions on the endoscopic methods with different FBs.

Aim: The study was performed from October 2015 to August 2016 among 595 patients with clinical suspicion of foreign body ingestion from 18 general hospitals in China. The patient data including age, gender, clinical features, and data about endoscopic management including types and locations of foreign bodies, retrieval devices, outcomes and complications were collected and analyzed.

Results: 1) The most common types of foreign bodies were fish bones (34.0%), chicken bones (22.1%), fruit nuclei (11.7%) and food bolus (14.6%). The majority of them were sharp objects (2.5 cm, 74.0%), subsequently followed by middle objects (2.5 – 6.0 cm, 24.5%) and long objects (> 6 cm, 1.5%). Most objects were lodged in the proximal esophagus (75.9%), followed by the middle segment (9.2%) and distal segment (8.9%) of esophagus. 2) 96.3% of all cases had obvious clinical symptoms. Clinical symptoms occurred more often in the proximal segment of the esophagus (98.1%) than any other segments of the upper gastrointestinal tract (92.6%) (P < 0.001). 3) The successful removal rate through endoscopy was 94.5%. It was even higher with general anesthesia (99.3%) than without it (92.7%) (P < 0.01). 4) Complication rate was as high as 34.0%, which was increased with long retention time and sharp objects (P < 0.001). The rate was increased by 2.2 and 6.1 folds after impacted for over 12 hours as compared to 12 hours. Logistic regression analysis indicated that sharp objects had obviously more complications than non-sharp ones (OR 3.36, 95% CI: 1.97–5.74). In particular, the incidence of perforation was 5.6%, which was strongly related with long retention time and sharp objects (P < 0.03), but not with locations or lengths of the objects (P > 0.05).

Conclusion: General anesthesia could largely improve the retrieval rate through endoscopy. Foreign bodies, especially sharp ones, should be removed as soon as possible within 24 hours, to further decrease severe complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Results: 1) The most common types of foreign bodies were fish bones (34.0%), chicken bones (22.1%), fruit nuclei (11.7%) and food bolus (14.6%). The majority of them were sharp objects (2.5 cm, 74.0%), subsequently followed by middle objects (2.5 – 6.0 cm, 24.5%) and long objects (> 6 cm, 1.5%). Most objects were lodged in the proximal esophagus (75.9%), followed by the middle segment (9.2%) and distal segment (8.9%) of esophagus. 2) 96.3% of all cases had obvious clinical symptoms. Clinical symptoms occurred more often in the proximal segment of the esophagus (98.1%) than any other segments of the upper gastrointestinal tract (92.6%) (P < 0.001). 3) The successful removal rate through endoscopy was 94.5%. It was even higher with general anesthesia (99.3%) than without it (92.7%) (P < 0.01). 4) Complication rate was as high as 34.0%, which was increased with long retention time and sharp objects (P < 0.001). The rate was increased by 2.2 and 6.1 folds after impacted for over 12 hours as compared to 12 hours. Logistic regression analysis indicated that sharp objects had obviously more complications than non-sharp ones (OR 3.36, 95% CI: 1.97–5.74). In particular, the incidence of perforation was 5.6%, which was strongly related with long retention time and sharp objects (P < 0.03), but not with locations or lengths of the objects (P > 0.05).

Conclusion: General anesthesia could largely improve the retrieval rate through endoscopy. Foreign bodies, especially sharp ones, should be removed as soon as possible within 24 hours, to further decrease severe complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0820 USEFULNESS OF LINKED COLOR IMAGING (LCI) FOR RECOGNITION OF EARLY GASTRIC CANCER AND GASTRIC ADENOMA

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Introduction: LCI is a novel color enhancement feature available for LASEREO endoscopy systems (FUJIFILM CO., Tokyo, Japan), which can enhance the slight color difference on gastrointestinal mucosa. Recently we reported that color enhancement of the diffuse redness by LCI was useful for the diagnosis of H. pylori infection. Therefore, we expected that LCI facilitate the endoscopic recognition of early gastric cancer and gastric adenoma by enhancing its color difference between normal and atypic mucosa.

Aims & Methods: The aim of this study was to evaluate the usefulness of LCI for recognition of early gastric cancer and gastric adenoma compared to conventional white light imaging (WLI), WLI with Indigo Carmine contrast staining (IC) and Blue Laser Imaging-bright (BLI-brt) imaging. We retrospectively analyzed 39 lesions in 33 patients who had endoscopic submucosal dissection (ESD) at Meiji Memorial Hospital from June 2014 to May 2016. All lesions were scanned with four imaging mode, WLI, IC, BLI-brt and LCI (LASEREO with EG-L590ZW scope), and assigned a recognition score from 3 (excellent visibility) to 0 (poor visibility) by three endoscopists.

Results: The overall mean recognition score of LCI was significantly higher than that of WLI/IC/BLI-brt (2.18 ± 0.073 vs. 1.56 ± 0.808/1.86 ± 0.099/1.91 ± 0.073). For type 0-Ha lesions (18 lesions), the mean recognition score of LCI was significantly higher than WLI and BLI-brt (2.26 ± 0.12 vs. 1.83 ± 0.12/1.4 ± 0.097), whereas no significant difference was seen between LCI and IC. However, for type 0-IIa lesions (17 lesions), the mean recognition score of LCI was significantly higher than WLI/IC/BLI-brt (2.11 ± 0.11 vs. 1.33 ± 0.10/1.44 ± 0.13/1.73 ± 0.10). And the mean recognition score of BLI-brt was higher than that of IC, but no significant difference was seen between LCI and IC. Regarding WLI, IC, and BLI-brt, the mean recognition score of type 0-IIa lesions in each mode was significantly higher than that of type 0-Hb or 0-IIc lesions. However, regarding LCI, there was no significant difference in the mean recognition score between type 0-IIa lesions and type 0-Hb or 0-IIc lesions. These results indicated that the detection of type 0-Hb or 0-IIc lesion was difficult compared to 0-IIa in WLI, IC and BLI-brt mode. However, LCI mode enable us to detect these type 0-Hb or 0-IIc lesion as easily as type 0-IIa.
P0821 GASTROINTESTINAL STROMAL TUMORS SHOULD BE RESECTED EVEN IN A SMALL SIZE – A RETROSPECTIVE ANALYSIS IN 33 CASES

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GISTs are considered to be quite low. Laparoscopic endoscopy may be a less invasive and effective treatment for GIST patients. We present a retrospective study of 33 consecutive patients aged 59 ± 13.7 years-old and 23.3 ± 8.4 mm, respectively. The procedure was successfully completed in all cases in a mean procedure duration of 206 ± 43 min. The patients were discharged without severe adverse events 7.3 ± 1.5 days after the procedure. The first endoscopy after the procedure was performed 5.8 months after discharge in 22 cases, which showed no residual food in the remnant stomach in all cases. Neither apparent impairment of food intake nor disease-related death occurred and a body weight loss was 0.9 ± 2.3 kg during the mean observational period of 16 months. GIST was histologically diagnosed in 20 cases. A risk of recurrence/metastasis in these tumors including ulcerated GISTs was classified into high (2), intermediate (1), low (12) and safety of POEM for achalasia in patients older than 70 years. A total of 33 patients were enrolled in this study, who had undergone POEM for achalasia in elderly patients older than 70 years with significant improvement in symptoms.

Conclusion: All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0823 POST-POEM ESOPHAGITIS – REAL REFUX ESOPHAGITIS OR JUST A HEALING PROCESS?

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Introduction: POEM has become a standard treatment of achalasia based on its excellent efficacy and safety. However, unlike in laparoscopic myotomy, POEM is not accompanied by an antireflux procedure and thus the rates of both clinically relevant post-POEM reflux (measured by symptoms and/or 24 h pH monitoring) and post-POEM esophagitis are key questions of long-term POEM safety. Several studies have reported the rates of post-POEM reflux and post-POEM esophagitis being as high as 30–40%. The aim of this retrospective analysis was to analyze whether esophageal erosions, detected endoscopically early after POEM, represent real reflux esophagitis or rather signs of still ongoing healing process after POEM.

Aims & Methods: A single-center retrospective analysis of 192 patients who underwent POEM in our institution. Three months after POEM, 162 patients underwent both pH monitoring and endoscopy and treatment with PPIS was assessed. At 24–36 months, a control endoscopy was performed in 41 patients to screen for esophagitis. We reviewed all available video recordings of POEM procedures and subsequent control endoscopies to analyze whether the localization of erosions was limited to the site of submucosal tunneling (e.g. between 2–4 o’clock in patients after anterior POEM) or also outside this area (real reflux erasure). We also analyzed evolution of esophagitis in time and correlated it with pH monitoring and intake of PPIS.

Results: At 3 months, esophagitis was present in 64 out of 162 patients (39.6%). Of those, 21 (33%) were on PPIS by the time of endoscopy and 43 (67%) were not. Among 43 patients with esophagitis and available video recording, 29 (67.4%) had erosion(s) only on the site of submucosal tunnel and 14 (32.6%) had erosions also elsewhere. Among patients with erosion(s) only on site of the tunnel, 13 (44.8%) had normal acid exposure time (assessed by pH monitoring


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Aims & Methods: The primary objectives were to define the frequency of a euphoric reaction pattern under propofol sedation, to evaluate the reminiscence on site of submucosal tunnel and early esophagitis may be lower than previously thought.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Results: Over 42 months, 30 ESDs for SMT lesions were performed. The mean age was 62 years with 19 male patients (63%). Mean lesion size was 18 mm. Twenty-five patients (83.3%) had completely resected lesions. Four patients (13%) had involvement of the MP which was identified during the resection, and one patient (3%) had MP injury which precluded complete resection. Three of five lesions of the incompletely ESD procedures were in the proximal body of the stomach, however only two lesions of the completely resected lesions were in the proximal body (P=0.004). Otherwise, there were no significant differences between the patients and lesions characteristics. The histology of the SMT lesions were 9 NET, 6 leiomyoma, 5 Granular cell tumours, 4 inflammatory fibroid polypos, 2 Glis, 2 dystrophic Lipoma, one myofibroblastic tumour and one Warthin’s like tumour. Nineteen patients had completed surveillance endoscopy (SE) without an endoscopic and histological recurrence (Median follow up 18 months). Six patients are pending SE. The four patients with deep MP involvement were referred for surgery.

Conclusion: ESD for selected UGI SMT is an effective treatment. Long-term endoscopic follow-up confirmed the absence of recurrence endoscopically and histologically. MP involvement cannot be reliably excluded by prior EUS. This technique should be considered for UGI SMT lesions without MP involvement in experienced centres.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P0827 COMPARING APPROACHES TO SELF-EXPANDING METALLIC STENTS INSERTION**

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Introduction: The incidence of oesophageal cancer has increased significantly over the past two decades. The majority of these cancers are incurable at diagnosis. Therefore, the management is aimed at maintaining quality of life by ensuring adequate nutrition and palliation of symptoms, mainly dysphagia. Self-expanding metallic stents (SEMS) have a well-recognised role in the palliative management of patients with oesophageal cancer. These stents are inserted endoscopically, under direct vision (EC) or with fluoroscopic assistance to endoscopy (FAE). There is little evidence to compare outcomes between these approaches.

Aims & Methods: The objective of this study was to compare the outcomes, using various performance indicators, in patients who underwent SEMS for palliation in oesophageal cancer via different approaches (EC or FAE) at the Royal Infirmary of Edinburgh (RIE). A retrospective observational study was conducted between May 2014 to April 2016; a total of 62 SEMS. The approach to stent insertion was subject to operator choice and availability of fluoroscopic assistance, and as such can be akin to a randomized study. We compared early and late complications associated with two techniques. Early complications included pain, vomiting, bleeding, perforation and tachydysrhythmia. Late complications included tumour growth, oesophageptisis, stent migration and stent failure. We also compared morbidity, the need for repeat procedures and the number of additional stents required following each approach.

Results: Forty-seven stents were inserted by EC and fifteen by FAE. The median age among the two groups were comparable at 75 and 69 years respectively. There was male predominance in both the groups (70% and 67%). Adenocarcinoma was the most common malignancy (56%), followed by squamous cell carcinoma (35%) among the study subjects. We observed a higher frequency of technical difficulties with EC placement (13%) to FAE (0%), however no malposition was observed in the EC group. Early complications were comparable in both groups, however chest pain (21%) was more frequently associated with the EC group. Late complications such as tumour overgrowth, oesophagitis, oesophageptisis and stent migration were comparable in both groups. Food bolus obstruction and dysphagia was more common in EC place-ment (28%) to FAE (0%) necessitating a higher number of endoscopic procedures. However, a relatively higher number of re-stent procedures where performed in the FAE group. Median survival was comparable in both the groups.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: A value of the combination of magnifying endoscopy of and image enhancement endoscopy (IEE) technology (e.g. NBI, BLI) is reported in a diagnosis for the early gastric neoplasm. That method is useful, but in order to master it is necessary to learn and familiarize complex classifications. Therefore, this diagnostic method is still more difficult for general endoscopists. Linked Color Imaging (LCI) was recently developed using a laser endoscopic system (Fujifilm CF-Q180Z). LCI acquires images by simultaneously using narrow-band short wavelength light and white light in an appropriate balance. This combination of light provides more information about the vasculature and architecture on the mucosal surface than that obtained with typical white-light imaging. When we use acetic acid indigocarmine mixture (AIM) with LCI mode, we reported that the magnifying images of early gastric cancer are very clear, three-dimensional and near to real histology. So, we examined the examined the utility of this method.

Aims & Methods: This was a prospective observational study performed at a single tertiary referral center. The subjects were 120 lesions of 115 patients with gastric neoplasm. We are indicated the endoscopic submucosal dissection (ESD), and were given preoperative endoscopy in our hospital from September 2014 to February 2017. Firstly we observed the lesions by magnifying endoscopy with the BLI mode and diagnosed using VS classification system. Secondly we observed the lesions by magnifying endoscopy with LCI + AIM method and diagnosed using VS classification system. Furthermore, we classified tumor differentiation into high differentiation, moderately differentiated, and poorly differentiated by its surface pattern. Finally, we classified the visualization ability of the surface fine structure in Clear, Visible, and Invisible and evaluated it. We believe that a magnifying endoscopy diagnosis of the gastric cancer is enabled by the pathology results, 92 lesions were gastric cancer and 28 lesions were gastric adenoma. The differentiation ability of a cancer and the non-cancer (adenoma) did not have the significant difference between the BLI mode and the LCI + AIM methods. Diagnosis of differentiation of gastric cancer was correct in 87 of 92 cases (94%). In the classification of visualization ability, 32 lesions were Clear, 44 lesions were Visible, 44 lesions were Invisible by BLI mode. On the other hand, 45 lesions were Clear, 64 lesions were Visible, 11 lesions were Invisible by LCI + AIM method. In the visualization ability of the surface fine structure, LCI + AIM method is significantly clearer than BLI mode (p < 0.001).

Conclusion: When we use AIM, indigocarmine accumulates in pits of the duct, and duct structures become clear by the acidic acid. By LCI mode, we can observe the vascular pattern of the lesion clearly. So by the combination of AIM and LCI, we can observe the endoscopic images closer to actual histological images. By this method, we can compare histopathology with an endoscopic image intuitively, so we believe that a magnifying endoscopy diagnosis of the gastric cancer is enabled even if we do not use various confusing classifications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO029 NOVEL IMAGE ENHANCEMENT TECHNOLOGY USING LINKED COLOR IMAGING WITH ACETIC ACID INDIGOCARMINE MIXTURE FOR DIAGNOSIS OF EARLY GASTRIC NEOPLASM

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Introduction: A value of the combination of magnifying endoscopy and image enhancement endoscopy (IEE) technology (e.g. NBI, BLI) is reported in a diagnosis for the early gastric neoplasm. That method is useful, but in order to master it is necessary to learn and familiarize complex classifications. Therefore, this diagnostic method is still more difficult for general endoscopists. Linked Color Imaging (LCI) was recently developed using a laser endoscopic system (Fujifilm CF-Q180Z). LCI acquires images by simultaneously using narrow-band short wavelength light and white light in an appropriate balance. This combination of light provides more information about the vasculature and architecture on the mucosal surface than that obtained with typical white-light imaging. When we use acetic acid indigocarmine mixture (AIM) with LCI mode, we observed the lesions by magnifying endoscopy with LCI and were given preoperative endoscopy in our hospital from September 2014 to February 2017. Firstly we observed the lesions by magnifying endoscopy with the BLI mode and diagnosed using VS classification system. Secondly we observed the lesions by magnifying endoscopy with LCI + AIM method and diagnosed using VS classification system. Furthermore, we classified tumor differentiation into high differentiation, moderately differentiated, and poorly differentiated by its surface pattern. Finally, we classified the visualization ability of the surface fine structure in Clear, Visible, and Invisible and evaluated it. We believe that a magnifying endoscopy diagnosis of the gastric cancer is enabled even if we do not use various confusing classifications.

Aims & Methods: The aims of our study were to evaluate and compare the efficacy, safety, and clinical outcomes of gastric ESD in patients aged 85 years or older and in younger patients. The subjects were 705 patients who collectively presented with 876 gastric tumors (288 adenomas and 588 early gastric cancers). All patients underwent ESD at our hospital between June 2007 and December 2016. Patients were divided into two groups: elderly (aged ≥ 85 years, consisting of 59 patients with a collective 71 lesions) and non-elderly (Group B: aged < 85 years, consisting of 646 patients with a collective 805 lesions). We evaluated the clinical and pathological findings, resection rates, complications, and long-term outcomes, including the survival rate. The local and distant recurrence rates were analyzed in the cohort with curative resection and observationally managed with non-curative resection. The 3- and 5-year overall survival and tumor-specific survival rates were analyzed in the entire study cohort.

Results: The patients' mean ages were 87 (Group A) and 71 years (Group B), and the male-to-female ratios were 30/29 (Group A) and 646/805 (Group B). No significant differences were found in the mean tumor size for Group A (15 mm) and Group B (20 mm). Regarding histopathological findings, the prevalence rates of tubular adenoma were 28.3% (21/71; Group A) and 33.8% (267/805; Group B); intramucosal carcinomas, 52.1% (37/71; Group A) and 53.8% (433/805; Group B); shallow submucosal invasive carcinomas (< 500 μm), 70.0% (52/78; Group A) and 65.6% (528/805; Group B); and deep submucosal invasive carcinomas (> 500 μm), 11.3% (8/71; Group A) and 6.6% (53/805; Group B). Once again, the groups showed no significant differences. The en bloc resection rates were 97.1% (71/71; Group A) and 97.3% (782/805; Group B); histological complete resection rates were 94.4% (67/71; Group A) and 92.9% (748/805; Group B), and the curative resection rates were 78.6% (56/71; Group A) and 86.5% (695/805; Group B). Among the non-curative cases, 13 (86.6%) of the 15 patients in Group A (46.3%) of the 33 patients in Group B died, and disease-specific mortality rates in Groups A and B were 0% (0/71) and 0.5% (4/805; Group B). Regarding long-term outcomes, analysis of recurrence revealed the local and distant recurrence rates to be 0% for Group A and 0.9% (7/746; local) and 0.1% (1/746; distant) for Group B. Concerning survival analysis, the mean follow-up period in Group A and Group B was 839 and 1156 days, respectively. There were no significant differences observed in the survival rates. 6 (10.0%) of 59 patients in Group A and 54 (9.3%) of 646 patients in Group B died, and disease-specific mortality rates in Groups A and B were 0% (0/71) and 0.8% (5/646), respectively.

Conclusion: Gastric ESD in patients aged 85 years or older can be effectively and safely performed. According to the long-term outcomes, gastric ESD performed as a local resection (total biopsy) in elderly patients may be acceptable, even in non-curative cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO031 RESULTS FROM THE FIRST UK VIRTUAL COMPLEX POLYP MDM

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Introduction: Data from the UK Bowel Cancer Screening Programme (BCSP) has established that the assessment and management of large non pedunculated colonic polyps (LNPCPs) varies markedly, leading to variable and often suboptimal outcomes, especially for the most complex lesions. A multicentre complex polyp multidisciplinary team meeting was created within the North East of England BCSP with the aim of ensuring more robust decision making and management of complex LNPCPs.

Aims & Methods: A virtual multicentre MDM was conducted via audioteleconferencing within the North East of England between 2014-6 to discuss complex LNPCPs (LNPCPs with increased risk of malignancy or complexity associated with endotherapy, as defined in BSG/ACPGBI guidelines1). Non-discussed LNPCPs were not discussed. Patient data was distributed securely via NHSmail. Outcomes were assessed prospectively using key performance indicators (KPIs) from the BSG/ACPGBI guidelines.

Results: 61 complex LNPCP cases were managed via the MDM with 8 excluded from analysis (7: managed prior to MDM referral, 1: MDM advice not followed), 27 lesions were managed with primary endotherapy, 23 with primary surgery and 3 cases conservatively. Of the endoscopic cases, 2 required surgery due to failed endotherapy and was referred to a finding meeting. 12-month recurrence was 8.7% with no reported complications. The rate of surgical management using the BSG/ACPGBI KPI (including only surgically managed benign lesions or lesions subject to failed endotherapy) was 39.5%.

Disclosure of Interest: All authors have declared no conflicts of interest.
rate of complexLNPCPs with features suggestive of increased malignancy risk was 22% in the high-ADR group. Overall, mean ADR was 23.06% (SD 0.55) with a min-
imum of 5.0–1 cm and those bigger than 2 cm. Regarding shape, proportion of peduncu-
lated adenomas were noted in 46% of adenomas with 1–2 cm in size, but have lower proportions of pedunculated adenomas than those with a low ADR. In our study cohort no significant differ-
ences in flat shape or diminutive size was measurable.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0832 DIFFERENCES IN DISTRIBUTION OF SIZE, SHAPE AND SERRATED HISTOLOGY OF COLORECTAL ADENOMAS BETWEEN ENDOSCOPYISTS WITH LOW (<20%) AND HIGH (≥20%) ADENOMA DETECTION RATE
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Introduction: Patients of endoscopists with high (≥20%) adenoma detection rate
(ADR) have less risk for interval cancer than those of those with an low ADR
(<20%). Lesion-related-factors, such as size, shape and histology influence
the probability of finding adenomas with high ADR during screening endo-
scopy. Aims & Methods: Our study aim is to investigate the differences of size, shape and
serrated histology of adenomas between low- and high-ADR group in our screen-
ing cohort. We analyzed 2534 screening colonoscopies performed by 268
deoacoscopists between 2007 and March 2017 within the austrian certificate of
screening colonoscopy. T-Test was used to assess differences.

Results: 39.1% of endoscopists were categorized in the ADR low- and 60.9% in the
high-ADR group. Overall, mean ADR was 23.06% (SD 0.55) with a mini-
mum of 0.39% and a maximum of 48.72%. In the low-ADR-group mean ADR
was 14.56% (SD 0.42) and 28.51% (SD 0.50) in the high-ADR group. Relating to
size, there was a significant difference (p = 0.029) in detection of adenomas of 1–
2 cm with a mean of 8.44% (SD 6.02) in low- vs. 10.22% (SD 6.44) of all adenomas
in high-ADR group but no differences between adenomas <0.5 cm, 0.5–1 cm and
those bigger than 2 cm. Regarding shape, proportion of peduncu-
lated adenomas in low-group ADR differ significantly higher p = 0.002, with a
mean of 19.36% (SD 14.60) vs. 17.04% (SD 9.55) but there were no differences
discrepancies between flat and sessile adenomas. With a mean proportion of 4.43% (SD 5.61)
vs. 6.64% (SD 5.97), the proportion of sessile sessile adenomas (SSA) differ
significantly between low-ADR vs. high-ADR group (p < 0.01). There was no significant
difference regarding traditional sessed adenomas (p = 0.800).

size ADR-Group Mean SD p-value
<0.5 cm ≥20% 34.04 6.02 p = 0.029
<0.5 cm <20% 23.59 15.46
≥20% 31.81 7.28
0.5–1 cm ≥20% 18.23 p = 0.980
<20% 20.58

(continued)

P0833 PREDICTIVE FACTORS FOR TECHNICALLY DIFFICULT ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD). IMPLICATIONS FOR CASE SELECTION: A SPANISH PROSPECTIVE MULTICENTER COHORT STUDY
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Introduction: ESD is a complex procedure, mainly in non-Asian countries where the
learning process is not well established. Results may be improved in Western
Europe by performing ESD with a careful selection of lesions for ESD and avoiding those
with greater chance of technical difficulty. Factors predicting technically difficult ESD
when it is performed by non-Asian endoscopists should be clarified.

Aims & Methods: We aimed to identify the potential risk factors that are asso-
ciated with a higher technical difficulty during ESD in a Western European
setting where there are no available Asian experts. We prospectively recorded
consecutive ESD cases performed by members of the ESD Working Group of the
Spanish Society of Digestive Endoscopy. Demographic and clinical characteris-
tics of the patients, location and morphology of the lesions, and technical factors
were collected. We defined difficult ESD as those aborted procedures, time-con-
suming (duration >180 min.) or when changing the technique to piecemeal resec-
tion was needed to remove the tumor. Analyses were carried out using IBM SPSS
Software for Windows (IBM Corp., Armonk, NY, USA). Parametric continuous
variables are reported as the mean ± standard deviation (SD). A Kolmogorov-
Smirnov test was used to evaluate normal distribution. Categorical variables are
reported as either frequencies or percentages. Statistical differences between
the groups were analyzed using a chi-squared method for categorical data. The
meaningful variables with a p value <0.1 in the univariate analysis were included
in the logistic regression model. Multivariate analysis was performed using
binary logistic regression methods. Odds ratios (ORs) and 95% confidence inter-
vals (CI) were calculated to assess the strength of the influence of each individual
variable.

Results: We included 265 lesions in 265 patients [mean age ≤ SD: 69 ± 10; 150
males (56.6%)]. They were recruited in 15 Spanish University Hospitals between
January 2016 and March 2017. Location of the lesions were: esophagus (n = 7;
2.6%), cardiac (n = 5; 1.8%); stomach (n = 48; 18.1%); duodenal bulb (n = 1;
0.3%); colon (n = 144; 54.3%) and rectum (n = 60; 22.6%). Mean lesion size
was 8.46 ± 18.5 mm. Median duration of the procedure was 105 min. (8–375).
In 73 cases (27.5%) criteria for difficult ESD were fulfilled. Endoscopic resection
was aborted in 7 cases (2.6%). When endoscopic resection was achieved (n = 258;
97.3%) both situations, duration ≥3 h and a piecemeal resection, were noted in
21 (8.1%) patients. Duration ≥3 h in 25 cases (9.7%) and unsuccessful en blocc
Conclusion: The factors independently associated with technically difficult ESD (aborted procedures, time-consuming or finished with a piecemeal resection) were: lesion size >30 mm, poor manoeuvrability, recurrent lesions and intra-procedural bleeding. Except for the last one, the remaining factors can be identified during the first diagnostic endoscopy. Endoscopists who will start performing ESD should try to avoid these difficult procedures in the early part of their learning curves.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0834 EPOCH-MAKING TECHNIQUE OF FULL-THICKNESS RESECTION FOR THE COLORECTAL TUMOR BY USING LAPAROSCOPY ENDOSCOPIC COOPERATIVE SURGERY (LECS)

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Introduction: We established the Laparoscopy Endoscopy Cooperative Surgery (LECS) procedure to overcome the limitation of colorectal endoscopic submucosal dissection (ESD). This procedure is a local full-thickness resection of the combined procedure of laparoscopy assisted colectomy (LAC) and ESD procedure. Also, it is the method that is epoch-making for minimal invasive treatment that kept an intestinal function.

Aims & Methods: The aim of this study was to investigate the feasibility and safety of LECS procedure applied with endoscopic submucosal dissection (ESD) technique obtained adequate surgical margin. We performed ESD on 1341 patients (male: female = 777:564; mean age, 66.1years). Among these cases, six cases had perforation (0.4%), and three of six cases required emergent surgery. We examined the cause of perforation and the limit of ESD from the view point of safety. We performed one-piece resection for 11 cases (male: female = 7:4; mean age, 63.5years) of colorectal tumors using LECS procedure. In the first, the indication of LECS is at high risk of the perforation by the treatment of ESD and EMR and is the lesion that safety cannot secure. In addition, the indication is the lesion which is curable by the local excision without lymph node dissection. Therefore, submucosal invasive (T1) cancer with the risk of lymph node metastasis does not become the indication for this full-thickness resection technique. From the above-mentioned basic concept, indications of the LECS procedure for colorectal tumors were thought to be as follows: 1) Intra-mucosal carcinoma (Tis) and adenoma with high-grade atypia involved appendix or diverticulum. We examined the clinicopathological outcomes of the above-mentioned 11 cases.

Results: Four of six cases that caused perforation in ESD were cases with fibrosis in the submucosal layer. Three cases of those were moderate to severe degree fibrosis cases, and a limit of ESD seemed to exist in these lesions from the viewpoint of safety and curability. We accomplished full-thickness resection successfully for 11 cases using LECS procedure as follows: 5 cases of Tis cancer, 4 cases of adenoma, 1 case of schwannoma, and 1 case of GIST. The results we judged as the indication of LECS procedure were as follows: three cases accompanied by severe degree fibrosis, 2 cases involved diverticulum, 3 cases involved appendix, 2 cases of submucosal tumor, and 1 case of poor endoscopic operability. These cases were considered a limitation of ESD due to the high risk of perforation. An operative time was an average of 195.8 minutes (127 to 332), and the perioperative bleeding was an average of 8.0 ml (3 to 20). We experienced no complications, and average post-operative hospital stay was 7.76(2 to 12) days. Histological examination of the resected specimens revealed negative lateral and deep margins. The postoperative follow-up was carried out first a half year later, and it was every one year subsequently. In the above-mentioned follow-up schedule, blood examination, colonoscopy, CT scan were performed for clinical evaluation. The residual/local recurrence case was absent for 31.6 months (range 10-60 months) for the mean follow-up period. Also, without complications such as postoperative anastomotic stricture or adhesive ileus, we followed favorable course.

Conclusion: We developed a LECS procedure to overcome the limit of ESD, and completed full-thickness one-piece resection of the tumors considered as high risk of perforation in the endoscopic treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
The interviews provided an in-depth understanding of patient experience of GI procedures. 6 over-arching and inter-linking themes emerged across all procedures. Anxiety, expectations, choice/control, communication/information, comfort and embarrassment/dignity. Relation of themes was seen e.g. if the procedure appointment was sooner than expected, patients were anxious about the potential outcome. Choice was important in terms of appointment, endoscopist and choice of pre-medication, however it was highly individualised. Communication prepared patients and managed expectations, with one patient describing poor endoscopist communication affecting the whole experience. Patients described embarrassment related to changing and waiting areas; sensitive nature of the test; exposure and physical reaction. Discomfort during the procedure was attributed to instrument and air insertion.

Conclusion: Despite heterogeneity between procedures consistent themes related to patient experience emerged. This work will be used to develop PREMs for gastrointestinal Endoscopy.

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C.J. Rees: Colin Rees has received research grants from ARC medical, Olympus Medical, Aquilant endoscopy, Norgine, travel grants from Boston scientific and Cook medical and speaking grants from Cook medical and speaking grants from Norgine and Olympus All other authors have declared no conflicts of interest.

Reference

P0838 RANDOMIZED CONTROLLED TRIAL OF ABDOMINAL VIBRATION STIMULATION AND WALKING EXERCISE FOR BOWEL CLEANSING PRIOR TO COLONOSCOPY
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Introduction: Adequate bowel preparation is important to perform colonoscopy for accurate mucosa examination, lesion detection and treatment. Walking exercise is known to be effective for colon cleansing. However, it is difficult for patients with uncomfortable walking to improve the status of bowel cleansing.

Aims & Methods: Therefore, we prospectively evaluated the clinical feasibility of the abdominal vibration stimulation for bowel cleansing and clinical validity of the abdominal vibration stimulation for bowel cleansing.

P0837 DEVELOPING PATIENT-REPORTED EXPERIENCE MEASURES FOR GI ENDOSCOPY: RESULTS OF PATIENT INTERVIEWS
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Introduction: Patient experience is increasingly recognised as a key measure of quality of care. Ensuring positive experience is important to patients and fundamental in maximising participation in screening programmes and re-attendance for surveillance procedures. Current measures of patient experience of gastrointestinal (GI) endoscopy are clinician derived.(1) Patient Reported Experience Measures (PREMs) should be patient derived and incorporate pre-and post-procedure experience. We aimed to identify themes considered as important to patients undergoing GI procedures as a basis for developing PREMs.

Aims & Methods: We aimed to identify themes important to patients undergoing GI investigations, to enable questionnaire development. Patients who had undergone upper or lower GI investigations (gastroscopy, colonoscopy and CT pneumocolon) were invited to attend for a semi-structured interview. 32 interviewees were purposefully sampled to ensure diversity. Interviews were conducted by a research fellow trained in qualitative methods and were audio recorded and transcribed verbatim. Recruitment continued until saturation was achieved. Analysis used qualitative thematic methods focusing on anticipated and emergent themes, using constant comparison to ensure that all perspectives were included.

Results: 168 patients were approached. 32 interviews were completed (12 gastroscopy, 10 colonoscopy and 10 CT pneumocolon), with a male:female ratio of 18:14. The time interval from examination to procedure ranged from 5 to 44 days. Mean age was 63.1 years (SD 11.5).

Table 1: Number of Patients with Adverse events on Day 1, 14, and 28.

<table>
<thead>
<tr>
<th>Event</th>
<th>Day 1 N</th>
<th>Day 14 ± 2 days N</th>
<th>Day 28 ± 2 days N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major 31(5.0%)</td>
<td>Major 16(2.5%)</td>
<td>Major 1(0.2%)</td>
<td></td>
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<tr>
<td>EMR 19(3.8%)</td>
<td>ESD 12(10.3%)</td>
<td>EMR 11(2.2%)</td>
<td>ESD 5(4.3%)</td>
</tr>
<tr>
<td>Hematochezia</td>
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<td>9</td>
<td>17</td>
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<tr>
<td>Chest pain</td>
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<td>4</td>
<td></td>
</tr>
<tr>
<td>Micro perforation</td>
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<td>2</td>
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<tr>
<td>Severe abdominal pain</td>
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<tr>
<td>Perforation</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Minor 284(46.1%)</td>
<td>Minor 344(55.9%)</td>
<td>Minor 25(4.1%)</td>
<td></td>
</tr>
<tr>
<td>EMR 217(43.5%)</td>
<td>ESD 67(57.8%)</td>
<td>EMR 267(53.5%)</td>
<td>ESD 77(66.4%)</td>
</tr>
<tr>
<td>Bowel habit change</td>
<td>156</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Abdominal bloating</td>
<td>28</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Minor bleeding</td>
<td>30</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Mild abdominal pain</td>
<td>54</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Dizziness</td>
<td>25</td>
<td>10</td>
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</tr>
<tr>
<td>Headache</td>
<td>19</td>
<td>6</td>
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</tr>
<tr>
<td>Back pain</td>
<td>13</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Easy fatigueability</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>General Myalgia</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Nausea/vomiting</td>
<td>3</td>
<td>8</td>
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</tr>
<tr>
<td>Tenesmus</td>
<td>3</td>
<td>9</td>
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</tr>
<tr>
<td>Febrile sense</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Voiding difficulty</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Dry mouth</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Epigastric pain</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Leg pain</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Urticaria</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Indigestion</td>
<td>1</td>
<td>5</td>
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<tr>
<td>Drowsiness</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Herpes zoster</td>
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<td>1</td>
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</tr>
<tr>
<td>Flank pain/proctalgia</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Preparation. In this randomized, prospective, investigator-blind study and single center study, 141 inpatients for elective colonoscopy were randomized to two groups. PEG solution was used for bowel cleaning in all patients. The one is walking over 3000 steps and the other is having abdominal vibrator more than 30 minutes before colonoscopy. After examination we recorded procedure results, sedation information, patient's satisfaction and adequacy of bowel preparation by using the Boston Bowel Preparations Scale (BBPS).

**Results:** There were no significant differences between vibrator group (n = 75) and walking group (n = 66) in bowel preparation quality (Total BBPS 7.40 vs 7.23, p = 0.519), withdrawal time (30.40 vs 30.05 mins, p = 0.829), number of polyps (4.09 vs 3.17, p = 0.085), patient satisfaction (4.39 vs 4.12, p = 0.249) and number of diarrhea after taking PEG (11.49 vs 11.42, p = 0.903). Vibration group was superior than walking group in time of first defecation after taking PEG (112.89 vs 123.42 mins, p = 0.005) and cecal intubation time (6.23 vs 8.52 mins, p = 0.011).

**Conclusion:** Bowel preparation accompanied with abdominal vibration stimulation showed almost similar results to a walking group which was conventional methods for adequate bowel preparation. The patients with the condition which cause uncomfortable gait such as old age, CVA, Parkinsons, or joint disease, bowel preparation with abdominal vibrator is expected to help in proper bowel cleansing for therapeutic colonoscopy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P0839 COMPARATIVE STUDY OF ELECTRICAL AND RHEOLOGICAL PROPERTIES OF DIFFERENT SOLUTIONS TO PERFORM SUBMUCOSAL INJECTION**

**Aims & Methods:** To analyze the electrical (R) and rheological (temperature, viscosity, height and lasting of the cushing) properties of different submucosal solutions in an ex vivo model of porcine stomach. Tested solutions were: Saline (S), Gliceol (GC), Hyaluronic acid (HA), Distilled water (DW), Platelet-rich Plasma (PRP), Glucosated saline 10% (GS), Gelaspan (GP), TriBio (TB) and Ossa3, I. Marı´n1, J. Boix1, R. Bartolı´4

**Results:** The solutions that showed the best basal R were: PL, HA, GS, TB and PRP. At 60 minutes, the best R were: PRP, TB, PRP + TB, HA and GS. The best durability at 60 minutes was for TB, PRP, TB+PRP and PL that maintained the height at around 80% of its original in comparison to the other substances with were at around 60%. During the resection the solutions that underwent a lower temperature increase were: TB + PRP, PL, and TB.

**Conclusion:** Based on electrical and rheological properties, the best submucosal solutions to perform safer endoscopic resections are: TB + PRP, TB, PL and PRP.

**Disclosure of Interest:** V. Lorenzo-Zúñiga: Authorship of the patient All other authors have declared no conflicts of interest.

**References**

1. 2016 Commonwealth Fund International Health Policy Survey of Adults.
Conclusion:
The incidence of synchronous advanced neoplasia (AN) of rectal LSTs with a skirt was significantly lower compared with rectal LSTs without a skirt (46.8% vs 27.3% and 0.02) between LSTs with and without a skirt. In contrast, there was no significant difference with respect to the rectum (6.0% vs 6.6% and p = 0.41). The total number of AN in rectal LSTs with a skirt (n = 7; right colon: 2; left colon: 2 and rectum: 3) was significantly lower than in rectal LSTs without a skirt (n = 74; right colon: 35; left colon: 34 and rectum: 5). There were significant differences in the right colon (p = 0.03) and the left colon (p = 0.04), while there was no significant difference between these groups with respect to the rectum.

Discussion of Interest: All authors have declared no conflicts of interest.

References

P00842 EVALUATION OF MUCOSAL HEALING WITH SHEIELDS BASED ON DIFFERENT HYDROGELS IN A RAT MODEL OF THERMAL INJURY
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1Endoscopy/er Group, Germans Trias/IJTP, Badalona/Spain
2IGTP/CIBERehd, Badalona/Spain
3Pathology Department, University Hospital Germans Trias, Badalona/Spain

Introduction: Endoscopic resection of large lesions leads to extensive mucosal defects and submucosal exposure, with a substantial risk of adverse events. The prevention of these complications is inefficient with current methods. Endoscopic shielding, as a simple and safe technique, has been proposed to improve mucosal restoration, and therefore, the incidence of these events. Previous reports have confirmed the efficacy of the placement of hydrogels based on platelet-rich plasma (PRP) (1) or hialuronic acid with other substances (TriBio) (2), but never the combination of both hydrogels, in the prevention of delayed complications after mucosal damage.

Aims & Methods: To assess the efficacy of endoscopic shielding with the combination of PRP and TriBio in a rat model of thermal injury. Thermal injury was obtained according to our rat model (3). Lesions were performed in male Sprague-Dawley rats (400–450 g) under general anesthesia. Animals were randomized to receive one of the following shields onto the lesions: PRP + TriBio, PRP and TriBio. Rats underwent endoscopic follow-up at 7 days and 2 weeks. Afterwards, animals were sacrificed and ulcers sites were macroscopically and histopathologically evaluated.

Results: Animals treated with PRP + TriBio obtained the best results in comparison with other hydrogels (PRP and TriBio). Mucosal healing rate (percentage of mucosal restoration) at 14 days was significantly higher with PRP + TriBio (100% vs 82% and 90%; p < 0.05). Histological study confirmed these data, showing total restoration of mucosal layer with PRP + TriBio

Conclusion: The use of a combination of two covering agents (TriBio and PRP) is the best approach to obtain mucosal healing in a rodent model of endoscopic thermal injury in colon.

Disclosure of Interest: R. Bartoli: Authorship of the patent J. Boix: Authorship of the patent V. Lorenzo-Zúñiga: Authorship of the patent All other authors have declared no conflicts of interest.

References
Results: Intratumoral injection was feasible in all animals with no adverse events. Biopsies of the neoplastic tissue showed residual tumour necrosis in 3.50±0.35 for the 2D system. The score was significantly higher for the 3D system than for 2D endoscopy (p<0.001). When comparing the evaluations by the experts, non-experts, and medical students, the differences in the scores by the non-experts and medical students were noted to be higher (p<0.05). In contrast, the scores by the experts were also higher for the 3D system, but no statistical difference was observed (3.50±0.53 for 2D endoscopy and 3.87±0.35 for the 3D system, p=0.08). As a result, 10 out of 12 observers noted that the 3D system had better visibility than conventional 2D colonoscopy, and none of the observers noted deterioration in visibility with the 3D system.

Conclusion: The present findings suggest that the 3D imaging system improves the visibility of non-polypoid colorectal neoplasms and may be more effective for non-experts. Our findings would contribute to improvement in the detection of these neoplasms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0845 PAIN DURING COLONOSCOPY: DIFFERENCES BETWEEN PATIENTS’ EXPERIENCES AND CAREGIVERS’ ASSESSMENT

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2Institute Of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg/Sweden
3Dept Of Internal Medicine, Sahlgrenska University Hospital - Dept of Internal Medicine, Sahlgrenska University Hospital; Gothe, Gothenburg/Sweden
4Centre For Person-centered Care, Institute of Health and Care Sciences, University of Gothenburg, Gothenburg/Sweden

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Introduction: Pain is a subjective perception, which contributes to difficulties to provide adequate pain relief according to every patient’s needs. Colonoscopy is by many patients considered as a painful and strenuous procedure. Approximately 6 to 8 mm. Anti-VEGF in comparison with Anti-EGF obtained the best results (significantly reduction in size and cell necrosis). However, only alfibeprotide showed total acute tumoral necrosis. This subgroup reported severe, very severe or extremely severe pain. 90% of the patients were given analgesics and sedation during the investigation. For patients who reported, “severe, very severe or extremely severe pain” (n=111), pain was underestimated by physicians and nurses in 58% of all assessments. This was most commonly seen among the youngest patients, 18–29 years (n=9), where pain was underestimated in 25.5% among the group. There was also a difference according to gender: physicians underestimated pain in 60% of men who reported “moderate pain” (n=66) while the nurses underestimated pain in 27% among the same group of men. Women’s pain was overestimated by caregivers in 26% (n=188) of all cases with mild pain. Patients undergoing colonoscopy for the first time (n=331), and reporting “moderate pain”, were underestimated by physicians in 58% and by nurses in 25%. 58% of the patient reports that they were anxious before the procedure. This group reported more pain than the group without anxiety (p<0.001). Presence of anxiety and a high level of agreement between patients, caregivers and the patient’s pain report. The agreement between pain reports from patients and caregivers were poor to fair, with slight differences between nurses (Kappa=0.37; p<0.000) and physicians (Kappa=0.29; p<0.000) in total, congruent pain reports between patients and caregivers were seen in 36% of all assessments.

Conclusion: Agreement between caregivers’ and patients’ pain reports is far from perfect, and the agreement is influenced by several factors such as the profession of the caregiver, as well as patient factors including pain severity, anxiety, age, gender and previous experience of colonoscopy. The goal for the future should be to individualize the use of analgesics based on every patient’s needs, which seems to be of special importance in specific groups of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. sakata s, grove pm, stevenson ar, hewett dg. gut. 2016; 65: 730–731.
2. matsumura t, ishigami h, okimoto k, et al. three-dimensional imaging system for colonoscopy. endoscopy 2017; 49: e1–e2

P0844 A THREE-DIMENSIONAL IMAGING SYSTEM IMPROVES THE ENDOSCOPIC VISIBILITY OF NON-POLYPOID COLORECTAL NEOPLASMS


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Introduction: Three-dimensional (3D) imaging techniques have been developed in the medical field. Previous research reports that simulated 3D colonoscopy improves the detection of colonic lesions [1]. A novel 3D imaging system has been recently developed, which can create 3D virtual video images from conventional two-dimensional (2D) endoscopic images [2]. However, actual cases have not been studied.

Aims & Methods: This study aimed to investigate whether the 3D system can improve the visibility of colorectal neoplasms compared with conventional 2D endoscopy. We analyzed non-polypoid colorectal neoplasms and recorded their videos using conventional 2D endoscopy and the 3D system. The movies were evaluated by 8 endoscopists (4 experts and 4 non-experts) and 4 medical students. Each neoplasm was assigned a visibility score between 4 (excellent visibility) and 1 (poor visibility).

Results: The mean visibility scores were 3.35±0.58 for 2D endoscopy and 3.75±0.44 for the 3D system. The score was significantly higher for the 3D system than for 2D endoscopy (p<0.001). When comparing the evaluations by the experts, non-experts, and medical students, the differences in the scores by the non-experts and medical students were noted to be higher (p<0.05). In contrast, the scores by the experts were also higher for the 3D system, but no statistical difference was observed (3.50±0.53 for 2D endoscopy and 3.87±0.35 for the 3D system, p=0.08). As a result, 10 out of 12 observers noted that the 3D system had better visibility than conventional 2D colonoscopy, and none of the observers noted deterioration in visibility with the 3D system.

Conclusion: The present findings suggest that the 3D imaging system improves the visibility of non-polypoid colorectal neoplasms, and this is more effective for non-experts. Our findings would contribute to improvement in the detection of these neoplasms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. sakata s, grove pm, stevenson ar, hewett dg. gut. 2016; 65: 730–731.
2. matsumura t, ishigami h, okimoto k, et al. three-dimensional imaging system for colonoscopy. endoscopy 2017; 49: e1–e2

P0846 DEVELOPMENT OF A NEW ENDOSCOPIC CLASSIFICATION AND A PROSPECTIVE INTERNATIONAL VALIDATION (FACILE GROUP) OF COLONIC LESIONS USING ADVANCED IMAGING MODALITIES IN IBD PATIENTS


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4Division Of Gastroenterology, Department Of Internal Medicine, Iwate Medical University, Morioka/Japan
5Gastroenterology, Leeds Teaching Hospitals NHS Trust, Leeds/United Kingdom
6Center For Preventive Medicine, Keio University School of Medicine Center for Preventive Medicine, Tokyo/Japan
7Clinical Research Unit, Calgary/Canada
8Gastroenterology And Hepatology, Maastricht Hospital, Maastricht/Netherlands
9HDK, Dr. Horst-Schmidt-Kliniken, Wiesbaden/Germany

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Introduction: The SCENIC consensus proposed recommendations for optimal detection and management of dysplasia during colonoscopic surveillance for IBD. Characterization of colonic lesions in IBD remains challenging even by using advanced endoscopic imaging modalities (high definition [HD], virtual chromoendoscopy [VCE] dye chromoendoscopy [DCE]). Aims & Methods: We aimed to develop a unified endoscopic classification of advanced imaging to predict histology of colonic lesions, and to validated by international experts (Frankfurt Advanced Chromoendoscopic Ibd LSions-FACILE Group). We developed an endoscopic classification of IBD lesions, based on morphology, colour, demarcation, surface pattern, vessel pattern, signs of inflammation (table). A library of 60 colonic lesions, including dysplasia, sessile serrated adenomas/polyps, invasive cancer and pseudopolyps collected at surveillance colonoscopy by using HD, DCE and VCE with i-scan or NBI were assessed. The diagnostic performance of the score was tested based on the final histopathology and the inter-observer variability of the eight examiners. The examiners have had to perform a pre-test (45 minutes) before analyzing the colonic lesions. Multivariate analysis with bootstrapping, of characteristics of the classification was performed to determine the strength of endoscopic predictors of dysplasia.

Results: Of the 60 IBD lesions, 33 (55%) were dysplasia, 6 (10%) cancer, 9 (15%) SSA/Ps and 12 (20%) pseudopolyps. Across the experienced international raters sensitivity, specificity, PPV, NPV and accuracy in predicting histology, were 72%, 91%, 46%, 72%, 77%. Individual rater accuracy ranged from 66% to 77%. Sensitivity, specificity, PPV, NPV, accuracy, for predictions made with high confidence were 72%, 90%, 97%, 46%, 76%, which were significantly more accurate compared with a low confidence of diagnosis (76% vs 65%; p<0.001). Univariate analysis showed that the non polypoid lesions, irregular and vessel architecture and signs of inflammation within the lesion were predictive of dysplasia. Subsequent multivariate analysis confirmed that of these endoscopic findings non polypoid lesion OR 11.6 (95% CI6.71–20.2), surface pattern

Disclosure of Interest: All authors have declared no conflicts of interest.
Table 1: Advanced endoscopic classification of IBD lesion

<table>
<thead>
<tr>
<th>Endoscopic Feature</th>
<th>UC/CD</th>
<th>Kudo Paris Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulceration</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Uleteration</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Colour of the lesion (relative to the background)</td>
<td>Darker</td>
<td>Same intensity</td>
</tr>
<tr>
<td>Vascular pattern</td>
<td>Roundish</td>
<td>Irregular (non-structural)</td>
</tr>
<tr>
<td>Vessel architecture</td>
<td>Non visible</td>
<td>Regular</td>
</tr>
<tr>
<td>Vessel architecture</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Endoscopic inflammatory activity</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Demarcation</td>
<td>Yes</td>
<td>No</td>
</tr>
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</table>

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0847 GENDER DIFFERENCES IN ACCEPTANCE OF COLORECTAL CANCER SCREENING: PAIN AS THE EXPLANATION

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4. University Of Birmingham, Institute of Translational Medicine, Birmingham/United Kingdom
5. University Of Birmingham, Institute of Translational Medicine, Birmingham/United Kingdom

Introduction: Participants’ experience with a screening test can influence adherence, and therefore the efficacy of a screening programme. We compared the satisfaction with decision and willingness to repeat colorectal cancer screening with flexible sigmoidoscopy (FS) and faecal immunochemical test (FIT).

Aims & Methods: In a prospective, randomised trial 3257 individuals (50–74 years) were invited to either FS or FIT (1:1) of whom 1650 (52.6%) attended.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P0848

Endoscopic Findings

<table>
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<tr>
<th>Diagnosis</th>
<th>UC/CD</th>
<th>Kudo Paris Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left sided UC</td>
<td>HO/IV</td>
<td>IIb Size &gt; 2.5 cm distinct</td>
</tr>
<tr>
<td>Crohn's colitis</td>
<td>IIIS/JIII</td>
<td>IIb Size &gt; 2.5 cm indistinct</td>
</tr>
</tbody>
</table>

Endomicroscopy Findings

Villiform appearance of the crypts with stellar opening. The colonic mucosa surrounding the lesion was normal.

SSA

En-block EMR

Surgical resection
with methylene blue 1% to characterize the surface, vascular pit pattern and the margins of the lesion. Each of the 7 patients had non polypoid colonic lesions, 4 were sessile (Paris Ia) and 3 flat (IIa/IIb). Four of them were amenable to endoscopic therapy and were successfully removed using endoscopic mucosal resection (EMR) en-block or piecemeal technique. Interestingly, one patient with multiple scattered ‘pseudopolyps’ had a 8 mm sessile pseudopolypoid lesion with a suspicious areas of SSA in the midst that was confirmed by real pCLE.

The endoscopic, endomicroscopic and histological findings of all the lesions were described in Table 1.

**Conclusion:** This case series highlights the first successful use of pCLE in combination with VCE and DCE to predict, characterise and treat colonic neoplasia in IBD. pCLE may be an additional tool to aid the endoscopist in therapeutic management by deciding endoscopic resectability versus colectomy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

<table>
<thead>
<tr>
<th>UC/CD</th>
<th>Endoscopic Findings</th>
<th>Endomicroscopy Findings</th>
<th>Histology</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulcerative Pancolitis</td>
<td>III/IV</td>
<td>Is Size &gt; 2.5 cm</td>
<td>distinct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Villiform appearance of the crypts with stellar opening of the lumens of the crypts. Areas of dark epithelium with decreased number of goblet cells. Surrounding mucosa was normal.</td>
<td>SSA with focal LGD</td>
</tr>
<tr>
<td>Colonic Crohn’s</td>
<td>II/IV</td>
<td>Is Size &gt; 2.5 cm</td>
<td>distinct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Villiform -elongated appearance of the crypts with stellar opening of the lumens. The mucosa surrounding the lesion was normal.</td>
<td>SSA</td>
</tr>
<tr>
<td>Colonic Crohn’s</td>
<td>III/IV</td>
<td>IIb Size &gt; 2.5 cm</td>
<td>indistinct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Villiform- elongated appearance of the crypts with dark epithelium and decreased number of goblet cells. The surrounding mucosa showed irregular architecture of the crypts and leakage of fluorescein.</td>
<td>LGD</td>
</tr>
<tr>
<td>Ulcerative Pancolitis</td>
<td>II/IV</td>
<td>IS Size &gt; 5 mm</td>
<td>distinct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In the midst of pseudopolyp villiform appearance of the crypts with stellar opening of the lumens</td>
<td>SSA</td>
</tr>
<tr>
<td>Ulcerative Pancolitis</td>
<td>III/IV</td>
<td>IIb Size &gt; 2.5 cm</td>
<td>indistinct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Villiform appearance of the crypts with dark epithelium and absence of goblet cells. The mucosa surrounding the lesions had irregular architecture of the crypts</td>
<td>HGD</td>
</tr>
</tbody>
</table>
**P0850 THE SAFETY AND EFFECTIVENESS OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION USING A SCISSORS-TYPE KNIFE IN ELDERLY PATIENTS**

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**Introduction:** Endoscopic submucosal dissection (ESD) is one of the most useful methods for treating early colorectal neoplasms and conventionally utilizes an IT, hook, or needle knife. However, because these devices are used without fixation to target, it confers a potential risk of complications due to unexpected incision. To reduce the risk of complications from ESD performed using a conventional knife, we used a scissors-type knife (SB Knife Jr: Akita Sumitomo Bakelite, Japan) that allows keeping an adequate dissection layer and preventing unexpected muscular layer injury. In the previous study, we reported that ESD performed using SB Knife Jr is a technically efficient and safe method for treating early colorectal neoplasms. However, the efficacy and safety of colorectal ESD using SB Knife Jr in elderly patients remain unclear.

**Aims & Methods:** The aims of our study were to evaluate the efficacy, safety, and clinical outcomes of colorectal ESD using SB Knife Jr in patients aged ≥75 years in comparison with those in younger patients. We evaluated 291 lesions in 271 patients (male-to-female ratio, 148:123; median age, 70 years) treated with ESD using SB Knife Jr between October 2010 to March 2017 at Kure Medical Center and Chugoku Cancer Center. The patients were divided into two groups, an elderly group (group A: age ≥75 years; 95 patients, 97 lesions) and a non-elderly group (group B: age <75 years; 176 patients, 194 lesions). We evaluated the en bloc resection rate, complete resection rate, curative resection rate, en bloc tumor size, procedural time, complications, and long-term outcomes, including survival rate. The 3-year overall survival and tumor-specific survival rates were analyzed in the entire study cohort, and the local and distant recurrence rates were analyzed in the cohort with curative resection and observationally managed with non-curative resection.

**Results:** The mean age was 80.0 years in group A and 64.3 years in group B. The male-to-female ratios were 45:50 and 103:73 in groups A and B, respectively. Regarding histopathological findings, the prevalence rates of tubular adenoma were 37.1% (36/97) and 36.1% (70/194); Tis, 30.2% (38/127) and 44.8% (67/194); T1a, 10.3% (10/97) and 10.3% (20/194); and T1b, 13.4% (15/97) and 8.8% (17/194) in groups A and B, respectively, showing no significant difference. The mean resected tumor size was 33.9 ± 16.6 mm in group A and 34.7 ± 15.2 mm in group B, and the median procedural time was 75.6 mm (range, 10-420 min) in group A and 75 min (range, 10-533 min) in group B, showing no significant difference. The en bloc resection rates were 96.9% (94/97) and 99.0% (192/194); the complete resection rates, 94.8% (92/97) and 94.8% (184/194); and the curative resection rates, 83.5% (81/97) and 88.1% (171/194) in groups A and B, respectively, showing no significant difference. Regarding complications, no perforation during the procedure occurred in any of the cases. The delayed bleeding rate was 1.0% (1/97) in group A and 2.6% (5/194) in group B. Delayed perforation and rectal bleeding occurred in one patient each in group A and were treated conservatively. Regarding long-term outcomes, the local recurrence rate was 1.0% (1/97) in group A and 0.5% (1/194) in group B, and no distant recurrence was observed in the recurrence analysis cohort. Regarding survival analysis (mean follow-up period; group A, 523 ± 469 days; group B, 628 ± 582 days), the 3-year overall and disease-specific survival rates were respectively 98.8% and 100% in group A, and 93.3% and 98.3% in group B. One patient (0.5%, 1/194) died of colorectal cancer (2.6%, 5/194) in group A, and one patient (1.1%, 1/95) died of other diseases in group A.

**Conclusion:** ESD performed with SB Knife Jr is a technically efficient and safe method associated with favorable long-term outcomes in cases of early colorectal neoplasms in elderly patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**P0851 DETECTION AND CHARACTERIZATION OF SSA/Ps DURING SURVEILLANCE COLONOSCOPY IN LONG STANDING IBD USING ADVANCED ENDOSCOPIC TECHNIQUES**

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**Introduction:** Sessile serrated polytys (SSA/Ps) are pre-malignant lesions that may lead to colorectal cancer in accelerated manner. These lesions are easily missed by endoscopists as these are difficult to detect in IBD patients. We aimed to assess the prevalence, detection rate and endoscopic findings of SSA/Ps in long standing IBD patients prospectively undergoing surveillance colonoscopy using dye (DCE) or virtual electronic chromoendoscopy (VCE) or high definition white light (HD-WLE) colonoscopy alone.

**Aims & Methods:** A total of 270 randomized patients (55% men; age range 20–77 years, median age 49 years) with long–standing IBD (median duration of the disease 14 years) undergoing surveillance colonoscopy were assessed by HD-WLE (n = 90), VCE (n = 90) or DCE (n = 90). Surveillance colonoscopy with High Definition (HD) alone, or with iSCAN VCE or DCE was performed. Endoscopic features were recorded in each group with regard to location, morphology (polyoid/non polyoid), size and mucosal pit pattern, and these were characterized using the Kudo modified classification system (Paris classification). The histology was reported by modified Vienna classification.

**Results:** Thirty -three SSA/Ps were detected in 20 (11UC; 9 CD; 11 female, age range 34–72 y, median age 61 years) patients out of the 270 patients with IBD (enrolled 12.2%). The endoscopic features of SSA/P lesions were: non-polypoid morphology (polypoid/non polypoid), size and mucosal pit pattern, and these were characterized using the Kudo modified classification system (Paris classification). The histology was reported by modified Vienna classification.

**Conclusions:** SSA/Ps are not an infrequent finding at surveillance colonoscopy in IBD. There are prevalent in the right colon location and these generally have Kudo pit pattern of I0. SSA/Ps can be recognized endoscopically by Kudo pit

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**Abstract:** P0851

<table>
<thead>
<tr>
<th>F</th>
<th>Age</th>
<th>Mean</th>
<th>UC/CD</th>
<th>Localization&amp;Size</th>
<th>Paris classification</th>
<th>Kudo pit pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td>Left</td>
<td>&lt;5mm</td>
<td>≥5mm</td>
<td>I/p</td>
<td>Hb/Ha</td>
<td>I/H</td>
</tr>
<tr>
<td>Serrated adenoma n = 33</td>
<td>11</td>
<td>61</td>
<td>11/9</td>
<td>29</td>
<td>4</td>
<td>16</td>
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pattern even in IBd patients. Further studies are needed to evaluate the natural history and progression of the SSA/Ps pathway lesions in IBd patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0852 IN VIVO HISTOLOGICAL PREDICTION OF COLORECTAL POLYPS USING FICE TECHNOLOGY

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Introduction: The histological characterization of colorectal polyps using FICE (Fujinon Intelligent Color Enhancement) technology presents high diagnostic accuracy. However, the excellent results in histological prediction are a reflection of the clinical practice by trained endoscopists, and their application remains to be confirmed outside this context.

Aims & Methods: To evaluate the in vivo histological prediction accuity of colorectal polyps using FICE technology in WLE (White light endoscopy) and using FICE technology, comparing both modalities. Prospective evaluation, using WLE and FICE, of colorectal polyps <10 mm in patients submitted to colonoscopy between 12/2016 and 02/2017 by four inexperienced endoscopists in FICE, except for a previous 20-minutes interactive session. Polyps were evaluated using the FICE classification (tubular or oval crypts (adenoma), round crypts or featureless appearance (hyperplastic polyps), indicating their confidence level (low <90% vs high >90%). Statistics: SPSS v23.

Results: 25 polyps were included, with a mean size of 4.5 mm, 14 adenomas, 10 hyperplastic and 1 serrated adenoma. From the global assessment of all polyps and observations, the use of the FICE classification for prediction of adenomato-suspicous lesions value of sensitivity, specificity, positive and negative predictive value identical to WLE (100%, 62.5%, 60% and 100%, respectively).

Overall, diagnostic acuity in histological prediction was identical in both modalities (76%). The individual acuity of the endoscopists ranged from 66% to 90% vs high >90%). Statistics: SPSS v23.

Conclusion: The use of FICE technology by inexperienced endoscopists in the histological prediction of colorectal polyps has no advantage over WLE, having both suboptimal accuracies. The lack of recourse to magnification may have contributed to these results.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0853 POLYP DETECTION RATES IN COLONOSCOPIES PERFORMED UNDER GENERAL ANAESTHETIC COMPARED TO CONVENTIONAL SEDATION

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Introduction: Colonoscopies are performed under general anaesthesia (GA) for various reasons, but mainly due to previous procedures being poorly tolerated with normal sedation. During the procedure, the endoscopist must be aware of the patient’s comfort levels and reactions to endoscopic manoeuvres. Polyp detection can be influenced by the modality of colonoscopy: GA (64.7±14.2) and non-GA (65±14.2). There was a significant (p=0.005) difference in age between the GA (59.7±18.2) and non-GA (64.7±14.2). This may be associated with the higher prevalence of polyps detected in non-GA patients.

Conclusion: GA (64.7±14.2) and non-GA (65±14.2). There was a significant (p=0.005) difference in age between the GA (59.7±18.2) and non-GA (64.7±14.2). This may be associated with the higher prevalence of polyps detected in non-GA patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0854 PATIENT AND PHYSICIANS RELATED FACTORS ASSOCIATED WITH A HIGH ADENOMA DETECTION RATE IN ROUTINE COLONOSCOPY

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Introduction: Adenoma and polyp detection rates are correlated to the risk of interval colorectal cancer and is consequently considered as a quality benchmark of clinical practice. We propose to identify in our daily practice, all the endoscopists of our endoscopy unit.

Aims & Methods: 6027 colonoscopies were performed between 01/01/2016 and 31/12/2016 by 30 physicians. Regarding patients, the following data were prospectively collected: age, gender, indication for colonoscopy, preparation procedure, and quality of the preparation (assessed by the Boston Scale), number and size of polyps and polyp histopathology. Regarding physicians, age, gender, number of colonoscopies and mean withdrawal time (calculated from the normal colonoscopies) were studied. Neoplasia was defined as grade 4 or 5 of the Vienna classification: (4: non-invasive high grade neoplasia (high grade adenoma/dysplasia, non-invasive carcinoma and suspicion of invasive carcinoma; 5: invasive neoplasia (intramucosal carcinoma, submucosal carcinoma or beyond). Links between these data and polyp detection rate (PDR) were assessed by univariate and multivariate analysis (stepwise logistic regression).

Results: We enrolled 2719 Male patients (45.1%) and 3308 Female patients (54.9%). Among 6027 patients, 732 (12.1%) of patient <50 years-old and 330 (5.5%) of patient >50 years-old were excluded, respectively. There was no significant difference between groups regarding number of polyps. The median number of polyps per physician was 140 (range: 10–720). 2054 colonoscopies detected 3914 lesions or polyps: 2914 tubular/villous adenomas, 496 serrated adenomas, 242 hyperplastic polyps (hyperplastic polyps located in the rectum and sigmoid colon were not considered as at risk for cancer and were excluded), 212 other histology leading to a major surgery. The mean number of Polyps (MNLP) was 0.65 and a Polyp Detection Rate (PDR) of 14.2). There was a significant (p<0.05). In the multivariate analysis, the only factors associated with a high PDR were: familial history of polyp/cancer, screening or positive faecal immunochromatography test (FIT+) and quality of preparation. Regarding physician-dependent factors, a high PDR was significantly associated with patient-dependent factors: age, gender, a familial history of polyp/cancer, screening or positive faecal immunochromatography test (FIT+) and sex. In the univariate analysis, a high PDR was significantly associated with patient-dependent factors: age, gender, a familial history of polyp/cancer, screening or positive faecal immunochromatography test (FIT+) and sex.

Conclusion: In this large series of routine colonoscopies, we found medically-relevant polyps in more than one third of the patients, irrespectively of age and indications. In multivariate analysis, a high PDR was significantly associated with a high PDR: familial history of polyp/cancer, FIT+ and age of the patient. This may suggest that the gender and polyp has no longer a risk factor for polyps. In addition, even if there are still discrepancies regarding PDR among physicians, we founded a patient-dependent factor associated with a high PDR in the multivariate analysis.

Disclosed of Interest: All authors have declared no conflicts of interest.

P0855 EFFICIENCY OF COLONOSCOPY IN CASE OF POSITIVE FECAL IMMUNOCHEMICAL TEST: ONE-YEAR EXPERIENCE AND RESULTS ON 391 PATIENTS IN ROUTINE PRACTICE IN FRANCE

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Introduction: Fecal immunochemical test (FIT+) has progressively replaced the gusac test for colorectal screening in average risk population in France since May 2015. With a high sensitivity and a good specificity, it is supposed to increase colorectal cancer risk detection. However, its efficiency has not been described in routine colonoscopy.

Aims & Methods: Among 6027 colonoscopies performed between 01/01/2016 and 31/12/2016 in our endoscopy unit, 391 were performed for a positive FIT (FIT+) due to a screening issue, an acute or chronic inflammatory bowel disease.
P0857 
TWO LIQUORS OF POLYETHYLENE GLYCOL (PEG) WITH 15 MG OF BISACODYL VERSUS 4 LIQUORS OF PEG FOR BOWEL PREPARATION TO COLONOSCOPY, PROSPECTIVE RANDOMIZED STUDY. PRELIMINARY RESULTS
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Introduction: Adequate bowel preparation is one of the most important quality factors of colonoscopy. Several formulations of bowel preparation have been evaluated for the ability to have a clean colon and be well tolerated by patients. Currently, PEG 4L solution is the preferred method of bowel preparation to colonoscopy. This preparation has the disadvantage of being poorly tolerated by patients. Furthermore, recent studies have shown that a low-volume PEG solution used in combination with Bisacodyl for bowel cleansing is as effective and better tolerated as a large volume PEG (4L).

Aims & Methods: This study aims to assess the efficacy and tolerance of the new regimen of PEG plus Bisacodyl compared to the classical regimen (4L of PEG).

Materials and methods: A prospective comparative randomised study comparing the tolerance, acceptability, and efficacy of a protocol A based on 4L of PEG and a protocol B corresponding to 2L of PEG + 15mg of Bisacodyl. Using the Boston Bowel Preparation Scale (BBPS) by endoscopists who did not know bowel preparation type, to evaluate the quality of preparation.

Results: Sixty-six patients were included (35 in group A and 31 in group B), with a sex ratio = 1. The average age of patients was 52 ± 15 years [17-86 years] with a median of 51.5 years (range: 32-86). Patients in group B had found the preparation difficult or moderately difficult vs 3 in group B (p = NS) with mild to severe side effects 54% of group A and 29% of group B (p = 0.03) and A mean side effect of patient was 2.26 vs. 1.89 (p = NS). Nausea and vomiting were respectively 34% and 19% of patients in group A and 13% of patients in group B (p = NS). However, 5 patients in group A had sleep disorders vs only one case in group B. Four patients who received 4L of PEG had expressed their refusal to resume the same preparation if necessary while 2 patients in group B had refused. A score greater than or equal to 7 was recorded 67% vs 36%, respectively (p = 0.03). Among patients with a maximal score of 9 (99%), 4 patients in group B and no patient in group A. Seven patients refused to repeat the test even if indicated. This refusal was secondary to the preparation in 4 cases (2 cases of each group). Abdominal pain and post-endoscopic distension ( useStyles = "start_adv") were respectively (62.8% and 65.7% vs 52% and 22.5%) (p = 0.016 and p < 0.001).

Conclusion: Preliminary results from our study suggest that the low-volume 2 L PEG with bisacodyl does improve patient tolerability with a tendency to be better for Good bowel preparation as compared to the traditional 4 L PEG. We continue our study to have a more significant number of patients view these new protocols to further confirm our results.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0858 
Colonicoscopy on the Left, Right? I. Mocanu, A. Laranjo, S. Pires, N. Veloso, L. Gonçalves, R. Godinho, I. Medeiros
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Introduction: Contrast-enhanced colonoscopy is a new procedure to train, with high variability of time spent to reach the cecum, depending on endoscopist experience, patient characteristics and type of colonoscopy used. Recently, the ROLCOL study demonstrated an advantage in time and patient comfort during progression in right lateral position (RLP) when compared with traditional left lateral position (LLP).

Aims & Methods: To compare time to reach cecum, patient and endoscopist comfort (using a visual analogue scale (VAS) in colonoscopies with progression on RLP and LLP. Prospective study, between January and April 2017, of colonoscopies under conscious sedation, randomly assigned to RLP and LLP. Olympus 190 series and Fuji EC-530 W13 colonoscopes were used. Inclusion criteria: routine colonoscopies, patients ≥ 18 years of age, abdominal surgeries other than colonic, examinations done by residents in second and fifth year of training and specialists. Exclusion criteria: incomplete colonoscopies or prior history of colonic surgery.

Results: One hundred and eighty-eight colonoscopies (94 on each side) were included. There was no statistical difference in mean age (RLP: LLP = 61 vs. 64 years; p = 0.05), gender (49 Vs. 52 males; p = 0.05), body mass index (27.4 Vs. 26.4; p = 0.05), previous history of abdominal surgery (44 Vs. 34; p > 0.05), and 52% vs. 41% specialist (p = 0.05), sedation dosage (midazolam 1.04 Vs. 1.09 mg, petidine 25 Vs. 25 mg; p = 0.05) or colonoscopy preparation (BBPS 6 Vs. 6, p = 0.05). Globally, there was no difference in “time to cecum” between the two positions (612 Vs. 633 seconds; p > 0.05), nor the patients’ comfort (VAS 3.92 Vs. 3.94; p > 0.05). This did not change after exclusion of less experienced endoscopists colonoscopies (581 Vs. 579 seconds, VAS 3.71 Vs. 3.76; p > 0.05). Surgical and overweight patients did not benefit from any of the positions (time to cecum: 650 Vs. 702 and 570 Vs. 657; p > 0.05, comfort: 4.2 Vs. 4.12 and 3.83 Vs. 3.96; p > 0.05, respectively). However, endoscopists comfort was higher in LLP (4.62 Vs. 3.76; p < 0.05). Both groups required position change during progression or loop palpation by the nurse in equal percentage (54% Vs. 46%; p > 0.05) and 49.5% Vs. 50.5%; p > 0.05). Additionally, there was no difference in time to cecum, patients or endoscopists comfort between the colonoscopies performed with Fuji or Olympus colonoscopes.

Conclusion: In our experience, progression in right lateral position did not show additional advantage over standard LLP in time to reach the cecum or patients comfort. We did not find any difference in time to progression or comfort between Olympus and Fuji colonoscopes.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Results: 1382 LSL in 1243 patients were analysed. 1155/1243 (92.9%) patients had a solitary LSL. The majority of patients with multiple LSL had two (77.3%) or three (15.9%) lesions. 889/1382 (64.3%) of LSL were G. G LSL were more likely to be solitary (87.0%) than NG LSL (77.5%, p < .001). G LSL were more commonly large (>40 mm in size) (49.3%) than NG LSL (26.0%, p < .001) and were more commonly found in the right colon (proximal to transverse colon) (54.2% versus 48.3%, p < .034). In 88 patients with multiple LSL the dominant LSL was G (49/88 [55.7%]). A dominant G LSL was associated with fewer other LSL than a dominant NG LSL, p = .029.

Table 1: The morphology of the dominant (largest) laterally spreading lesion (LSL) predicts the presence and number of synchronous LSL. Morphology of the dominant lesion did not predict the others would be of the same morphology (p = .697). The dominant LSL was large in 43.2% of cases. Size of the dominant LSL predicted size of the other LSL (p < .001). 58.6% of dominant LSL were located in the right colon. In 65.9% patients all LSL were in the same colonic segment; this was not predicted either by the location of the dominant LSL (p = .860) or its morphology (p = .228).

### Results

**Patient**
- Age, mean (standard deviation): 68.58 (10.12)
- Sex, female (%): 27 (79.4)
- Lesion
  - Size, median (IQR): 15 (14.5–20)
  - Location, proximal to transverse colon (%): 26 (63.4)
- Paris classification (%)
  - 0-IIa: 40 (97.6)
  - 0-IIb: 1 (2.4)
- Endoscopic evidence of dysplasia (%): 0 (0)
- Kudo, highest (%): 11 (27.3)
- Procedure
  - Duration, median minutes (IQR): 4.5 (1.4 to 6.3)
  - Pieces, median (IQR): 3 (3–5)
  - Protrusion within defect (%): 9 (22.0)
- Intra-procedural bleeding requiring intervention (%): 0 (0)
- Histopathology, serrated adenoma (%): 41 (100)
- Low grade cytological dysplasia (%): 3 (7.3)
- Outcomes
  - Clinically significant post endoscopic bleeding (%): 0 (0)
  - Delayed perforation (%): 0 (0)
  - Post procedural pain (%): 0 (0)
  - Admission to hospital for related complication within 2 weeks: 0 (0)
  - Follow up
    - Months to SC1, IQR: 6 (5–7)
    - Recurrence at SC1, (%), n = 8: 0 (0)
  - Histologic recurrence at SC1, (%), n = 5: 0 (0)

### Conclusion
There is potential for pCSP to become the standard of care for non-dysplastic large SSP. This may reduce the burden on patients and healthcare systems of removing SSP, particularly by avoidance of delayed bleeding.

### Disclosure of Interest
All authors have declared no conflicts of interest.

P0061 THE PROSPECTIVE OBSERVATION STUDY FOR OVER 10MM COLORECTAL LESIONS ENDOSCOPICALLY RESECTED USING BIPOLAR SNARE

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Introduction: Polyectomy of adenomas reduces death due to colorectal cancer; therefore, colonoscopy is the gold standard to detect and treat adenomatous lesions. Most adenomatous lesions are less than 20 mm in size. Therefore, these are not indication for endoscopic submucosal dissection (ESD). Currently, there are some reports about cold snare polypectomy (CSP). CSP is effective and easy to remove lesions of less than 5–10 mm in size. On the other hand, in over 10 mm lesions, many endoscopists would remove it by endoscopic mucosal resection (EMR) with monopolar snare. It is expected that the bipolar snare would decrease the incidence of perforation because of electric current flow peculiar to bipolar snare that does not flow through the wall of colon. So, by using bipolar snare, hot snare polypectomy (HSP) that can be easily resected in a short time may be safely performed for over 10 mm colorectal lesions. However, there is no report about them.

Aims & Methods: We aimed to clarify removal method, procedure time and complications for over 10 mm colorectal lesions endoscopically resected using bipolar snare. Consecutive patients with over 10 mm colorectal lesions endoscopically resected using bipolar snare in National Cancer Center Hospital East between September 2016 and March 2017 were enrolled in this study, prospectively. The removal method rate of these lesions, each procedure time, complete resection rate, bleeding rate and perforation rate, and pathological finding were assessed.

Results: A total 92 lesions in 67 patients were analyzed. 47 patients (70%) were male, and the median age was 67 years (range: 44–88). The median lesion size was 15 mm (range: 10–30). The macroscopic type was 33 (36%) polyoid lesions and 59 (64%) flat lesions. The location was 55 (60%) lesions in right colon, 31 (34%) left colon and 25 (28%) rectum.

### Disclosure of Interest
All authors have declared no conflicts of interest.

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**Table 1:** Baseline characteristics and outcomes of the 34 patients and 41 SSP that underwent piecemeal cold snare polypectomy (pCSP). IQR – interquartile range, SC1 - first surveillance colonoscopy.
in left colon and 6 (6%) in rectum. Pathological diagnosis was 22 (24%) hyperplastic polypl or SSA/P, 42 (46%) low grade dysplasia (LGD), 23 (26%) high grade dysplasia (HGD), and 11% submucosal invasive cancer. In the removal methods, HSP was 71 (77%) lesions and EMR was 21 (23%). The median procedure time of HSP and EMR was 37 seconds (range: 7–430) and 167 (range: 60–450) (p < 0.001). The median lesion size of was HSP and EMR was 12 mm (range: 10–30) and 20 (range: 10–26) (p < 0.001). The immediate bleeding of HSP and EMR occurred in 7 (10%) lesions and 6 (33%) (p = 0.009). The delayed bleeding of HSP and EMR occurred in 2 (3%) lesions and 0 (p = 0.437). Perforation was not occurred. No tumors were horizontal and vertical margin positive. In the pathological diagnosis, 86% of hyperplastic polypl or SSA/P, 86% of LGD, and 57% of HGD was resected by HSP, and submucosal invasive cancer was resected by EMR.

Conclusion: Of 10 mm colorectal lesions was resected by using bipolar snare, 77% were resected by HSP. The procedure time of HSP was significant shorter than EMR.

Disclosure of Interest: All authors have declared no conflicts of interest.

### P0862 THE SMSA POLYP SCORE RELIABLY PREDICTS ROBUST ENDPOINTS OF ENDOSCOPIC MUCOSAL RESECTION OF COLORECTAL LATERALLY SPREADING LESIONS

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**Introduction:** The 'SMSA' polyp scoring system is a method of risk stratifying the difficulty of polypectomy based on expert consensus opinion. The score is simple, intuitive and has been developed in a large multicentre setting.

**Aims & Methods:** We aimed to determine the ability of the SMSA polyp score to predict robust endpoints after endoscopic mucosal resection (EMR) of colorectal laterally spreading lesions (LSL). The SMSA polyp score was applied to a prospectively collected multicentre database of LSL resected by EMR over eight years. This score describes the complexity of polyprectomy with respect to four major domains (table 2) and is subsequently divided into four levels. Standard inject and resect EMR procedures were performed with detailed patient, procedural and outcome data recorded prospectively over the study period including all features of the SMSA. In patients who had multiple lesions resected the largest lesion was resected for analysis. The primary endpoints were correlation of SMSA score with completion rate, adverse event rate and adenoma recurrence.

**Results:** 2035 lesions in 2035 patients (47.4% M, 45.2% right colon) underwent EMR. The majority of lesions were SMSA 4 (50.2%) with a median lesion size of 30 mm (range 20–160 mm). Failed single session EMR occurred in 97 (4.7%) and this was predicted by increasing SMSA (p < 0.001). Intra-procedural bleeding was significantly more common with increasing SMSA (SMSA 2, 19/229 (8.3%) versus SMSA 4 291/1158 (25.1%), p < 0.001). Clinically significant post EMR bleeding (CSPEB) was more common as SMSA increased with 4 (1.7%) in the SMSA 2 group and 90 (7.8%) in the SMSA 4 group, p < 0.001. Intra-procedural perforation and delayed perforation were no different between the groups. After EMR surgery at 2 weeks was more common in the SMSA 4 group (p < 0.001). Of those patients that underwent their first surveillance colonoscopy (SC1), endoscopic recurrence (EDR) was more common in the SMSA 4 group than the SMSA 2 group, 206 (23.7%) as compared to 9 (5.4%), p < 0.001. This was also the case for histologic recurrence (p < 0.001). The difference in EDR persisted to the second surveillance colonoscopy (SC2) with no recurrences in the SMSA 2 group and 90 (7.8%) in the SMSA 4 group, p = 0.001. The median lesion size of was HSP and EMR was 12 mm (range: 10–30) and 20 (range: 10–26) (p < 0.001). The immediate bleeding of HSP and EMR occurred in 7 (10%) lesions and 6 (33%) (p = 0.009). The delayed bleeding of HSP and EMR occurred in 2 (3%) lesions and 0 (p = 0.437). Perforation was not occurred. No tumors were horizontal and vertical margin positive. In the pathological diagnosis, 86% of hyperplastic polypl or SSA/P, 86% of LGD, and 57% of HGD was resected by HSP, and submucosal invasive cancer was resected by EMR.

**Conclusion:** SMSA is a simple readily applicable clinical score that identifies a subgroup of patients who are at increased risk of EMR related complications including CSPEB and recurrence. This information is useful for planning EMR lists with respect to time and resource allocation. Moreover SMSA could have a major impact on training, both in identifying appropriate training cases and providing an objective benchmark against which to assess the progress of trainees in EMR.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**SMSA score (2)**

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<tr>
<th>Size</th>
<th>Points</th>
<th>Morphology</th>
<th>Points</th>
<th>Access</th>
<th>Points</th>
<th>Site</th>
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<th>p value</th>
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</thead>
<tbody>
<tr>
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<td>1</td>
<td>Pedunculated</td>
<td>Easy</td>
<td>1</td>
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<td>1</td>
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<tr>
<td>1–1.9 cm</td>
<td>3</td>
<td>Sessile</td>
<td>Difficult</td>
<td>3</td>
<td>Right 2</td>
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<td></td>
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<tr>
<td>2–2.9 cm</td>
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<td>Flat</td>
<td>3</td>
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<td>&lt;0.001</td>
</tr>
<tr>
<td>3–3.9 cm</td>
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<td></td>
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<td>&lt;0.001</td>
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<tr>
<td>&gt;4 cm</td>
<td>9</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**SMSA Level Points**

1 1–2
2 3–4
3 5–6
4 >7

**EMR** – endoscopic mucosal resection, IPB – intra-procedural bleeding, IPR – intraprocedural perforation, CSPEB – clinically significant post endoscopic bleeding (bleeding after EMR requiring admission to hospital or re-intervention), 2w – two weeks, SC1/2 - surveillance colonoscopy 1/2. * target sign or actual hole corresponding to DMI type III/IV - Sydney Classification (1)

**PO863 USE OF ACETIC ACID FOR EVALUATING SESSILE SERRATED ADENOMA/POLYP: A PILOT STUDY**

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**Introduction:** Sessile serrated adenoma/polyp (SSA/P) has been accumulated increasing attention since its risk for developing to cancer had been clarified. These polyps are difficult not only to detect but also to determine their precise margin after detection especially in right side colon. Such a difficulty leads high recurrence rate after endoscopic resection. Magnifying function and narrow band imaging (NBI) is reported to be useful for evaluation of SSA/P but it needs special equipment, extra time, and expertise. Easier, uncomplicated, and non time consuming method is desired. The use of acetic acid or acetic acid-indigo carmine mixture have been introduced into endoscopic diagnosis in Barrett’s esophagus, early gastric cancer, and colorectal early cancer. However, there have been no reports on using this agent as aid for the optimal diagnosis of the margin of SSA/P. If this rather cheap agent was helpful for realizing the precise margin of SSA/P, it could decrease insufficient removal of the polypl and recurrence after that.

**Aims & Methods:** The aim of this pilot study is to assess whether the acetic acid could facilitate the recognition of the margin of SSA/P. We used acetic acid as a mixture with indigo carmine and compared it to conventional evaluating methods; narrow band imaging (NBI) and indigo carmine. From December 2016 to February 2017, patients in whom SSA/P more than 10 mm were found in right side colon in daily practical colonoscopy by single endoscopist in our institute were included. We used the standard scope without magnifying function. First we observed lesions with conventional white light and NBI. Second, we recorded pictures with indigo carmine (IC) spray alone on it. Finally, we sprayed the mixture of acetic acid and indigo carmine mixture (AIC) directly through the endoscopic working channel without using catheter onto lesion. Using recorded pictures during these procedures, ability for recognizing the margin of polyps were thought to be as AIC better than IC, and
similarly 7.3 in 9 were better than NBI. Kappra value among participants was 4.8; moderate agreement (p = 0.0016). All polyps were removed endoscopically after evaluation. All lesions were histologically diagnosed as SSA/P without dysplasia.

Conclusion: Acetic acid was useful and promising to facilitate the endoscopic recognition of the precise margin of SSA/P in right side colon. Strength of this method is that it is very simple and needs no special equipment nor skill.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO864 AUTOLOGOUS BLOOD, A NOVEL AGENT FOR PREOPERATIVE COLONIC LOCALIZATION: A SAFETY AND EFFICACY COMPARISON STUDY
E.J. Kim1, J. Chung2, S. Kim1, J.H. Kim1, Y.J. Kim1, K.O. Kim1, K.A. Kwon1, D.K. Park1, S.W. Park1, J. Baek2
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Introduction: Preoperative localization or tattooing is essential for minimally invasive surgery. Although preoperative endoscopic tattooing using India ink or indocyanine green is widely used, clinical evidence and safety profile supporting the use of these agents is lacking.

Aims & Methods: We assessed the efficacy and safety of preoperative endoscopic tattooing using autologous blood. A total of 80 patients who underwent endoscopic tattooing with autologous blood were included in this study. From February 2016, all patients who required localization of a target lesion before colorectal surgery underwent endoscopic tattooing using autologous blood at a single tertiary medical center, and the outcomes were collected prospectively. As a comparison, we retrospectively reviewed the medical records of a further 40 consecutive patients who underwent endoscopic tattooing using India ink before February 2016. The primary outcomes were the visibility of the tattooing in the peritoneal cavity and related adverse events.

Results: Endoscopic tattoos produced using India ink were visible in 38 (95%) patients, and tattoos created using autologous blood were visible in 36 (90%) patients. In the autologous blood group, the tattoo could not be identified in four patients due to excessive peritoneal fat, bleeding tendency, congenital anomaly, and tattoos inadequate depth. Eight (20%) patients in the India ink group and four patients (10%) in the autologous blood group experienced endoscopic tattooing-related adverse events.

Conclusion: Preoperative endoscopic tattooing using autologous blood is a feasible and safe modality for the preoperative localization of colorectal lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

PO865 SUBMUCOSAL INVASION IN COLORECTAL LATERALLY SPREADING TUMORS (LST) AND ABILITY OF THE ENDOSCOPIST FOR CANCER DETECTION
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Introduction: Lateral spreading tumors (LSTs) are defined as lesions > 10 mm with a low vertical axis and lateral extension. They are separated in 2 subclasses for each of them: granular LST (LST-G) with, or without large nodule; and non-granular LST (LST-NG), separated into flat lesions (Ha) and depressed lesions (Ha+Hc). Every subclass has been associated with a poor risk of cancer and submucosal invasion (T1sm)1, 2. Knowing this aspect could help for the decision of the resection technique (endoscopic mucosectomy EMR, endoscopic submucosal dissection ESD, or surgery). The aim of our study was to determine the rate of cancer (submucosal and mucosal adenocarcinoma) in a western series of LST treated by endoscopic resection, and to evaluate the ability of the endoscopist to predict the depth of cancer invasion.

Aims & Methods: The entire patients with a LST ≥ 20 mm treated between January 2012 and December 2016 in our single center were included. Endoscopic data were collected (size, location, LST classification, analysis of pit pattern, endoscopic suspicion of cancer). We also reported the resection technique, histological results, and the follow-up at 1 year.

Results: 377 LST were included in our study. The average age was 67.7 years old. The mean size of lesion was 40.6 mm. LST were located in the right colon, the rectum, the left colon and the transverse colon in 44.5%, 32.6%, 14.0% and 8.8%, respectively. The resection technique used was a monobloc EMR in 15.4%, piecemeal EMR (pEMR) in 42.9%, ESD in 27.3% and assisted ESD in 14.5%. ESD was associated with a significant lower risk of recurrence after 1 year (4% against 18.1%). Considering the LST classification, there were 27.0% LST-G without large nodule, 28.4% LST-G with large nodule, 35.5% flat LST-NG Ha, and 9.0% LST-NG with depression Ha+Hc. The overall rate of adenocarcinoma was 19.7%, and 9.0% with submucosal invasion. The rates of adenocarcinoma and the rates of submucosal invasion in every subtype of LST are reported in table 1. They were higher for LST-G with large nodule (34.5% and 15.9% respectively) and for LST-NG with depression (35.3% and 20.6%). Endoscopic predictors of submucosal cancer were invasive pit pattern (HR 33.0; p = 5.76e-07) and depression (HR = 11.86; p = 0.049).

Conclusion: Our western series confirm similar rates of submucosal adenocarcinoma according to the type of LST as compared to Asian series. LST-G with large nodule, and LST-NG with depression were associated with a higher risk of submucosal invasion and invasive pit pattern was the stronger predictor of malignancy. Endoscopic submucosal dissection should be systematically performed in these cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PO866 ETHNIC VARIATION OF COLONIC POLYPS: FINDINGS FROM AN INTERNATIONAL HOSPITAL FOR MEDICAL TOURISM IN THAILAND
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2Department Of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore/United States of America/MD

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Introduction: Evidence on an international variation of pathological types and anatomical distribution of colonic polyps is beneficial for early detection and management but limited.

Aims & Methods: To characterize differences in colonoscopy findings by ethnicity, a random sample of patients aged at least 50 years without colonic symptoms or history of colorectal diseases who underwent colonoscopy were reviewed. Of 26,508 subjects, 2651 were randomly selected. Of 1300 subjects who met the inclusion criteria, abnormal findings were identified in 878 cases (67.54%), of which 452 cases had 940 polyps and 7 cancer lesions were found in 6 cases. Of 452 patients with polyps, half had only one polyp (53.76%) and were Asian (54.63%), followed by Caucasian (26.99%), Middle Eastern (15.71%), and other ethnic origins (2.65%) (Figure). Ethnicity-specific polyp prevalence were 36.26%, 38.05%, 27.24%, and 34.15%, respectively. Polyps of Caucasian subjects tended to be smaller (4.52 mm) and locate on the left side of the colon (65.3%) than that of other ethnicities (44.4%–60.53%). The majority of the polyps (84.04%) were small (< 5 mm) whereas 8.19% were large (> 10 mm); hyperplastic polyp, tubular adenoma (TA), and tubulovillous (TVA) adenoma were identified in 43.19%, 53.83%, and 2.34%, respectively. Premalignant (TA + TVA) polyps were found in 56.08%, 50.19%, and 64.23% of the polyps of Asian, Caucasian, and Middle Eastern patients, respectively. Premalignant lesions were found in 52.91% of small polyps.

Conclusion: The findings suggested that number, size, distribution, and pathological type of colonic polyps vary across ethnic groups. As more than half of small polyps were a tubular adenoma, we propose that polyps of all sizes should be removed when feasible.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Endoscopic submucosal dissection represents the standard of care for large superficial colo-rectal neoplasms in Japan. In Europe, only few studies reported on the results of ESD in the rectal location. Colonic ESD is more technically challenging because of the colonic loops, intestinal motility, the folded anatomy, problems caused by inconstant gravity, and submucosal fibrosis. Colonic ESD is also more risky because perforations are most often caused by colonic peristalsis (3). The goal of the current study was to report our experience in performing colonic ESD in two French centers during the perioperative period.

Aims & Methods: Retrospective bicentre study of all cases of colonic ESD performed between 01/2016 and 03/2017 for superficial pre-cancerous or cancerous neoplasms. Primary Endpoint was to evaluate the En bloc, R0, curative resection rate and extended curative resection rate (Curative resection + non-curative due to positive horizontal margins and without recurrent disease on endoscopic control). Secondary endpoints were to compare these results with results of rectal ESDs performed during the same period.

Results: 87 colonic ESD were performed in two French centers between 01/2015 and 03/2017 for superficial pre-cancerous or cancerous neoplasms. During the same period 93 rectal ESDs were performed for superficial pre-cancerous or cancerous neoplasms. Descriptive results: male 54 (61%), mean size of the specimen: 49 mm, mean duration of procedure 125.1 min, mean speed of ESD: 18.9 mm²/min, perforation rate: 9 (10.3%), post procedural bleeding rate: 2.3%, secondary surgery 13 (15.3%) (3 (23%) for a perforation; 10 (77%) for a failure or R0 resection: 77.5%, curative resection: 63.8%, extended curative resection: 87.4%. Secondary Endpoint: No statistically significant parameters have been found between rectal and colonic ESD (Table 1).

Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: Colonic ESD could be performed with similar results than rectal ESD in French expert teams with prior strong experience in rectal and upper digestive tract ESD. Colonic ESD is technically challenging because of the colonic loops, intestinal motility, the folded anatomy, problems caused by inconstant gravity, and submucosal fibrosis. Colonic ESD is also more risky because perforations are most often caused by colonic peristalsis (3). The goal of the current study was to report our experience in performing colonic ESD in two French centers during the perioperative period. Colonic ESD could be performed with similar results than rectal ESD in French expert teams with prior strong experience in rectal and upper digestive tract ESD. Colonic ESD is technically challenging because of the colonic loops, intestinal motility, the folded anatomy, problems caused by inconstant gravity, and submucosal fibrosis. Colonic ESD is also more risky because perforations are most often caused by colonic peristalsis (3). The goal of the current study was to report our experience in performing colonic ESD in two French centers during the perioperative period.
WHAT IS THE CONCORDANCE FOR THE DIAGNOSIS OF LATERALLY SPREADING-TYPE LESIONS (LST) AMONGST WESTERN AND JAPANESE EXPERT ENDOSCOPISTS?


The "column" connected to the latest version of the robot (ready) and virtual chromo-endoscopy, useful for follow-up and screening for dysplasia in patients with long duration of disease are now available in the latest version of R. The “column” connected to the latest version of the robot is the size of a portable suitcase, and suitable for remote operation. Further studies with newer versions of the use of classification systems are needed to assess the role of this technology from an economic point of view and in special situations like failed colonoscopies, dysplastic lesions in UC, bed-side colonoscopy, colonoscopy in rural areas.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


PO0781 CLINICAL USEFULNESS OF THE SMSA SCORE AND COMPARISON WITH A SUBJECTIVE SCORE FOR THE MANAGEMENT OF LARGE NON-PEDUNCULATED COLORECTAL LESIONS. A MULTICENTER STUDY FROM THE SPANISH ESOPHAGOGASTROENTEROLOGY SOCIETY ESOPHAGOGASTROENTEROLOGY RESSECTION GROUP


The "column" connected to the latest version of the robot (ready) and virtual chromo-endoscopy, useful for follow-up and screening for dysplasia in patients with long duration of disease are now available in the latest version of R. The “column” connected to the latest version of the robot is the size of a portable suitcase, and suitable for remote operation. Further studies with newer versions of the use of classification systems are needed to assess the role of this technology from an economic point of view and in special situations like failed colonoscopies, dysplastic lesions in UC, bed-side colonoscopy, colonoscopy in rural areas.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


calculated the SMSA score of difficulty and assessed the ability of SMSA to identify 5 future outcomes: 3-month recurrence, 1-year recurrence, global recurrence (endoscopy not effective after 2 or more treatments), delayed bleeding and perforation. We compared results with those obtained using a subjective classification of difficulty: easy or medium vs difficult. Comparisons were conducted using chi-square tests and complemented with logistic regression models.

Results: The SMSA scoring system classified 690 polyps (39%) as level 4 and 1098 (61%) as level 3, whereas the subjective classification system classified 399 (22%) as difficult and 1389 (78%) as easy or medium. The agreement between measures of difficulty was weak ($k = 0.22$% as difficult and 1389 (78%) as easy or medium). The agreement between measures of difficulty was weak ($k = 0.22$% as difficult and 1389 (78%) as easy or medium).

Perforation 18(1.9%) 10(1.6%) 0.631 18(1.5%) 10(2.8%) 0.105 0.55(0.46, 0.64) 1.06(0.88, 1.27) 0.521

Delayed bleeding 29(3.1%) 35(5.6%) 0.012 41(3.4%) 24(6.6%) 0.006 0.61(0.53, 0.68) 1.23(1.09, 1.39) 0.001

Global recurrence 25(5.8%) 27(8.9%) 0.106 27(4.7%) 24(14.7%)

Table: SMSA score vs Subjective difficulty score

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<th>Level 4</th>
<th>p-value</th>
<th>Subjective difficulty score</th>
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<th>Difficult</th>
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<td>3-months recurrence</td>
<td>73(12.2%)</td>
<td>125(26.6%)</td>
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<td>125(15.2%)</td>
<td>72(30%)</td>
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<td>1-year recurrence</td>
<td>29(7.7%)</td>
<td>46(17.2%)</td>
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<td>46(9.0%)</td>
<td>28(20.9%)</td>
<td>&lt;0.001</td>
<td>0.66(0.59, 0.72)</td>
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<tr>
<td>Global recurrence</td>
<td>25(5.8%)</td>
<td>27(8.9%)</td>
<td>0.106</td>
<td>27(4.7%)</td>
<td>24(14.7%)</td>
<td>&lt;0.001</td>
<td>0.54(0.46, 0.63)</td>
</tr>
<tr>
<td>Delayed bleeding</td>
<td>29(3.1%)</td>
<td>55(5.6%)</td>
<td>0.012</td>
<td>41(3.4%)</td>
<td>24(6.6%)</td>
<td>0.006</td>
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<tr>
<td>Perforation</td>
<td>18(1.9%)</td>
<td>10(1.6%)</td>
<td>0.631</td>
<td>18(1.5%)</td>
<td>10(2.8%)</td>
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Endoscopic findings

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<tr>
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<td>Mural thickening</td>
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<td>13 (40)</td>
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<tr>
<td>Distorted Ileocecal valve</td>
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Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Clinical significance of delayed bleeding is the most frequent adverse event following endoscopic colorectal mucosal resection. Observational and interventional studies on the efficacy of prophylactic closure (PC) following endoscopic mucosal resection (EMR) showed conflicting results.

Aims & Methods: The primary objective of this review is to evaluate the effectiveness in preventing bleeding and post-polyectomy syndrome (PPS) or perforation of PC of colonic mucosal defects following endoscopic resection. We performed a systematic review and meta-analysis of randomized controlled trials (RCTs) from MEDLINE. We included studies with humans submitted to colorectal endoscopic mucosal resection and in whom mucosal flat or sessile (Paris classification 0-I or Ia) lesions with an estimated size ≥10 mm were found and removed.

Results: 269 articles were initially screened: 5 were RCTs, 4 of them were pooled in the quantitative analysis. A total of 355 patients and 357 resected lesions (proximal colon: 220; distal: 337) were included. Endoscopic procedures: 459 loop polypectomies and 98 submucosal dissections. A total of 298 lesions were randomized to PC versus 259 to non-closure (NC). Number of events on PC group: delayed bleeding (n = 3), PPS and perforation (n = 61). Number of events on NC group: delayed bleeding (n = 13), PPS and perforation (n = 14). Prophylactic mucosal defect closure was effective in reducing delayed bleeding risk (OR 0.206, 95%CI 0.054–0.779; p = 0.020; I² = 0%; 2 RCT and 452 lesions included). There was a non-significant trend for PPS/perforation risk reduction after PC (OR 0.349, 95%CI 0.114–1.070, p = 0.066; I² = 0%; 2 RCT and 374 lesions included).

Conclusion: Prophylactic closure of mucosal defects after EMR of flat or sessile colorectal lesions ≥10 mm reduces risk of delayed bleeding. Further studies are needed to evaluate the effect on PPS/perforation prevention.

Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: ESD is feasible and efficient in very old patients. However, En bloc resection and R0 resection are less frequent than in younger patients probably due to more challenging lesions (more frequent cancer on the pathological analysis). ESD should be the treatment of choice for large rectal superficial neoplasms of the rectum in very old patients in view of its oncological efficiency and its safety in comparison to the surgical alternative.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0876 COLONOSCOPY SPLIT-DOSE PROTOCOL IMPLEMENTATION: A SINGLE-CENTRE EXPERIENCE
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Gastroenterology Department, Hospital Beato Angelico, Loures/Portugal

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Introduction: Split-dose bowel preparation (SD) is more effective in bowel cleansing quality in patients from a district hospital. This was an exploratory observational study of patients who underwent total colonoscopy between Jan/2016-Mar/2017 with polyethylene glycol bowel preparation before and after SD protocol implementation. Bowel cleansing quality was assessed prospectively (using Boston Bowel Preparation Score) and compared between SD and PD groups. Tolerance was assessed using a patient questionnaire.

Results: A total of 344 patients were included, 53% were male, mean age of 61.8±13.6 years. Bowel preparation: 66% SD and 34% PD. Overall, 72% of colonoscopies occurred in morning shifts. Mean interval between finishing bowel preparation and colonoscopy was 4h50 (SD) and 8h09 (PD). Adequate bowel cleansing was found in 51% of patients (SD 83% vs. PD 79%; p = 0.34). There was an association between SD preparation and better overall cleansing quality in patients from a district hospital. There was a significant association between preparation and colonoscopy (Sh40 vs. 7h15; p = 0.010). Split-dose preparation was associated with a better cleansing in the right colon (2.17±1.69 vs. 2.03±0.65; p = 0.047) and a trend for better overall cleansing (6.70±1.87 vs. 6.32±1.90; p = 0.067). On morning shifts, there was a significant difference between PD and SD groups (p = 0.03). A trend for better overall cleansing was found in patients of age ≥70 years old. There was an association between SD preparation and better bowel cleansing in patients of age ≥70 years old (risk difference 0.42% 95%CI –0.03%–0.83%; p = 0.068). There was no difference between groups on bowel urgency (SD 2.6% vs. PD 1.7%; p = 0.718). SD preparation was associated with worse sleep quality (SD 25% vs. DA 7%; p = 0.004).

Conclusion: The implementation of a split-dose preparation bowel protocol in our hospital was associated with better bowel cleansing, especially on the right colon. Split-dose preparation was not associated with higher bowel urgency, although there was a worse sleep quality.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
All authors have declared no conflicts of interest.

A468
United European Gastroenterology Journal 5(5S)
study. All patients were identified from a database of 225 consecutive dissections
Aims & Methods: colorectal endoscopic submucosal dissection (ESD) conversion to mucosal resec-
Introduction: Spinal cord injury (SCI) is a devastating event that occurs with a dis-
cussion. This is a methodological article that presents the results of a double-blind, randomized con-
Control E-mail Address: thorstren.brechmann@rub.de
Introduction: Spinal cord injury (SCI) is a devastating event that occurs with a dis-
References
3. Frisibe JH, Chopra S, Foo D, Sarkarati M. Colorectal Carcinoma and mye-
5. Post JB, Galea M, Korsten MA. Clinical trial: the efficacy and safety of Collyte for use in bowel cleansing agents for elective colonoscopy in persons with
(rectum/non-rectum). The presences of different factors were evaluated to deter-
maviolet method, non-
Results: One-hundred and seventeen patients (39 cases, 78 controls) were included (mean age: 68±10.9 years, 52.1% male). Mean tumor size was 38.5±14.4 mm and the most common location was the right colon/transverse (n=71, 60.7%). By multivariable analysis using backward stepwise method, non-
Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: The primary objective was to determine the adenoma detection rate
Results: In 236 SCI, compared to 414 control patients, bowel preparation lasted longer (3.57±1.5 vs. 1.15±0.6 days, p=0.001), achieved insufficient cleansing rate was more common (23.7±3.6%) and caused more adverse events (OR=13.7±3.0, p=0.001).
Conclusions: Despite intensified protocols, bowel preparation shows inferior results in spinal cord injury colonoscopy needs more efforts to succeed, but achieves a comparable quality.
Disclosure of Interest: All authors have declared no conflicts of interest.

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(rectum/non-rectum). The presences of different factors were evaluated to deter-
multiple logistic regression analyses. Multivariable logistic regression analyses identified (75.4%) tumor, intra-procedure complications (14.5%) and start time were not associated to ESD conversion. R0 was achieved in 64.7% (n=11/17) cases with en-bloc EMR resection and in 91% controls (p<0.001). There were two recurrences (13.3%) at 3-months within the 15 cases with piecemeal resection which were noted in en-bloc (ESD or EMR) resection patients (p=0.044). Three (7.7%) and one (1.3%) patients had an indication for surgery in case-control groups (p=0.107).
Conclusion: The presence of certain factors should be assessed during the proce-
Disclosure of Interest: All authors have declared no conflicts of interest.
P0877 CONTRIBUTION OF COLONOSCOPY IN ELDERLY PATIENTS OLDER THAN 70 YEARS
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Introduction: The elderly patients are considered as a particular population. Colono
results more often (23.7 vs 3.6%) and caused more adverse events. Colonoscopy
alterations, characterized by loss of bowel control, diarrhea, reduced bowel moti-
spinal cord injury (SCI) [2]. Preventive strategies claim increasing attention, but
assessed in 83% (n=45), with polyps in 111% (n=14), IBs in 31% (n=3), radiographic abnormalities in 13.6% (n=13), iron defici-
dysphagia or dyspepsia in 42.4%. Constipation or evacuation difficulties were noted in 45% (n=61) and 7.7% (n=10), respectively. Anemia, bleeding, bleeding requiring transfu-
discussion. This is a methodological article that presents the results of a double-blind, randomized con-
Control E-mail Address: thorstren.brechmann@rub.de
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5. Post JB, Galea M, Korsten MA. Clinical trial: the efficacy and safety of Collyte for use in bowel cleansing agents for elective colonoscopy in persons with
(rectum/non-rectum). The presences of different factors were evaluated to deter-
multiple logistic regression analyses. Multivariable logistic regression analyses identified (75.4%) tumor, intra-procedure complications (14.5%) and start time were not associated to ESD conversion. R0 was achieved in 64.7% (n=11/17) cases with en-bloc EMR resection and in 91% controls (p<0.001). There were two recurrences (13.3%) at 3-months within the 15 cases with piecemeal resection which were noted in en-bloc (ESD or EMR) resection patients (p=0.044). Three (7.7%) and one (1.3%) patients had an indication for surgery in case-control groups (p=0.107).
Conclusion: The presence of certain factors should be assessed during the proce-
Disclosure of Interest: All authors have declared no conflicts of interest.
P0878 RISK FACTORS AND PRACTICAL CONSEQUENCES OF COLORECTAL ESD CONVERSION TO EMR AT A WESTERN REFERRAL CENTER IN DAILY PRACTICE
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Introduction: There are limited data concerning risk factors and consequences of colorectal endoscopic submucosal dissection (ESD) conversion to mucosal rese-
Aims & Methods: Hospital-based frequency-matched case-control retrospective study. All patients were identified from a database of 223 consecutive dissections between 2013 and 2017. The cases were those with ESD conversion to EMR for a >20mm colonic lateral spreading tumor (LST). The controls were randomly selected using frequency 1:2 matching for tumor size (±50mm) and location
Disclosure of Interest: All authors have declared no conflicts of interest.
P0880 ENDOCOSPOIC CLOSURE OF ACUTE IATROGENIC PERFORATIONS OF THE GASTROINTESTINAL TRACT AND PREDICTORS OF NEED FOR EMERGENCY SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS
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Introduction: Acute iatrogenic perforations are one of the recognized complications of both diagnostic and therapeutic gastrointestinal endoscopy. For decades, surgical treatment has been the standard of care, but endoscopic closure has become a more popular approach, due to feasibility and the reduction of the
burden of surgery, combined with the availability of various endoscopic closure devices.

Aims & Methods: To assess the technical and clinical success and safety of endoscopic closure, in total, and for each endoscopic device used. Also, to identify factors predicting success as a first line treatment, and failure of endoscopic treatment.

Medical literature (Cochrane library, EMBASE, MEDLINE) from 1996 till September 2016 was searched. A systematic review and meta-analysis were performed on studies reporting technical and clinical success of endoscopic closure of acute iatrogenic perforations, according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) guidelines.

Results: 764 studies were identified. 28 studies, in human, met our inclusion criteria and were analysed. A total of 474 endoscopic closures were observed: 74.5% (95% CI: 67.7%–82.8%). Technical success was 91.6% (n = 431/474, 95% CI: 84.5%–95.9%), and complication rate was 1.3% (n = 7/474, 95% CI: 0.3%–2.3%). Technical success for endoclips closure was 96.6% (95% CI: 94.2%–98.2%), and clinical success was 93% (95% CI: 87.1%–97.2%), and complication rate was 6.6% (95% CI: 5.4%–7.8%) for OTSC. For Ovesco (Over the scope clip device), technical success was 83.8% (95% CI: 63.9%–96.6%), clinical success was 77.9% (95% CI: 56.8%–93.3%), and complication rate was 4.1% (95% CI: 1.9%–6.9%). Technical success rate for Self-expanding metallic stent (SEMS) is 100% (95% CI: 71.5%–100%), clinical success is 91% (95% CI: 74.1%–108%), and complication rate of 9.1% (95% CI: 78%–112%). Only one study for endosuturing met our criteria, with technical and clinical success rate of 100%, and without any complication. Factors predicting failure of endoscopic treatment and need for early surgical intervention included large perforation size, leukocytosis, fever, severe abdominal pain, large amount of peritoneal free air, necrosis or soft inflammatory margins, unavourable anatomical site, stool contamination and failure of endoscopic closure.

Conclusion: Our study suggests that endoscopic closure is a suitable treatment option for acute iatrogenic gastrointestinal perforations. Several factors have been suggested as predictors of need for surgery as a first line treatment. The study is limited by the low methodological quality of most studies included, indicating the need for further research.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0882 “O-RING SIGN” AS A NOVEL COLORECTAL FINDING WITH NARROW-BAND IMAGING FOR DETECTING DEPRESSED-TYPE COLORECTAL LESIONS

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Introduction: In recent years, colorectal cancer (CRC) has become a focus of attention as likely representing “missed” or “rapidly-growing” lesions in colonoscopy screening for colorectal cancer (CRC). Currently, lesions thought responsible for CRC include sessile serrated adenomas/polyps or flat and depressed-type lesions occurring on the right side of the colon, and there is an increasing need for endoscopic modalities to prevent overlooking these lesions. Colorectal screening using narrow-band imaging (NBI) during colonoscopy withdrawal from the cecum, which was started at our clinic since November 2008, suggested that “O-ring sign” was superior to white-light imaging (WLI) colonoscopy in detecting flat and depressed-type lesions (1). With NBI, the depressed area of a lesion is recognized as “whitish” and the surrounding ring-like mucosa as “brownish”, which constitutes the “O-ring sign”.

Aims & Methods: We aimed to evaluate the incidence and characteristics of the “O-ring sign” in depressed-type colorectal lesions. A total of 227 endoscopically resected and histologically confirmed depressed lesions (IIa + Ic, 156, Ic, 71) were included for analysis. The colonoscopic images of these lesions were retrospectively examined for “O-ring sign” positivity and intensity (grade 0, negative; grade 1, mildly to moderately positive; and grade 2, highly positive). Of these, 16 were excluded as unvaluable and a total of 211 evaluable lesions were analyzed. Results: Of the 211 lesions (IIa + Ic, 141; IIc, 70) analyzed, 84 (IIa + Ic, 68; IIc, 24), 105 (IIa + Ic, 69; IIc, 36), and 22 (IIa + Ic, 12; IIc, 10) were found to be in grades 0, 1, and 2, respectively, with 60.2% of these shown to be “O-ring sign”- positive (127/211), with Ia + IIc and Ic accounting for 57.4% (91/141), and 65.7% (45/67), respectively, of these lesions. While an examination by tumor size and location revealed no clear tendency in “O-ring sign” positivity, an examination by grade revealed a higher “O-ring sign” positivity rate among those with high-grade dysplasia (84.6%, 11/13) than those with low-grade dysplasia (59.2%, 116/196).

Conclusion: NBI colonoscopy screening for the “O-ring sign” as an index appears to improve the detection of depressed-type colorectal lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. Fuji T. Gastrointest Endosc 2010; W1480

P0883 THE LEARNING CURVE FOR COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) BETWEEN EXPERT AND TRAINEE ENDOSCOPIST

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Introduction: Endoscopic submucosal dissection (ESD) has been acceptable as a minimally invasive therapy and providing en-bloc resection for early malignant and pre-malignant lesions of gastrointestinal cancer. Colorectal ESD has some difficulties such as a risk of perforation and its severity compare to gastric ESD. Hence, Colorectal ESD is more challenging than gastric ESD in endoscopic technique. In Japan, where has high incidence of gastric cancer, endoscopists

Conclusion: The overall performance of endoscopists significantly improved with on-the-job training, but did not meet the standards for the implementation of the "do not resect" strategy. However, the results may have been affected by the addition of an additional category (is) to the NICE classification.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0881 REAL-TIME HISTOLOGICAL CHARACTERIZATION OF COLORECTAL POLYPS - THE IMPACT OF TRAINING

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Introduction: Narrow-band imaging (NBI) allows, after training, "in-vivo" classification of colorectal polyps. Recent guidelines propose a "do not resect" strategy for rectosigmoid hyperplastic polyps ≤5mm, with high confidence level (n = 35). NBI for adenoma was 80% (59–93%).

References
1. Fujii T. Gastrointest Endosc 2010; W1480

Disclosure of Interest: All authors have declared no conflicts of interest.

References
could have many experiences of gastric endoscopy, which may be beneficial for the introduction of colorectal ESD. However, little is know about the learning curves of the young endoscopists who perform the colorectal ESD first.

Aims & Methods: We conducted multi-center retrospective observational study to elucidate the safety and learning curve of the trainee who perform the colorectal ESD procedure. Trainees were consecutively recruited. ESD was performed by three endoscopists in Nippon Medical School Hospital and Machida Ichio Hospital from 2010 to August 2016. The ESD devices were Flash knife BT (Fujifilm), Dual knife (Olympus), Hook knife (Olympus) or a combination of both used by operators. The endoscopist A and B, who had over 10,000 examinations of colonoscopy and experiences of gastric ESD (as expert group), and endoscopist C had about 1000 colonoscopy and stented colorectal ESD first (as trainee group). The completion rate of operation, which is defined as en-block resection rate without changing operator, operation time, speed (time/mm) and complications were analyzed in each endoscopist. Furthermore, we divided these procedures in three periods equally as early, middle and late.

Results: The mean age was 70 (range 26–91) years old, and genders were 158 males and 103 females. Tumor locations were proximal colon, distal colon and rectum in 143 (54.8%), 59 (22.6%), and 59 (22.6%), respectively. The histological types were well and moderately differentiated tubular adenocarcinoma, adenocarcinoma with colonic differentiation in 13 (5.2%), and neuroendocrine 2 (0.8%), respectively. There is no statistically significant difference in age, gender, tumor location, tumor size and histological type. The average operation time was 1 hour and 58 minutes (range 41–335 minutes). The completion rates of endoscopist A and B reached 100% in all three time periods and endoscopist C showed an increase: 41%, 67%, and 100% in the initial, middle, late period, respectively. In the operation time, there was a significant difference between endoscopists C (range 38.5, median 49.0) and (100 ± 60.8, median 85), B (62.9 ± 45.1, median 55.5) and C (P < 0.001). In addition, there was no difference in the operation speed of endoscopist C among each periods. The complications were perforation and delayed bleeding in 8 cases (3.9%) and 2 cases (0.8%). All cases recovered with medical and/or endoscopic treatment alone.

Conclusion: Trainee endoscopist may have a good learning curve in completion rate and increasing experience reflects in a remarkable success rate in colorectal ESD. Therefore it was determined that the training of colorectal ESD first was acceptable by the trainee endoscopist who had no experience of gastric ESD. Disclosure of Interest: All authors have declared no conflicts of interest.
received anesthesiologist-directed BPS, required bag-mask ventilation and the ERCP was aborted due to sedation effects. There was no mortality from any cause within 24 hours of ERCP. All patients were discharged from the advanced endoscopy suite without adverse events.

Conclusion: Endoscopist-directed BPS appears feasible, safe and efficacious for ASA I-III patients undergoing outpatient ERCP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0877 DUODENOSCOPES AND LINEAR ECHOENDOSCOPES ARE NOT CONTAMINATED WITH BACTERIAL OR FUNGAL PATHOGENS NATIONWIDE PERSISTENT HIGH PREVALENCE IN THE NETHERLANDS


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Introduction: Recent studies describe multiple outbreaks of multi-drug resistant organisms caused by contaminated duodenoscopes, used for endoscopic retrograde cholangiopancreatography (ERCP) procedures. Contamination of duodenoscopes is attributed to their complex design, which includes a forceps elevator and elevator wire channel. Linear echoendoscopes (LEs), used for endoscopic ultrasound (EUS) procedures, have a similar design with an additional balloon channel. Previously, we found that contamination of duodenoscopes was widespread in the Netherlands. It is unclear if the increased awareness of contamination and associated outbreaks has improved reprocessing outcomes of duodenoscopes and linear echoendoscopes (DLEs).

Aims & Methods: This cross-sectional study was conducted to determine the prevalence of bacterial contamination of all reprocessed DLEs in The Netherlands. All 75 Dutch ERCP/EUS centres were invited to sample all DLEs using centrally distributed kits, according to uniform sampling methods explained in video instructions. Local staff sampled four to six sites per DLE depending on endoscope type, including swabs (protection cap, forceps elevator, flushes (biopsy, suction, air/water and forceps elevator channel) and brushes (biopsy, air/water and balloon channel). Samples were centrally cultured. Radiography of the Meglumine Diatrizoate was performed in each patient of SOBS group to evaluate the occurrence of duodenal biliary reflux. 74 patients who were treated at or two more ERCP with extrahepatic bile ducts stricture treated with ordinary plastic stents (OBS group) from last ten years were compared with SOBS group.

Results: (1) The mean age of SOBS and OBS were 68.8±15.6yrs and 60.4±14.7yrs (P = 0.002), respectively. (2) 35 (57.4%) and 34 (45.9%) patients were contaminate. (3) The first and second patency was 4.5 months and 5.6 months in OBS groups. All the patients in OBS group experienced at least three ERCP to exchange plastic stents. The mean first and second patency were 3.9 months in OBS patients with malignant biliary obstruction. Yet the mean patency was 5.1 and 6.5months in OBS patients with benign biliary obstruction. (4) The occlusion rates of SOBS and OBS group after 3, 4, 5, 6 months of first ERCP were 13.1% and 36.5%, 27.1% and 55.4%, 42.4% and 67.6%, 55.9% and 77.0%, respectively (P = 0.003, 0.001, 0.005, 0.15). Similar to our previous findings, in 47% of all Dutch ERCP/EUS centres at least one patient-ready DLE was AM20 or MGO contaminated. Thirty-two (15%) DLEs from 23 (37%) centres were contaminated. Thirty-two (15%) DLEs from 23 (37%) centres were contaminated with MGO, including Enterobacteriaceae, Pseudomonas aeruginosa and Candida albicans. The most common bacteria were identified in eight different duodenoscope manufacturers and in all nine duodenoscope types and three LE types. For both definitions, contamination was not detected in LE or DE-dependent (P-values < 0.72), nor type (P-values >0.14) or microbial surveillance dependent (P-values > 0.45).

Conclusion: Similar to our previous findings, in 47% of all Dutch ERCP/EUS centres at least one patient-ready DLE was AM20 or MGO contaminated. Of all DLEs, 15% was contaminated with digestive tract bacteria, indicating inadequacy of current reprocessing techniques. These results suggest that any additional awareness of contamination has had no lasting effect or that the current reprocessing technique is not suitable for current DLE designs. This highlights the need for new preventative measures to minimize the risk of interpatient microbial transmission by DLE.

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All other authors have declared no conflicts of interest.

P0888 TECHNICAL EVOLUTION OF A NEWLY-DEVELOPED DIGITAL CHOLANGIO/PANCREATO-SCOPY (SPYGLASS DS) FOR INTRAOPERATIVE EVALUATION OF PANCREATOBILIARY NEOPLASM


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Introduction: Although a newly digital cholangio/pancreato-scopy (SpyDS) has been reported to be useful for therapeutic purpose in patients with biliary diseases, clinical application for diagnostic purpose of pancreateobiliary neoplasm remains unclarified.

Aims & Methods: To evaluate the usefulness and safety of cholangio/pancreato-scopy using a SpyDS for preoperative evaluation of pancreaticobiliary neoplasm. Patients and methods: Between October 2015 and Feb 2017, consecutive 26 patients (19, cholangiocarcinoma; 7, IPMN) who underwent cholangio/pancreato-scopy using a SpyDS for preoperative evaluation were included in this study. Diagnostic accuracy of malignancy and tumor extent evaluation by cholangio/pancreato-scopy guided biopsy/cytology and adverse event after the procedure were retrospectively investigated.

Results: Of 19 patients with cholangiocarcinoma, success rate of SpyDS guided mapping biopsy was 83% (103/124 sites). Diagnostic accuracy of longitude
tumor extent using SpyDS plus mapping biopsy was 92%. One patient developed mild cholangitis after the procedure. As for IPMN, pancreatobiliary using a SpyDS could visualize intraductal papillary tumors in all patients, and SpyDS guided biopsy/cytology was successfully performed. Diagnostic accuracy of malignancy was 100% without any adverse event after the procedure.

**Conclusion:** Preoperative evaluation using a SpyDS plus histological evaluation for pancreaticobiliary neoplasm was found to be useful and safe. Further study is needed to establish evidence about the usefulness of this technique.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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### P0889 ACUTE PANCREATITIS AND HYPERAMYLASAEMY DEVELOPMENT AFTER ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY – CHALLENGES AND PREVENTION

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**Introduction:** Endoscopic retrograde cholangiopancreatography (ERCP) is one of the most technically complex procedures performed by gastroenterologists. After a significant increase in the indications for implementing ERCP, gastroenterologists began to pay greater attention to complications identification and prevention. Despite the widespread improvement of endoscopic techniques and increased experience of endoscopists, the rate of complications has not declined significantly.

**Aims & Methods:** To analyze the frequency of probable causes of asymptomatic hyperamylasaemy and acute pancreatitis after ERCP and their prevention. Two groups of patients were covered: a retrospective (340) and prospective (154) group. Patients had evidence of bile ducts impaired passibility of varying etiology. In these cases ERCP is the final stage in the diagnostic and therapeutic algorithm. All ERCPs were carried out by one expert endoscopist. Patients from the prospective group were administered intramuscularly with Diclofenac (75 mg) before and after the manipulation. The methods used in the study were: demographic data; history and physical examination; laboratory data; imaging methods; ERCP; clinical course and statistical methods for processing data received.

**Results:** The most common indication for ERCP in all patients was cholestasis constellation (88.1%). In a minority of patients ERCP was purely diagnostic (6.1%), while at 93.9% it was also therapeutic. Of all patients at 47 of cases (9.5%) hyperamylasaemy was observed, and at 12 or 2.4% - acute pancreatitis. The estimated true percentage for predicting lack of hyperamylasaemy with this predictive model is very good - 97%. Univarient logistic regression analysis identified the following risk factors for the development of acute pancreatitis: cannulation of the pancreatic duct and the presence of calculous cholecystitis when entering.

**Conclusion:** We detected a low incidence of asymptomatic hyperamylasaemy (9.5%) and acute pancreatitis (2.4%) in the group of patients which were subjected to ERCP. Clinical and laboratory parameters characterizing the patients who developed these complications, and risk factors for acute pancreatitis and asymptomatic hyperamylasaemy were determined. The effect of intramuscular Diclofenac administrated before and after ERCP has no effect.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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### P0890 MOST ADVANCED ENDOSCOPY TRAINEES DO NOT MEET COMPETENCE FOR NATIVE PAPILLAE CANNULATION IN ERCP: RESULTS FROM A PROSPECTIVE MULTICENTER STUDY

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**Introduction:** Advanced endoscopy trainees (AETs) achieve ERCP competency at variable rates and specific case volumes do not ensure competence. However, training and credentialing guidelines continue to utilize an absolute procedure volume to determine competence. There are limited data on whether current training composition and volumes ensure ERCP competence in the US.

**Aims & Methods:** (i) To define ERCP learning curves, utilizing a centralized database, with a focus on cannulation rates using a large national sample of AET programs (AETPs). (ii) To critically examine the composition of current ERCP training in AETPs. ASGE-recognized AETPs were invited to participate and AETs were graded on every ERCP after completion of 25 hands-on ERCP exams. Grading was performed using our previously developed and validated tool [The EUS and ERCP Skills Assessment Tool (TEESAT)] which assesses technical and cognitive competence in a continuous fashion. Grading for each skill was done using a 4-point scoring system: 1-no assistance, 2-minimal verbal cues, 3-multiple verbal cues or hands-on assistance and 4-unable to complete. A comprehensive data collection and reporting system was built using REDCap, a web-based data collection software, and SAS to create learning curves using cumulative sum (CUSUM) analysis for overall and individual technical and cognitive components of ERCP. Individual results and comparison to peers were sent to AETs and trainers quarterly. Acceptable and unacceptable failure rates were set a priori. AETs with <20 evaluations were excluded and success was defined as a skill score of 1 or 2. Individual and combined graphs to assess change in cannulation success rates were constructed and the Cochran-Armitage trend test was used to assess improvement in success rates.

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ERCP techniques are required. Papilla cannulation rates and strategies to increase AET exposure to advanced time provided to AETs. Selective native papilla deep cannulation needs to be native papilla cannulation which may, in part, be due to limited cannulation system. Using strict definitions, a minority of AETs achieved competency in curves using a novel web-based comprehensive data collection and reporting threshold numbers to determine competence. We report the feasibility of establishing curves and competence among AETs in ERCP validating the shift away from advanced cannulation techniques such as double-wire technique, placement of sphincterotomy in 1199 (53%) and 901 (40%) cases, respectively. The mean time allowed for cannulation was overall - 4.0 min (SD 4.3), native papilla - 5.7 min (SD 4.8), and AET failed cannulation cases - 6.2 min (SD 5). There was no change in the time allowed for native papilla cannulation during the 1-year period (p = 0.28). AETs were involved in a small proportion of cases requiring advanced cannulation techniques such as double-wire technique, placement of pancreatic duct stent and precut sphincterotomy (6%). Learning curves for individual endpoints, overall technical and cognitive aspects noted substantial variability. Majority of AETs achieved overall technical (60%) and cognitive (100%) competence at the end of training. While there was a statistically significant improvement in overall and native papilla cannulation rates (both p < 0.001), only 18% of AETs achieved competence for native papilla cannulation (Table 1).

Conclusion: The results of this study confirm the substantial variability in learning curves and competence among AETs in ERCP validating the shift away from threshold numbers to determine competence. We report the feasibility of establishing a centralized national database to report individualized ERCP learning curves using a novel web-based comprehensive data collection and reporting system. Using strict definitions, a minority of AETs achieved competency in native papilla cannulation which may, in part, be due to limited cannulation time provided to AETs. Selective native papilla deep cannulation needs to be a benchmark for assessing competence. Methods to improve native papilla cannulation rates and strategies to increase AET exposure to advanced ERCP techniques are required.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Abstract: P0891. Table 1.

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<td>2; 1.7%</td>
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<td>1; 0.8%</td>
<td>Metal stent for cholangiocarcinoma</td>
<td>1; 0.8%</td>
<td></td>
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<tr>
<td>Immediate bleeding</td>
<td>1; 0.8%</td>
<td>Controlled with metal stent</td>
<td>2; 1.7%</td>
<td></td>
</tr>
<tr>
<td>Delayed bleeding</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intramural duodenal haematoma</td>
<td>0</td>
<td></td>
<td>1; 0.8%</td>
<td></td>
</tr>
</tbody>
</table>

Patient & procedural characteristics

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Notes</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>71; 53.8%</td>
<td>79; 66.9%</td>
<td></td>
</tr>
<tr>
<td>Median age</td>
<td>63.5</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>History of Sphincter of Oddi dysfunction</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>History of PERCPP</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>History of chronic pancreatitis</td>
<td>1; 0.8%</td>
<td>1; 0.8%</td>
<td></td>
</tr>
<tr>
<td>Trainee involvement</td>
<td>2; 16.5%</td>
<td>No data for 5 patients</td>
<td>11; 10%</td>
</tr>
<tr>
<td>Normal LFTs</td>
<td>29; 20.5%</td>
<td>No data for 8 patients</td>
<td></td>
</tr>
<tr>
<td>Non-dilated bile ducts</td>
<td>19; 15%</td>
<td>30; 25.9%</td>
<td></td>
</tr>
<tr>
<td>Pancreatic duct wire/contrast</td>
<td>4; 3%</td>
<td>9; 7.6%</td>
<td></td>
</tr>
</tbody>
</table>

Results: Of the 62 programs invited, 20 AETPs participated and 20 AETs were included in the final analysis. At the end of training, median number of ERCPs performed/AET was 350 (15–500). Overall, 2649 ERCP exams were graded; the majority were ASGE biliary grade 1 (77%) and only 14% for pancreatic indication. Among biliary ERCP cases, AETs attempted native papilla cannulation and sphincterotomy in 1199 (53%) and 901 (40%) cases, respectively. The mean time allowed for cannulation was overall - 4.0 min (SD 4.3), native papilla - 5.7 min (SD 4.8), and AET failed cannulation cases - 6.2 min (SD 5). There was no change in the time allowed for native papilla cannulation during the 1-year period (p = 0.28). AETs were involved in a small proportion of cases requiring advanced cannulation techniques such as double-wire technique, placement of pancreatic duct stent and precut sphincterotomy (6%). Learning curves for individual endpoints, overall technical and cognitive aspects noted substantial variability. Majority of AETs achieved overall technical (60%) and cognitive (100%) competence at the end of training. While there was a statistically significant improvement in overall and native papilla cannulation rates (both p < 0.001), only 18% of AETs achieved competence for native papilla cannulation (Table 1).

Conclusion: The results of this study confirm the substantial variability in learning curves and competence among AETs in ERCP validating the shift away from threshold numbers to determine competence. We report the feasibility of establishing a centralized national database to report individualized ERCP learning curves using a novel web-based comprehensive data collection and reporting system. Using strict definitions, a minority of AETs achieved competency in native papilla cannulation which may, in part, be due to limited cannulation time provided to AETs. Selective native papilla deep cannulation needs to be an important benchmark for assessing competence. Methods to improve native papilla cannulation rates and strategies to increase AET exposure to advanced ERCP techniques are required.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: or procedure-related variable significantly associated with the development of remaining 3 were mild. In the AHP group, 3 PEP were moderate and 4 were between both PEP incidences was not significant. Despite our study didn’t show between both groups. 3) Two patients (1.05%) developed aspiration pneumonia none were 94/21 in the F group and 59/16 in the non-F group. (Fisher’s test: p-value = 0.074). There were no significant differences of patient characteristics between both groups: the mean procedure times were 36.7 minutes in the F group and 30.3 minutes in the non-F group, respectively. The details of procedures for the major papilla (endoscopic sphincterotomy/endoscopic papillary balloon dilation/dilation others) were 40/13/5/56 in the F group and 25/5/3.4/41 in the non-F group. The distributions of endoscopic biliary drainage or stenting/none were 94/21 in the F group and 59/16 in the non-F group, (Fisher’s test: p-value = 0.85) There were no significant differences of procedure characteristics between both groups. 2) The mean procedure times were 36.7 minutes in the F group and 30.3 minutes in the non-F group, respectively. 

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0984 \textbf{ERCP CYTOLOGY YIELD – DOES THE BRUSH MATTER?}

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Introduction: Extra-hepatic biliary tree strictures are caused by a variety of malignant and benign diseases. The brushing of such stenosis during ERCP is safe and easy to perform, however, it’s low sensitivity, ranging from 30% to 50%. Efforts to improve cytology yield include dilution of the stricture prior to brushing and multiple brush passages, both without significant success. In 2011, US Endoscopy introduced the Infinity® cytology brush - a 4Fr (4, 75 mm) device that combines soft and stiff bristles in order to improve acquisition of cytology samples.

Aims & Methods: We aimed to determine if a new-design brush can improve the diagnostic yield of biliary cytology. From February 2015 until December 2016, the new Infinity® brush was used in all cases of ERCP cytology. These were compared with historical controls, where a classical 8Fr biliary cytology brush was used. In both groups, at least two passages were made, with transfer to a thin prep solution, as per prior protocol. Follow-up data, namely clinical course, radiological data or other histological results were collected for a definitive diagnosis.

Results: Thirty-five new brush cases were compared with 52 historical controls. There was no significant difference between gender (57% Vs. 52% male; p > 0.05), age (mean 70 Vs. 74 years; p > 0.05), location of structure (common bile duct 77% Vs. 84%; p > 0.05), length of stricture (between 1–3 cm in 80% Vs. 84%; p > 0.05) or dilution prior to sampling (71% Vs. 84%; p > 0.05) between the two groups. Physicians’ impression of malignant stricture during ERCP was more frequent in new brush cases, with near statistical significance (91% Vs. 75%; p = 0.052). Sufficient sample size for cytological analysis was more frequently obtained in cases when compared to controls (86% Vs. 100%, p < 0.05). Definitive diagnosis were as follows (cases Vs. controls): pancreatic neoplasia 57% Vs. 48%, cholangiocarcinoma 25.7% Vs. 23%, ampulla 0 Vs. 1.9%, benign conditions 17.3% Vs. 21%, no definitive diagnosis 0 Vs. 6.1%. In malignant cases, there was no difference between sensitivities of the cases (31%) and controls (37%), either for pancreatic cancer (20% Vs. 24%; p > 0.05) nor cholangiocarcinoma (55.6% Vs. 50%; p > 0.05). Specificity, positive predictive value and negative predictive value of Infinity® brush and classical 8Fr brush were as follows: 100% Vs. 100%; 100% Vs. 100%, 23% Vs. 35.7%. One stricture with benign features on ERCP (3 cases Vs. 13 controls), 14 had negative cytology and 2 were inconclusive (both controls).

Conclusion: There were significantly more samples with adequate cellularity for cytological analysis with the new Infinity® brush, however, the global sensibility of the two standard devices. With both brushes, the yield is twice as better for cholangiocarcinoma than for pancreatic cancer. One disadvantage we noted with the Infinity® brush is the increased difficulty in passing very tight, fibrotic strictures, even after dilution, due to its width and rigidity. Further ways to improve results would be the routine production of a smear sample, cell block analysis or intra-duodenal biopsies. The future era of cholangioscopy could dramatically increase our ability to sample biliary strictures.

Disclosure of Interest: All authors have declared no conflicts of interest.
3. David Z., Martín G., Cecilia C., et al. Early precut is as efficient as pancreatic duct cannulation during therapeutic ERCP were identified from the ERCP database of 3 institutions in 5
48 (6.3%) in Single APA group, and 4 of 48 (8.3%) in Multiple APA group
Aims & Methods: When guidewire was placed in the pancreatic duct initially by
chance, the patients were randomized into early precut (Group A) or usual early precut sphincterotomy with pancreatic stent (Group B). In Group A, pancreatic duct cannulation within 5 times and attempted precut papillotomy with
our study group. In Group B, from the precut stent was inserted and
then precut with an incision over a pancreatic stent was done. Main outcome
measurements were frequency of successful CBD cannulation and post-proce-
dure related complications.
Results: From January 2015 to August 2016, the two groups were similar
with regard to patient demographics. A total of 50 patients were enrolled. 26 patients
were assigned to the Group A and 24 to the Group B. Successful CBD cannula-
tion was achieved in 23 of 26 (88.5%) patients in the Group A and 23 of
95.8%) patients in the Group B. The mean cannulation time was 16 minutes in the
Group B in 14.8 and minutes in the Group B. Post-procedure hyperamylasemia
was significantly higher in Group A. The overall incidence of post-procedure pancreatitis was 11.5% (3/26) in the Group A and 4.2% (1/24) in the Group B
(P < 0.001).
Conclusion: In patients with pancreatic duct cannulation initially by chance,
compare to early precut group, utmost early precut with pancreatic stent over
the guidelines can only facilitate biliary cannulation and the success rate but also promise low incidence of post-ERCP pancreatitis. In experienced hands,
 utmost early precut technique can dramatically reduce the risk of ampulla and risk of PEI compared with conventionally persistent cannulation attempts.
Disclosure of Interest: All authors have declared no conflicts of interest.
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3. David Z., Martin G, Cecilia C., et al. Early precut is as efficient as pancreatic
tec in preventing post-ERCP pancreatitis in high-risk subjects - A ran-
 prevention of post-ERCP pancreatitis after early precut sphincterotomy for

**References**


**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Introduction:** In biliary access, repeated biliary cannulation attempts are a risk factor for post ERCP pancreatitis (PEP). Early precut is an effective technique for successful biliary cannulation and can significantly reduce the incidence of PEP. The aim of this study was prospectively to evaluate clinical efficacy the performance of utmost early precut with pancreatic stent in the patients in whom pancreatic duct cannulation was performed initially.

**Aims & Methods:** When guidewire was placed in the pancreatic duct initially by chance, the patients were randomized into early precut (Group A) or utmost early precut sphincterotomy with pancreatic stent (Group B). In Group A, pancreatic duct cannulation within 5 times and attempted precut papillotomy with our study group. In Group B, from the precut stent was inserted and then precut with an incision over a pancreatic stent was done. Main outcome measurements were frequency of successful CBD cannulation and post-procedure related complications.

**Results:** From January 2015 to August 2016, the two groups were similar with regard to patient demographics. A total of 50 patients were enrolled. 26 patients were assigned to the Group A and 24 to the Group B. Successful CBD cannulation was achieved in 23 of 26 (88.5%) patients in the Group A and 23 of 95.8%) patients in the Group B. The mean cannulation time was 16 minutes in the Group A and 14.8 in the Group B. Post-procedure hyperamylasemia was significantly higher in Group A. The overall incidence of post-procedure pancreatitis was 11.5% (3/26) in the Group A and 4.2% (1/24) in the Group B (P < 0.001).

**Conclusion:** In patients with pancreatic duct cannulation initially by chance, compare to early precut group, utmost early precut with pancreatic stent over the guidelines can only facilitate biliary cannulation and the success rate but also promise low incidence of post-ERCP pancreatitis. In experienced hands, utmost early precut technique can dramatically reduce the risk of ampulla and risk of PEP compared with conventionally persistent cannulation attempts.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Introduction:** In a recent, a digital version of single-operator cholangioscope (SpyGlass DS) and direct POC (DPOC) using a multibending ultrasound endoscope were introduced as improved forms of each POC, especially in image quality and technical difficulty, respectively.

**Aims & Methods:** In this study, we prospectively compared the procedure success rates of SpyGlass DS and DPOC according to the type of lesion. Both advanced image quality of SpyGlass DS and improved technical difficulty of DPOC by a multibending ultrasound endoscope showed comparable and high procedure success rates in patients with dilated BD. Future prospective studies focused on overall cost savings and long-term clinical outcomes are seems to be required for deciding adequate indications of each POC systems.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

During this 12-months period we have performed 1102 ERCPs, in 458 of April 2017.

Aims & Methods: The cannulation of a virgin papilla is the most difficult and high-risk step in ERCP and it requires significant experience to maximize the success and to minimize poor outcomes. Cannulation rate is one of the accepted quality indicators of ERCP. It is mandatory to regularly assess quality indicators of endoscopic procedures to maintain and improve endoscopic service.

Aims & Methods: We prospectively collected data about cannulation details of all patients with virgin papillas and post-ERCP complications from April 2016 to April 2017.

Results: During this 12-months period we have performed 1102 ERCPs, in 458 of them we had virgin papilla. All ERCPs had therapeutic intentions and all of the patients were followed up. In 13 patients papillas were not successful due to duodenal stenosis (10) or postoperative situations (3/10). In two of them the indication was ceased (because the biliary obstruction resolved spontaneously), 11 patients got percutaneous transheaptic drainage (PTD). The primary cannulation success rate of accessible papillas was 88.5% (394/445) while the overall cannulation success was 96.6% (430/445). 56.1% of primary successful cannulations were achieved by conventional method, in 14.2% we used pancreatic guidewire assisted technique, in 20.1% we used early precut sphincterotomy, and in the rest cases we used combined techniques. In 51 primary unsuccessful cases we repeated ERCP attempt in 4 days on average and successfully cannulated 70.5% (36/51) of them at the second or third attempts. 27 of them were achieved by conventional method, 7 of them after extending the precut, one case with pancreatic guidewire technique, and we used profllactic pancreatic stent in one patient, as well. Out of the 15 patients with finally unsuccessful cannulation, we performed precut without deep cannulation in 10 cases. 7 of them resolved after precut, 2 of the 10 patients got PTD and one patient refused further investigation. In 4 patients out of the 15 unsuccessful cannulations the obstruction resolved without any further intervention and one patient got PTD. We had in sum 3.4% (15/445) post-ERCP pancreatitis, 7 of them were mild, and 8 moderate, we had no severe one. We observed endoscopic signs of biliary drainage in 63 of the 102 cases (61.8%) with some endoscopic techniques (inflation/coagulation/stenting), 7 of them (1.6%) required blood transfusion. Three patients suffered perforation during ERCP. One of them got biliary stent and was discharged uneventfully on the 8th day. We had 2 sphincterotomy related perforations, 1 had early surgery – he died on the 14th day, another patient had delayed surgery, he recovered.

Conclusion: Quality assessment of ERCP performance is essential. Our overall cannulation rate was acceptable. We used pancreatic guidewire assisted technique just after long phase of ERCP without deep cannulation in order to avoid long lasting traumatisation of the papilla. Our complications rate of post-ERCP pancreatitis was good while the post-sphincterotomy bleeding rate should be considered higher than in the literature, therefore we changed the technique of electrocautery.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

**P0903** ENDOSCOPIC ULTRASOUND-BASED TRANSDUODENAL CHOLECYSTOTHOTOMY VIA DOUBLE-FLANGED FULLY COVERED METAL STENT WITH HOT STENT DELIVERY

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Introduction: Laparoscopic cholecystectomy (LC) has become the ‘gold standard’ for the treatment of symptomatic gallstones. However, before clinical implementation, instruments still need modification, and a more convenient treatment is still needed.

Aims & Methods: The aim of this study was to evaluate the transduodenal tractcholecystectomy technique in the treatment of gallbladder disease without choledocholithotomy in the patient with cholesterol gallstones and high surgical risks were enrolled between January 2015 and March 2017. Endoscopic ultrasound (EUS)-guided cholecystoduodenostomy by deploying a double-flanged fully covered metal stent with hot stent delivery was performed and endoscopic sphincterotomy (EST) was also performed during this procedure for those patients with accompanying common bile duct stones. One or two weeks later an forward-viewing endoscope was advanced into the gallbladder via the stent, and cholecystolithotomy or polypectomy was performed. After the stents were removed, a pigtail-type naco-cholecystic drainage catheter was inserted into the gallbladder over the guide wire and removed 2 days later. Four weeks later gallbladder was assessed by abdominal ultrasound.

Results: EUS-guided cholecystoduodenostomy with double flanged metal stent deployment was successfully performed in all of 26 patients (Male/Female, 11/15; mean age, 61 ± 16.19yrs). After the procedure, fistulas had formed in each of the patients and the stones of 7 patients expelled themselves completely. Endoscopic cholecystotomy (19) and polypectomy (2) were performed by using a single cautery under the small endoscope. The mean follow-up period was 11 months (range: 1–27months). Cholesterol gallstones recurrence were not detected in any patient during follow-up.

Conclusion: The EUS-guided placement of a novel metal stent with hot stent delivery is a safe and simple approach for performing an endoscopic cholecystoduodenostomy, which can subsequently allow procedures to be performed for treating biliary disease, including cholecystolithotomy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P0904 QUANTITATIVE ENDOSCOPIC ULTRASOUND ELASTOGRAPHY IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC SOLID TUMORS**

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Introduction: The second generation of quantitative ultrasound (EUS) elastography allows the quantitative analysis of tissue stiffness and can be a useful auxiliary tool in the differential diagnosis of pancreatic solid tumors (1)(2).

Aims & Methods: The aim of this study was to evaluate the accuracy of the quantitative EUS elastography in the differential diagnosis of pancreatic solid masses, discriminating malignant from benign masses, using strain ratio (SR) analysis. A prospective study was performed for 15 months and included 29 consecutive patients who underwent EUS for the evaluation of solid pancreatic masses. EUS elastography was performed by 2 operators, using a linear echoendoscope. The mean of 3 measures was considered as the SR final result for each lesion. EUS-fine-needle aspiration of the lesions was performed after SR assessment and the final diagnosis was based on the cytology or histology results.

Accuracy of the elastography was obtained by the analysis of ROC curves.

Results: Included 29 patients in a total of 30 lesions with conclusive histological/ cytologic diagnosis (8 inflammatory masses, 19 adenocarcinomas, 2 neuroendocrine tumors and 1 undifferentiated carcinoma). The mean SR value was significantly higher in the malignant tumors compared with the benign tumors (55.56 vs 23.93, p < 0.001). The sensitivity and specificity of SR for differentiation of pancreatic malignancy for a cut of 15.89 were, respectively, 95.45% and 87.5% (area under the curve of 0.89, 95% CI). The overall accuracy of the EUS elastography using the SR for the detection of pancreatic malignancy was 93%. Conclusion: Quantitative EUS elastography presents good accuracy in the differential diagnosis between malignant and benign pancreatic masses. It is a promising EUS technique in the diagnostic approach of solid pancreatic lesions, which may complement the study and characterization of the tumors, aiding in the diagnostic and follow-up of these patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
Disclosure of Interest:

pulmonary cancer staging.

lymph node (N) staging by EUS, with particular relevance in esophageal

in patients with no evidence of oncologic disease. This higher prevalence, mostly

Veloso Do

INDICATIONS: A PORTUGUESE SINGLE-CENTRE PROSPECTIVE

P0907 PREVALENCE OF POSTERIOR MEDIASTINAL

Lesions comparing to ERCP-guided tissue sampling (ERCP-TS), there was few

were higher in proximal lesions (cardia and JEG) (k = 0.82, p = 0.001). Depending on primary lesions, the diagnostic accuracy for pancreatic lesions was statistically higher in EUS-TS than ERCP-TS (84.4% vs. 51.1%, p = 0.003). Conclusion: EUS-TS is superior to ERCP-TS for the evaluation of suspected malignant pancreaticobiliary obstructive lesions. Especially, if the biliary obstruction was caused by pancreatic lesions, EUS-TS would need to be a priority for cytologicopathology diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0907 PREVALENCE OF POSTERIOR MEDIASTINAL

LYMPHADENOPATHIES IN PATIENTS UNDERGOING

ENDOSCOPIC ULTRASOUND-GUIDED TISSUE SAMPLING:

INDICATIONS: A PORTUGUESE SINGLE-CENTRE PROSPECTIVE

STUDY

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Introduction: Significant heterogeneity in geographic distribution in the prevalence of mediastinal lymphadenopathies have been documented in CT studies. Awareness of the geographic prevalence and characteristics of lymphadenopathies will be relevant when performing endoscopic ultrasonography (EUS-TS) for non-malignant necrotic lesions. EUS-TS revealed higher rate of overall diagnostic accuracy comparing to ERCP-TS (82.8% vs. 60.2%, p = 0.001).

Results: From January 2011 to September 2016, we enrolled 125 patients and 32 patients were excluded due to the following reasons: loss of follow up in 8, EUS-TS of pancreatic duct in 23, and ERCP-TS from peripancreatic biopsy in 4. Among the enrolled patients (93 patients; 62 males, mean age 65.8 years), 86 (92.5%) had malignant tumor such as cholangiocarcinoma in 39, pancreatic cancer in 37, and other malignant tumors in 10 patients. And 7 (7.5%) patients had benign lesions. EUS-TS revealed higher short axis diameter (EUS-FNA) or biopsy (EUS-FNB) and ERCP-TS using brush cytology and/or forceps biopsy were performed. The diagnostic performances were compared between two techniques according to primary tumor sites.

Conclusion: In one of the largest series of patients, we showed that endoscopic ultrasonography has an overall high agreement and accuracy in the selection of gastric adenocarcinoma patients for neoadjuvant therapy, although they higher for proximal and intestinal lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0908 ACCURACY OF ENDOSCOPIC ULTRASOUND IN GASTRIC ADENOCARCINOMA PATIENT SELECTION FOR NEOADJUVANT THERAPY

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Introduction: Recent studies documented the positive impact of neoadjuvant treatment for gastric adenocarcinoma T ≥2 and/or N +. Aims & Methods: We aimed to assess the accuracy of endoscopic ultrasound in the selection of patient with gastric adenocarcinoma for neoadjuvant therapy. A unicentric retrospective analysis of patients with the anatomopathological diagnosis of gastric adenocarcinoma between 2011 and 2016, who performed endoscopic ultrasound for staging and underwent surgery without prior neoadjuvant treatment. The concordance (kappa) and accuracy (S) and specificity (E) of the endoscopic ultrasound for T ≥2 and/or N + (criteria for neoadjuvant treatment) were assessed using the anatomopathological staging of the resected specimens.

Results: The final sample included 144 patients (64.6% male) with a median age of 68.5 ± 12.2 years. In most cases (80.6%), the neoplasia was distal (antrum, incisura angularis and body). The neoplasia was of the intestinal type, diffuse and mixed in 65.3%, 18.8% and 16% of the cases, respectively. After examination of the resected surgical specimen, 53.5% of patients had criteria for neoadjuvant treatment (T ≥ 2 and/or N +). The overall kappa, specificity and sensitivity of the endoscopic ultrasound for T ≥2 and/or N + were 0.720, p < 0.001), 85.2% (95% CI: 75.6–92.1%) and 87.3%, (95% CI: 76.5–94.4%), respectively. The overall kappa, specificity and sensitivity of the endoscopic ultrasound for T ≥2 and/or N + were higher in proximal lesions (cardia and JEG) (k = 0.924, S-94.4% and E-100%) compared with distal lesions (k = 0.671, S-82.5% and E-84.9%) and in intestinal type lesions (k = 0.765, S-84.9% and E-92.7%) compared with diffuse type lesions (k = 0.682, S-88.4% and E-80%) or mixed (k = 0.566, S-81.8% and E-75%).

Conclusion: In one of the largest series of patients, we showed that endoscopic ultrasonography has an overall high agreement and accuracy in the selection of gastric adenocarcinoma patients for neoadjuvant therapy, although they higher for proximal and intestinal lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0909 IS IT USEFUL TO REPEAT ENDOSCOPIC ULTRASOUND WITH FINE NEEDLE ASPIRATION OF PANCREATIC CYSTIC LESIONS? A RETROSPECTIVE STUDY

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Introduction: Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) for cystic fluid analysis for CEA and cytology had a change in the most accurate diagnostic method in these lesions. The role of repeated EUS-FNA for cystic fluid analysis in follow-up of PCNs is not clear.

Aims & Methods: To determine if patients with pancreatic cysts with a second repeated EUS-FNA for cystic fluid analysis for CEA and cytology had a change in cyst classification or on clinical decision. Retrospective analysis of a EUS database, with 284 patients who had EUS-FNA for pancreatic cyst evaluation from 2007–16, of which 35 had 2 EUS procedures, and of these, 22 had 2 consecutive EUS-FNA procedures.

References


**P0910 DETERMINATION OF INTRACYSTIC GLUCOSE CONCENTRATIONS IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC CYSTS: A PROSPECTIVE STUDY**

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**Introduction:** Despite advances in imaging techniques, differential diagnosis of pancreatic cysts still remains challenging. There has been an increasing interest in new pancreatic cyst biomarkers as a way to differentiate different cyst subtypes and avoid unnecessary surgery. Recently intracystic fluid glucose has been proposed as a promising marker. The aim of this prospective study was to verify this early finding.

**Aims & Methods:** We enrolled in the study all the patients who underwent Endoscopic Ultrasound (EUS) guided Fine Needle Aspiration of a pancreatic cyst at our Institution from October 2015 to February 2017. The cyst fluid was sent for cytology, mucin staining and determination of amylase, Carbohydrate Antigen 19-9 (CA 19-9), Carcinoembryonic Antigen (CEA) and glucose. When deemed necessary by the endoscopist, needle-based confocal laser endomicroscopy (nCLE) of the cyst wall and/or contrast-enhanced EUS was performed. A definitive diagnosis of the nature of the cyst was reached relying on surgery, cytology or mucin staining, a typical pattern of nCLE or by consensus (on EUS and nCLE features) by three expert endosonographers, blinded to cyst markers concentrations.

**Results:** Twenty-nine patients (13 males, median age 72 years, range: 30-83) entered the study. Nineteen (66%) pancreatic cysts were unilocular (74%), 10 (35%) were multilocular and the median largest diameter was 45 mm (range: 20-70 mm). Sixteen (55%) cysts were located in the pancreatic head, 10 (35%) in the body and 3 (10%) in the tail. CE-EUS was performed in 14 (48.3%) patients, nCLE was performed in 9 (30.7%) patients. Eighteen (62%) cysts were classified as mucinous (6 mucinous cystadenomas; 12 intraductal papillary mucinous neoplasm) and 11 (37.9%) as non-mucinous (6 serous cystadenomas; 5 pseudocysts). The final diagnosis was reached relying on surgery in 9 patients (31%), on cytology in 10 (34.4%), on nCLE in 8 (27.6%) and on consensus in 8 (27.6%). Mean glucose concentrations in mucinous cyst were significantly lower than in non-mucinous cysts (7.7 μg/dl vs 95.7 μg/dl, p < 0.0001). In the diagnosis of mucinous cysts, sensitivity of CA 19-9 (cutoff more than 5000 U/ml), CEA (cutoff more than 192 mg/ml) and glucose (cutoff less than 50 mg/dl) was respectively 22.2%, 66.7% and 94.4%. Specificity was respectively 72.7%, 100% and 100%. Accuracy was respectively 41.4%, 79.3% and 96.6%. Only two subjects in this cohort were affected by diabetes, this condition did not impact on intracystic glucose concentration.

**Conclusion:** Although limited by the small sample size, this study confirms the utility of intracystic glucose levels in differentiating mucinous from non-mucinous pancreatic cysts. This cheap, new marker outperformed CA 19-9 and CEA in sensitivity, specificity and accuracy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0911 UTILITIES OF LIQUID BASED CYTOLOGY IN EUS-FNA SAMPLES FOR THE PANCREATIC LESION:**

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**Introduction:** Liquid-based cytology (LBC) preparation method is one of the most advanced methods, which is widely used in gynecological and non-gynecological cytological samples, due to its ability to decrease screening time, insufficient sample rate, and air-drying artifacts compared to a conventional smear method. Additionally, immunocytochemistry (ICC) can be performed after LBC, which is used in gynecological and non-gynecological cytology samples, due to its ability to decrease screening time, insufficient sample rate, and air-drying artifacts compared to a conventional smear method. Additionally, immunocytochemistry (ICC) can be performed after LBC.

**Aims & Methods:** The aim of this study is to show the actual method of LBC and to evaluate the utility of LBC in EUS-FNA samples of the pancreatic lesions. 292 specimens obtained by EUS-FNA from patients with pancreatic disease were included in this study. Clinical information was prospectively recorded in 210 cases, acinar cell carcinoma in three cases, adenosquamous cell carcinoma in one case, invasive ductal carcinoma derived from IPMN in three cases, metastatic pancreatic tumor in eight cases, pancreatic neuroendocrine tumor (PNET) in 20 cases, solid pseudopapillary neoplasm in 11 cases, serous cyst (SCN) in five cases, mass-forming pancreatitis in four cases, and autoimmune pancreatitis (AIP) in 40 cases. Just after EUS-FNA, tissue sample in the FNA needle was flushed out into petri dish with saline. The sample was carefully examined to provide samples for biochemical and cytological examination. The liquid was formalin-fixed and processed for pathological evaluation. All residual liquid specimen in whole was immediately immersed in liquid-based fixation medium (CytoRichTMRed) at the bedside. The liquid was centrifuged and processed (a) LBC, (b) PCL with two protocols: group 1: Ciprofloxacin 200 mg iv, one-dose, immediately before FNA; and group 2: Ciprofloxacin 200 mg iv, one-dose, immediately before FNA plus three days of oral Ciprofloxacin 500 mg, bid. Retrospective statistical analysis of all the cases was performed to compare the results of the two protocol groups.

**Results:** Positive predictive values of cytology and histology are 99.1%(223/225) and 98.3%(201/205). Positive predictive values of cytology and histology are 18.7%(214/225) and 67.6%(152/225). 65.8% (48/73) of pathologically non-diagnosed cases could be diagnosed as malignancy owing to cytology. In 26 specimens where immunocytochemistry was needed, IHC was available in 23 of the 26 specimens (88.5%) and ICC was available in all specimens. In the three specimens, IHC was not available owing to pathological insufficiency. In 204 EUS-FNA samples obtained by EUS-FNA may be useful for reducing insufficient material rate and conducting ICC as well as in samples in other medical fields.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0912 ANTHOCOLIC GLUCOSE CONCENTRATIONS IN THE DIFFERENTIAL DIAGNOSIS OF PANCREATIC CYSTS: A PROSPECTIVE STUDY**

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**Introduction:** Despite advances in imaging techniques, differential diagnosis of pancreatic cysts still remains challenging. There has been an increasing interest in new pancreatic cyst biomarkers as a way to differentiate different cyst subtypes and avoid unnecessary surgery. Recently intracystic fluid glucose has been proposed as a promising marker. The aim of this prospective study was to verify this early finding.

**Aims & Methods:** We enrolled in the study all the patients who underwent Endoscopic Ultrasound (EUS) guided Fine Needle Aspiration of a pancreatic cyst at our Institution from October 2015 to February 2017. The cyst fluid was sent for cytology, mucin staining and determination of amylase, Carbohydrate Antigen 19-9 (CA 19-9), Carcinoembryonic Antigen (CEA) and glucose. When deemed necessary by the endoscopist, needle-based confocal laser endomicroscopy (nCLE) of the cyst wall and/or contrast-enhanced EUS was performed. A definitive diagnosis of the nature of the cyst was reached relying on surgery, cytology or mucin staining, a typical pattern of nCLE or by consensus (on EUS and nCLE features) by three expert endosonographers, blinded to cyst markers concentrations.

**Results:** Twenty-nine patients (13 males, median age 72 years, range: 30-83) entered the study. Nineteen (66%) pancreatic cysts were unilocular (74%), 10 (35%) were multilocular and the median largest diameter was 45 mm (range: 20-70 mm). Sixteen (55%) cysts were located in the pancreatic head, 10 (35%) in the body and 3 (10%) in the tail. CE-EUS was performed in 14 (48.3%) patients, nCLE was performed in 9 (30.7%) patients. Eighteen (62%) cysts were classified as mucinous (6 mucinous cystadenomas; 12 intraductal papillary mucinous neoplasm) and 11 (37.9%) as non-mucinous (6 serous cystadenomas; 5 pseudocysts). The final diagnosis was reached relying on surgery in 9 patients (31%), on cytology in 10 (34.4%), on nCLE in 8 (27.6%) and on consensus in 8 (27.6%). Mean glucose concentrations in mucinous cyst were significantly lower than in non-mucinous cysts (7.7 μg/dl vs 95.7 μg/dl, p < 0.0001). In the diagnosis of mucinous cysts, sensitivity of CA 19-9 (cutoff more than 5000 U/ml), CEA (cutoff more than 192 mg/ml) and glucose (cutoff less than 50 mg/dl) was respectively 22.2%, 66.7% and 94.4%. Specificity was respectively 72.7%, 100% and 100%. Accuracy was respectively 41.4%, 79.3% and 96.6%. Only two subjects in this cohort were affected by diabetes, this condition did not impact on intracystic glucose concentration.

**Conclusion:** Although limited by the small sample size, this study confirms the utility of intracystic glucose levels in differentiating mucinous from non-mucinous pancreatic cysts. This cheap, new marker outperformed CA 19-9 and CEA in sensitivity, specificity and accuracy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
prophylaxis is mandatory during EUS-FNA of PCLs, since it does not seem to have a protective effect. Moreover, the raise in antibiotic resistance and possible adverse effects related to their use should be balanced against the very low infectious complication rate of EUS-FNA. One limitation of our study is its retrospective nature, with a significant delay between the EUS-FNA and the time to inquiry, which could have biased the patients answers.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

Disclosure of Interest: All authors have declared no conflicts of interest.

P0914 EUS-GUIDED FNA IN THE STUDY OF THE ADRENAL GLAND: NATIONAL RETROSPECTIVE MULTICENTER STUDY


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Introduction: The endoscopic ultrasound (EUS) has proven useful in the study and evaluation of the adrenal gland (AG) by endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA), in both the left and right glands.

Aims & Methods: To analyze the diagnostic performance, safety, on clinical management, predictors of malignancy and cyto-pathological correlation of the EUS-FNA with adrenal gland.


Results: A review of 205 EUS-FNA of adrenal gland in 200 patients (154 males). Average age: 65.3 (DE 9.6). Primary tumor: lung 69%, unknown 10%, other 20%. Adrenal gland left 191; adrenal gland right 14 (Main features: CT scan-proven adenopathy, high-uptake (82%), hypochogenic (88%) and suspected by endoscopist (69%)). Puncture technique most commonly used: cytological needle (75%), 22-G (64%), suction-syringe (66.3%), passes 2.17 (DE 1.38).

92% of samples allowed a cytological diagnosis, 60% malignant. Variables associated with malignancy: CT scan pathological morphology (OR: 2.99 IC 95% 1.41–6.44), heterogeneous pattern EUS (OR 2.99 IC 95% 1.13–3.97), morphological and extension of the EUS-FNA with adenocarcinoma. A size >5 mm (OR: 2.27 CI 95% 1.17 to 4.48). Pathological suspicion of the endoscopist was associated with a greater therapeutic change (OR: 4.48 CI 95% 2.38 to 8.62). No description of adverse events.

Conclusion: Adrenal gland by endoscopic ultrasound-guided fine-needle aspiration is a safe and high diagnostic yield method. The variables most associated with malignancy are the suspicious echo endoscopic images objectified by expert endoscopists, a heterogeneous pattern and variegated morphology. The results suggest the possibility of developing a predictive malignancy model pre-surgical.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

Disclosure of Interest: All authors have declared no conflicts of interest.

P0915 RELIABILITY OF GISTs PRE-TREATMENT RISK ASSESSMENT CLASSIFICATION WITH EUS-FNB BY USING DESIGNED CORE NEEDLES

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Introduction: The current classifications of non-metastatic GIST are based on post-operative pathologic criteria and are useful to estimate the potential risk of postoperative recurrence and determine the value of adjuvant Imatinib. The proposed pre-treatment classification currently recognized risk factors as tumor diameter, mitotic rate and site (gastric vs non-gastric). EUS-guided tissue samples remains mainstay for pathological diagnosis of GIST, but previous studies showed that EUS-FNA with standard 19 or 22 gauge needles does not reliably reflect GIST’s proliferation and size.

Aims & Methods: We aimed to investigate the EUS-FNB diagnostic yield for GIST and to evaluate whether EUS-FNB samples reflect prognostic criteria obtained from resected GISTs. A prospectively maintained database was retrospectively reviewed to identify consecutive patients with surgically resected subepithelial lesions who received a diagnosis of GIST at a previous EUS-FNB with a 19 or 22 gauge core-needle (EchoTip® ProCore™ Cook Medical). Size from EUS examination and mitotic/proliferative indexes obtained from EUS-FNB samples were compared with surgical specimens.

Results: Between November 2012 and December 2016 18 patients were studied (11 males, mean age 71.6 years, range 44–88 yo). The tumour site was the stomach in 15 out of 18 patients and the duodenum in 3 out of 18 patients. Agreement between EUS-FNB and surgical pathology was 100% with respect to the diagnosis of GIST (18/18). Proliferative indexes (Ki67/MIB1) were determined in 14/18 (77.7%) of all cases (as expected) in resected specimens. In our series Ki67/MIB1 were generally underestimated. We found only 2 patients with the required number of 50 HPFs for mitotic count examination. They showed a mitotic index <5/50 HPFs comparable to surgical specimen. No mitotic figures were seen in core biopsy specimen from any of the remaining 16 patients. In these patients the number of HPFs for mitotic count examination ranged from 1 to 22. In their corresponding surgical specimen we found mitoses in 16/16 patients, ranging from 1 to 5 per 50 consecutive HPFs. Tumour size of the surgical specimen exceeded (> 5 cm) the tumour size in 11 out of the 18 investigated cases (66.6%) and was equal (± 5 mm) in 6 cases (33.3%).

Conclusion: In our experience, EUS-guided tissue core biopsy have an extremely high diagnostic accuracy for GIST diagnosis, but underestimates the proliferation indexes and rarely allows for a reliable mitotic count. The main reason responsible for these results is the uneven distribution of the mitotic figures throughout the lesion, which may cause the biopsy to miss the most mitotically active areas. Furthermore, EUS examination generally underestimates the size of the lesions; this limit is fundamentally linked to the “bidimensional” evaluation of lesions obtained by ultrasound. In addition, the underestimation of the size is greater for large lesions because of the low depth of field evaluated by high frequencies used in EUS. Our data obtained with EUS-FNB are similar to previous studies with FNA and constitute a major limitation for developing a possible pre-treatment and biopsy-based risk classification of GIST. Alternative parameters (genotype profiling) must be validated on pre-surgical biopsy samples from GISTs for prognostication purposes.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0916 TECHNICAL FEASIBILITY AND SAFETY OF ENDOSCOPIC ULTRASOUND (EUS)-GUIDED FIDUCIAL MARKER PLACEMENT USING A NOVEL SYSTEM WITH PRE-LOADED 22-GAUGE NEEDLES IN PANCREATIC CANCER PATIENTS

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Introduction: Pancreatic cancer (PC) remains a disease with overall poor prognosis, despite significant advances over the past decade. Stereotactic body radiation therapy (SBRT) is able to deliver higher biological effective dose to the tumor over a shorter period of time with reduced local toxicity compared to conventional external beam radiation therapy. EUS-guided fiducial placement has been shown to improve the accuracy and localization during SBRT.
Conventional EUS-guided fiducial placement requires back-loading each fiducial through the tip of the FNA needle. Thus, delivery of multiple fiducials can be cumbersome and time-consuming.

**Aims & Methods:** We aimed to evaluate the feasibility, safety, and performance characteristics of fiducial deployment in PC patients using a novel exchangeable FNA system with pre-loaded 22-gauge EUS fiducial needles. This was a single-center pilot study of 10 consecutive patients undergoing EUS-guided fiducial placement for SBRT. The fiducial delivery system contains a 22-gauge EUS fiducial needle insert through the exchangeable FNA system for total deployment of 4 markers in each patient. All patients underwent CT after fiducial placement as part of SBRT to evaluate successful deployment and compliance with the primary endpoint was procedure success, defined as deployment of at least 3 fiducials into the desired target area. Secondary endpoints were total procedure time, fiducial delivery time, and safety.

**Results:** Fiducial placement was attempted in 10 consecutive patients with PC (mean age 61.7 years, males 60%). The tumor was located in the head (n = 6), neck (n = 2), and the body (n = 2) of the pancreas. Mean size of the tumor was 2.7 cm (range 1.6–5.3). Procedure success was achieved in all 10 (100%) patients. All 10 patients successfully received fiducials. Mean total procedure time was 12.2 minutes (range 5–18). By comparison, using historic controls of the first 10 patients who underwent conventional EUS-guided fiducial placement, the mean total procedure time was 26 minutes (range 16–44, p < 0.002). Mean fiducial delivery time was 4.2 minutes (range 1–8). There were no immediate or delayed (7 days) complications.

**Conclusion:** EUS-guided fiducial placement with a novel exchangeable FNA system with pre-loaded 22-gauge EUS fiducial needle is quick, technically feasible and safe. This system may theoretically decrease the risk to the clinical staff by eliminating the need for back-loading fiducials through exposed needle tip and handling of potentially dirty needles. Given the potential safety and time advantages, further prospective studies are warranted for validation.

**Disclosure of Interest:** E.J. Shin: Consultant, C2 Therapeutics No conflict of interest relevant to the abstract.

M.A. Khashab: Consultant, Boston Scientific No conflict of interest relevant to the abstract.

M.I. Canto: No conflict of interest relevant to the abstract.

All other authors have declared no conflicts of interest.

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**P0918 DEVELOPMENT AND VALIDATION OF A HIGHLY SENSITIVE AND SPECIFIC AUTOMATED ALGORITHM TO EVALUATE THE ABUNDANCE OF BUBBLES IN SMALL BOWEL CAPSULE ENDOSCOPY:**

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**Introduction:** Bubbles can impair the visualization of the small bowel (SB) mucosa during capsule endoscopy (CE). The aim of the study was to develop and to validate a computer algorithm, which would evaluate the abundance of bubbles in SB-CE. Two sets of 200 SB-CE normal still frames were extracted from 45 complete third-generation SB-CE videos. Two experienced SB-CE readers analyzed both sets of images twice, in a random order. Each still frame was categorized as "scarce in" or "abundant in bubbles (<10% or ≥10% of bubbles covering the frame, respectively). Reproducibility (κ coefficient), sensitivity (Se), specificity (Sp), Receiver Operating Characteristic (ROC) curve, and calculation times were measured for different algorithms (Grey-level of co-occurrence matrix [GLCM], fractal dimension, Hough transform, and Speeded-Up Robust Features [SURF]) using the experts’ reading as reference. Algorithms with highest reproducibility, Se and Sp were then selected for a validation step on the second set of frames. The criteria for validation were κ ≥ 0.81, Se ≥ 90%, Sp ≥ 85%, and a low calculation time.

**Results:** Both SURF and GLCM algorithms had high operating points (Se and Sp over 90%) and a perfect reproducibility (κ = 1). At the validation step, the GLCM detector strategy had the best diagnostic capabilities, with Se = 95.79%, Sp = 95.19%, and a mean calculation time of 0.037 s per frame. Table 1: Sensitivity (Se), specificity (Sp), negative predictive value (NPV), positive predictive value (PPV) and area under receiver operating characteristic curve (AUROC) of four algorithms for evaluation of bubble abundance in small bowel capsule endoscopy still frames (development step).

**Conclusion:** A GLCM detector strategy has high diagnostic performances to categorize "scarce in" or "abundant in bubbles" SB-CE frames. This algorithm is of interest for clinical use (i.e. quality in CE reporting) and for research (providing an objective comparison tool of different preparations, including anti-bubble agents).

**Disclosure of Interest:** X. Dray: Xavier Dray has received consultancy fees from Covidien GI solutions.

All other authors have declared no conflicts of interest.

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**P0919 A NOVEL CAPSULE TECHNOLOGY PLATFORM FOR SPECIFIC LOCALIZED COLON DRUG DELIVERY:**


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**Abstract:** P0917

**Introduction:** Capsule endoscopy has been demonstrated to be a first-line tool for small bowel visualization. However, it has some limitations such as incomplete examinations - i.e: the capsule does not reach the cecum - leading to missing lesion diagnosis.

**Aims & Methods:** To evaluate those factors that can predict incomplete examinations, to identify those patients at risk for incomplete procedures and to define those approaches that may improve the efficiency of the examination reducing the time of the diagnostic process as well as the need to repeat procedures. A total of 1918 patients who underwent capsule enteroscopy at our center between 2008 and 2015 were retrospectively analyzed. We evaluated variables such as age, sex, anthropometric parameters, comorbidity, drugs, outpatient care, analytical parameters, indication of the test and transit times. Initially, a univariate analysis and then, a multivariate analysis using a logistic regression model were carried out.

**Results:** In the univariate analysis, the following variables showed a statistically significant association with the rate of incomplete examinations: age, gender, indication of procedure, outpatient care, history of abdominal surgery, heart disease, capsule ingestion posture, hemoglobin levels, renal failure and both gastric and small bowel transit times. These variables were included in the multivariate analysis: age was > 65 years (OR = 1.99, 95% CI: 1.34–2.95), gastric transit time > 41 minutes (OR = 2.60, 95% CI: 1.72–3.93) and small bowel transit time > 286 minutes (OR = 3.52 95% CI: 2.26–5.48) showed a statistically significant association with the risk of incomplete examination.

**Conclusion:** Incomplete capsule endoscopy is predictable. Patients older than 65 years and/or a gastric emptying time greater than 42 minutes are independent predictive factors for incomplete procedures. In these clinical scenarios, pharmacological preventive measures or endoscopic introduction should be taken into account to avoid incomplete examinations.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P0919 DEVELOPMENT AND VALIDATION OF A HIGHLY SENSITIVE AND SPECIFIC AUTOMATED ALGORITHM TO EVALUATE THE ABUNDANCE OF BUBBLES IN SMALL BOWEL CAPSULE ENDOSCOPY:**

**O. Pietri, G. Rezgui2, A. Histaça2, M. Camus3, I. Nion-Larmurier1, E. Abou Ali1, C. Li2, A. Beq1, O. Romain2, U. Chaput3, P. Marteau1, C. Florent1, X. Dray1**

1) Department Of Digestive Diseases, APHP Saint Antoine Hospital, Paris/Paris2) Department Of Gastroenterology, Cochin Hospital, Assistance Publique-Hôpitaux de Paris, Paris/Paris3) College Of Arts And Sciences, Drexter University, Philadelphia/United States of America

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**Introduction:** Bubbles can impair the visualization of the small bowel (SB) mucosa during capsule endoscopy (CE). The aim of the study was to develop and to validate a computer algorithm, which would evaluate the abundance of bubbles in SB-CE. Two sets of 200 SB-CE normal still frames were extracted from 45 complete third-generation SB-CE videos. Two experienced SB-CE readers analyzed both sets of images twice, in a random order. Each still frame was categorized as "scarce in" or "abundant in bubbles (<10% or ≥10% of bubbles covering the frame, respectively). Reproducibility (κ coefficient), sensitivity (Se), specificity (Sp), Receiver Operating Characteristic [ROC] curve, and calculation times were measured for different algorithms (Grey-level of co-occurrence matrix [GLCM], fractal dimension, Hough transform, and Speeded-Up Robust Features [SURF]) using the experts’ reading as reference. Algorithms with highest reproducibility, Se and Sp were then selected for a validation step on the second set of frames. The criteria for validation were κ ≥ 0.81, Se ≥ 90%, Sp ≥ 85%, and a low calculation time.

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**Disclosure of Interest:** X. Dray: Xavier Dray has received consultancy fees from Covidien GI solutions.

All other authors have declared no conflicts of interest.
P0920 COLON CAPSULE ENDOSCOPY: HOW DOES PROCEDURE ACCURACY?

Introduction: A variety many of pharmaceuticals for the treatment of colon disease can be more effective and have less side effects if targeted for precise delivery in the colon. Over the years, many types of delivery vehicles have been developed with the aim of targeting the colon, such as PB-based delivery technologies, time dependent drug release mechanisms, pressure based mechanisms, flora sensitive mechanisms and others. These technologies have performed with variable degrees of success due to the wide distribution of motility and other physiological variability between patients. We describe a novel capsule technology which incorporates a diffused gas sensor that allows for an accurate sensing of colon entrance, as well as a 3D real time positioning system that allows for an accurate, programmable, localized, and in colon drug delivery system.

Aims & Methods: Data was collected from 14 patients that swallowed capsules in a multi-center clinical trial using an x-ray imaging capsule (GUT 2016). The patients were sent home to continue their normal life routine while the capsule naturally traveled in the gastrointestinal tract until excretion. (Subjects signed informed consent forms and the study was performed after local IRB approval). The capsules contained electronics and software that allowed for live communication between the capsule and a recording device that is placed directly on the patient’s back. This device tracks the position of the capsule and communicates with it, receiving diffused gas pressure from the capsule sensor and fusing this information with 3D position information from the capsule. The capsule system exhibited position accuracy of ±1 cm and the ability to detect movements in real time, as well as potential of ~1 ml of payload for drug containment.

Results: The average total transit time of the capsule was 43 hours (range: 15–68 hours). The average transit time to cecum was 13.8 hours, and the average time across the colon was 12.8 hours (range: 6–25). The position tracking and the RF communication between the capsule and the recorder showed >90% coverage in all cases, even in obese patients. No adverse events were reported. Figure 1 illustrates the recorder placement on the patient back. Figure 2 is a typical averaged capsule position trace in the colon.

Conclusion: A capsule with accurate position tracking, 2-way communication, and on line algorithms can determine colonic entrance and identify exact locations in the colon. A wide variety of drugs can accurately be delivered to their exact target in the colon. It enables for a more effective (high dose) and less toxic (no systemic delivery) therapy for IBD and cancer.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medic Checkup All other authors have declared no conflicts of interest.

P0921 COLON CAPSULE ENDOSCOPY MAY REDUCE COLONOSCOPY MISS RATE – A MULTICENTER STUDY

Introduction: Colonoscopy miss rate is an area of intense focus, as it directly correlates with colorectal cancer incidence rate. Previous studies reported a colonoscopy miss rate of 2%–22%, depending on polyp size and histology [1]. Colon Capsule Endoscopy (CCE) is a visualization diagnostic modality of the colon mucosa, which has demonstrated high sensitivity for polyps and adenomas [2]. Determining the nature of polyps detected by CCE but missed by the imperfect gold standard (colonoscopy), may facilitate both optimization of CCE application (potential CCE additive value) and increase colonoscopy polyp detection.

Aims & Methods: Characterize polyps detected by CCE, which were missed by colonoscopy. 695 screening population participants, from 17 sites in the United States and Israel, underwent CCE procedure followed by a blinded colonoscopy. The overall colonoscopy adenoma detection rate in this study was very high – 39% [2]. Following the blinded colonoscopy, the patient's CCE report was assessed. Based on the findings in this report, the colonoscopy miss rate of 2% was estimated. Determining the nature of polyps detected by CCE but missed by the imperfect gold standard (colonoscopy), may facilitate both optimization of CCE application (potential CCE additive value) and increase colonoscopy polyp detection.

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Results: The 70 polyps missed by first colonoscopy and detected by second colonoscopy, 20 (29%) were 6 mm or larger (based on colonoscopy size estimation), 19 (27%) were either adenomatous or sessile serrated lesions and 16 (23%) were described as either flat or sessile-flat by colonoscopy performing physician. Stratification of polyps based on location:

<table>
<thead>
<tr>
<th>Location</th>
<th>Detected by blinded colonoscopy (n = 683)</th>
<th>Detected after CCE and unblinding (n = 70)</th>
</tr>
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<tbody>
<tr>
<td>Cecum</td>
<td>64 (84%)</td>
<td>12 (16%)</td>
</tr>
<tr>
<td>Ascending</td>
<td>181 (94%)</td>
<td>11 (16%)</td>
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<tr>
<td>Transverse</td>
<td>98 (96%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td>Descending-Sigma</td>
<td>243 (90%)</td>
<td>26 (10%)</td>
</tr>
<tr>
<td>Rectum</td>
<td>97 (85%)</td>
<td>17 (15%)</td>
</tr>
</tbody>
</table>

Abstract: P0920

Colon cleansing Sensitivity (≥6 mm); n = 272

<table>
<thead>
<tr>
<th>Category</th>
<th>Sensitivity (≥6 mm); n = 272</th>
<th>Specificity (≥6 mm); n = 495</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate cleansing</td>
<td>153/195 = 78.5% (72.2%–83.7%)</td>
<td>308/350 = 88.0% (84.2%–91.0%)</td>
</tr>
<tr>
<td>Inadequate cleaning</td>
<td>54/77 = 70.1% (59.1%–79.2%)</td>
<td>130/145 = 89.7% (83.5%–93.7%)</td>
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<tr>
<td>P-value</td>
<td>0.147</td>
<td>0.600</td>
</tr>
<tr>
<td>Poor cleansing</td>
<td>3/9 = 33.3% (11.7%–64.9%)</td>
<td>15/16 = 93.8% (69.7%–100%)</td>
</tr>
<tr>
<td>Fair, good and excellent cleansing</td>
<td>204/263 = 77.6% (72.1%–82.2%)</td>
<td>423/479 = 88.3% (85.1%–90.9%)</td>
</tr>
<tr>
<td>P-value</td>
<td>0.007</td>
<td>1</td>
</tr>
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</table>

Poor cases had significantly lower CCE sensitivity compared with fair, good and excellent cases, for 6 mm polyps (P-value = 0.007). When stratifying cases based on the current adequacy cutoff, sensitivity for 6mm polyps is similar in inadequate (“poor” + “fair”) cases compared to adequate (“good” + “excellent”) cases (70.1%, 78.5% respectively, P-value = 0.147).

References

Multivariate logistic regression revealed that after adjusting to polyp’s size, cecal and rectal segments were associated with increased chance of CCE additive value to colonoscopy (cecum vs. ascending or transverse colon: Adj.OR = 3.2 [95%CI: 1.3–7.6] and Adj.OR = 4.5 [95%CI: 1.4–14.6] respectively; rectum vs. ascending or transverse colon: Adj.OR = 2.6 [1.1–5.8] and Adj.OR = 3.6 [95%CI: 1.2–11.4] respectively). There were 59 patients (8.49% of study population), with at least one CCE additive value to colonoscopy event.

Conclusion: CCE has the ability to detect polyps missed by traditional colonoscopy, especially lesions in the cecum and rectum.

Disclosure of Interest: S. Perek; Employee of Medtronic

N. Schwarz; Employee of Medtronic

References

P0922 ENDOSCOPIC MANAGEMENT OF POSTOPERATIVE PANCREATIC FISTULAS AFTER DISTAL PANCREATECTOMY OR ENucleation
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Introduction: Only small series (<10 patients) have described endoscopic management of postoperative pancreatic fistulas (POPF). The purpose of this retrospective study was to describe the indications, technique and results of endoscopic treatment of POPF.

Aims & Methods: From a prospective database of an endoscopic unit of a tertiary center, patients with POPF who underwent pancreatic endoscopic treatment during a retrograde endoscopic cholangiopancreatography (ERCP) were identified. From January 2010 and June 2016, POPF was classified according to the definition of the International Study Group of Pancreatic Fistula Working Group. The indications, the techniques and results of endoscopic drainage and the patients’ outcomes were registered.

Results: Among 6473 ERCP performed during the inclusion period, 31 patients had POPF treated endoscopically (14 men, 7 women, mean age 63±14.5 years). The male-to-female ratio was 2:1 in favor of the male gender. Pancreatic stents proved their efficiency in 98% cases, in only 3 patients deep cannulation being unsuccessful. On average, patients required 1, 15 ERCP procedures in order to obtain biliary access. ERCP indication for benign pathology was predominant (60%). The stents used were 5 Fr, 5 cm (102 patients) and 5 Fr, 3 cm (56 patients). Precut sphincterotomy was performed in 82 cases (37 before stent insertion and 45 after stent insertion). From all patients included, only 19 patients (12%) presented post procedure elevation of serum amylase 3 times higher than normal value associated with abdominal pain. Complications: Pancreatic stent insertion was efficient in all cases of pancreatic duct obstruction and with success in difficult situations. Regardless of their length, 5 Fr (3 cm, 5 cm) stents ensure the same success rate for cannulation and offers protection against post ERCP pancreatitis, as long as they are correctly inserted.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0924 ENDOSCOPIC ULTRASONOGRAPHY-GUIDED BILIARY DRAINAGE WITHOUT DILATION DEVICE USING A THIN DELIVERY-SYSTEM STENT: A PRECLINICAL STUDY
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Introduction: Endoscopic ultrasonography (EUS)- guided biliary drainage (EUS-BD) is increasingly used in the treatment of malignant biliary obstruction after failed ERCP. However, Multi-step process for EUS-BD is closely related to adverse events.

Aims & Methods: The present study was designed to determine feasibility and effectiveness of stent placement using a thin delivery-system stent without dilatation step during EUS-BD. Three types of the new designed partially covered laser-cut metal stents (6-mm-wide and 60-mm-long) with 7Fr delivery catheter with hard tip (7Fr hard tip), 7.5Fr delivery catheter with soft tip (7Fr soft tip) were prepared respectively. A phantom model with a silicon plate was created. The plate was punctured with 19-G needle and a guidewire was passed the plate. The delivery system was advanced over the guidewire to pass the plate and the resistance force was measured. A biliary obstruction model was created by clipping the papilla in 10 pigs, EUS-BD (choledochoduodenostomy) using the thin delivery system stents was attempted following 19-G needle puncture without the use of dilation devices. The technical success and adverse events within 2 weeks after EUS-BD were analyzed for three types of stents.

Results: Among the three types of stents, 7Fr soft tip had the least resistance in the phantom model. In the animal model, the median common bile duct diameter was 6.81 mm (4.05–9.5 mm) and 29.3 minutes (16–47) respectively. In all pigs, EUS-BD using the three types of stents were technically successful. Dilation was unnecessary in 25% (1/4), 0% (0/2) and 100% (4/4) for the 7Fr hard tip, 7.5Fr hard tip and 7Fr soft tip, respectively. Even in the cases requiring dilation, stent placement was successful immediately after dilation only with a thin catheter (6.5Fr). Neither cholangiography nor balloon dilation was needed. There were no procedure-related complications occurring during and 2 week after EUS-BD. All stents remained in place without migration. At necropsy, fistulas were created between the bile duct and duodenum in all pigs and the growth of fibrous tissue was observed in the microscopic findings.

P0923 EFFICIENCY OF PANCREATIC STENTS IN DIFFICULT CANNULATION – A RETROSPECTIVE SINGLE - CENTER STUDY
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Introduction: Difficult biliary cannulation is defined by the presence of one or more of the following: more than 5 contacts with the papilla while attempting to cannulate; more than 5 minutes spent attempting to cannulate following visualization of the papilla; more than one unintended, pancreatic duct cannulation or pancreatic duct stent insertion. In these situations, pancreatic stent insertion might prove to be very useful for prophylactic and tactical purposes.

Aims & Methods: We are proposing in this paper to present the experience of Clinical Emergency Hospital Bucharest regarding difficult biliary cannulation and the use of pancreatic stent insertion to be efficient in obtaining biliary access. This paper is a retrospective study of the patients who presented difficult cannulation and to whom pancreatic stents were inserted for prophylactic and tactical purpose. The purpose of this study was to describe the indications, technique and results of endoscopic management of pancreatic stents insertion.

Results: In the study included 158 patients with ERCP and difficult biliary cannulation, who required pancreatic stent insertion for prophylactic and tactical purpose. Patients’ mean age was 60 years, while the sex ratio was 2:1 in favor of the female gender. Pancreatic stents proved their efficiency in 98% cases, in only 3 patients deep cannulation being unsuccessful. On average, patients required 1, 15 ERCP procedures in order to obtain biliary access. ERCP indication for benign pathology was predominant (60%). The stents used were 5 Fr, 5 cm (102 patients) and 5 Fr, 3 cm (56 patients). Precut sphincterotomy was performed in 82 cases (37 before stent insertion and 45 after stent insertion). From all patients included, only 19 patients (12%) presented post procedure elevation of serum amylase 3 times higher than normal value associated with abdominal pain. Complications: Pancreatic stent insertion was efficient in all cases of pancreatic duct obstruction and with success in difficult situations. Regardless of their length, 5 Fr (3 cm, 5 cm) stents ensure the same success rate for cannulation and offers protection against post ERCP pancreatitis, as long as they are correctly inserted.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Conclusion: Among the three types of stents, the 7Fr soft tip was suitable for ERCP in the phantom and animal models. This thin delivery system stent may be technically feasible and safety for EUS-BD and possibly reduce adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0925 TREATMENT WITH FULLY-COVERED METAL STENTS OF POST-SPHINCTEROTOMY EARLY AND LATE BLEEDING

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Introduction: Post-endoscopic sphincterotomy bleeding is treated endoscopically with pharmacologic injection, electrosurgical coagulation, balloon tamponade or clipping, but severe cases may require angiographic or surgical approach. An alternative long-acting tamponade treatment with fully-covered metal stents (FCMS) has been advocated.

Aims & Methods: We report here on the use of FCMS in post-sphincterotomy early and late bleeding. Patients referred for in- and out-patient ERPC were informed of the potential off-label treatment with FCMS of post-sphincterotomy bleeding, and of treatment approval by the local ethical committee. We treated post-spincterotomy bleeding first with adrenaline and/or sclerosing agent injection. When this first line hemostasis failed, we placed short FCMS in the distal cholecodochus. Endoscopy was rescheduled after 1 month to remove the FCMS. During the early post-procedural period the patients were treated with blood transfusions if needed, and antiplatelet drugs as well as oral anticoagulants were avoided.

Results: 17 Patients (10M/7F), aged on an average 70 years (range 38–90) received 18 FCMS (10 mm × 40 mm, Boston Scientific) for failed hemostasis since tamponade was 100%. All patients had, with an average loss of 1 g/dl of Hb and 9 packed red cells units transfused. In our cases we had 1 outlier, a patient that had received needle-knife sphincterotomy without early bleeding but developed delayed bleeding with hypovolemic shock. He received a second ERCP and a FCMS after 3 days. After further 3 days the patient was in the intensive care unit because of persistent bleeding and we performed a third ERCP. The FCMS was in place, but we removed it, retreated the bleeding by injective therapy and placed a second FCMS, obtaining a stable hemostasis and receiving 8 red blood cells after 5 days. In the study the FCMS spontaneously migrated in 4/18 cases, one had been removed for incomplete bleeding control and substituted after 3 days, and 13 were easily removed as per protocol. In two cases FCMS were removed and a plastic double pigtail stent was placed in parallel for persistent choleodochal distal stenosis.

Conclusion: These cases represent a large collection of evidence showing that treating post-sphincterotomy early bleeding with FCMS is feasible, safe and effective. Late bleeding associated with needle-knife pre-cut was much harder to control and required endoscopic revision, intensive care unit support and re-stenting. Our results are consistent with and support previous research in the field.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0926 EFFICACY OF SELF-EXPANDABLE METALLIC STENT PLACEMENT IN THE MANAGEMENT OF ANASTOMOTIC STRICURE AFTER ORTHOTOPIC LIVER TRANSPLANTATION

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Introduction: Anastomotic bile duct stricture (ABS) remains as one of the most common complications after orthotopic liver transplantation (OLT). Current standard of practice of endoscopic retrograde cholangiopancreatoscopy (ERCP) with insertion of multiple plastic stents (PS) often requires multiple procedures before achieving satisfactory stricture resolution. In recent years, studies utilizing covered self-expandable metallic stent (cSEMS) in refractory ABS management reported varying degree of success.

Aims & Methods: The aim of this study was to analyze efficacy of SEMS in resolution of anastomotic stricture in patients with orthotopic liver transplantation (OLT). Inclusion criteria: with or without to identify factor(s) influencing the likelihood of stricture resolution, the rate of adverse outcome(s) A retrospective cohort study was conducted using a registry of consecutive patients who underwent ERCP with biliary SEMS placement from January of 2010 to November of 2016 for the management of refractory ABS. Demographic variables including age, gender, and clinical variables including body mass index (BMI), number or prior ERCP with PS insertion, stent brand and dimensions and duration of SEMS insertion period were collected. The rates of stricture resolution, adverse outcomes including post ERCP pancreatitis, cholangitis and stent dysfunctions (occlusion, migration) were analyzed. This study was approved by the Institutional Review Board of the Cleveland Clinic.

Results: There were 47 OLT patients who underwent ERCP-cSEMS insertion for refractory ABS during the study period. Of 47 patients, 37 patients (78.9%) achieved stricture resolution after single SEMS treatment. Longer duration of SEMS insertion was the only variable associated with increasing probability of stricture resolution as there was 20% increase in odds of stricture resolution for every additional week SEMS was in place. Among those who achieved initial stricture resolution, 27 patients (57.4%) maintained bile duct patency throughout the follow up period. The most common adverse outcome was internal migration of cSEMS which occurred in 11 patients (23.4%). Post-ERCP pancreatitis was observed in 3 (6-4%) patients

Conclusion: The efficacy rate observed in resolving refractory ABS with cSEMS placement appears to be comparable to that of multiple ERCPs with PS placement method. Furthermore, durability of ABS resolution with cSEMS use further supports its potential long-term efficacy. Hence, cSEMS should be considered as a viable alternative, with no increase in risk of migration, and is associated with higher likelihood of ABS resolution. The high rate of internal migration observed with SEMS warrants further endeavor in stent design improvements.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0927 "DISCONNECTED PANCREATIC DUCT" FOLLOWING EUS GUIDED DRAINAGE OF PANCREATIC FLUID COLLECTION - IS IT CLINICALLY RELEVANT? LONG-TERM FOLLOW UP FROM A LARGE VOLUME TERTIARY CARE CENTRE


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Introduction: Disconnected pancreatic duct (DPD) can occur in patients after drainage of pancreatic fluid collections (PFC). Concerns have been raised about clinical relevance of DPDs.

Aims & Methods: To assess the frequency of DPD and its clinical significance after EUS guided drainage of PFC. Patients of acute or chronic pancreatitis with symptomatic PFC, who underwent Endoscopic Ultrasound (EUS) guided drainage between January 2011 to December 2016 were included, after an informed consent. Stents used for drainage procedure were either bi-flanged metal stents (BFMS) or double pigtail plastic stent. All these patients underwent MRCP between 4 to 8 weeks after drainage to evaluate pancreatic duct (PD) anatomy and confirm resolution of PFC. Subsequently, they had Endoscopic Retrograde Pancreatography (ERP) and, if required, stent removal. BFMS was removed in all patients. Plastic stents were retained indefinitely, if DPD was confirmed. All patients were systematically followed at 3–6 monthly intervals for any recurrence of PFC or new onset clinical event.

Results: A total of 407 patients (346 males, mean age 33.5 years, range 5-69 years) were followed up after EUS guided drainage for PFC. Of these 260 underwent BFMS and 147 underwent plastic stents placement. 319 patients had pancreato-gram (ERP and MRCP) after resolution of PFC. The pancreatic duct abnormalities observed were DPD in 197 (61.7%), PD leak in 36 (11.3%), PD stent in 20 (6.3%) patients. Normal PD was seen in 43 (13.5%) patients. Calcific pancreatitis was noted in 23 (7.2%). Among the patients with DPD, the location of PD ‘cut off’ was in head (32, 16.2%), genu (59, 29.8%), body (90, 45.6%) and tail (16, 8.1%). Overall, the follow-up after stent removal ranged from 3–72 months, with a median follow up of 12months. Pseudocyst recurred in 29 patients (8.5%) at a mean follow up of 3.5 months (range 1–30 months), which included PDSPS 27, PD stent 1, and CCP 1. 20/29 had pain (symptomatic) and 9 were asymptomatic. 15/20 underwent intervention (EUS drainage with plastic stent in 12, surgery in 3) and 5 resolved spontaneously.
P0928 FULLY COVERED SELF-EXPANDABLE METAL STENT IN THE MANAGEMENT OF DUODENAL RETROPERITONEAL PERFORATIONS DURING ERCP: A SINGLE CENTER EXPERIENCE

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Introduction: ERCP-related perforation is rare (0.39%), but it is associated with a mortality rate of 7.8%. Duodenal retroperitoneal perforation (Type II) is the most frequent, among the ERCP-related perforations. The management of this complication has not been standardized yet: traditionally surgery was considered the only rescue therapy, but in the last years the majority of cases has been managed conservatively. The endoscopic treatment included biliary stent and/or nasobiliary drainage. In our institution, from 2010 we have been using fully covered self-expandable metallic stent (FCSEMS) with nasobiliary drainage always after resolution of the initial indication for ERCP. These stents have the advantage of covering the laceration and allowing free flow of bile into the duodenum instead of into the retroperitoneal space. The aim of this study was to evaluate in our cohort of patients, the benefits of FCSEMS in type II perforations.

Aims & Methods: We experienced six type II perforations associated with ERCP. We retrospectively evaluated the clinical findings, the length of hospital stay, the need for surgery and death.

Results: Of the 3250 ERCP procedures performed from March 2010 to November 2016, only six (0.18%) resulted in perforations (male/female, 2/4; median age: 69 years; age range: 54–80 years). ERCP procedures were performed with carbon dioxide insufflation. Five patients underwent ERCP for biliary stent placement and a sphencterotomy was performed and was immediately detected. Successful closure of persistent splencterotomy-related duodenal perforation using FCSEMS was obtained in all patients. One patient developed ERCP-related pancreatitis, successfully treated with medical therapy. Three FCSEMS were successfully removed after a median of 18 days, the remaining three fell out spontaneously. The median length of hospital stay was 8.5 days (range 4–20 days). There were no deaths or need for surgery.

Conclusion: The placement of FCSEMS is easy, safe and quick. In our cohort of patients, FCSEMS is the effective endoscopic approach for management of type II perforations recognized during ERCP.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: Refractory Esophageal Stenosis (RES) definition differs among studies. Unresolved benign esophageal stenosis even after 5 or more sessions of endoscopic dilation therapy in most studies. Until now, there have been no treatment showing the satisfactory results. Mitomycin C (MMC) inhibits DNA synthesis reduces fibroelastic collagen formation. Tried in RES in several studies. The meta-analysis about treatment of refractory gastrointestinal stenosis with MMC in total 24 studies. The most commonly reported site esophagus (79%). Only 9 recruited adult patients (n=38). Of these, 23 patients were RES.

P0931 THE CLINICAL Efficacy of Mitomycin-C injection therapy for refractory benign esophageal stenosis: a Preliminary study
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Conclusion: DS was achieved in 19 (95%), 12 (78%) and 21 (100%) of the patients at the first, second, and third follow-up visits respectively. The median duration of the treatment showing the satisfactory results. Mitomycin C (MMC) inhibits DNA synthesis reduces fibroelastic collagen formation. Tried in RES in several studies. The meta-analysis about treatment of refractory gastrointestinal stenosis with MMC in total 24 studies. The most commonly reported site esophagus (79%). Only 9 recruited adult patients (n=38). Of these, 23 patients were RES.
Conclusion: In our study, the mitomycin injection therapy was effective in patients who had retractable benign esophageal stenosis. The mitomycin injection therapy could be considered as an alternative for retractable benign esophageal stenosis. A large-scale prospective studies are required in future.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Table 1: Outcomes of MMC injection therapy

<table>
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<th>Variables</th>
<th>values</th>
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<td>Number of Bougie dilation before MMC injection</td>
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</tr>
<tr>
<td>The number of session of MMC injection</td>
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</tr>
<tr>
<td>Mean GOO score before MMC injection</td>
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<tr>
<td>Mean score of GOOSS after final MMC injection</td>
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<tr>
<td>Mean diameter of stenosis before MMC injection</td>
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<tr>
<td>Mean diameter of stenosis 3 month after final MMC injection</td>
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<tr>
<td>Clinical success rate (%)</td>
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<td>Complications (N,%) perforation bleeding requiring transusion of other interventions others</td>
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Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0932 TREATMENT WITH MULTIPLE REABSORBABLE STENTS OF COMPLETE AND PARTIAL LOWER GI ANASTOMOSIS DEHISCENCE AND STENOSIS

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Introduction: Anastomotic stenosis or dehiscence are serious complications of colorectal surgery. Colostomy or ileostomy and later redo anastomosis or Hartmann’s procedure are the mainstream of therapy, but edema and inflammation caused by neoplasm or perianastomotic abscess can predispose to recurrent dehiscence and stricture. Intraoperative mitomycin-C injection therapy has been used for the treatment of colorectal anastomotic failure, but it is not always effective.

Aims & Methods: We report the outcomes of the treatment of 132 colorectal anastomotic strictures with multiple reabsorbable stents. All patients, except two, had undergone at least one attempt with standard treatment, but it was unsuccessful.

Results: Most patients (99/132) were male (71.5%) and mean age was 73.5 years old (range: 32–95). The primary colorectal surgery was performed for rectal cancer (61.4%) and for diverticulosis (38.6%). The locations of anastomotic dehiscence were sigmoid colon (87.5%), descending colon (3.8%), and rectum (8.7%). The number of sessions of mitomycin-C injection therapy was one in 3 patients, two in 21 patients, three in 40, four in 37, five in 27, six in 9, and seven in 8 patients.

Conclusion: In our study, the treatment of colorectal anastomotic dehiscence and stenosis with multiple reabsorbable stents was successful in 76.1% of patients.
**P0934 EFFECTIVENESS OF REPEATED DILATIONS IN THE MANAGEMENT OF ESOPHAGEAL BENIGN STRICTURES**

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**Introduction:** Refractory or recurrent esophageal benign strictures (REBS) are frequent, and defined as the impossibility to reach or maintain a diameter of 14 mm after 5 sessions of endoscopic dilation (ED). Because of a lack of guidelines, their management remains challenging, sometimes leading to surgical intervention.

**Aims & Methods:** The aim of this study was to define the efficacy of long-term and repeated ED in the management of REBS. This was a monocentric retrospective study involving patients managed in our tertiary center between January 2002 and April 2017 for REBS. All the endoscopic dilations were performed using Savary bougies or hydraulic balloons, depending on the operator’s choice. Demographical and clinical data were recorded for each patient. The endoscopic management was detailed with the number of procedures, the endoscopic device used, the diameter of dilation, and potential concomitant treatment (as self-expanding metal stent, steroid injection or incisional therapy). The primary endpoint was the efficacy of sustained and recurrent ED, defined as the absence of further dilation within 3 months of the last procedure or an interval between the 2 last ED greater than 3 months. A failure was considered in case of death, need for surgery, permanent enteral feeding tube or an interval between the last 2 procedures longer than 3 months. The secondary endpoints were to document the characteristics of dilation procedures and concomitant treatments, the decreasing of the number of dilations per trimester, and to elucidate potential predictive factors for success of ED.

**Results:** A total of 39 patients (23 men) with a mean age of 47.5 ± 20.7 years were included. The etiologies of strictures were anastomotic (46.1%), caustic (28.2%), peptic (10.3%) or other etiologies (radiation injuries, esophageal diverticulitis, severe viral esophagitis, 15.4%). A clinical success of repeated ED was achieved in 27 patients (69.2%). Twelve patients (30.8%) experienced failure, among them seven (17.9%) required frequent dilations, two (5.1%) underwent surgery, two (5.1%) maintained an enteral feeding tube, and one patient (2.6%) died consecutively to inhalation pneumonia. A mean of 9.8 ± 4 ED sessions were performed per patient, with a mean treatment duration of 22.6 ± 20.1 months. Regarding concomitant treatments, 16 patients (41%) had at least one fully-covered metallic stent placement, incisional therapy was performed in 11 patients (28.2%), and 3 patients (7.7%) received corticosteroid injections. The number of dilations per trimester gradually decreased over time. No significant predictive factor of success was found, such as etiology of stricture or the use of concomitant treatment, particularly. Nevertheless, an greater number of dilations during the first trimester could promote the success of the management (3.2 ± 2.2 dilations in the success group vs 2.2 ± 0.8 in failure group, p = 0.056).

**Conclusion:** Repeated and maintained endoscopic dilations are effective (70%) in the management of REBS, regardless of the etiology of stricture. A prolonged management up to 2 years, and the initial rhythm of endoscopic procedures may favor the final success. A systematic schedule for ED would improve the efficacy of this management.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P0935 EFFICACY AND SAFETY OF NEWLY DEVELOPED ENDOSCOPIC COLONIC STENTS WITH AN INCREASED EXPANDBLE FORCE: A RETROSPECTIVE COMPARISON WITH CONVENTIONAL COLONIC STENTS**

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**Introduction:** Endoscopic stenting with self-expandable metallic stents (SEMSs) is a widely accepted procedure for treating malignant colorectal obstruction. This procedure was covered by the National Health Insurance of Japan in January 2012, and the WallFlex colonic stent and Niti-S colonic stent can currently be used in Japan. In the previous study, we reported that the WallFlex colonic stent has more expanded force than the Niti-S colonic stent. On the other hand, the risk of stent-related perforation was lower when using the Niti-S stent due to its structure. Currently, we newly developed an SEMS (Niti-S structure, with 18-mm diameter with increased expanded force compared with the conventional type), which comprised the benefits of both WallFlex and Niti-S. In this study, we compared the efficacy and safety of the newly developed colonic stent with the conventional colonic stents.

**Aims & Methods:** This study aimed to compare the efficacy and safety of the newly developed colonic stent with the conventional colonic stents (the WallFlex colonic stent and the Niti-S colonic stent). Overall, 91 patients (96 lesions, male/female: 48/43, average age: 73.2 years) underwent endoscopic SEMS placement between November 2011 and March 2017 at Kure Medical Center and Chugoku Cancer Center. The WallFlex colonic stent was used in 36 patients (38 lesions: Group W), the Niti-S colonic stent in 51 patients (53 lesions: Group N), and the newly developed colonic stent in 5 patients (5 lesions: Group D). Stratified analysis of the clinical background, technical success rate, procedure time, clinical success rate, and complications was performed to compare Group W, Group N, and Group D.

**Results:** Endoscopic SEMS placement was attempted in 96 lesions as a bridge to surgery (BTS) in 52 lesions (54.2%) and as palliative therapy (PAL) in 44 lesions (46%). In Group W, SEMS was placed in 19 lesions (50%) as BTS and in 19 lesions (50%) as PAL; in Group N, SEMS was placed in 32 lesions (60%) as BTS and in 21 lesions (40%) as PAL; and in Group D, SEMS was placed in 1 lesion (20%) as BTS and in 4 lesions (80%) as PAL. The technical success rate was 100% in all groups. The overall clinical success rate was 93.7% (90/96): 89.5% (34/38) in Group W, 96.2% (51/53) in Group N, and 100% (5/5) in Group D. Complications within 7 days included abdominal pain (3/38, 8%).

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<table>
<thead>
<tr>
<th>Patient</th>
<th>Age (Y)</th>
<th>M/F</th>
<th>Primary disease</th>
<th>Primary treatment</th>
<th>Complication</th>
<th>Secondary and result</th>
<th>N. Stents</th>
<th>N. Follow-Up (months)</th>
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<tr>
<td>CD 70 F</td>
<td>sigmoid adeno K</td>
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<td>Sigmoid resection and colorectal anastomosis with colostomy and radiotherapy</td>
<td>anastomotic stenosis</td>
<td>Endoscopic dilation</td>
<td>Sub-total dissection</td>
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<td>RS 52 M</td>
<td>rectal adeno K</td>
<td></td>
<td>Knight-Griffen re-tosigmoid resection</td>
<td>Perianal fistulas an anastomotic dehiscence</td>
<td>Ileostomy + re-do low colorectal anastomosis + FC-SEMS placement and removal</td>
<td>Sub-total dissection</td>
<td>3 + 1</td>
<td>FC-SEMS placement and removal</td>
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<tr>
<td>AI 23 M</td>
<td>Occlusion due to Hirsch prung’s disease</td>
<td></td>
<td>Ileostomy, left emi-colectomy, coloanal anastomosis, closure of ileostomy</td>
<td>Abscess and dehiscence</td>
<td>Re-do ileostomy and anastomosis, 1 FC-SEMS placement and removal Abscess and total dehiscence</td>
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<td>Sigmoid resection and colorectal anastomosis</td>
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<td>anastomotic stenosis and dehiscence</td>
<td>Endoscopic dilation and 1 FC-SEMS placement and removal Sub-total dissection</td>
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P0973 PREDICTORS OF POSTOPERATIVE LYMPHOPEAenia AFTER SURGERY FOR ESOPHAGEAL AND ESOPHA-GASTRIC JUNCTION CANCER
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Introduction: Postoperative immunosuppression in transhiatal esophagectomy for patients with esophageal cancer is a common finding \cite{1}. In fact, both transhiatal and transthoracic esophagectomy induce severely depressed monocyte and T-lymphocyte cytokine production \cite{2}. Remarkably, lymphopenia is an independent predictive factor for long-term survival in patients with esophageal cancer \cite{3}.

Aims & Methods: The aim of this study was to assess the predictors of postoperative immune suppression in esophageal or esophago-gastric junction cancer. One hundred ninety three consecutive patients with esophageal or esophago-gastric junction cancer were enrolled in this retrospective study. White blood cells count, polymorph nucleate cells and lymphocytes counts were observed at preoperative time, post-operative day (POD) 1, 3 and 7. Post-operative complications were also recorded. Multiple regression models were fitted to the data to test the association between potential predictors and postoperative lymphopaenia and lymphopenia on POD1 as parameters of immune suppression.

Results: The lymphocytopenic count was 1, 240/ml (IQR: 0.895–1.700) on POD 1. The lymphocyte count on POD 1 was 0.670 mlq (IQR: 0.500–0.982), p < 0.001; on POD 3, it was 0.800 mlq (IQR: 0.580–1.070), p < 0.001; and on POD7, it was 0.825 mlq (IQR: 0.550–1.180), p < 0.001. In a model that also included the interval between the end of neoadjuvant therapy and the esophagectomy, the number of surgical accesses (laparotomy, thoracotomy and cervicotomy) and the number of nodal metastasis, only the final dose of radiotherapy resulted to be an independent predictor of postoperative lymphocyte count.

Conclusion: Patients with esophageal and esophago-gastric junction cancer present a significant post operative immunosuppression that lasts at least for the first postoperative week. The total amount of radiation received by the mediastinum is the only predictor of the postoperative and postoperative lymphocyte count.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: The aim of this review was to determine the optimum choice and the neo-conduit following colorectal interposition after esophagectomy in adults. PubMed, MEDLINE and the Cochrane Library (January 1985 to January 2017) were systematically searched for studies which reported outcomes of colonic interposition after oesophagectomy in adults. The primary outcome measure was overall morbidity and secondary outcome measure was operative mortality.

Results: Twenty-seven studies, involving 1849 patients (median age 60 years, 1177 males, 697 malignant disease) who underwent colorectal interposition were analysed. The overall pooled morbidity rate of left vs. right colorectal conduit was 9.6% [95% CI (6.24–12.87), p < 0.0001] vs. 16.5% [95% CI (11.07–22.02), p < 0.0001] respectively. The overall pooled mortality rate of left vs. right colorectal conduit was 5.6% [95% CI (3.59–7.60), p = 0.0001] vs. 10.3% [95% CI (7.23–13.27), p < 0.0001] respectively. Retrosternal route placement was associated with the lowest overall pooled mortality of 9.2% [95% CI (6.48–11.99), p < 0.0001], and lowest overall pooled mortality of 4.8% [95% CI (3.74–5.89), p < 0.0001].

Conclusion: Left colon is the conduit of choice for colonic interposition after oesophagectomy in adults and the retrosternal route should be favoured.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
or more extended liver resection (HPD) is occasionally indicated in patients with
more than 5 years without evidence of tumor recurrence, on the other hand one
with bile duct cancer (R1 resection). Four patients with bile duct cancer survived
VCM was injected intravenously in the morning of operation (20 mg/kg) and just
administered VCM, because the occurrence of side effects of VCM was relatively
the incidence of SSI and duration of postoperative antibiotics administration
the Enterobacteriaceae (Piperacillin/Tazobactam + Vancomycin: PIPC/
for biliary tract. In our clinical trial [1], SSI after pan-
of VCM or PIPC/TAZ, and the occurrence of multidrug resistant bacteria were
longer incubation period of VCM or PIPC/TAZ, but the difference was not
between 2 groups (3-year survival rate: 33.3% vs 21.6%, Log-rank P = 0.37).
Sano T, Shimada K, Sakamoto Y, Ojima H, Esaki M, Kosuge T. Prognosis
at National Cancer Center, Tokyo,
resistance test and the incidence of multidrug resistant Enterobacteriaceae
the CS group than in the S group, e.g., tumor number (mean ± SD 2.7 ± 1.7) and number of metastatic liver nodes (4/2 ± 3 vs 2.7 ± 2.3).
Furthermore, overall survival (OS) in the CS and S groups since primary
tumor was resected (3-year survival rate: 86.9% vs 93.4%, Log-
rate (P = 0.40) and much better than that in the C group (3-year survival rate: 40.2%)
for liver resection after chemotherapy that existing prognostic factors in unvari-
and multivariate analyses, and RFS was much better in patients with ETS
have a better prognosis after liver resection. Liver resection after chemotherapy
reported comparatively favorable prognosis in well-selected patients with
in those with non-ETS (3-year survival rate: 62.5% vs 77.5%, Log-rank P = 0.05).
Conclusion: OS and RFS in the CS group compared favorably with those in the S
group despite the high frequency of poor prognostic factors; patients with ETS
have a better prognosis after liver resection. Liver resection after chemotherapy
References
1. Okamura K, Tanaka K, Miura T, Nakashima Y, Noji T, Nakamura T, Tsukichawa T, Okamura K, Shinohara T, Hirano S. Randomized con-
controlled trial of perioperative antimicrobial therapy based on the results of
Aims & Methods: Sixty-nine patients underwent PD at Hokkaido University Hospital (Japan) between April 2015 and March 2016, when prospective surgical site
Pancreatoduodenectomy (PD) is one of the operations associated
at the National Cancer Center, Tokyo, Aichi Cancer Center Hospital, Aichi/ Japan
and 9 initially had unsuitable disease (progressive primary disease or suspicion
of other distant metastasis); therefore, upfront chemotherapy was selected.
Results: The frequency of adverse prognostic factors tended to be higher in
the CS group than in the S group: tumor size (mean ± SD 45.0 ± 22.3 vs 34.0 ± 21.6, Log-
rank P = 0.05) and number of metastatic liver nodes (mean ± SD 1.7 ± 1.3 vs 1.1 ± 1.3, Log-
rank P = 0.02). Early tumor shrinkage (ETS) was found to be a stronger prognostic
factor for liver resection after chemotherapy than existing prognostic factors in unvari-
in the CS group than in the S group (3-year survival rate: 45.0% vs 62.7%, Log-rank P = 0.14), RFS after hepatectomy was equivalent in the
HPD was revealed in patients with PD (3-year survival rate: 33.3% vs 21.6%, Log-rank P = 0.37).
united. Liver resection is performed in terms of Pean clamp crushing method under intermittent
was carried out by a single surgeon (TS) at National Cancer Center, Tokyo,
investigated, as well.
Contact E-mail Address: sano.syo@aihich-med.u.ac.jp
Introduction: Hepatopancreatoduodenectomy associated with hemihepatectomy or more extended liver resection
were carried out by a single surgeon (TS) at National Cancer Center, Tokyo, Aichi Cancer Center Hospital, Nagoya, and Aichi Medical University, Nagakute and
and reconstruction in one patients (7.1%). The median operation time was 822
patients undergoing PD. The one of the reasons is said that SSI is associated with the preoperative biliary infection caused by preoperative examinations or drainage of biliary tract. In our clinical trial [1], SSI after pancrea-
June 2016, when RFS and OS in the CS group compared favorably with those in the S group: tumor size (mean ± SD 45.0 ± 22.3 vs 34.0 ± 21.6, Log-
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HPD was revealed in patients with PD (3-year survival rate: 33.3% vs 21.6%, Log-rank P = 0.37).
Klebsiella pneumoniae carbapenemase-resistant (2.2%).

Introduction: The aim of this study was to critically explore whether suggestions that populations-at-risk for multi-antibiotic resistant Gram-negative and Gram-positive enteric rods, principally analyzed. Based on the positivity/negativity of preoperative surveillance cultures, patients were grouped by whether a dedicated lymphadenectomy was performed or not while those with missing information were excluded. Groups were compared for baseline characteristics. Positive lymphadenectomy was performed by univariate and multivariable adjusted logistic regression with adjustment for important patient- and tumor characteristics. Overall survival was assessed using Cox proportional hazard regression analyses before and after full bipartite pairwise propensity score matching.

Results: Of the 3879 patients included, 287 (7.4%) had T1a, 661 (17.0%) T1b, and 2931 (75.6%) T2 gallbladder cancer. Most patients were female (n = 2751, 70.9%), median age was 72 years (range 21–90). Among patients with T1a, T1b, and T2 disease, 102 (35.5%), 278 (42.1%), and 1526, (51.1%) underwent a dedicated lymphadenectomy, respectively. Over the study period, the rate of lymph node excision increased from 43% to 58% (p for trend = 0.005). The rates of positive lymph nodes were 11.8%, 16.2%, and 42.5% for T1a, T1b, and T2-stage, respectively. 5-year overall survival rate was 31.6% for patients without and 44.6% for patients with a dedicated lymphadenectomy and 58.6%, 43.9%, and 34.5% for T1a, T1b, and T2-stage, respectively. After multivariable adjustment, the odds of undergoing a lymphadenectomy increased with tumor stage compared to T1a disease (vs. T1b: OR: 1.37; CI: 1.01–1.86, vs. T2: OR: 1.95; CI: 1.48–2.57). Compared to their counterparts, patients who underwent lymphadenectomy for gallbladder cancer were more likely to have had an R0 resection status or radiation therapy, were diagnosed in later years, were younger, had a lower Charlson-Deyo-comorbidity score, were operated in high volume centers and traveled a longer distance to the treatment facility. In univariate analysis, no survival benefit of lymphadenectomy was found for T1a disease (HR 1.04, 95%CI 0.70–1.54) while lymphadenectomy improved overall survival in T1b (HR 0.72, 95%CI 0.58-0.90) and T2 stage (HR 0.59, 95%CI 0.53–0.65). Given significant bias of undergoing lymphadenectomy, full bipartite, pairwise propensity-score matching was performed. A trend towards overall survival benefit was also found for T1b disease (HR 0.49, 95%CI 0.39–0.69). Overall survival benefit remained for T1b (HR 0.68, 95%CI 0.51-0.91) and T2-stage (HR 0.63, 95%CI 0.55–0.71).

Conclusion: Our results support current consensus guidelines that T1b and T2 gallbladder cancer patients should undergo LA. However, based on the high rate of nodal positivity among patients with T1a disease and the trend towards overall survival improvement among T1a patients who underwent lymphadenectomy, we suggest to rethink this dogma and advocate to perform lymphadenectomy also in surgically fit elderly patients with T1a disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P0996 EFFECT OF TRICLOSAN-COATED SUTURE USE ON THE INCIDENCE OF SUPERFICIAL INCISIONAL SURGICAL SITE INFECTIONS AFTER GASTROENTEROLOGICAL SURGERY: A PROPENSITY SCORE MATCHING RETROSPECTIVE STUDY

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Introduction: Surgical site infections (SSIs) after gastrointestinal surgery cause significant morbidity, prolong hospitalisation and increase health care costs. Thus, SSI prevention is critical. To prevent bacterial colonisation in suture material, which disables local mechanisms of wound decontamination, triclosan-coated sutures were developed. We retrospectively analysed the efficacy of triclosan-coated polydioxyanone sutures in abdominal fascia and skin closure using a propensity score matching analysis. We further analysed the surgery types for which these sutures are best suited.

Aims & Methods: The study protocol followed the principles of the Declaration of Helsinki and received ethical approval from the Ethics Committee of the Fukuoka University. Eligibility criteria included patients undergoing gastrointestinal surgery at Fukuoka University Hospital from January 2015 to July 2016. Data were conventionally analyzed for the control group from September 2012 to September 2013. In total, we included 1768 patients (control group, n = 640; study group, n = 1128) who underwent gastrointestinal surgery. Baseline differences and selection bias were adjusted using propensity score matching.

Results: Before matching, the SSI incidence differed significantly between the control and study groups for all gastrointestinal surgeries [12.4% (140/1128) vs. 5.5% (35/640); p = 0.0008] and hepato-biliary-pancreatic [16.4% (11/64) vs. 4.3% (6/136); p = 0.0049] surgeries. No significant difference was found between the groups for upper GI surgery, emergency surgery and others. Multivariable logistic regression analysis showed that triclosan-coated suture use for lower GI surgery was the independent factor affecting the SSI incidence (p = 0.017). The sutures demonstrated a significant efficacy in lower GI surgery.

Conclusion: Few studies have focused on the types of surgery best suited for triclosan-coated sutures. Our findings suggest that abdominal fascia and skin closure using these sutures reduces the SSI risk, particularly after lower GI surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.
POLYURETHANE-FOAM AND FILM DRAINAGE
NEGATIVE PRESSURE THERAPY WITH OPEN-PORE

In recent years, laparoscopic proximal gastrectomy (LPG) has been actively performed in our institution to reduce invasiveness. However, proximal gastrectomy is sometimes followed by reflux. Until February 2015, we performed esophagogastrectomy with a circular stapler (CS) accompanied by fundoplication in LPG. After this period of 2015, to avoid the complication of ulceration, we have been using esophagogastrectomy with the double-flap technique (DFT) in LPG for gastric cancer.

Aims & Methods: We conducted this study to examine whether DFT can reduce the incidence of reflux and improve the outcome of postoperative hospital stay. Surgical factors, postoperative factors, and postoperative conditions were examined and compared between the DFT and CS groups.

Results: Twenty-three LPGs with DFT and 24 LPGs with CS were performed during the period. Compared with the CS group, the DFT group had a significantly longer surgical time (272.3 ± 55.5 vs. 241.1 ± 26.7 min; p < 0.01). Other surgical factors showed no statistically significant differences between the two groups. As for postoperative factors, although no significant differences in PPI intake, LA classification, and RGB classification were found, the DFT group showed a significantly lower score than the CS group (p < 0.01). Postoperative nausea and vomiting were observed in 9% of cases in the DFT group and in 19% of cases in the CS group.

Conclusion: Although LPG with DFT required a longer surgical time than LPG with CS, DFT is thought to be a safe reconstruction method in LPG. In addition to its safety, DFT can reduce postoperative reflux in patients who undergo LPG.

Discourse of Interest: All authors have declared no conflicts of interest.

References

PO049

NOVEL ENDOSCOPIC REPAIR TECHNIQUE FOR GASTROINTESTINAL LEAKS AND PERFORATIONS USING NEGATIVE PRESSURE THERAPY WITH OPEN-PORE POLYURETHANE-FOAM AND FILM DRAINAGE

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Introduction: Gastrointestinal (GI) leaks and perforations are difficult to manage and often mandate laparotomy and extensive surgical interventions for their repair. Endoscopic Negative Pressure Therapy (ENPT) has been developed to treat GI leaks and perforations such as leaks, fistulae and perforations. However, ENPT has only been utilized in the management of rectal and esophageal leakages.

By modifying the delivery catheter we were able to adapt ENPT to treat duodenal defects, that otherwise would have required surgery or more invasive methods to be employed.

Aims & Methods: Herein, we report ENPT using open-pore Polyurethane-foam and Film Drainage in a series of 10 patients with duodenal leakages. This is an open-label, retrospective, single-center study. Open-pore polyurethane-foam drainage (OPD) devices were constructed out of a piece (1.5 cm) of open-pore polyurethane-foam which was fixed surrounding the tip of a naso-gastric drainage tube. Small bore open-pore film drainage (OFD) device was constructed out of a piece (1.5 cm) of open-pore polyurethane-foam which was fixed surrounding the tip of a naso-gastric drainage tube. The open-film consists of two permeable membranes with a small interspace. Fluids are drained along the interspace and through the membranes. Diameter of small-bore OPD is 4–6 mm, depending on the diameter of the drainage tube. OPD is inserted transnasally. The foam is grasped with endoscopic forceps and guided to the duodenal lumen. After correct placement into the duodenal lumen for intraluminal ENPT, the tube is transferred out nasally, to become a naso-duodenal tube. Due to its smaller outer diameter OFD insertion is similar to placement of a naso-gastric or naso-intestinal feeding tube (i.e. through the nose). After nasal insertion into the esophagus OFD is grasped with a forceps and advanced into the stomach, and guided into the duodenal lumen for intraluminal ENPT. In case of a duodenal- cutaneous fistula the pull-through technique has been used for duodenal placement. In one case rendezvous technique was used for duodenal placement.

In case of a duodenal fistula, the pull-through technique was used for duodenal placement. In one case rendezvous technique was used. Ongoing follow-up of 10 patients treated with ENPT is ongoing.

Results: We treated 10 patients with ENPT because of a duodenal leakage. Reason of duodenal defects were: rupture of operative suture (n = 8),iatrogenic perforation due to intraoperative violation from system of a hemostasis. In case of a duodenal perforation, caused by a duodenal tube. Due to its smaller outer diameter OFD insertion is similar to placement of a naso-gastric or naso-intestinal feeding tube (i.e. through the nose). After nasal insertion into the esophagus OFD is grasped with a forceps and advanced into the stomach, and guided into the duodenal lumen for intraluminal ENPT. In case of a duodenal-cutaneous fistula the pull-through technique has been used for duodenal placement. In one case rendezvous technique was used for duodenal placement.

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Introduction: The main releaser for development of multiorgan failure syndrome (MOFS) is an intoxication syndrome. This plan especially in the intensive care. We treated 10 patients with ENPT because of a duodenal leakage. Reason of duodenal defects were: rupture of operative suture (n = 8),iatrogenic perforation due to intraoperative violation from system of a hemostasis. In case of a duodenal perforation, caused by a duodenal tube. Due to its smaller outer diameter OFD insertion is similar to placement of a naso-gastric or naso-intestinal feeding tube (i.e. through the nose). After nasal insertion into the esophagus OFD is grasped with a forceps and advanced into the stomach, and guided into the duodenal lumen for intraluminal ENPT. In case of a duodenal-cutaneous fistula the pull-through technique has been used for duodenal placement. In one case rendezvous technique was used for duodenal placement.

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Disclosure of Interest: All authors have declared no conflicts of interest.

References

Introduction: Laparoscopic cholecystectomy is the gold-standard for the treatment of gallbladder disease. Single-incision laparoscopic (SILS) cholecystectomy was introduced with the aim of reducing the invasiveness of classic laparoscopic surgery. Despite satisfactory cosmetic results of SILS cholecystectomy and its repute of a painless procedure, there are few published studies comparing early and long-term postoperative period of laparoscopic SILS cholecystectomy with laparoscopic four-port cholecystectomy.

Aims & Methods: The aim of this study is the comparative evaluation of SILS cholecystectomy and laparoscopic four-port cholecystectomy. Early and long-term postoperative period has been analyzed in 240 patients who underwent laparoscopic cholecystectomy including 120 cases of single-port technique and 120 cases of four-port technique. Both groups were compared in surgical time, pain syndrome severity (visual analog scale), need for analgesics, postoperative complications, hospital-stay, daily activity recovery and return to physical work, patients’ satisfaction of surgical results and their aesthetic effect.

Results: It was revealed that SILS cholecystectomy is associated with lower severity of postoperative pain, quick recovery of daily activity and return to physical work, high satisfaction of surgical result, and aesthetic effect compared with four-port cholecystectomy.

Conclusion: Further studies to standardize, evaluate the safety and benefits of SILS cholecystectomy are necessary.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Introduction: Endoscopic treatment of gastro-cutaneous and gastro-pulmonary leaks after bariatric surgery (BS). Surgical intervention may be indicated but is associated with high morbidity and mortality. The use of self-expanding esophageal metallic stents (SEMS) has become an effective alternative. Over the scope clips (OTSC) have also been used. Nevertheless some patients develop a refluxary fistulae after stent removal or other failed fistulous treatments. Cardiac Septal Defect Closure Device (CSDCD), used in interventional cardiology have been described to treat post-surgical digestive fistulae in non-bariatric cases. Aims & Methods: We aim to present the experience using CSDCD for gastric leaks. Methods: We present a case series of 42 patients with leaks secondary to gastric bypass (GBP) or sleeve gastrectomy (SG) from 4 centers were included. Data collected from november 2012 to January 2016 included sex, age, type of surgery, previous treatment, tract path, size of the leak opening and defect closure. Leaks were grouped according to the International Sleeve Gastrectomy Expert Panel Consensus in acute (post-operative days 1–7), early (1-6 weeks), late (after 6 weeks) and chronic (>12 weeks). Biliary catheters were adapted to introduce the CSDCD through the endoscopes working channels. Clinical success was defined as a complete closure of the tract path as assessed by contrast study after 2 months.

Results: 42 patients with leaks were included (31 SG, 11 GBP). Three acute leaks, 5 early, 2 late and 12 chronic. Prior failed therapies included: SEMS and enteral tube feeding (ETF), SEMS alone, SEMS and gastrosomy of excluded stomach, OTSC, ETF alone, jejunostomy and none (3 acute leaks had CSDCD as the primary treatment). Tract path was grouped as gastric-cutaneous (37), gastric-pleural (3) and gastric-bronchial (2). Median follow-up was 34, 8 weeks. All 3 patients with acute leak failed to close the defect. The CSDCD were removed within 7 days and SEMS were placed instead leading to defect closure. The 5 patients with early leaks had initial good response but within 30 days drainage recurred. The CSDCD were removed and replaced for a larger diameter device leading to permanent defect closure. Clinical success was achieved on 38 patients (90, 5%). In one patient with late leak the tract path was connected to an underlying cavity. Evolution was unsatisfactory and total gastrectomy accomplished.

Conclusion: CSDCD are effective to treat post bariatric surgery late and chronic leaks despite of the failed previous endoscopic treatment. Although early leaks finally healed it seems advisable to maintain conservative treatment and wait for the leak to become late or chronic before CSDCD placement. Acute leaks must be managed with a combination of SEMS, ETF, OTSC as first step. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0953 BASELINE CHARACTERISTICS IN LAPAROSCOPIC SIMULATOR PERFORMANCE

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Introduction: Laparoscopic technique is the first choice for multiple surgical procedures today. Laparoscopic surgery differs from traditional open surgery in several aspects, for example two-dimensional view of a three-dimensional interior, higher demands on eye-hand coordination and lack of tactile feedback. Laparoscopic surgical skills can be substantially improved by simulator training. Learning via simulators are under constant development and it is important to understand the value of baseline characteristics and abilities to further optimize simulators and training curricula within surgical education. In this study, focus, will be the PC-gaming experience and visuospatial skill.

Aims & Methods: The aim of the study is to further analyse different factors to laparoscopic simulator training. 48 medical students completed three tasks in a laparoscopic virtual reality simulator, a validated Minimally Invasive Surgical Training (MIST, Mentice, Gothenburg, Sweden). Prior to the task, they performed a visuospatial test and answered questions regarding baseline characteristics (e.g. PC-gaming experience, age, gender, previous simulator experience). The data where analysed regarding different parts of the simulation (time, economy of movement, errors and total score).

Results: The group with high PC-gaming experience performed significantly better in total time (Mean difference = 32.17, p = 0.021) and economy of movement (M = 22.30, p = 0.035) compared to the low PC-gaming experience group (M = 38.40, p = 0.001). There were no differences between the groups in task number 3. A high visuospatial score correlated with a better total score (M = 71.68, p = 0.045) and total task score (M = 71.68, p = 0.045) between the groups. The group with both high PC-gaming experience and low visuospatial score performed worst in the simulator exercises.

Conclusion: PC-gaming experience and visuospatial skill have a positive impact on laparoscopic simulator performance. No remaining significant differences by either of the groups in task number 3. A high visuospatial score correlated with a better total score (M = 71.68, p = 0.045) and total task score (M = 71.68, p = 0.045) between the groups. The group with both low PC-gaming experience and high visuospatial score performed worst in the simulator exercises.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0954 PERITONEAL TUBERCULOSIS: EPIDEMIOLOGICAL DATA, CLINICAL AND EVOLUTIVE ASPECTS ACCORDING TO THE EXPERIENCE OF A TUNISIAN CENTER

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Introduction: Tuberculosis is a major cause of morbidity and mortality worldwide. Its incidence is continually increasing. Peritoneal localization is a particular entity, even less well known, because of its atypical and confusing symptomatology, which in most cases imposes a malignant condition.

Aims & Methods: We collected all patients hospitalized for peritoneal tuberculosis from the records of the gastroenterology unit of the National Institute of Gastroenterology, Tunisia between 2005 and 2015. The aim of this retrospective study was to study the epidemiology, clinical, pathological, diagnostic, therapeutic and evolutive specificities of peritoneal tuberculosis in its various presentations.

Results: The total number of patients was 65. It was 15 men (23.1%) and 50 women (76.9%). The sex ratio was 0.3. The mean age at diagnosis was 40 years (15–79 years). No personal history of tuberculosis has been found in our series. A personal history of tuberculosis was found in 3 patients (4.6%). The general signs of tuberculosis infection were frequently found (91%). The digestive functional symptoms that brought the patients to consult were: abdominal pain (87.7%), abdominal distension (87.7%), nausea (16.9%) and sub occlusive syndromes (4.6%). An abdominal mass was observed in only 4 patients (6.1%). Hepatomegaly and splenomegaly were noted in 2 cases for each. The intradural reaction was positive in only 24% of patients. The research of BK in the ascites fluid was systematically performed in all patients but returned negative in all cases. The quantiferon-TB Gold was performed in 3 patients only and returned negative. The mean level of CA 125 was 250.3 IU/ml. Confirmation of diagnosis was obtained on the histological analysis of peritoneal biopsy (17 patients) and on the surgical pieces. The main operative findings (in patients with coloescopy or exploratory laparotomy) were: Whist granulations (98%), adhesions (43.1%) and agglutinated loops (1.5%). The presence of tuberculous granuloma was observed in 22 patients (87%). The course of treatment was as follows: cure in 50 patients (80.6%), recurrence in 6 patients (9.6%), relapse in 2 patients and 3 patients were lost to follow-up. The mortality in our series was 0%.

Conclusion: Peritoneal tuberculosis raises diagnostic problems in the first place, because of its polymorphic and non-evocative clinical expression. Hence the value of carrying out radiological, endoscopic and histo-bacteriological investigations to confirm the diagnosis before the evolution towards serious or even fatal forms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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Introduction: Tuberculosis is the most common site of extra-pulmonary tuberculosis. No single test is adequate for diagnosis of abdominal tuberculosis. We collected all patients hospitalized for peritoneal tuberculosis in all patients. ABM remains an ongoing diagnostic dilemma requiring a high index of clinical suspicion.

Disclosure of Interest: All authors have declared no conflicts of interest.

TUESDAY, OCTOBER 31, 2017
09:00-17:00
IBD II - HALL 7_

P0956 PATHOBIONT-FREE MICROBIOTA PROTECTS AGAINST GUT INFAMMATION INDUCED BY AN INNATE IMMUNE DEFICIENCY OR DIETARY PERTURBANT OF THE MICROBIOTA

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Introduction: Inability to maintain a stable and beneficial microbiota is associated with chronic gut inflammation, which classically manifests as colitis but may more commonly exist as low-grade inflammation that promotes metabolic syndrome. Alterations in microbiota and associated inflammation can originate from dysfunction in host proteins that manage microbiota, such as the flagellin receptor TLR5, and/or be promoted by exogenous factors that disturb host-microbiota interactions, such as the detergent-like dietary emulsifiers carboxymethylcellulose (CMC) and polysorbate 80 [1, 2, 3]. That the complete absence of a microbiota (i.e. germ-free conditions) eliminates all evidence of inflammation in
TLR3-deficient and emulsifier-treated mice demonstrate that these models of gut dysbiosis and gut microbiota disruption on distribution and polarization of Th17-polarized cells are involved in pathogenesis of both diseases. Therefore, (CD4 T(+)IBD). Two major types of IBD are ulcerative colitis, limited to the colon and rectum and Crohn’s disease causing chronic intestinal inflammation, termed Inflammatory bowel disease (IBD). Disrupted regulation of LPMCs is implicated in pathology of a group of disorders, including gastrointestinal infections, autoimmune diseases such as inflammatory bowel disease (IBD), and various malignancies. In IBD, LPMCs function to eliminate invading pathogens from beneficial intestinal flora and swiftly remove them. The tissue may be considered as healthy in terms of IBD. We have employed an approach to these patients. Clinical activity seems more important to CD than UC patients in terms of disability. Crohn’s Disease (CD) or Ulcerative Colitis (UC) for at least 3 months and followed up at our outpatient clinic thereafter. Socio-demographic and clinical data were collected in a cross-sectional study. The Revised Life Orientation Test (LOT-R) and IBD-DI, respectively. The assessment of the patients included demographic predictors. Most (85.3%) was in clinical remission. The median IBD-DI-PT score was 17.9 ± 10.7, with no significant difference between DC and CU (p = 0.944). In univariate analysis, female gender, high level education, number of days off from work, articular manifestations, number of comorbidities, use of psychotropic drugs and pessimism (low LOT-R score) were significantly associated with higher disability (IBD-DI-PT score). In multivariate analysis, only female gender (β = 0.150), number of comorbidities (β = 0.186) and pessimism (β = 0.370) were significantly associated with higher disability. Clinical activity was assessed with higher disability index (IBD-DI-PT score). In multivariate analysis, only female gender (β = 0.150), number of comorbidities (β = 0.186) and pessimism (β = 0.370) were significantly associated with higher disability. Clinical activity was associated with higher disability only for CD patients (β = 0.321). Concomitantly, the ASF was maintained WT mice, loss of TLR5 did not result in low-grade intestinal inflammation nor metabolic syndrome in WT ASF animals. We are interested in the development of a robust method for isolation and characterization of LPMCs from human colonic mucosa, comparable with further extracellular vesicles (EVs). EVs released by immune cells and enteric bacteria have been identified as potential biomarkers of IBD and may serve as targets for therapeutic strategies.

References
significant increase was observed in patients undergoing treatment with corticosteroids. Regarding HLADR, statistical difference (p = 0.005) and CD62L (p = 0.001) in subpopulation of CD4+ T cells, a significant increase in the expression was observed in the group receiving biological therapy. Redirecting HLADR, statistical difference (p = 0.001) was observed between the groups. The markers CD38, CD62L and HLA-DR besides being classically markers of cellular activation, are also known as markers of diseases progression (Lovecchi et al., 2017). Some studies shows that CD+ T cells play a key role in the immune inflammatory response leading to CD but this cells are poorly characterized in the blood of the patients.

Aims & Methods: This study aimed to characterized CD4+ and CD8+ T cells in the blood of patients with CD. The study was performed in individuals with CD (n = 40) and healthy controls (n = 38). Blood of healthy donors and patients with CD was collected in clinical laboratory from Hospital Albert Einstein. CD4+ and CD8+ T cells was quantified by multiparametric flow cytometry. Dosage of calprotectin and ASCA was performed by commercial Elisa kit. The groups were compared for numerical measures using Student's t-tests, ANOVA, Mann-Whitney or Kruskal-Wallis, depending on the suitability of the data and the number of groups to be compared. The computational package used for the analyses was R 3.0.3 and GraphPad Prism 6.

Results: The highest prevalence in both group was female, aged between 19 and 66 years with a median of 37.5 years. Among clinical exams, 61% of cases presents the value greater than 200 in the dosage of Calprotectin, whereas in the control group the rate was only 18.4% (p = 0.015). Significantly higher percentage of patients with CD was collected in clinical laboratory from Hospital Albert Einstein. CD4+ and CD8+ T cells was quantified by multiparametric flow cytometry. Dosage of calprotectin and ASCA was performed by commercial Elisa kit. The groups were compared for numerical measures using Student's t-tests, ANOVA, Mann-Whitney or Kruskal-Wallis, depending on the suitability of the data and the number of groups to be compared. The computational package used for the analyses was R 3.0.3 and GraphPad Prism 6.

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Aims & Methods: This study aimed to characterized CD4+ and CD8+ T cells in the blood of patients with CD. The study was performed in individuals with CD (n = 40) and healthy controls (n = 38). Blood of healthy donors and patients with CD was collected in clinical laboratory from Hospital Albert Einstein. CD4+ and CD8+ T cells was quantified by multiparametric flow cytometry. Dosage of calprotectin and ASCA was performed by commercial Elisa kit. The groups were compared for numerical measures using Student's t-tests, ANOVA, Mann-Whitney or Kruskal-Wallis, depending on the suitability of the data and the number of groups to be compared. The computational package used for the analyses was R 3.0.3 and GraphPad Prism 6.

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Aims & Methods: This study aimed to characterized CD4+ and CD8+ T cells in the blood of patients with CD. The study was performed in individuals with CD (n = 40) and healthy controls (n = 38). Blood of healthy donors and patients with CD was collected in clinical laboratory from Hospital Albert Einstein. CD4+ and CD8+ T cells was quantified by multiparametric flow cytometry. Dosage of calprotectin and ASCA was performed by commercial Elisa kit. The groups were compared for numerical measures using Student's t-tests, ANOVA, Mann-Whitney or Kruskal-Wallis, depending on the suitability of the data and the number of groups to be compared. The computational package used for the analyses was R 3.0.3 and GraphPad Prism 6.
P0963 EOSINOPHILS-ASSOCIATED CYTOKINES AS INF Patrol inflammatory bowel disease biomarkers K. Neubah1, M. Matusiwick2, I. Bednarz-Misna2, S. Górska3, A. Gamian2, M. Krzyżewski-Korpacka2 1Gastroenterology And Hepatology, Wrocław Medical University, Wrocław, Poland 2Medical Biochemistry, Wrocław Medical University, Wrocław, Poland 3Laboratory Of Medical Microbiology, Ludwik Hirschfeld Institute of Immunology and Experimental Therapy, Polish Academy of Sciences, Wrocław, Poland Contact E-mail Address: kasianeu@gmail.com Introduction: Pathogenesis of inflammatory bowel disease (IBD) is multifactorial and establishing diagnosis requires a performance of series of variable tests. The alternative, non-invasive, markers of IBD are intensively searched for. Eosinophils are acidophilic multifunctional granulocytes that remain outside the mainstream research on IBD. However, they are a rich source of cytotoxic proteins, pro- and anti-inflammatory cytokines, chemokines and growth factors and are likely to contribute to both inflammatory and regenerative phases of the disease. Accordingly, peripheral eosinophils of IBD patients are primed and pre-activated. They display increased responsiveness, adhesiveness, migration, and degranulation and are characterized by up-regulated secretion of their mediators. Locally, increased number and activation of eosinophils have been repeatedly observed in areas of active inflammation. Despite the acknowledged contribution of eosinophils to the disease pathogenesis, available data on cytokines closely related to the development and activity of peripheral eosinophils in IBD patients are either scattered or non-existent. Aims & Methods: Aim of the study was assessment of the circulating eosinophil-associated cytokines and growth factors as differential markers and indicators of mucosal healing in inflammatory bowel diseases. The study population consisted of 277 individuals: 101 patients with Crohn’s disease (CD), 77 with ulcerative colitis, 16 with irritable bowel syndrome (IBS) and 83 healthy controls. The disease severity was assessed using the Crohn’s Disease Activity Index (CDAI) for CD and the Mayo Disease activity index (MDAI) for UC. Also, the Mayo endoscopic score was applied to evaluate the severity of bowel inflammation in UC patients. The concentrations of eosinophil-associated cytokines and growth factors: eotaxin, GM-CSF, IFNγ, IL4, IL5, IL8, IL10, IL13, RANTES and TNFα were measured simultaneously in the blood of a patient’s sera using LumineX xMAP® technology and referred to IBD activity and the levels of hscCRP. The suitability of eosinophil-associated cytokines and growth factors as differential markers and potential indicators of mucosal healing, individually and in multi-marker panels, was evaluated using ROC analysis. Results: As compared to IBS patients or healthy controls, patients with CD had significantly higher levels of II5, II8, IL12(p70), GM-CSF, and TNFα and patients with UC the levels of eotaxin, IL4, IL5, II8, IL12(p70), IL13, GM-CSF, and TNFα. As compared to CD patients, patients with UC had significantly higher levels of eotaxin, IL4, IL5, II5, and II1. In turn, the concentrations of II8 were significantly higher in CD than in UC. Except for IL13, all cytokines and hscCRP positively correlated with CDAI but only II12(p70) and hscCRP were significantly higher in patients with active than inactive CD. In UC, a positive correlation with MDAI was observed for hscCRP, GM-CSF, IL12(p70), and IFNγ and a negative one for IL8. The concentrations of hscCRP, GM-CSF, IFNγ, IL12(p70) and RANTES were higher in UC patients with active than inactive disease whereas those of II8 and TNFα were significantly lower. As differential individual markers, eotaxin displayed superior accuracy as an indicator of active UC (71%), followed by hscCRP as an indicator of active CD (66%). The combined assessment of eotaxin, hscCRP and IFNγ had slightly lower accuracy (72%) and allowing for a correct classification of 72% of patients. The concentrations of hscCRP, GM-CSF, IFNγ, and IL12(p70) were significantly and positively correlated with the degree of bowel inflammation, expressed as Mayo endoscopic score. Of these, a drop in GM-CSF had superior diagnostic accuracy (91%), followed by macroscopic score (91%), allowing for a correct classification of 87% of patients. IL5, IL8, IL12(p70), TNFα, and GM-CSF were significantly higher in both CD and UC than in IBS. Of these, IL8 had superior accuracy in differentiating IBS and IBD (91%), allowing for a correct classification of 93% of patients. Conclusion: Eosinophil-associated cytokines are elevated in IBD, more pronounced in UC and may support the differential diagnosis of IBD and aid in monitoring of mucosal healing. Disclosure of Interest: All authors have declared no conflicts of interest. P0964 MACROPHAGE IL10 SIGNALING IS REQUIRED FOR THE THERAPEUTIC EFFECT OF ANTI-TNF THERAPY IN INFAMYLITARY BOWEL DISEASE P. J. Koelink1, F. M. Bloemendaal1, L. Westera2, A. B. van ‘t Wout2, A. K. Gloumdemas3, B. Li4, T. L. Geiger5, M. E. Wildenberg6, G.R. Van Den Brink1 1AMC Amsterdam, Amsterdam, Netherlands 2Janssen Prevention Center, Janssen Pharmaceutical Companies of Johnson & Johnson, Leiden, Netherlands 3Department Of Pathology, St. Jude Children’s Research Hospital, Memphis, United States of America 4Tyrgut Institute, AMC Amsterdam, Amsterdam, Netherlands 5Dept. Of Gastroenterology, Academisch Medisch Centrum, Amsterdam, Netherlands 6Contact E-mail Address: p.j.koelink@amc.nl Introduction: Interleukin(IL)10 is an important anti-inflammatory cytokine for the maintenance of gut homeostasis. Defects in the IL10 signaling pathway in macrophages leads to deregulation of regulatory (M2) type macrophages and subsequent inflammatory bowel disease (IBD). IBD patients are frequently successfully treated with anti-TNFα therapy, although not all patients are responsive. Aims & Methods: We determined the effect of anti-TNFα therapy in both IL10 knock-out (KO) mice and in the CD4 + CD45Rb high T-cell transfer model of colitis. Macrophage populations were quantified using qPCR analysis for CD206 and F4/80 and flow cytometry for CD206. IL10 mRNA and protein levels were analysed with qPCR and ELISA. Results: Colitis in the IL10 KO mice was completely resistant to anti-TNFα therapy, in sharp contrast to the colitis in SCID or Rag1 KO mice upon transfer of wild-type or CD4 + CD45Rb high T-cells, which was significantly reduced by anti-TNFα therapy. Successful anti-TNFα therapy was accompanied by an increase of IL10 levels and an increase of regulatory (M2) type macrophages in the intestine. Blocking IL10 signaling, with an IL10 Receptor blocking antibody, diminished the therapeutic efficacy of anti-TNFα therapy. Anti-TNFα therapy was also blocking IL10 signaling in T-cells was not important for the therapeutic efficacy of anti-TNFα. In contrast, LysMcCre Il10 KO mice, defective in macrophage IL10 signaling, were unresponsive to anti-TNFα therapy upon receiving CD4 + CD45Rb high T-cells. In these mice there was also no increase of intestinal M2 macrophages. Conclusion: IL10 signaling in macrophages is pivotal for the therapeutic efficacy of anti-TNFα therapy in animal models for IBD. Defects in the IL10 pathway may also play a role in anti-TNFα non-responders which is subject of further investigation. Disclosure of Interest: All authors have declared no conflicts of interest. P0965 LONG-TERM CONSEQUENCES OF ANTI-TNF THERAPY: ROLE OF SCFAS AND INTESTINAL BARRIER INTEGRITY Y. Holota1, A. Bazan1, V. Stets1, N. Dziubenko1, T. Dovbychnyk1, T. Chernivska1, L. Zakordonets1, T. Serhiychuk1, I. Kaji1, G. Tolstanova1 1Bogomolets National Medical University, Kyiv/Ukraine 2Shevchenko National University of Kyiv, Kyiv/Ukraine 3Bogomolets National Medical University, Kyiv/Ukraine 4UCLA School Of Medicine/Cure, West LA V A Medical Center, Los Angeles 5United States of America Contact E-mail Address: julialagota@gmail.com Introduction: Epidemiological studies revealed that antibiotics exposure increases the risk of inflammatory bowel diseases (IBD) development (Hviid, 2011, Shaw, 2011, Krommon, 2012). However, mechanisms of this association are not fully understood. Recent studies revealed sustained alterations in gut microbiota after antibiotic treatment (Rashid, 2015, Dethlefsen, 2011), the full consequences of antibiotic treatment (Rashid, 2015, Dethlefsen, 2011), the full consequences of antibiotic treatment in both IL10 − /− and IL10 + /+ IL10 KO mice and in the CD4 + CD45Rb high T-cell transfer model of colitis. Macrophage populations were quantified using qPCR analysis for CD206 and F4/80 and flow cytometry for CD206. IL10 mRNA and protein levels were analysed with qPCR and ELISA. Results: Colitis in the IL10 KO mice was completely resistant to anti-TNFα therapy, in sharp contrast to the colitis in SCID or Rag1 KO mice upon transfer of wild-type or CD4 + CD45Rb high T-cells, which was significantly reduced by anti-TNFα therapy. Successful anti-TNFα therapy was accompanied by an increase of IL10 levels and an increase of regulatory (M2) type macrophages in the intestine. Blocking IL10 signaling, with an IL10 Receptor blocking antibody, diminished the therapeutic efficacy of anti-TNFα therapy. Anti-TNFα therapy was also blocking IL10 signaling in T-cells was not important for the therapeutic efficacy of anti-TNFα. In contrast, LysMcCre Il10 KO mice, defective in macrophage IL10 signaling, were unresponsive to anti-TNFα therapy upon receiving CD4 + CD45Rb high T-cells. In these mice there was also no increase of intestinal M2 macrophages. Conclusion: IL10 signaling in macrophages is pivotal for the therapeutic efficacy of anti-TNFα therapy in animal models for IBD. Defects in the IL10 pathway may also play a role in anti-TNFα non-responders which is subject of further investigation. Disclosure of Interest: All authors have declared no conflicts of interest.
**References**


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**Introduction:** According to our previous report, the imbalance of Treg/Th17 cells in the host is related with the reduction of CD45RA FoxP3high activated Treg (FrII) cells, which has the real function of immunosuppression, and with the elevation of CD45RA FoxP3low Th17 (FrIII) cells, which provide FoxP3low IL17a+ T cell activity, and make them resistant to immunosuppressive capacity. Activation of Toll-like receptors, especially TLR2, leads to elevation of FrIII, which show FoxP3low IL17a+ T cell activity. The levels of Treg cells were elevated in PBMC and LPC of group B compared with group A (4.215 fold, 0.104 P<0.05). But the level of CD3+ CD8+ T cells was decreased in spleen, PBMC, MLN and LPC compared with group B (0.533 fold, 0.100 P<0.05). The level of CD3+ CD8+ FoxP3low IL17a+ cells were decreased in spleen, PBMC, MLN and LPC compared with group B (5.967 fold, 0.158 P<0.05, 4.896 fold, 0.232 P<0.05 respectively). The level of CD3+ CD62L+FoxP3+ IL17a+ cells were decreased in spleen, PBMC, MLN and LPC with group B (0.533 fold, 0.100 P<0.05, 1.238 fold, 0.158 P<0.05, 2.523 fold, 0.044 P<0.05, 2.390 fold, 0.028 P<0.05 respectively). But the level of CD3+ CD62L+FoxP3+ IL17a+ cells were decreased in spleen, PBMC, MLN and LPC with group B (0.533 fold, 0.100 P<0.05, 1.238 fold, 0.158 P<0.05, 2.523 fold, 0.044 P<0.05, 2.390 fold, 0.028 P<0.05 respectively). (4) The levels of Th17 cells were elevated in PBMC and LPC of group B compared with group A (1.333 fold, 0.05). (5) The levels of Th17 cells were elevated in PBMC and LPC of group B compared with group A (1.333 fold, 0.05). (6) The levels of Th17 cells were elevated in PBMC and LPC of group B compared with group A (1.333 fold, 0.05). (7) The levels of Th17 cells were elevated in PBMC and LPC of group B compared with group A (1.333 fold, 0.05). (8) The levels of Th17 cells were elevated in PBMC and LPC of group B compared with group A (1.333 fold, 0.05).

**Conclusion:** Blocking TLR2, TLR2Nab could improve the level of FrII cells in PBMC, MLN and LPC, but reduce the levels of FrII and FoxP3+IL17a+ cells in DSS induced UC mice. Furthermore, TLR2Nab could alleviate the DAI index as well as the inflammation of CD45RA FoxP3low IL17a+ cells.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P09696**

**FIRST ANALYSIS FROM UK IBD TWIN BIOBANK; 16S RNA GENE SEQUENCING IDENTIFIES REDUCED DIVERSITY IN ACTIVE IBD AND TAXA ASSOCIATED WITH ACTIVE DISEASE. PHENOTYPE TO LEVEL OF SPECIES**

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**Introduction:** Previous studies have shown that the gut microbiota plays an important role in IBD, however this role is not a confirmed fact and what bacteria are responsible for the disease. 16s gene profiling studies generate large amounts of information, however they can be confounded by genetic and environmental factors. Twin studies are instrumental in controlling for some of these variabilities, and in this study we investigated the microbiota of twin pairs discordant for Crohn’s disease (CD) and Ulcerative colitis (UC) using 16s RNA gene sequencing, with the aim of identifying taxa associated with disease.

**Aims & Methods:** Participants were recruited via the UK IBD Twin Registry. Stool samples were collected and frozen using standard methods. Participants who had received antibiotics within 3 months were excluded. Harvey-Bradshaw Index and Simple Clinical Colitis Activity Index were recorded. Full medical history was available from the UK IBD Twin Registry. Samples underwent 16s RNA gene sequencing using the Illumina MiSeq platform with our data analysis pipeline. PERMANOVA was used to evaluate associations with clinical metadata, which included matching of twin pairs for analysis, and STAMP was used to identify taxonomic differences between groups.

**Results:** 20 twin pairs discordant for CD (5MZ:15DZ mean age 52 years) and 17 discordant for UC (6MZ:11DZ mean age 59.7 years) were recruited. 7 subjects with CD had active disease as did 4 with UC. Gut microbiota from active CD patients had lower bacterial diversity compared to remission patients and healthy twins (Shannon diversity index, p < 0.01 healthy vs active UC, p < 0.05 active vs remission CD, 1-way ANOVA post-hoc = Tukey). Active UC patients also had lower bacterial diversity compared to remission UC patients and healthy twins (Shannon diversity index, p < 0.01 healthy vs active UC, p < 0.05 active vs remission UC) We found that active CD patients had a higher proportion of *Clostridium hylemonae* and *Lactobacillus delbrueckii* compared to healthy twins, and a lower proportion of *Faecalibacterium prausnitzii* compared to healthy twins (p < 0.05). We found that active UC patients had a lower proportion of *Attilispor spp* compared to their healthy twins and UC patients in remission (p < 0.05).

**Conclusion:** This study confirms previous findings showing decreased diversity in IBD patients and changes in some bacterial taxa, however our study is the first to show decreases in *Attilispor spp* in active UC. **Disclosure of Interest:** All authors have declared no conflicts of interest.

**P09698**

**CD4+ T CELLS OF IBD PATIENTS ARE CHARACTERIZED BY AN INCREASED EXPRESSION OF THE NUCLEOTIDE RECEPTOR P2Y2, WHICH IMPACTS RELEVANTLY ON PRO-INFLAMMATORY SIGNALS AND SCFAS**

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**Introduction:** Chronic and acute inflammation is often associated with an upregulation of extracellular UTP and ATP nucleotides, which are able to interact with various cell types via purinergic G protein-coupled P2 receptors. Interestingly, former studies already described an increased expression of the ATP/UTP receptor subtype P2Y2 (P2Y2R) in the colonic tissue of IBD patients [1]. However, it remained unknown in how far immune cells of IBD patients are characterized by an increased expression of the nucleotide receptor P2Y2, which impacts relevantly on pro-inflammatory cascades.

**Aims & Methods:** P2Y2R mRNA and protein expression were evaluated in primary human CD4+ T cells from the blood of IBD patients or healthy donors was analyzed via qPCR or western blot, respectively. Furthermore, primary human CD4+ T cells were stimulated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thio-UTP and activated in the presence of UTP or the selective P2Y2R agonist 2-thi-
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human CD4 T cells from IBD patients could be characterized by a significantly increased P2Y2R expression compared to healthy controls, while the expression levels of the P2Y4 receptor subtype turned out to be comparable between both groups. Further subdividing the group of included IBD patients into Crohn’s disease and ulcerative colitis patients, we could not observe a significant difference in the P2Y2R levels between both disease entities. Interestingly, the increased P2Y2R expression in the lymphocyte compartment of IBD patients seemed to be limited to CD4 T cells, as CD6 T cells of those patients even showed decreased P2Y2R levels. Regarding potential regulators of P2Y2R expression in the context of IBD, our data identified IL-6 and TGF-beta as mediators of increased P2Y2R expression in human CD4 T cells. Interestingly, high extracellular UTP levels resulted in a decreased expression of the TGF-beta1 receptor on CD4 T cells, implicating a potential negative feedback loop in which P2Y2R signaling might inhibit TGF-beta1 induced P2Y2R expression over time. The impact of P2Y2R on the pro-inflammatory capacity of human lymphocytes, our data indicate that the selective P2Y2R agonist 2-Thio-UTP is able mediate NFkB as well as STAT3 activation and to induce secretion of the pro-inflammatory cytokines IL-6 and IL-17 in stimulated human lymphocytes. Conclusion: The observed increased expression of P2Y2R in CD4 T cells of IBD patients together with the demonstrated pro-inflammatory effects of P2Y2R signaling in human T cells markedly strengthen the role of P2Y2R as a promising molecular target in IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P0969 HIF-1A STABILIZATION THROUGH HYDROXYLASE INHIBITION AMELIORATES DSS-INDUCED COLITIS AND INDUCES AUTOPHAGY

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Introduction: Environmental hypoxia has been increasingly recognized as an important environmental factor associated with Inflammatory Bowel Disease (IBD). Hypoxia allows the stabilization of hypoxia inducible factor (HIF) complexes and has been linked to the activation of autophagy. HIF 1α is induced in the inflamed mucosa from IBD patients and mouse models of colitis, but its role in intestinal inflammation is still controversial since both, positive and negative effects have been reported. Aims & Methods: We aim to elucidate the effects of HIF1α stabilization in autophagy and the development of intestinal inflammation in a murine model of colitis. Female C57BL/6J mice between 8–10 weeks of age were exposed to 25% DSS in drinking water for 7 days, and received 8 mg of the hydroxylase inhibitor dimethylxaloylglycerol (DMOG) intraperitoneally every second day. Mice were killed at day 9, mucosal damage was assessed by colonoscopy and mucosal endo-scopic score of colitis severity (MEICS) was calculated. H&E staining was performed to visualize the histological damage. Expression of TNF, IL-6, IL-1β and Nlrp3 was analyzed by qPCR and protein expression of p-NFκB, NFκB, p-akt, mTOR, LC3, NfκB, p62, LCM was assessed by Western Blot. HT-29 cells were subjected to normoxia (21% O2) or hypoxia (0.2% O2) for 24h in the presence or absence of 40µM chloroquine. Cells were stained with DAPI and LysoTracker Yellow-HCK-123 to monitor lysosomal accumulation. Chromatin immunoprecipitation (ChIP) analysis was performed using an antibody against HIF1α and PCR was performed using the promoter-specific primers for the p62 promoter binding of HIF1α. Results: DMOG administration induced a significant lower reduction of body weight in DSS-treated mice compared to DSS-treated mice administered with vehicle. Furthermore, mice administered with DMOG presented less reduction in the colon length, a significant reduction in the MEICS and histological scores showing intact crypts in large areas without extensive infiltration or thickening of the mucosa. The mRNA expression of the pro-inflammatory factors TNF, IL-6, IL-1β and Nlrp3 was significantly reduced in mice treated with DMOG compared to vehicle-treated mice. At a protein level, DMOG administration reduced p-NFκB and NLRP3 expression. DMOG-treated mice also showed activation of autophagy, as evidenced by a decrease in p-mTOR and p62 expression and increase of LC3II. In vitro, hypoxia induced a significant accumulation of lysosomal proteins, a reduction of p-mTOR. The late-stage autophagy inhibitor chloroquine reverted this effect indicating that was autophagy-mediated. Finally, ChIP analysis revealed that hypoxia induced the binding of HIF1α to the promoter of p62. Conclusion: Our results indicate that DMOG-mediated HIF1α stabilization ameliorates DSS-induced colitis, activates autophagy and significantly reduces inflammatory gene expression and signaling. In cultured intestinal epithelial cells hypoxia triggers lysosomal formation and HIF1α binds to the promoter of p62, thereby promoting autophagy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0970 PROTECTIVE EFFECT AND ACTION MECHANISM OF APOCYNIN IN IBD MOUSE MODEL

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Introduction: There are several medical treatment options for inflammatory bowel disease (IBD), but all have drawback due to their significant adverse effects. Many new drugs are being developed for more safe and effective treatment. Apocynin is a chemical 4-hydroxy-3-methoxycinnamatephene which is an inhibitor of NADPH oxidase and has showed promising effect in various chronic inflammatory diseases such as asthma and atherosclerosis. Due to its anti-inflammatory effect and safety profile, apocynin can be a new candidate for the treatment of IBD.

Aims & Methods: In this study, we aimed to investigate effect of apocynin on colonic inflammation and the action mechanism using chemically-induced colitis mouse model. We used dextran sulfate sodium (DSS)-induced colitis model. 8 weeks male BALB/c mice were divided into four groups (each n=6): control, DSS only, DSS with apocynin, and DSS with sulfasalazine. Water (control and DSS group), apocynin (400 mg/kg) and sulfasalazine (150 mg/kg) were administered by oral route using sonde during 7 days. For western blot analysis, colon was lysed and protein was extracted. The following antibodies were used; iNOS (BD Biosciences), COX2, Nrf2 (Santa Cruz Biotechnology Inc), MCP-1, TNF-α, p-Nfr2, HO-1 (Abcam), and β-actin (Sigma).

Results: Protective effect of apocynin was evident by weight change and colon length. Histologic analysis also showed improved erosion and decreased neutrophilic infiltration in apocynin group compared to DSS group. In colon tissue, several pro-inflammatory enzymes and cytokines were decreased by apocynin. Apocynin also activated anti-inflammatory pathway by inducing activation of Nrf2 and production of heme oxygenase-1 (HO-1).

Conclusion: Apocynin, a NADPH-oxidase inhibitor, showed significant anti-inflammatory effect in DSS induced colitis model. Considering its good safety profile, this molecule can be a new candidate for the treatment of IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0971 THE USE OF RAPID EVAPORATIVE IONISATION MASS SPECTROMETRY (REIMS) IN FAECAL SAMPLES TO IDENTIFY INFAMMATORY BOWEL DISEASE

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Introduction: Fecal metabolic profiling has been shown to distinguish Inflammatory Bowel Disease (IBD) from healthy controls (HC), specifically with depletion of gut-associated short chained fatty acids (SCFA) as the predominant feature separating these groups (1). Previous and current studies have used proton nuclear magnetic resonance (1H NMR) spectroscopy or mass spectrometry (MS) to measure faecal metabolites and their concentration in IBD patients to different treatments. Both techniques require a significant amount of sample pre-processing. Rapid Evaporative Ionization Mass Spectrometry (REIMS) is a relatively new technology which applies a laser to a biological sample, and the resulting vapour, containing gas phase ions of metabolites and structural lipids, is analysed by a mass spectrometer (2). Unprocessed faecal samples can be rapidly assessed using this technique to obtain lipidomic spectral profiles (2). To our knowledge this is the first study that has used REIMS to investigate whether IBD patients can be distinguished from healthy controls using faecal samples. Aims & Methods: Unprocessed faecal samples from 109 IBD patients and 46 healthy controls were analysed using Rapid Evaporative Ionization Mass Spectrometry. Clinical and dietary data were collected, and patients with significant other co-morbidities were excluded. Partial least squares discriminative analysis (PLSDA) was performed to examine whether there were differences in the metabolic data between patients with Inflammatory Bowel Disease and healthy controls. Further samples were then carried out including examining whether ulcerative colitis could be distinguished from Crohn’s disease.
P0972 THE PATHOGENIC MECHANISM OF ARYL HYDROCARBON RECEPTOR MEDIATED ABNORMAL DIFFERENTIATION OF INTESTINAL ILC3/ILC1 IN CROHN’S DISEASE

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Introduction: The abnormal differentiation of intestinal innate lymphoid cells ILC3 and ILC1 exist in autoimmune disease. ILC3 decreased and ILC1 increased in Crohn’s disease (CD) patients, suggesting that CD patients have abnormal intestinal ILC3/ILC1 alteration.

Aims & Methods: The present study investigated the aberrant colonic mucosal ILC3/ILC1 in active CD patients and 2, 4, 6-trinitrobenzene sulfonic acid (TNBS)-induced colitis mice. The expressions of aryl hydrocarbon receptor (AhR) in colon of active and quiescent CD patients were detected by western blot and immunofluorescence. The ILC3/ILC1 were investigated in CD patients and 2, 4, 6-trinitrobenzene sulfonic acid (TNBS)-induced colitis mice (AhR-/-, AhR+/-).

Results: Compared to quiescent CD patients, the expression of aryl hydrocarbon receptor (AhR) in the intestinal tissue in active CD patients was decreased. Meanwhile, the number of ILC3 in active CD patients and AhR knockout mice was decreased while ILC1 increased. The intestinal inflammation in AhR knockout mice given TNBS was more severe than wild-type mice.

Conclusion: These findings suggest that AhR may mediate abnormal differentiation of ILC3/ILC1, and the production of inflammatory cytokines, finally, promotes the pathogenesis of CD.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P0973 PREVALENCE AND GENETIC DIFFERENCES IN ADHESION-RELATED GENES AMONG COMMENSAL AND ADHERENT-INVASIVE E. COLI STRAINS

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Introduction: Long polar fimbrae (LpfA), Filh amino acid variants and ChiA chitinase have been related with adherent-invasive E. coli (AIEC) pathogenesis. Controversial results have been found regarding the prevalence of LpfA in AIEC vs non-AIEC (1, 2). Some Filh amino acid variants were reported to be specific for AIEC (3) whereas other variants were associated with phylotype B2. The origin of the strains (4). Differences in the ChiA sequence were reported between LF82 and K-12 strains but this gene has not been studied in other AIEC yet (5).

Aims & Methods: The prevalence of LpfA and the distribution of filh and chiA variants in the collection of AIEC and non-AIEC from different disease origins. Crohn’s disease (CD), ulcerative colitis (UC) and colorectal cancer (CRC) were studied with the purpose to determine if these genes could be used as molecular markers for AIEC identification and disease diagnosis. In a collection of 77 AIEC and 29 non-AIEC isolated from CD, UC, CRC patients and controls, lpfA gene was PCR-amplified to assess its presence and filh and chiA genes were sequenced to identify point mutations. For comparison of filh and ChiA protein sequences, UPGMA phylogenetic tree and allele identification was performed using MEGA5. The genetic differences were annotated using as reference the K-12 strain. Then, they were analysed statistically according to AIEC pathotype, filh and chiA variant, and disease origin by the χ2 test and non-parametric tests were used to evaluate amino acid variability regarding the adhesion and invasion indices.

Results: Low gene frequency for lpfA414 and lpfA154 was reported (11.7% and 16.7% respectively). LpfA154 was only found in strains from A (22%) and B1 phylgroup (86%) and no relation with AIEC phenotype or disease was observed. Two main clusters of Filh were obtained by phylogenetic analysis, classifying the strains according to the presence of S78N mutation. N70S and S78N variants were characteristic from strains of B2 and D phylgroups as none of the A or B1 strains presented it. Despite statistical significance was not reached, the strains with N70S, S78N, V163A, R166H mutations showed the highest adhesiveness. Regarding ChiA, two main clusters defined by the presence of an insertion in 312-314 residues were observed. None of the five previously mutations found in LF82 strain were associated with AIEC strains whereas the V415A variant was found specifically in AIEC (20%) (p = 0.049). Of note, among the strains harbouring the 312-314 insertion, a subcluster that shared identical amino acid sequence included the LF82 strain and the 44% of AIEC strains but only the 10% of the non-AIEC (p = 0.019). No differences were observed between Filh, ChiA variants and origin of isolation was observed.

Conclusion: In contrast with other studies, no relation of lpfA presence nor in Filh mutations with AIEC pathotype or disease was observed. Nonetheless, a variant in ChiA sequence more frequently found in AIEC isolates was reported, being an interesting signature sequence for the detection of at least a subgroup of AIEC strains. Further confirmation in a wider strain collection would be required.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
levels. Data were further processed in QIIME employing MaAsLin and LEfSe tools for analysis of the output data.

Results: Microbial profiles in both PSC and UC were characterized by low bacterial diversity and significant change in global microbial composition. Rothia, Enterococcus, Streptococcus, Veillonella, and three other genera were markedly overrepresented in PSC regardless of concomitant IBD. Rothia, Veillonella and Streptococcus were tracked to the species level to identify Rothia mucilaginosa, Streptococcus infantis, S. adhaerens, and S. equi along with Veillonella parvula and V. dispar. PSC was further characterized by decreased abundance of Adhistructus,icornis and Prevotella corpori. Decrease in genus Phascolarctobacterium was linked to presence of colonic inflammation regardless of IBD phenotype. Akkermansia muciniphila, Butyrivibrio rumenii and Clostridium columbiam were decreased in UC along with genera Roseburia. Unclassified Actinomycetes species were markedly increased in overlap syndrome of autoimmune hepatitis (AIH) and PSC. Low levels of serum albumin were significantly correlated with enrichment of order Actinomycetales.

Conclusion: Microbial features were independent of concomitant IBD and could serve as potential biomarkers for IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0976 HYPOXIA INDUCTIVE FACTOR (HIF)-1 ALLOWS EPITHELIAL WOUND HEALING THROUGH INTEGRIN REGULATION
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Introduction: The characteristic inflammation associated with IBD contributes to repeated cycles of epithelial wounding and repair in the intestine. The epithelium functions as a selective barrier, critical for mucosal protection. During intestinal inflammation, damage to the vasculature leads to reduced oxygen availability (hypoxia) at the mucosa. Epithelial wound healing processes occur in this hypoxic environment and are critical to restore barrier integrity and gut homeostasis. A key factor in the co-ordination of mucosal wound healing is the transcription factor HIF-1. HIF-1 mediates an array of protective mechanisms to cell survival and repair. Previous work has shown that pharmacological stabilisation of HIF-1α by prolyl hydroxylase inhibitors (PDHI) is protective in murine models of colitis. Importantly, our work has identified HIF-1-mediated induction of integrin-β1 at the mucosa as critical to this process.

Aims & Methods: We aimed to examine the functional role and post-translational activity of epithelial α-integrin subunits dimerizing with integrin-β1 to promote HIF-1-mediated wound healing by PDHI. Cell migration and inhibition scratch assays were performed on T84 monolayers (~1% O2 and/or PDHI (AKB-4924), wound closure was monitored over 24 hours. Monolayers were stained by immunofluorescence for cytoskeletal components. Key integrin subunits were linked to expression of the cytoskeletal organization therefore PHD3 compounds may enhance wound closure through integrin-β1-mediated organization of the cytoskeleton.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0977 EFFECTS OF TIME ON URINARY METABOLIC PROFILE DURING MUCOSAL HEALING IN INFLAMMATORY BOWEL DISEASE
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Introduction: Metabolic profiling (metabonomics) has been proposed as a novel clinical tool in IBD to predict development of complex disease, or for longitudinal non-invasive monitoring of activity and/or response to drug treatment. Urinary metabonomics can distinguish IBD from healthy controls (1) but no studies to date have assessed the stability of these discriminatory profiles over time in IBD. The metabolic signature of IBD may not be unique and may change over periods of 3 years (2) but signals are influenced by multiple external factors including medication and surgery, so how these changes in IBD is unknown. The aim of this study was to compare baseline urinary metabolic profiles of IBD patients with a repeated sample several years later to assess similarity, and also to test if any clinical outcomes could be retrospectively predicted from the baseline sample.

Aims & Methods: Two urine samples from 39 IBD patients (22 Crohn’s disease (CD) and 17 ulcerative colitis (UC)) were collected - one at baseline and one several years later (range 7–9 yrs). These were analysed by 1H NMR spectroscopy. Disease progression was defined as initiation of immunosuppression or biologic therapy, progression of disease, and mucosal healing status. Principal components analysis was used to visualise the variance between the two time-points within the cohort. Orthogonal partial least squares discriminant analysis (OPLS-DA) was used to establish if the metabolic signatures could be used to predict adverse clinical outcomes in the patients studied.

Results: 57% of CD patients and 17% of UC patients had clinical progression at follow-up sampling. PCA showed clustering of sample pairs from the baseline and several years later in most individuals, suggesting intra-individual similarity across time. OPLS-DA showed no statistical models could be built to predict combined poor outcome based on the initial urinary metabolic profile (p = 0.26). However, the small subgroup who went on to require surgical intervention could be separated from the cohort in a model (Q2 = 0.015; p = 0.03) constructed on their baseline profiles.

Conclusion: The metabolic profile of IBD in an individual appears relatively stable over a significant time period despite a variety of clinical outcomes and interventions. Variations in longitudinal measurements appear to be subtle, and therefore replication of this technique for disease monitoring or prediction of principal outcomes may prove difficult. These results may suggest that metabolic profiling could be exploited to predict a higher risk of requiring future surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P0978 BACTERIAL TRANSLOCATION CONTINUES IN ULCERATIVE COLITIS DESPITE MUCOSAL HEALING AND CURED CLINICAL REMISSION
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Introduction: Mucosal healing is considered to be the hallmark of successful therapy in Ulcerative Colitis, and has become increasingly used as a target of therapeutic interventions. Loss of mucosal integrity and associated bacterial translocation of bacterial components across the mucosal epithelial barrier occurs in Ulcerative Colitis and persistance of a structural mucosal defect is a characteristic of chronic inflammatory bowel disease. Mucosal healing can be defined by clinical, microscopic and histological means but no clear definition of the required extent of mucosal healing exists, nor is there agreement on how functional mucosal healing is defined.

Aims & Methods: To define the extent and associations of mucosal healing in patients with Ulcerative Colitis, and the relationship with bacterial translocation and clinical remission. Patients with established diagnosis of Ulcerative Colitis undergoing endoscopic evaluation were recruited to the study (Ethics: South West London REC2 10/H0706/26). Clinical history and long-term follow-up data were recorded. Blood and mucosal samples were processed as mononuclear cells. Healthy controls recruited from cohort undergoing routine lower gastrointestinal investigations without positive findings. Flow cytometry characterisation of cells by cell surface CD45RO, CD27, CD14, CD48 and CD161 and cytokine expression after stimulation with bacterial enterotoxin B stimulation by IL-1, IL-17a, IL-22, TNF, IL-17F and IFNγ. Immunohistochemistry to define tight junction apical epithelial expression (Claudin 1, Claudin 4 and Occludin) and lipopolysaccharide within the lamina propria. Peripheral blood markers of bacterial translocation: bacterial DNA (16sDNA), lipopolysaccharide Binding protein (LBP), soluble CD14 and plasma lipopolysaccharide. Statistical analysis by Mann Whitney or Kruskall Wallis analysis with Dunn’s post test correction, or by Spearman rho correlation.
**Results:** 28 patients with Ulcerative Colitis, duration of disease 4 months to 31 years, aged 22 Healthy and 22 Colitis were recruited for the study. Half of the patients had active disease as assessed by Ulcerative Colitis Severity Score. Disease severity positively correlated with frequency of mucosal TH17 (CD4+HLA-17+) and IL-17f. Breaches in tight junction protein expression were greatly increased: Claudin 1 (p = 0.016) and occludin (p = 0.03). The serum marker of bacterial translocation, lipopolysaccharide binding protein (LBP) was elevated in UC compared to controls (p = 0.0078) and was positively correlated with breaches of Claudin 1 and Occludin. We found that fibrosis (r = 0.018) and increased colonic biopsies for the presence of lipopolysaccharide in the lamina propria demonstrated positive findings in healthy controls, supported by data from 16s rDNA analysis of blood from healthy controls. In the Ulcerative Colitis cohort in clinical remission the absence of lipopolysaccharide in the lamina propria was associated with elevated levels of LBP and increased breaches of Occludin (p = 0.0022).

**Conclusion:** Breaches of tight junction proteins in the colon of patients with stable clinical remission can be detected and are associated with perturbations of mucosal immunological function and markers of bacterial translocation. These findings require further study, specifically to examine the role of mucosal immune tolerance to lipopolysaccharide and other bacterial cell products that may be present in the healed mucosa of ulcerative colitis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Salim SY Inflamm Bowel Dis 2011 17:362-61
Nagao A J Gastroenterol Hepatol 2005; 39:92-97
Heller F Gastroenterology 2005; 129:550-364

**P0979 EFFECT OF FIBER AND FAT CONSUMPTION ON DISEASE ACTIVITY AND QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE**

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**Introduction:** Diet may influence intestinal inflammation via various pathways but the evidence regarding the role of fiber or fat intake in patients with inflammatory bowel disease (IBD) is controversial.

**Aims & Methods:** The aim of this study was to investigate the association between dietary fiber or total fat intake and disease activity or quality of life in Greek IBD patients. We prospectively collected food frequency questionnaires (FFQ) from consecutive IBD patients at outpatient visits. The European Prospective Investigation into Cancer and Nutrition (EPIC) Study FFQ for Greek population with the MAFF photographic food atlas were used in order to collect information for dietary habits of IBD patients. Moreover, disease activity was measured using the disease activity index (SCCAI) for ulcerative colitis (UC) and the Harvey-Bradshaw index (HBI) for Crohn’s disease (CD)) as well as quality of life using the short inflammatory bowel disease questionnaire (SIBDQ) were evaluated. Patients’ demographic, clinical characteristics, nutritional status, laboratory data (C reactive protein (CRP), haemoglobin, erythrocyte sedimentation rate (ESR), platelets and albumin) and treatment data were recorded and analysed for all participants.

**Results:** A total of 141 consecutive IBD patients (53 UC, 88 CD, mean age 47.2±16.1 years, 84 males 57 females, BMI 26.7±5.3) were included. Patients’ mean daily fiber intake was 21.8 g (IQR 13.8-34.6) and mean daily total fat was 16.1 g (IQR 12.1-23.7) with 43.5% percent energy from fat. Regarding disease activity 34 (24.1%) patients had active disease with HBI or SCCAI score ≥5 whereas 45 (31.9%) patients had clinical remission can be detected and are associated with perturbations of mucosal immunological function and markers of bacterial translocation. These findings require further study, specifically to examine the role of mucosal immune tolerance to lipopolysaccharide and other bacterial cell products that may be present in the healed mucosa of ulcerative colitis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Salim SY Inflamm Bowel Dis 2011 17:362-61
Nagao A J Gastroenterol Hepatol 2005; 39:92-97
Heller F Gastroenterology 2005; 129:550-364

**P0980 PROGRESSION IN CROHN’S DISEASE BEHAVIOUR IN A PROSPECTIVE EUROPEAN POPULATION-BASED INCEPTION COHORT – THE ECCO-EPICOM COHORT**


**Introduction:** Crohn’s disease (CD) is a progressive disease that over time can lead to the development of complications such as strictures or internal penetrating disease that will ultimately lead to surgery. Only few population-based studies from the biological era and widespread use of immunomodulators have investigated the change in disease behaviour and subsequent risk of surgery in CD.

**Aims & Methods:** The EpiCom-cohort is a population-based cohort of unselected patients with inflammatory bowel disease diagnosed in 2010 in Eastern and Western European centres. Patients were followed prospectively for five years and clinical data were captured throughout the follow-up period. Disease behaviour was defined according the Montreal classification as B1: non-stricturing, non-penetrating, B2: stricturing; B3: penetrating based on endoscopy, cross-sectional imaging or surgery. The risk of surgical resection was analysed by Cox regression analyses using the proportional hazard assumption including multiple covariates (age, gender, disease location, diagnostic delay, smoking status, change in behaviour, geographic region and treatment with biologics within 6 months from diagnosis).

**Results:** A total of 488 incident CD patients were included in the study, of which 347 (71%) had B1. A total of 141 (29%) patients had complicated CD at diagnosis. After 5 years’ follow-up, this number increased to 190 (39%) (Table 1). Of patients diagnosed with B1, 35 (10%) progressed to B2 while 14 (4%) progressed to B3 after a median of 21 months (range: 0-62). The proportion of B1 patients changing behaviour was highest during the 1st year of disease (5%) but stable during the remaining follow-up period (approx. 2%/year). Colonic location (L2 region) was associated with progression of behaviour from B1 to B2/B3 (HR: 0.3 CI95%: 0.1-0.8), extra-intestinal manifestations at diagnosis (HR: 0.2 CI95%: 0.1-0.8), and the need for early biologics (HR: 2.5 CI95%: 1.2-5.1) were associated with progression in behaviour. During follow-up, a total of 107 patients had a resection. Of patients with B1 as initial behaviour a total of 37 (11%) patients had a resection. A change in behaviour from B1 to B3 (HR 6.8 CI95%: 3.0-15.6) and early biologics (HR 0.5 CI95%: 0.2-0.5) was
associated with the risk for resection. No difference in the results was found between Eastern and Western European patients.

### Table 1: Disease behaviour in Crohn's disease at diagnosis and follow-up

<table>
<thead>
<tr>
<th>Follow-up</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>Total (diagnosis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagnosis</td>
<td>298 (61%)</td>
<td>35 (7%)</td>
<td>14 (3%)</td>
<td>347 (71%)</td>
</tr>
<tr>
<td>B1, non-stricturing</td>
<td>298 (61%)</td>
<td>35 (7%)</td>
<td>14 (3%)</td>
<td>347 (71%)</td>
</tr>
<tr>
<td>B2, stricture</td>
<td>89 (18%)</td>
<td>11 (3%)</td>
<td>100 (21%)</td>
<td></td>
</tr>
<tr>
<td>B3, penetrating</td>
<td>41 (8%)</td>
<td>41 (8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (follow-up)</td>
<td>124 (25%)</td>
<td>66 (14%)</td>
<td>488 (100%)</td>
<td></td>
</tr>
</tbody>
</table>

### Conclusion

In this European population-based inception cohort of unselected CD patients 14% of patients with B1 progressed to B2 or B3 after five years of follow-up. The risk of surgery was increased in patients with B1 who progressed to B2/B3. No clinical predictors for progression in behaviour including smoking and treatment with biological therapy could be identified.

### Disclosure of Interest

All authors have declared no conflicts of interest.

### P0981

**Title:** CHANGES IN GUT MICROBIOTA COMPOSITION CORRELATE WITH SHORT TERM CHANGES IN FACIAL CALPROTECTIN AND CRP IN PATIENTS WITH CROHN'S DISEASE

**Authors:** D. Chan1, D. Kumar2, M. Mendall2

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**Introduction:** Faecal microbiota are believed to play an important role in the pathogenesis of Crohn's disease (CD). It is not known for certain whether gut microbiota composition (GMC) changes in response to inflammation or whether inflammation in the gut wall is a response to changes in GMC. Dynamic changes in bowel wall inflammation and short term changes in GMC have not previously been studied, but would give a clue as to the aetiological importance of GMC.

**Aims & Methods:** We aimed to assess the correlation between short changes in GMC and a faecal marker of gut inflammation faecal calprotectin (FC) and CRP, a marker of systemic inflammation.

We conducted a blinded sham controlled cross-over study of 32 subjects assigned to IgG4 guided exclusion diets. Each subject was randomised to one month of true or sham diet followed by a one month washout period followed by a further month of the other diet. Changes in other species and phyla were calculated. Kendall Tau correlation with change in FC and CRP with relative abundance of bacteria groups were calculated. Kendall Tau correlation was used to assess correlation between change in FC and CRP to change in relative abundance of various bacteria. We found significant negative correlation with change in FC and CRP with *Bifidobacterium* genus and change in FC with *Roseburia* genus. There were poor correlation and inconsistent changes in other species and firmicutes and bacteroidetes and Shannon diversity.

### Results

26 people fully completed the study. For each participant this provided as a species.

<table>
<thead>
<tr>
<th>Species</th>
<th>Kendall Tau</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Roseburia</em></td>
<td>0.295</td>
<td>0.126</td>
</tr>
<tr>
<td><em>Bifidobacterium</em></td>
<td>0.158</td>
<td>0.315</td>
</tr>
<tr>
<td><em>Shannon Diversity</em></td>
<td>0.320</td>
<td>0.027</td>
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</table>

### Conclusion

Bifidobacterium relative abundance correlate closely with short term changes in FC suggesting a possible causal association. Other genera and species had poor and inconsistent correlations with short term changes in FC suggesting that they may not be causally related to short term changes in gut inflammatory activity.

### Disclosure of Interest

All authors have declared no conflicts of interest.

### P0982

**Title:** COLORECTAL CANCER IN INFLAMMATORY BOWEL DISEASE: RISK FACTORS IN A PROSPECTIVE MULTICENTER NESTED CASE-CONTROL IG-BBD STUDY

**Authors:** L. Biancone1, A. Armuzzi2, M.L. Scrubano3, R. D’Inca4, C. Papini5, S. Spina5

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**Introduction:** Risk factors for colorectal cancer (CRC) in Inflammatory Bowel Disease (IBD) are still debated (1).

**Aims & Methods:** In a prospective multicenter, nested case-control IG-BBD study at 4 years, we aimed to assess the frequency and risk factors for incident CRC in IBD. The role of IBD phenotype vs thiopurines (IS) and/or anti-TNFs use as risk factors for CRC was also evaluated. From Jan. 2012 to March 2017, all incident cases of CRC in IBD pts referring to 16 IG-BBD Units were recorded. Each IBD pt with CRC (IBD-CRC) was matched with 2 IBD pts with no cancer (IBD-C) for IBD type (Crohn’s Disease, CD vs Ulcerative Colitis, UC), gender, age (<5 yrs). Cases of CRC derive from a larger cohort of IBD pts referring to the same Units, with incidence of any cancer separately reported at 4 years (follow up at 3 yrs reported for cancer overall) (2). Statistical analysis: data expressed as median (range), Wilcoxon test, Chi-squared test, Fisher exact test; multivariate logistic regression analysis.

**Results:** Incident cases of CRC occurred in 66 IBD pts: 41 UC (UC-CRC), 25 CD (CD-CRC). IBD-C group therefore included 198 pts (66 UC-CRC, 132 CD-C). UC group included 123 pts (41 UC-CRC, 82 UC-C) and CD group included 75 CD pts (25 CD-CRC, 50 CD-C). The frequency of incident CRC was higher in the tested UC versus CD population (62.1% vs 37.9%;p = 0.009). Gender was equally distributed in IBD groups (UC 44.3% vs CD 44.8%); UC vs CD: p = 0.1). The median age was comparable between IBD-C and IBD-C (UC-CRC vs UC-C 62 [37–86] vs 59 [35–86]; CD-CRC vs CD-C: 52 [23–76] vs 55 [22–76]; p = 1). UC duration was longer in pts with vs without CRC (20 [0–37] vs 10 [0–35]; p = 0.005). Conversely, CD duration was comparable between pts with vs without CRC (20 [1–47] vs 13 [0–35];< 10 yrs:24% vs 15 [30%];≥10 yrs:19 [76%] vs 75 [70%]; p = 0.58). IBD activity.

<table>
<thead>
<tr>
<th>Species</th>
<th>Kendall Tau</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Shannon Diversity</em></td>
<td>0.62</td>
<td>0.034</td>
</tr>
</tbody>
</table>

### Abstract

**P0981**

**Title:** CHANGES IN GUT MICROBIOTA COMPOSITION CORRELATE WITH SHORT TERM CHANGES IN FACIAL CALPROTECTIN AND CRP IN PATIENTS WITH CROHN'S DISEASE

**Authors:** D. Chan1, D. Kumar2, M. Mendall2

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**Introduction:** Faecal microbiota are believed to play an important role in the pathogenesis of Crohn's disease (CD). It is not known for certain whether gut microbiota composition (GMC) changes in response to inflammation or whether inflammation in the gut wall is a response to changes in GMC. Dynamic changes in bowel wall inflammation and short term changes in GMC have not previously been studied, but would give a clue as to the aetiological importance of GMC.

**Aims & Methods:** We aimed to assess the correlation between short changes in GMC and a faecal marker of gut inflammation faecal calprotectin (FC) and CRP, a marker of systemic inflammation.

We conducted a blinded sham controlled cross-over study of 32 subjects assigned to IgG4 guided exclusion diets. Each subject was randomised to one month of true or sham diet followed by a one month washout period followed by a further cross-over trial diet. stool and blood samples were obtained at time 0, 1 month (completion of first trial diet), 2 months (completion of washout) and 3 months (end of cross-over trial diet). Taxonomic profiling was performed using 16s RNA next generation sequencing. Copy counts were made for firmicutes and bacteroidetes as a phylum, Roseburia and Bifidobacterium as a genus and Faecalibacterium prausnitzii as a species. Shannon diversity was calculated.

**Results:** 26 people fully completed the study. For each participant this provided six timepoints for comparison: timepoint 1–2, 2–3, 3–4, 1–3, 1–4 and 2–4. The relative abundance of bacteria groups were calculated. Kendall Tau correlation coefficient was used to assess correlation between change in FC and CRP to change in relative abundance of various bacteria. We found significant negative correlation with change in FC and CRP with *Bifidobacterium* genus and change in FC with *Roseburia* genus. There were poor correlation and inconsistent changes in other species and firmicutes and bacteroidetes and Shannon diversity.

**Conclusion:** Bifidobacterium relative abundance correlate closely with short term changes in FC suggesting a possible causal association. Other genera and species had poor and inconsistent correlations with short term changes in FC suggesting that they may not be causally related to short term changes in gut inflammatory activity.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
pts with CRC were younger at diagnosis of IBD than their IBD-C (UC-CRC: a median of 54 yrs [15–76] vs 46 [20–73]; P = 0.04; CD-CRC: a median of 27 yrs [6–67] vs 37 [10–67]; < 0.01; UC-CRC vs CD-CRC: a median of 27 yrs [33%] vs 40 yrs [29%] vs 55 [67%]; P = 0.04). CD-CRC vs UC-CRC: the frequency of CRC was comparable between UC pts using or not IS and/or anti-TNFs (CRC-UC vs CRC-UC: IS monotherapy 6 [15%] vs 17 [21%]; Anti-TNFs monotherapy: no CRC; Combination: 5 [12%] vs 6 [7%]; no IS/no anti-TNFs: 11 [27%] vs 23 [28%]; p = 0.04). There were also observed no significant differences between CD pts treated or not with IS and/or anti-TNFs (CRC-CD vs CRC-UC: IS monotherapy: 4 [16%] vs 9 [18%]; Anti-TNFs monotherapy:2 [8%] vs 3 [6%]; Combination:10 [40%] vs 23 [46%]; no IS/no anti-TNFs: 16 [64%] vs 35 [70%]; p = 0.04). CD pts with CRC showed a higher frequency of pattern B1 (B1 vs B2 vs B3: 14 [56%] vs 3 [12%] vs 8 [28%]; p = 0.019). Risk factors for CRC considered in multivariate analysis included: age (<40 yrs vs 40 yrs), IBD duration (<10 yrs vs ≥10 yrs), smoking habits (Yes/No/Y), IS/no anti-TNFs (Y/N), IBD-related surgery, UC extent (rectal vs distal; subtotal vs distal), CD pattern (B3 vs B1, B2 vs B1), perianal CD. In UC, the only significant risk factor was UC duration (OR [95% CI]: OR 3.33 [1.44–9.11], as the other risk factors were not significant: OR 0.94 [0.36–2.98],1.28 [0.48–3.06]0.96 [0.36–3.06],1.78 [0.60–4.66].1.36 [0.66–2.89]0.38 [0.08–1.23], respectively).

Conclusion: In a prospective, multicenter, nested-case control IG-IBD study, incident cases of CRC were more frequent in UC than in CD. In our cohort, UC duration and perianal CD, but not immunomodulators use, were identified as significant risk factors for CRC.

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All other authors have declared no conflicts of interest.

References
P0985 CURRENT UNDERSTANDING OF POUCH MICROBIOTA IN HEALTH AND DISEASE: A SYSTEMATIC REVIEW

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Introduction: The human gut microbiome is made up predominately of four major bacterial phyla, Firmicutes, Bacteroidetes, Proteobacteria and Actinobacteria. Changes or imbalance of these phyla is termed dysbiosis. Systemically, in inflammatory bowel disease (IBD), key changes have been identified such as a reduction in beneficial bacterial species including Faecalibacterium prausnitzii and increases in more pathogenic species including members of the Enterobacteriaceae. Currently it is not understood if dysbiosis is the cause of, or the effect of, intestinal inflammation. It is difficult to chronologically assess the microbiota changes prior to developing IBD as currently we are unable to predict those individuals who will develop the disease. The pouch is a potential model to study pathogenesis of inflammation as 40% of those that develop pouchitis do so within 12 months. The relative short time from pouch formation to inflammation allows the longitudinal study of the microbiota which gives insight into potential microbial patterns occurring both in disease and non-diseased states. Interestingly, inflammation within the pouch is rarely seen in patients who have this operation for Familial Adenomatous Polyposis (FAP), thus raising the possibility that pouchitis shares a similar pathogenesis to the inflammation that is seen in ulcerative colitis.

Aims & Methods: 1. To understand changes in pouch microbota over time. 2. To understand pouch microbiota that is associated with pouch inflammation A computer assisted search of the on-line bibliographic databases MEDLINE and EMBASE was carried between 1966 and February 2016. Randomised controlled trials, cohort studies and observational studies were included. Inclusion criteria: Studies which reported microbiota analysis on either faecal samples or tissue from the ileo-pouch anal anastomosis. Studies that provided information on specific bacterial taxa. Exclusion criteria: Studies which did not report on patterns of individual bacterial taxon differences in the pouch. Studies on the microbiota of Colon’s disease or UC in isolation without any data on pouch patients. Studies with less than ten patients.

Results: The search strategy found 844. There were a total of 27 papers included in the analysis. Microbiota in pouchitis: Bacteroidetes, Enterococcaceae, Lachnospiraceae, Ruminococcaceae, Streptococci, Alcaligenaceae and Bifidobacterium were reduced in patients with pouchitis. Whereas Enterobacteriaceae, including E. coli Fusobacterium and Clostridia were increased in patients with pouchitis. One study highlighted bacteria that were exclusively found in pouchitis which included Lepotrixos, Pseudoodoromonas, Desulfosporosinus, Microctis, Methylobacter. Chronic pouchitis was associated with a significant increase in Staphylococcus aureus and it has been suggested that this may be a responsible pathogen for chronic pouchitis. Furthermore, Enterococcus, F. prausnitzii, Lachnospiraceae and Inserta Sedix MV and have been shown to be significantly reduced in chronic pouchitis patients. These differences were largely due to a decrease in sequences from members of the genera Ruminococcus, Dorea, Clostridium, and Eubacterium.

Conclusion: The microbiota undoubtedly plays an important role in both the inflamed and the healthy pouch. However, a direct causal relationship has not yet been established between individual microbiota changes and inflammation. There are many studies that highlight changes in bacterial composition, but studies are limited by heterogeneity of and in particular, analysis techniques and sampling strategies. Studies used a variety of methods to define microbial diversity which can be broadly split into culture vs culture-independent approaches. Culture-based studies are likely to have a bias towards culturing more aerobically friendly microbes than exist in a true pouch environment, thus over-representing aerobic bacteria whilst possibly under-representing anaerobic bacteria. The use of 16 S rRNA analysis methods will negate this effect and represents the future in accurately determining the microbiota.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0986 LIVE-VACCINES AND BREASTFEEDING IN NEWBORN EXPOSED IN UTERO TO ANTI TNF: A MULTICENTER FRENCH STUDY IN INFLAMMATORY BOWEL DISEASE

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1Institut Mutualiste Montsouris, Paris/France
2Hopital Montfermeil, Paris/Montfermeil/France
3Hopital Saint Antoine, Paris/ France
4Hopital Saint Louis, Paris/France
5CHU Nancy, Nancy/France

Abstract: P0985, Table 1: Evolution of pouch microbota over-time

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<th>Comparator</th>
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Aims & Methods: exposed in utero to anti TNF and 2) of breastfeeding under anti TNF. newborn in the first 6 months at least. Along this, European consensus recom-

IBD women during pregnancy, by at least the gastroenterologist in 89% of cases, exposure to antiTNF and vaccination recommendation was given to 111 (91%) was reported. MMR vaccination (Measles, Mumps and Rubella) was performed (30%) and was administered before 6 months in 15 children (14%). One local abscess was reported with favorable evolution. Rotavirus vaccination was per-

questionnaires, 96 responses were obtained. BCG was performed in 29 children because not recommended by the gastroenterologist. Concerning vaccination perform lactation, 42 (63%) did not for personal choice and and 25 (37%)
disease and 28 (23%) for ulcerative colitis or undetermined colitis. AntiTNF used under anti TNF, giving birth to alive newborn and agree to answer a question-

P0987 OUTCOME OF ENDOCYTICALLY ALLELY REJECTED DYSPLASIC LESIONS IN ULCERATIVE COLITIS


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Introduction: For a long time, dysplastic lesions in ulcerative colitis are only treated by surgery. Recent guidelines recommend the complete endoscopic resec-
tion of dysplastic lesions in ulcerative colitis. dysplasia was detected after a mean follow up of 30.16 months (range: 7.56- 62.5). Neoplasic lesions were found in 5 patients (11.1%). Only one case of local abscess, resection of the sigmoid detected in a women that have had a high-grade dysplasia resected in the sigmoid; in 3 patients new dysplasic lesions localized in other segments of the colon than those initially resected. In one patient a serrated rectal adenoma was found in the same place where was resected a serrated adenoma, reflecting an incomplete resection.

Conclusion: Our results confirm that a complete endoscopic resection may be sufficient in dysplastic lesions occurred in ulcerative colitis. Nevertheless a closer follow-up is necessary because these patients may develop neoplastic lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0988 CYTOMEGALOVIRUS INFECTION IS ASSOCIATED WITH A POOR OUTCOME IN PATIENTS WITH ULCERATIVE COLITIS TREATED BY VEDOLIZUMAB

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Introduction: Cytomegalovirus (CMV) infection has been associated to resistance to several immunomodulatory therapies in Ulcerative Colitis (UC) patients. The impact of CMV infection in UC patients treated with Vedolizumab is unknown.

Aims & Methods: We performed a retrospective case-control study of all patients with IBD treated by Vedolizumab from June 2014 to August 2016 by our gastroenterologist in our IBD center. All eligible patients had presented latent CMV infection with presence of IgG against CMV and undetectable CMV DNA load determined by real time PCR (qPCR) in colonic biopsies before treatment. During the follow-

load disease were considered as control group. After antiviral treatment, the CMV DNA load was found undetectable for all 6 patients. Treatment change was more frequent in the CMV disease group (HR = 3.15 [1.02-9.7], p = 0.03507) with only 16.7% patients who continued Vedolizumab treatment versus 65.4% in the control group (p = 0.062). Colectomy was also more frequent in the CMV group (33.3% versus 7.7% p = 0.064). By multivariate analysis, the only factor associated with the occurrence of CMV disease was a fecal calprotectin less than 260 mg/g stools at the beginning of the vedolizumab treatment. A previous CMV colonic infection also was more frequent but not statistically significant.

There was no association between CMV infection and Vedolizumab levels in the sera.

Conclusion: The occurrence of CMV disease, documented with high CMV DNA load on colonic biopsy samples, in UC treated with Vedolizumab is responsible for a negative impact on the natural evolution of UC, with more therapeutic failure and surgical treatment, even after an efficient antiviral treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0989 F-CALPROTECTIN USE IN INFLAMMATORY BOWEL DISEASE IS CHARACTERISED BY IMPROVED DIAGNOSTIC ACCURACY, LESS PATIENTS SUBJECT TO UNNECESSARY DIAGNOSTIC TESTING AND REDUCED COSTS, COMPARED WITH CONVENTIONAL SEROLOGICAL MARKERS AND COLONOSCOPY. THE SPANISH SCENARIO

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Introduction: Gastrointestinal disorders may exhibit overlapping symptoms making diagnosis difficult in the primary and specialty care settings. Inflammatory bowel disease (IBD), with a prevalence of <0.5% in the general population[1], is characterized by chronic inflammation of the gastrointestinal tract, non-specific elevation of conventional inflammatory markers such as ESR and CRP and may present with extra-intestinal manifestations. Irritable bowel syndrome (IBS), in contrast, is a functional disorder without gastrointestinal inflammation and with an estimated prevalence of 10-20% [2]. Endoscopy is the gold standard for detecting and quantifying IBD vs. IBS, but due to the low prevalence of IBD, is negative in the majority of cases. Furthermore, it is invasive, expensive, and uncomfortable for the patient and not without risks. Moreover, inadequate bowel preparation prior to colonoscopy is known to
increase the burden of disease from both the clinical and the economic perspec-
tive; shorter intervals between repeated procedures, higher missed rates, patient 
inconvenience, and increased risk of complications are reported in the scientific 
literature. F-Calprotectin (FC) is a fecal marker of intestinal inflammation; IBD 
patients exhibit FC levels significantly higher than the general population; IBS 
patients, have FC levels that are lower than healthy controls, but significantly lower than 
IBD patients [3]. Therefore, FC can be used as a pre-endoscopic test to differ-
entiate between IBD and IBS. The present study aims at evaluating the cost-
effectiveness of FC compared to the combined usage of CRP and ESR, and the 
gold standard to distinguish IBD from IBS in Spain.

Aims & Methods: An 18-week Markov model was developed for each diagnostic 
strategy, simulating 1000 patients present to a primary care physician with 
non-specific gastrointestinal symptoms. In the model, 1.6% of the colonoscopies 
brought about complications [4], which may result in Emergency Room visits 
and surgery. Inadequate colon preparation (23%)[5] and consequent repeated 
colonoscopies (30.3%)[6] were also included in the calculations. Outcomes 
include cost savings, cost per correct IBD diagnosed, and colonoscopy reduc-
tion. Uncertainty was addressed with sensitivity analysis.

Results: FC is cost-effective when compared to CRP + ESR, and to colonoscopy 
(Table 1): It results in more correctly IBD diagnoses at a lower price. It reduces 
the number of unnecessary endoscopies, increasing the number of correctly diag-
nosed IBD (N = 63) and IBS (N = 26) patients.

Clinical and health economics results

<table>
<thead>
<tr>
<th></th>
<th>F-Calprotectin</th>
<th>CRP + ESR</th>
<th>Colonoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>N correctly diagnosed IBS</td>
<td>683</td>
<td>657</td>
<td>900</td>
</tr>
<tr>
<td>N correctly diagnosed IBD</td>
<td>98</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Total costs (EUR)</td>
<td>290 527</td>
<td>477 787</td>
<td>582 106</td>
</tr>
<tr>
<td>Average cost/patient (EUR)</td>
<td>290.5</td>
<td>477.8</td>
<td>582.1</td>
</tr>
<tr>
<td>Colonoscopy comp - costs (EUR)</td>
<td>1 978</td>
<td>269</td>
<td>6 313</td>
</tr>
<tr>
<td>N colonoscopies avoided</td>
<td>706.3</td>
<td>640.6</td>
<td>0</td>
</tr>
<tr>
<td>Savings acribable to the avoided colonoscopies</td>
<td>336 338</td>
<td>305 051</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion: Results show that the usage of FC as pre-endoscopic diagnostic tool 
is associated with fewer colonoscopies and correctly identifies more disease while 
decreasing the costs compared to the alternatives. Consequently, FC demonstrates 
superior value both from patient and payer perspective, while simultaneously 
increasing diagnostic efficacy.

Disclosure of Interest: B. Mascalamo: Employee of thermo Fisher Scientific 
A.A. Vora: Employee of thermo Fisher Scientific

References

P0990 RISK OF SERIOUS INFECTION IN HEALTHCARE WORKER WITH INFLAMMATORY BOWEL DISEASE: A CASE-CONTROL STUDY OF THE GETAD

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Introduction: The increased use of immunomodulators and biological agents for 
the treatment of patients with inflammatory bowel disease (IBD) is associated 
with a key safety concern considering potential serious infection. Healthcare 
workers are at an increased risk for acquiring such infections due to close daily 
and close interactions with infected patients and asymptomatic carriers of 
pathogens.

Aims & Methods: We performed a retrospective observational study, collecting 
data from the Group of Etudes Thérapeutiques des Affections Inflammatoires du 
tube Digestif (GETAD) from January 2015 to June 2016, on all 482 consecutive 
patients with IBD (68.5% with rohn’s disease, 28.4% with ulcerative colitis and 
3.1% with IBD undetermined) who worked as healthcare workers (27.2% of phy-
sicians, 33.0% of nurses; 13.1% of nurses’ aides and 26.7% of other healthcare 
worker personnel working in interaction with in-hospital patients), in 17 tertiary 
centers in France and Belgium. We selected a control group of patients with IBD who 
were not working as healthcare personnel from the monocentric MICISTA database. 
Controls were matched on age (±2.5 years), sex, IBD type and date of IBD 
diagnosis (±2.5 years). Serious infection was defined as (1) Clostridium difficile 
faction (2) community-acquired pneumonia (3) Mycobacterium tuberculosis infection 
(4) any community-acquired infection that required hospitalization. Serious 
infection-free survival was studied with Kaplan-Meier method, log-
rank test and Cox regression model. In each patient, the duration of IBD was 
divided into semesters which were independently analyzed regarding the occur-
rence of serious infection too take into account the influence of various 
treatments.

Results: 482 patients (126 male; median age: 24.0 [IQR 19.9–32.1] years) were 
included in the present study. The median follow-up period was 9.3 [4.6–16.2] 
years. A total of 74 serious infection was recorded in healthcare workers includ-
ing 14 Clostridium difficile infection, 19 EBV or CMV-related serious viral infec-
tion, 8 tuberculosis infection including 4 tuberculosis and 4 tuberculous primo-
infection, 8 community-acquired pneumonia and 25 miscellaneous serious infec-
tion. The probabilities of serious infection-free survival were 1.0% at 0.6%, 1.1% 
and 14.1% at 1, 5, 10 and 15 years. No difference was found between healthcare 
workers and control patients regarding the occurrence of serious infection in 
time-dependent analysis and in independent semester analysis. However, a 
increased risk of tuberculosis infection was found in healthcare workers (0.07 
infections for 100 patient-years vs. 0.009, p = 0.02). In multivariate analysis, 
serious infection was decreased in patients with Crohn’s disease (OR = 0.63, 
IC95%[0.43–0.91], p = 0.01) and increased in patients treated with corticoster-
oids (OR = 3.05, IC95%[2.06–4.52], p < 0.001), immunosuppressant (OR = 1.98, 
IC95%[1.38–2.84], p < 0.001) and anti-TNF agents (OR = 2.93, IC95%[2.02– 
4.27], p < 0.001).

Conclusion: Although there is an increased risk potential pathogens in 
healthcare workers, this is not associated with a higher risk of serious infection 
as compared with controls with the exception of tuberculosis infection. 
Prospective studies are needed to confirm that the level of occupational exposure 
to potential pathogens should not be taken into account when discussing the 
interaction of immunomodulator or biological agents with the exception of the 
risk of tuberculosis infection.

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J. Gornet: Jean-Marc Gornet has received fees from Sanofi, Merck Serono, 
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and Abbvie
D. Laharie: David Laharie has received consulting and lecture fees from AbbVie, 
Ferring, Janssen Cilag, MSD, Pfizer, and Takeda.
C. Reenaers: Reenaers C. consulting fees from Abbvie, MSD, Janssen; lectures 
frees from Abbvie, MSD, Roche, Takeda, Falk; EL; consulting and lecture fees from 
Abbvie and MSD
A. Buisson: Anthony Buisson has received lecture fees from Abbvie, MSD, Ferrings, 
Takeda, Hospira and Vifor Pharma. This author has also received a 
counseling fee from Abbvie.
M. Nachury: Nachury M declares lecture fees from Abbvie, MSD, Takeda and 
Hospira.
S. Viennot: Stephanie Viennot has received consulting fees from Abbvie, MSD, 
Takeda, Vifor Pharma and Ferrings.
L. Vuitton: Lucas Vuitton has received lecture fees from Abbvie, MSD, Takeda, 
Norgine, and Ferrings. This author has also received consulting fees from Abbvie 
and MSD.
C. Stefanescu: Stefanescu M: consulting fee from MSD and sponsored travel 
from Abbvie, Msd, Takeda, Mayolii.
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G. Bouguen: Guillaume Bouguen has received consulting fees from MSD and Abbvie. This author has also received lecture fees from MSD, Abbvie, Takeda, and Ferring.

J. Cosnes: Jacques Cosnes has served as a speaker for Abbvie and Falk Foundation and is an advisory board member for VIFOR PHARMA.

A. Amiot: Abbvie, Hospira, Takeda, Gilead, Bicozodex, MSD, Janssen, Ferring and Takeda.

All other authors have declared no conflicts of interest.

Conclusion: In our cohort the frequency of HS varied between 13.4% and 41.7% defined by non-invasive methods. We found that the presence of metabolic syndrome and obesity were more frequent in patients with HS. Regarding factors related to IBD, patients with previous history of surgery were more frequently diagnosed with HS.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0991 CORRELATION BETWEEN INFLAMMATORY BIOMARKERS AND ENDOSCOPIC SCORES IN ULCERATIVE COLITIS: WHEN SEVERITY MAKES THE DIFFERENCE?

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Introduction: Several endoscopic scores have been used to assess the severity of inflammatory activity in Ulcerative Colitis (UC), however, few consider the extension of the disease. Scores such as the Dublin Score (DS) and the Modified Mayo Endoscopic Score (MMES) combine the severity of inflammation with the extent of the disease.

Aims & Methods: We aimed to calculate the correlation between the endoscopic scores -Mayo Endoscopic Score (MES), DUBLIN, MMES and the biomarkers of inflammation - erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) over time and to compare the ability of these scores to predict Calprotectin >100 μg/L. This was a retrospective study, including patients with diagnosis of left or extensive UC who underwent colonoscopy between 2015 and 2016. The biomarkers were obtained with a maximum interval of one week in relation to colonoscopy and without introduction of new therapy. The Spearman test calculated the correlation between scores and biomarkers. ROC curves (AUC) were obtained for each score to predict Calprotectin >100 μg/L.

Results: 60 patients were included, 46.7% female patients with mean age 45.3 ± 12.8 years with median values of ESR 4.4 ± 12.8 mm, CRP 5.12 ± 6.00 mg/l and Calprotectin 354 ± 430 μg/g. The correlation between Calprotectin and MES was rs = 0.623 p < 0.001, for DS rs = 0.548 p < 0.001 and for MMES rs = 0.588 p < 0.001. Regarding CRP, a correlation with the MES was rs = 0.415 p = 0.001, and with the MMES rs = 0.404 p < 0.001 but no correlation was found with the DS. There was no significant correlation between ESR and endoscopic scores. To predict values of Calprotectin >100 μg/L the AUC for the MES was 0.848, for the DS 0.801 and for the MMES 0.815, and there was no statistically significant difference between the curves.

Conclusion: Although there is a good correlation between endoscopic scores and Calprotectin, the correlation between scores that take into account the extension were not superior to Mayo Endoscopic Score.

P0992 IBD - IS IT A RISK FACTOR FOR THE DIAGNOSIS OF HEPATIC STEATOSIS?

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Introduction: Although is not yet established, recent studies suggest an increase prevalence of hepatic steatosis (HS) in patients with inflammatory bowel disease (IBD). Factors such as chronic inflammation, previous surgeries, drug-induced hepatotoxicity, malnutrition and intestinal dysbiosis seem to be involved in the pathogenesis of this disease.

Aims & Methods: We aimed to assess the frequency of HS in IBD patients quantified by CAP (controlled attenuation parameter) and by clinical-analytical methods: Hepatic Steatosis Index (HSI) and Fatty Liver Index (FLI). A secondary aim is to investigate risk factors associated with HS in IBD patients. This was a cross-sectional study that included consecutive patients that were observed in our department between January and March 2017. Patients with known liver disease or alcohol habits were excluded. HS was defined as HSI > 5.18, and FLI (31.5 ± 24.3) among patients passed Metabolic Criteria. We found that patients with CAP ≥ 248 were more frequently obese (27.4% vs 0% p < 0.001), males (54.8% vs 36% p = 0.029) and presented more frequently metabolic syndrome (25% vs 4.6% p < 0.001). Regarding the IBD factors, patients with HS had a higher frequency of previous surgeries (30.0% vs16.1% p = 0.035). There were no differences between hospitalization, duration of the disease, use of corticosteroids or other IBD treatments.

Results: 149 patients included with mean age 40.7 ± 13 years, 83 female (55.7%), 59.7% with Crohn’s disease (CD). 62 patients (41.7%) had CAP ≥ 248.20 (13.4%) FLI > 60 and 40 (26.8%) HSI > 36. There were no differences in the mean CAP value (244.4 ± 54.2), HSI (33.3 ± 18.5), and FLI (31.5 ± 23.5) among patients with and without Hepatic Steatosis. We aimed to compare the AUC of the scores to predict HS. There was no statistically significant difference between the scores.

Conclusion: Rates of vitamin D deficiency, and osteoporosis were similar among patients on anti-TNF medications to those on no biologics. TNF group patients were diagnosed with osteoporosis at an earlier age compared to NB group. Patients on anti-TNFs also had statistically lower Z-scores at the spine. Prospective studies are necessary to further determine the role of anti-TNF medications in osteoporosis.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Infliximab (IFX) trough levels (ITLs) have emerged as a promising tool for the management of inflammatory bowel disease (IBD) patients and they correlate with clinical response and endoscopic remission. However, its use in clinical practice is still under debate, particularly in clinically stable patients.

Aims & Methods: 1) to describe real-life ITLs in clinically stable IBD patients; 2) to characterize factors associated with infratherapeutic ITLs; and 3) to evaluate the impact of ITLs availability by comparing the CCD with TLGD. The decisions between experts were also compared. Both comparisons were calculated by the concordance coefficient (C.C.D) was taken regarding clinical data and CRP. ITLs were measured just before the IFX infusion and were considered as infratherapeutic if <2 μg/ml. Once ITLs were known, 3 experts took a hypothetical decision on treatment based on the same clinical and biological data plus ITLs (ITL-guided decision –TLGD).

Results: A total of 224 IFX infusions from 74 patients (76% Crohn’s disease) were analyzed. Median (IQR) disease and IFX therapy duration was 10 years (5-18) and 23 months (7-61), respectively; 87% received concomitant immunosuppressant therapy; 70% were on standard dosing, whereas 10% were scheduled every 4-6 weeks and 5% every 12 weeks. 60% of patients with clinical and biological remission. Median (IQR) ITL values were 3.1 mg/ml (1.5-6.1). Median (IQR) ITLs were 1.79 μg/ml (0.5-3.74), with 52% of patients having infratherapeutic ITLs. In the multivariate analysis, the only risk factor for infratherapeutic ITLs was the presence of biological activity. Concordance between CCD and TLGD was poor (κ = 0.10 [95%CI:0.01-0.20] vs. κ = 0.11 [95%CI:0.01-0.21]) for experts A/B/C, respectively. This “disagreement” is due to a higher proportion of dose-escalations according to the TLGD as compared to the CCD. Among the 203 infusions in which no action was taken according to the CCD, 93 (40%), 48 (20%) and 65 (30%) would have been dose-escalated according to the TLGD for experts A, B and C, respectively.

Conclusion: Our results highlight the impact of the inflammatory burden on ITLs and their therapeutic range in patients clinically stable. Both the clinical and economical impact of ITL-assisted decision-making in IBD patients should be evaluated in prospective cohorts.

Disclosure of Interest: E. Domenich: Fees for advisory, lectures and research grants from MSD, Takada, AbbVie, Pfizer. All other authors have declared no conflicts of interest.

P0996 WHAT SITUATIONS PRODUCE PSYCHOLOGICAL MALAISE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE? PERCEPTIONS FROM PHYSICIANS AND PATIENTS. THE ENMENTE PROJECT


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Introduction: Inflammatory Bowel Disease (IBD) patients live situations that may trigger negative feelings and psychological malaise. ENMENTE Project globally aims to improve identification and early management of psychological impact in IBD patients followed in Spanish hospital gastroenterology clinics. The aim of the study was to describe possible differences among perceptions from physicians and patients about the clinical situations triggering anxiety in IBD patients. Aims & Methods: During April 2016 two surveys were available on-line, one for IBD patients, in the ACCU Spain website (Confederation of IBD Spanish Patients’ Associations) and another one for physicians members of GITECCU (Spanish Group for IBD treatment). Both invited their members to participate by email and the patients’ survey was announced in social networks. The scientific committee (3 gastroenterologists, 2 psychologists, 1 nurse and 1 patient) decided which potentially stressful clinical situations were considered. Physicians and patients rated these situations on a scale from 1 to 10 as potential triggers of anxiety for the patient. A Mann-Whitney test was used to compare perceptions from patients and physicians taking 151 valid questionnaires from physicians and a randomized sample of 151 IBD patients’ questionnaires.

Results: The survey was completed by 912 patients (mean age 39 ±10 years, 67% women) and 170 patients (mean age 44 ±10 years, 58% women). Having an ostomy, fecal incontinence in public or surgery are important triggers according to both physicians and patients (table). Patients, however, experience anxiety from a possible new flare or from being fatigued, whereas physicians are more concerned about anxiety due to telling about a new IBD diagnosis and about pregnancy in IBD patients (table).

Mean scores from physicians and patients about clinical situations triggering anxiety or depression

<table>
<thead>
<tr>
<th>Situation</th>
<th>Physicians (n = 151)</th>
<th>Patients (n = 155)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The lack of diagnosis</td>
<td>6.3</td>
<td>6.0</td>
<td>ns</td>
</tr>
<tr>
<td>The diagnosis of IBD</td>
<td>6.2</td>
<td>5.6</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>The performance of an endoscopy</td>
<td>5.6</td>
<td>5.7</td>
<td>ns</td>
</tr>
<tr>
<td>The explanation of an ostomy</td>
<td>6.6</td>
<td>5.9</td>
<td>ns</td>
</tr>
<tr>
<td>A new oral treatment</td>
<td>4.8</td>
<td>4.8</td>
<td>ns</td>
</tr>
<tr>
<td>A new auto-injectable treatment</td>
<td>5.6</td>
<td>5.3</td>
<td>ns</td>
</tr>
<tr>
<td>A new intra-venous treatment</td>
<td>5.9</td>
<td>5.3</td>
<td>ns</td>
</tr>
<tr>
<td>A surgery</td>
<td>6.7</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>Having an ostomy</td>
<td>6.9</td>
<td>6.9</td>
<td>p &gt; 0.05</td>
</tr>
<tr>
<td>A pregnancy</td>
<td>5.9</td>
<td>4.0</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>The pain</td>
<td>6.3</td>
<td>6.1</td>
<td>ns</td>
</tr>
<tr>
<td>An episode of public incontinence</td>
<td>6.8</td>
<td>6.6</td>
<td>ns</td>
</tr>
<tr>
<td>A new flare</td>
<td>6.2</td>
<td>6.5</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Changes in the body image</td>
<td>6.3</td>
<td>5.9</td>
<td>ns</td>
</tr>
<tr>
<td>Tiredness, fatigue, reduction in performance</td>
<td>6.0</td>
<td>6.3</td>
<td>p &lt; 0.05</td>
</tr>
</tbody>
</table>

Conclusion: The main anxiety triggers in patients were having an ostomy, fecal incontinence in public, a surgery, a new flare and the feeling of fatigue. These last
two situations were scored higher by patients than by physicians. Teaching the patient to manage a new condition and treatment of fatigue are aspects that would help to reduce the anxiety feeling and should be taken into account in clinical practice Acknowledgements. Funded by Merck Sharp & Dohme of Spain and endorsed by ACCU España and by GETECCU Disclosure of Interest: All authors have declared no conflicts of interest.

P0997 EVALUATION OF LISA-TRACKER IMMUNOASSAY INFLIXIMAB AND ANTI-INFLIXIMAB FOR THE THERAPEUTIC DRUG MONITORING OF SB2 A. Berger1, A. Haccourt1, J. Salameh2, X. Roblin3, S. Paul4, 1Laboratoire D’Immunologie Cic1408, CHU Saint-Etienne, Saint-Etienne/France 2Biogen France, Nanterre/France 3University of St. Etienne Dept. de Gastroenterologie, Saint-Etienne/France 4Immunology, Hôpital Nord, Saint-Etienne/France Contact E-mail Address: stephane.paul@chu-st-etienne.fr

Introduction: Flixabts, an infliximab biosimilar referencing Remicade®, was developed by Samsung Bioepis, the joint venture between Samsung BioLogics and Biogen. SB2 received approval in EU for all approved indications of the reference infliximab. Many decision algorithms based on the measure of Infliximab (IFX) trough levels and antibodies to infliximab (ATI) have been increasingly used to optimize infliximab in Crohn’s disease and ulcerative colitis. The aim of our study was to appreciate if the biosimilar SB2 could be efficiently monitored using the Lisa-Tracker infliximab and anti-infliximab immunoassays developed by Therdag (France).

Aims & Methods: During this evaluation, standard curves of Infliximab and two different batches of SB2 were compared and then accuracy of the Lisa-Tracker IFX kit in detecting the spiked concentration of SB2 was measured using the Lisa-Tracker assay. Levels of infliximab (from 5 spiked samples with known amount of SB2 and 10 clinical samples from patients treated with infliximab) were calculated according to each of the 3 standard curves (infliximab, SB2 batch1 and SB2 batch2). All samples and standards were tested in duplicate. Recovery rate be ≥ 95% and the slope must be comprised between 0.9 and 1.1. Intra-run and inter-run precision were also measured with spiked samples of different known SB2 (from 2 to 12 μg/mL) amounts. Capacity of polyclonal antibodies directed against infliximab to block the detection of SB2 using the Lisa-Tracker infliximab assay and the capacity of SB2 to block the detection of anti-infliximab antibodies using the Lisa-Tracker anti-infliximab assay were tested.

Results: We demonstrated the perfect equivalence of infliximab standard curve to the SB2 standard curve and that the Lisa-Tracker assay is suitable for the quantification of SB2 in human serum samples (R² = 0.99; the levels of infliximab of the 20 samples were calculated according to the 3 standard curves infliximab, SB2 batch 1 and SB2 batch 2 with CV ranged from 2.1 to 12.6%). Quantification of SB2 was not disturbed by serum matrix and 95% of recovery were comprised between 82% and 113%. High intra-run and inter-run precision were obtained with the Lisa-Tracker infliximab assay for the quantification of SB2 (CV ranging from 3.3 to 17.9%). Finally, the capacity of polyclonal antibodies to infliximab to block the detection of SB2 and the capacity of SB2 to block the detection of anti-infliximab antibodies using the Lisa-Tracker anti-infliximab assay were tested.

Conclusion: In conclusion, Lisa-Tracker Infliximab and anti-infliximab assays are suitable for the monitoring of patients treated with SB2. Acknowledgements: Biogen provided the SB2 drug for this study. Biogen reviewed the manuscript and provided feedback to the authors.

Disclosure of Interest: All authors have declared no conflicts of interest.

P0998 THE MEASURE OF TROUGH LEVELS OF INFLIXIMAB IS LINKED TO THERAPEUTIC RESPONSE IN IBD PATIENTS X. Robin1, A. Berger2, G. Boscotchi1, B. Faurie1, S. Nuncy3, S. Paul4, 1Gastroenterologie and Hepatology, VU University Medical Center, Amsterdam/Netherlands 2Department Of Pediatric Gastroenterology, VU University Medical Center, Amsterdam/Netherlands Contact E-mail Address: xavier.robin@chu-saint-etienne.fr

Introduction: If the association between trough levels of infliximab (TLI) and clinical remission or mucosal healing is demonstrated, we don’t really know the cause and effect between TLI and target value to obtain this association. So, the aim of our study was to evaluate the causality or the association between TLI and clinical remission.

Aims & Methods: We prospectively included all IBD patients treated in our IBD unit and in clinical remission (CDAI < 150 for Crohn’s Disease (CD) or partial Mayo score < 3 for ulcerative colitis (UC) with biomarker normalization (fecal calprotectin < 200 μg/g stools) or in deep remission (clinical remission with fecal calprotectin <50 μg/g stools). We analyzed median of TLI and fecal calprotectin at the inclusion (M0) and 6 months before eligibility (M-6). We excluded patients with deep remission at M-6.

Results: 111 patients were included (60 CD, sex ratio M/F: 0.8, 51 patients in deep remission at M0). All 111 patients were in clinical remission at M-6. Median fecal calprotectin at M-6 were similar in the two groups of patients (210μg/g in the group of patients who achieved deep remission at M0 vs 220μg/g in the group of patients who achieved only biomarker remission respectively; p=0.01). A ROC curve analysis was not able to isolate a cut-off value associated to deep remission achievement. (AUROC = 0.61). Next, we analyzed separately median of TLI and fecal calprotectin 6 months before eligibility (M-6) of patients in deep remission at M0 (51 patients). The median TLI was significantly lower at M-6 than at M0 (41 μg/mL vs 5.9 μg/mL respectively; p=0.03). Conversely, median fecal calprotectin was significantly higher at M-6 in comparison with M0 (190 vs 35 μg/mL); p=0.01). A negative and weak significant correlation between fecal calprotectin and TLI was observed (Spearman’s rank correlation coefficient (q) = -0.25; p = 0.045).

Conclusion: Although TLI may increase with decreased drug clearance due to deep remission, we show for the first time that the residual rate is the causal element for achieving clinical remission.

Disclosure of Interest: All authors have declared no conflicts of interest.

REFERENCES
P1000 CLOSTRIDIUM DIFFICILE INFECTION AND IBD PATIENTS IN ONE CLINICAL CENTER
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Introduction: The prevalence of Clostridium difficile infection (CDI) in patients suffering from inflammatory bowel disease (IBD) has increased rapidly over the past several decades. However, the exact global epidemiology remains unclear because of insufficient data from developing countries.

Aims & Methods: The goal of our study is to examine the incidence of CDI in patients of our prospective, observational study evaluating IBD patients in a referral center was performed to evaluate the incidence of Clostridium difficile. Diagnosis was confirmed with stool toxin analysis. Demographic information, diagnosis, anatomic location, IBD therapy, antibiotic exposure, hospitalizations and outcomes were recorded. For a period of 3 years 202 IBD patients were studied, 105 of which have UC and 97 - Chron’s disease (CD). We used the Clostridium difficile Glutamat Dehydrogenase + Toxin A + B based on the principle of quantitative immunochromatographic assay for the determination of Clostridium difficile Glutamat Dehydrogenase, Toxin A and Toxin B in stool samples.

Results: The results show that all patients with a positive CDI test have a clinical picture, which resembles a relapse of the disease (p < 0.05). There's a tendency towards growth in the incidence of IBD patients who are CDI positive. Their number in 2016 is significantly higher than that in 2014. In 2014 it was ~5.90% with CD and 12.30% with UC, whereas in 2016 - 12.20% with CD and 27.80% with UC (p < 0.05). The results show that the incidence of CDI patients with UC is significantly higher than in patients with CD, respectively 18.1% to 9.30% (p < 0.05). There is a strong correlation between CDI incidence in patients with IBD and the severity of their disease. Patients positive for CDI have a much more severe course of the disease, UC (46.40%) and CD (24.20%) (p < 0.05).

Conclusion: There is an increase in incidence of CDI, and patients with UC are more affected by it. The results of our study are confirmed by other authors as well. A significant part of patients with CDI have a severe disease that needs extra prospective researches to determine the incidence and influence of the infection amongst patients with IBD, who receive different therapy regimes and also to understand how the CDI affects the evolution of the disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1001 DEVELOPMENT OF A NEW SCORE PREDICTIVE OF SUSTAINED CLINICAL REMISSION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE UNDER INFLIXIMAB- AZATHIOPRINE COMBINATION THERAPY
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Introduction: There is no blood test predictive of sustained clinical remission in patients with Crohn’s Disease (CD) or Ulcerative colitis (UC) under Infliximab (IFX) - azathioprine (AZA) combination therapy.

Aims & Methods: All patients with CD or UC, consecutively treated by the combination of IFX-AZA between August 2015 and March 2017, were included in this monocentric study. Clinical, biological (blood cells count, liver function enzymes, C-reactive protein (PCR)) were retrospectively collected at baseline, at week 14 (W14) and at 6 months (W24) from the start of combination therapy.

Trough level of IFX (TLI) at W14 was also recorded. Sustained clinical remission was defined as clinical remission for 6 months with no need of AZA dose modification, nor therapeutic switch or need for surgery. A pre-
dictive score before combination therapy was developed basing on receiver operating characteristic (ROC) curves and logistic regression analyses.

Results: Of 71 patients enrolled (median age: 36.3 yrs; women: 52.5%; CD: 61.3%; current tobacco: 28.7%), 58 (81.7%) experienced sustained clinical remis-
sion. The clinical biological score was calculated at baseline by adding attributed points for these variables as follows: alkaline phosphatase <55U/L (11 pts), albumin <3.5 (1 pt), mean corpuscular volume <87 fl (4 pts), white blood cell count <9.3 x 109/L (4.5 pts), neutrophils <5.0 x 109/L (4 pts), body mass index >22 kg/m2 (3 pts), platelets count <330 x 109/L (3 pts), PCR >3.7 mg/L (3 pts) and C-reactive protein >10 mg/L (2 pts). A total score >17 was predictive of sustained clinical remission with good performance (Area under the curve (AUC: 90.1% [95%CI: 81.8%–98.5%]; sensitivity (Se): 81.3%, speci-
ficity (Sp): 90.9%; Positive predictive value (PPV): 97.7%; Negative predictive value (NPV): 58.9%), especially in UC patients (AUC: 98.2% [95%CI: 93.9%–100%]; Se: 90.5%, Sp and PPV: 100%: NPV: 66.7%). Corresponding outcomes for CD were also satisfying (AUC: 83.9% [95%CI: 70%–97.8%]; Se: 79%, Sp: 85.7%, PPV: 36%; NPV: 42.9%). In contrast, performance of TLI at W14 (>2.87 ug/mL) for the prediction of sustained clinical remission were mod-
erately interesting (AUC: 60.9% [95%CI: 58.7%–83.1%]; Se: 79.3%; Sp: 61.3%; PPV: 90.2%; NPV: 40%). These results were not significantly different between patients who had received an AZA monotherapy before combination ther-
rapy compared to those who did not.

Conclusion: This new score is a promising tool for the prediction at baseline of sustained clinical remission in inflammatory bowel disease patients who start combination therapy. It may help to identify easily patient benefiting from optimal optimi-
ization of IFX rather than early switch treatment in this setting. However, a prospective validation is needed before recommending its use in clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Study criteria

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
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<tr>
<td>Age ≤ 45 years</td>
<td>Known Iron deficiency anaemia</td>
</tr>
<tr>
<td>Presenting complaint: diarrhoea, constipation and abdominal pain/bloating</td>
<td>Overt or obscure GI bleeding</td>
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</tbody>
</table>

Known Inflammatory Bowel Disease

Results: 2155 medical GI outpatient colonoscopies performed over 12 months were identified. 242 met inclusion criteria for the study. Median age of the patient cohort was 34 years (range 16-45), with 141 (58%) females. The cohort was stratified according to indications; Group A; 132 (55%) patients with diarrhoea predominant symptoms, and Group B; 110 (45%) patients with constipation/ abdominal pain and bloating. Coloscopy was normal in 104 (79%) of Group A and 102 (93%) of Group B (p = 0.002), 36 (15%) Colonoscopies were abnormal; 7 patients had active ileitis, 22 had colonic inflammation (12 IBD, 2 lymphocytic colitis, 8 non-specific inflammation), and 7 had ileocolonic inflammation (all diagnosed with IBD). 28 of (36%) patients with mucosal inflammation confirmed on histology had diarrhea (p = 0.0001). FC was available in 36 patients, and CRP in 171 patients. In Group A the negative predictive value, positive predictive value and specificity of CRP/FC were 88%, 43% and
As surgical resection is not curative in Crohn’s disease (CD), post-operative recurrence (POR) remains a crucial issue. The POCER trial (1) has demonstrated that postoperative enterography including diffusion-weighted sequences with apparent diffusion coefficient (ADC) parameter was significantly different: ADC (2.05 vs 2.20; \(p = 0.11\)). Faecal calprotectin values were significantly higher in patients with endoscopic POR, while none of the following MRI parameters was significantly different: ADC (\(p = 0.25\)) and MRI score (\(p = 0.17\)) were not significantly higher in patients with endoscopic POR (\(p = 0.262\)). In the first tertile, the quantitative score was significantly better in the PEG group (7.4 vs 10.4; \(p = 0.038\)) and related contrast enhancement (RCE) (75% vs 132%, \(p = 0.01\)) were higher in patients with endoscopic POR (\(p = 0.262\)). In contrast, MaRIA (5.0 vs 7.3; \(p = 0.15\)) and MRI scores (\(p = 0.17\)) were not significantly higher in patients with endoscopic POR (\(p = 0.262\)). In the PEG group, the mean duration of small bowel transit time was comparable between the three groups (198 min (PEG), 245 min (LD), 226 min (Water) (\(p = 0.102\)). The endoscopic activity of the disease was comparable between the three groups (\(p = 0.358\)). The cecal intubation rate was significantly lower in the PEG group 66% versus 91% (LD) and 94% (Water) (\(p = 0.04\)). No capsule impaction was observed. The mean quantitative cleanliness score for the whole small bowel was not significantly better for the PEG group (5.7) compared to the other modalities LD (6.3) and Water (6.5) (\(p = 0.262\)). In the first tertile, the quantitative score was significantly better in the PEG group (7.9) compared to the PEG group (6.8) (\(p = 0.043\)). The preparation by water was considered qualitatively better compared to the other two modalities (\(p = 0.04\)).

References
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Conclusion: This is the first study evaluating the relevance of PEG preparation in a large population of adult patients with CD. Our study has demonstrated that there is no benefit in using PEG for the preparation of the small bowel before the capsule in patients with CD. Quantitatively, the two simplified preparation methods were more efficient than the preparation with PEG and qualitatively, the preparation using Link was characterized by better light imaging (WLI) and LCI. The Commission international de l'éclairage (CIE) LAB color differences (ΔC) were calculated among WLI and LCI in each ROI. After ROI was observed by colonoscopy, the biopsy specimen was taken in each ROI. Inflammatory cell infiltration, erosion, crypt abscesses, and goblet cell depletion were assessed, indicating that the higher ΔC mean easier color difference for recognition.

Results: The mean age of patients who were enrolled in the present study was 41.6 ± 17.7 years. The sex ratio (men/women) was 4:6. The type of extent of UC (ulcerative colitis/proctitis/left-sided) and the presence of ileal resection (yes/no) was recorded. The correlation between CIELAB color differences and histology. The mean ΔC of ROI without inflammatory cell infiltration was significantly higher than that of ROI with inflammatory cell infiltration (15.9 ± 4.9 vs. 12.3 ± 6.7, p = 0.046). The mean ΔC was not affected by histological findings of erosions, crypt abscesses, goblet cell depletion, crypt atrophy, crypt distortion, and basal plasmacytosis. LCI distinguished colon mucosal white color compared to WLI with use of three-dimensional color space, indicating the remission-colon mucosa of UC with no inflammatory cell infiltration in ROI was easily detected by LCI. The correlation between CIELAB color differences and Mayo endoscopic subscore. Low Mayo endoscopic subscore tended to be inversely proportional to high ΔC (ΔC: 23.7 ± 5.9 vs. 11.8 ± 5.1, 13.0 ± 9.0, but not significant in the present evaluation. The colon mucosa with the low Mayo endoscopic subscores were relatively easily detected by LCI compared to WLI.

Conclusion: The present pilot trial indicated that the inactive UC mucosa could be noninvasively be detected as the white area by the LCI mode compared to WLI, suggesting that LCI might be a novel approach for evaluating the disease activity.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
P1008 FAECAL AMINO ACID PROFILES AS NOVEL NON-INVASIVE BIOMARKERS FOR THE DETECTION OF PAEDIATRIC INFLAMMATORY BOWEL DISEASE: A METABOLOMICS APPROACH
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Introduction: Inflammatory bowel disease (IBD) is primarily assessed by endoscopy, which is a costly and invasive procedure with serious risk of complication, underlining the need for novel non-invasive diagnostic biomarkers. In previous studies, plasma amino acid analysis has revealed significant differences between IBD subjects and controls. This 'aminostring' has not yet been studied in faecal samples of IBD patients. The aim of this explorative study was to compare faecal amino acid composition between paediatric de novo IBD patients and healthy controls, and between the phenotypes ulcerative colitis (UC) and Crohn’s disease (CD).

Aims & Methods: In this cross-sectional case-control study, paediatric treatment naïve IBD patients from a tertiary centre were included, before bowel cleansing and colonoscopy. Control patients were recruited from schools in the province North Holland, the Netherlands. All participants collected a faecal sample on which amino acid analysis was performed by means of high performance liquid chromatography (HPLC, Biochrom 30). To correct for the influence of faecal consistency, the samples were freeze dried for 24 hours before the analysis was performed. To prevent artifacts by peak overlap of different amino acids, outcomes of 5 nmol/mg or lower were excluded from further analysis.

Results: Faecal samples from 15 subjects (5 healthy, 5 UC, 5 CD) were analysed. Median age was 14 (8-17) years. Subjects and controls were matched on age and sex. A total of 42 different amino acids were analysed, of which 30 were excluded due to quantities of ≤5 nmol/mg. In particular, alanine, glycine, phenylalanine, leucine, isoleucine, valine and lysine differed between IBD patients and healthy controls with ratios up to 5:1 (table 1). In addition, UC and CD patients differed remarkably based on levels of glycine, phenylalanine and serine with ratios up to 4:1 (table 1).

Table 1: Levels of amino acids in patients with Crohn’s disease, ulcerative colitis and healthy controls

<table>
<thead>
<tr>
<th>Amino acid</th>
<th>healthy controls median</th>
<th>ulcerative colitis median</th>
<th>Crohn’s disease median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alanine</td>
<td>2.07 (1.88–4.39)</td>
<td>5.28 (3.10–10.38)</td>
<td>8.21 (4.59–13.05)</td>
</tr>
<tr>
<td>Phenylalanine</td>
<td>0.48 (0.48–1.46)</td>
<td>1.37 (1.07–1.09)</td>
<td>2.62 (1.74–3.91)</td>
</tr>
<tr>
<td>Glycine</td>
<td>1.06 (0.91–2.65)</td>
<td>1.91 (1.10–3.58)</td>
<td>5.28 (2.17–5.97)</td>
</tr>
<tr>
<td>Leucine</td>
<td>1.00 (0.86–2.88)</td>
<td>3.04 (2.34–5.32)</td>
<td>4.13 (3.80–4.56)</td>
</tr>
<tr>
<td>Isoleucine</td>
<td>0.76 (0.09–2.15)</td>
<td>1.69 (0.88–2.01)</td>
<td>3.07 (1.68–5.32)</td>
</tr>
<tr>
<td>Valine</td>
<td>0.96 (0.76–2.61)</td>
<td>2.43 (2.35–5.19)</td>
<td>4.41 (3.29–6.64)</td>
</tr>
<tr>
<td>Lysine</td>
<td>1.72 (1.21–4.03)</td>
<td>2.63 (1.27–5.64)</td>
<td>4.62 (2.27–8.04)</td>
</tr>
<tr>
<td>Serine</td>
<td>0.81 (0.52–1.69)</td>
<td>1.08 (0.97–1.96)</td>
<td>2.57 (1.48–4.57)</td>
</tr>
</tbody>
</table>

*All levels are displayed in nmol/mg

Conclusion: This was the first pilot study to assess the potential of the faecal aminostring as non-invasive biomarker for disease activity of paediatric IBD. We observed remarkable differences in faecal amino acid composition between IBD patients and healthy controls, and between the IBD phenotypes. Whether these differences reflect decreased absorption or increased loss by inflamed intestines needs to be elucidated. Currently, we are awaiting the results of a larger proof-of-concept study on these faecal amino acid profiles.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1009 INFliximab TROUGH LEVELS AND ANTIBODIES TO INFliximab IN ASSOCIATION WITH DISEASE ACTIVITY AND ME/CFS/SYNDROME IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE
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Introduction: Measurement of infliximab trough levels (IFX-TLs) and antibodies to infliximab (ATIs) has been suggested as an important parameter for the optimization of IBD treatment of patients with inflammatory bowel disease (IBD).

Aims & Methods: We aimed to cross-sectionally investigate the correlation between IFX-TLs or ATIs and clinical, biochemical as well as endoscopic activity in Greek IBD patients. Consecutive IBD patients on maintenance treatment with IFX, were included. IFX-TLs and ATIs were measured using ELISA (Eagle Diagnostics, Richmond, VA, USA). IFX trough samples drawn before infusion. At the same time point of treatment using short IFX questionnaire (SIBDQ) and clinical disease activity score using Harvey-Bradshaw Index (HBI) for Crohn’s disease (CD) or simple colitis activity index (SCAI) for ulcerative colitis (UC) were assessed. Moreover, biomarkers (thromboglobulin, ESR, CRP, platelets, albumin) were measured and latest colonoscopies (within 6 months) were reviewed and evaluated for presence or not of mucosal healing.

Results: A total of 74 patients receiving IBD maintenance therapy [55 CD, 19 UC] were included, males mean age 42.3 years, 45 on combination therapy with immunomodulators (IMMs), 10 under intensified dose (either 10 mg/kg bw or 5 mg/kg/4–6w) were studied. Median time since IFX initiation was 26 (13–71) months and median value of serum IFX-TL was 4.33 μg/ml (0.03–3.07). Seven out 74 (9.5%) were positive for ATIs (>10 IU/ml). Patients on combination treatment had significantly higher IFX-TLs (6.98 μg/ml, 0.34–3.07) compared to those on IFX alone (1.85 μg/ml, 0.09–25.8) (p <0.01). Patients with positive ATIs had median IFX-TLs 0.99 μg/ml (0.09–4.0) statistically lower compared to those without (4.01 μg/ml, 0.03–3.69) (p<0.005). The correlations of IFX-TLs and ATIs with clinical, biochemical and endoscopic indices of disease activity in IBD patients are presented in Table 1. No other significant correlations between IFX-TL or ATIs with other disease characteristics were observed. In the logistic regression analysis only IFX-TLs (OR 0.86, 95% CI 0.76–0.97 p =0.017) and duration of IFX treatment (OR 0.97, 95% CI 0.95–0.99 p =0.04) were independently correlated with the presence of mucosal healing.

Table 1: Correlations of infliximab trough levels and antibodies to infliximab with clinical, biochemical and endoscopic indices of disease activity in patients with inflammatory bowel disease

<table>
<thead>
<tr>
<th>N = 74</th>
<th>Infliximab trough levels (IFX-TLs)</th>
<th>Antibodies to Infliximab (ATIs)</th>
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<tr>
<td></td>
<td>r</td>
<td>p</td>
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</tbody>
</table>

| HBI (CD) | –0.31 | 0.02 |
| SIBDQ    | 0.17  | 0.47 |
| ESR 1st hour | 0.09 | 0.63 |
| PLT (x10^5/µL) | 0.19 | 0.88 |
| Alb (mg/dl) | 0.09 | 0.94 |
| ATIs     | –0.34 | 0.01 |
| Combined with IMMs | 0.25 | 0.02 |
| Mucosal healing (N = 53) | 0.06 | 0.01 |

Conclusion: Therapeutic drug monitoring is valuable in IBD-patients on maintenance IFX-treatment. Combination treatment with IFX and IMMs is associated with higher IFX-TLs compared to IFX monotherapy. Higher IFX-TLs are independently associated with the presence of mucosal healing.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1010 COMPARATIVE INVESTIGATION OF ENTEROBIOTA BUSH IN ULCERATIVE COLITIS PATIENTS, AND THEIR CONSANGUINEOUS, AND NON-CONSANGUINEOUS RELATIVES
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Introduction: In recent years, the gut microbiota has been recognized as a relevant fingerprint to predict the development of inflammatory bowel disease (IBD) like ulcerative colitis (UC). Accordingly, inter-individual variation in the gut microbiota may reflect inter-individual variation in the risk of developing IBD or other diseases. Further recently, the Next-Generation Sequencing (NGS) has been validated for determining bacterial species in faecal samples. Essentially, NGS is a molecular biology sequencing technique for the precise identification and assessment of bacterial species.

Aims & Methods: With the major focus of our study being to establish a relevant biomarker of disease activity in UC patients based on the intestinal microbiota, 82 UC patients together with 61 healthy relatives as controls were included for investigations. One hundred and twenty-five patients had active UC (group I) and 57 had quiescent UC; 29 with mild inflammation in the large intestine (group II), and 28 without inflammation (group III). The patients’ relatives were consanguineous (group IV, n = 33), and non-consanguineous (group V, n = 28). The subjects’ age ranged from 15 to 69 years. Faecal bacteria between groups I to V were compared by the t-test. The Discriminant analysis in all five groups was done for each Phylum, Class, Order, Family, Genus and Species. The Canonical Discriminant Function Coefficient (DF) for each bacterial community was calculated. The quantity of each bacteria was multiplied by the Df value, and the sum was termed the Discriminant Score (Ds). Next, we tried to analyze the quantity and the diversity of the bacteria which had significant difference.

Results: We obtained 1011 varieties of bacteria as Phyla, Class, Order, Family, Genera and Species. Any individual bacterial quantity with 0 value >95% of group I and group V, the mean of the individual quantity of bacteria >0.05% cases (684) were excluded. The t-statistics was done on 363 bacteria between groups I to V. Significant difference was calculated in 18 Species, 10 Genera, and 4 Families. The Discriminant analysis was done on these 18 Species from all groups. The Ds value showed an increasing tendency in this order: group I < group II < group III < group IV < group V. Significant difference was calculated for group I vs group II, vs group III, vs group IV, and vs group V (P < 0.05). Likewise, Group V vs group I, vs group II, vs group III (P < 0.05), indicating a relevant association between gut microbial species and the development of UC. In bacteria having significant difference, especially Bacteroidaceae Family and Bacteroides Genus were numerous clearly, and both were higher in group I, active UC. It’s odd that the diversity of Bacteroides Genus was higher in Group V, non-consanguineous relatives, but the quantity of Bacteroides Genus was higher in group I. And Bacteroides fragilis was increased in group I, and the others of Bacteroides were increased in group V, it depends on the amount of Bacteroides fragilis. In active UC, the amount of Bacteroides fragilis was increased, but the diversity of Bacteroides Genus was decreased. It’s very interesting, and the balance can be key point between Bacteroides fragilis and the diversity of Bacteroides in UC activity. And about Genus Anaerococcus, Finegoldia and Peptotrichilus, about Species Anaerococcus vaginalis, Finegoldia magna and Peptotrichilus gorbachi were increased in group I significantly. All these bacteria belong to Peptotrichilaceae Family.

Conclusion: In this study, we compared 363 bacteria between active UC patient to control, significant difference was calculated in 18 Species, 10 Genera, and 4 Families. To our knowledge, this is the first report on so many bacteria being related to UC activity. Additionally, the Ds related to UC, or otherwise absence of UC in the five groups. Potentially, Ds might be a clinically relevant biomarker of disease activity in UC. This is the first application of the Ds to the study of microbiota in UC patients, consanguineous and non-consanguineous relatives by using NGS. Moreover we could obtain a lot of interesting results about the quantity and the diversity of the bacteria, especially Bacteroides and Peptotrichilaceae. Clinical trial No: UMIN000017103

Disclosure of Interest: All authors have declared no conflicts of interest.

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Langhorst J, Boone J, Lauche R, Ruefer A, Dobos GJ. Fecal Lactoferrin, Calprotectin, PMN-Elastase, CRP, EDN, PME and White Blood Cell Count as an Indicator for Musculoskeletal Healing and Clinical Course of Disease in Patients with Mild to Moderate Ulcerative Colitis: Post Hoc Analysis of a Prospective Clinical Trial. JOURNAL OF CROHNS AND COLITIS 2016; Feb 13
Introduction: At present, drug response to infliximab is monitored by trough levels of antibody levels. With fluently, another pathway of drug degradation has been hypothesized since MMP3 and MMP9 were found to be able to cleave IgG, like infliximab, in both animal and human experimental studies (1).

Aims & Methods: We collected serum samples in 102 patients (27 Crohn’s Disease and 75 Ulcerative Colitis) treated with stable doses of infliximab for at least 6 months ($t_0$) and 6 months thereafter ($t_1$). In each patient TL, ATI values and MMP3 levels were assessed at $t_0$ and $t_1$ by ELISA. In addition, MMP3 levels were also measured in 28 healthy subjects as controls. Clinical (HBI or Mayo score) and biochemical (CRP, fecal calprotectin) markers were assessed to define disease remission/activity. TL activity were considered therapeutic if $>3.8$ mcg/ml, ATI were considered positive if $>10$ mcg/ml. Data are presented as mean ± Standard Error Mean (SEM). Comparison among groups was performed by non-parametric tests.

Results: MMP3 levels were similar at $t_0$ and $t_1$ in patients which maintained therapeutic TL (14.5 ± 1.7 pg/ml and 15.0 ± 1.6 pg/ml, respectively) and in healthy controls (13.1 ± 3.0 pg/ml). Patient with low TL but ATI positive had significantly higher MMP3 levels compared to the group with low TL and ATI positive (33.2 ± 3.0 and 20.0 ± 2.7 respectively, p=0.0003), showing another pathway of drug degradation. 21 patients lost response between $t_0$ and $t_1$: 15 out of 21 patients demonstrated high levels of MMP3 (22.0 ± 2.1 pg/ml) already at $t_0$; in addition, 17 of these 21 patients were in clinical remission at $t_0$, while at $t_1$ all patients had disease activity.

Conclusion: Serum MMP3 levels are useful in predicting loss of response to anti-TNFa in patients with low TL but without ATI. High MMP3 levels predict with 90.5% accuracy loss of response over the next 6 months.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0103 USEFULNESS OF A MULTIDISCIPLINARY APPROACH COMBINING BOTH RHEUMATOLOGY AND GASTROENTEROLOGY FOR THE ASSESSMENT AND TREATMENT OF INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: More than one third of inflammatory bowel disease patients (IBD) possess genetic mutations, with the common, clearly the more incapacitating and which more alter the quality of life of IBD patients. These patients could benefit from a multidisciplinary approach for quicker diagnosis and for optimizing treatments.

Aims & Methods: The aim of the study was to evaluate the impact of a multidisciplinary approach carried out by both a rheumatologist and a gastroenterologist in the management of these patients. Therapeutic changes after the consultation were also evaluated. From April 2014 to April 2015, all IBD patients reporting arthritic pain to the IBD-dedicated gastroenterologist were referred to an experienced rheumatologist. The day of the consultation a multidisciplinary committee with a rheumatologist and a gastroenterologist evaluated and discussed in all patients their possible diagnosis and potential changes in their treatment. Assessment was made according to current guidelines and data recorded in a common database regarding the reasons why patients were remitted from IBD, their rheumatologic diagnosis and all changes implemented in their treatments. Results are shown in percentages.

Results: 112 consecutive IBD patients were remitted from the IBD Unit and analyzed by the committee. Mean age 38 years (ranging from 18 to 73). Most patients were women (67%), 19% were smokers and 23% former smokers. 51% of them had Crohn’s disease and 49% ulcerative colitis. The main causes for derivation from IBD were a suspicion of inflammatory arthropathies in 43% and of arthromyalgias in 40%. The more frequent diagnosis after the rheumatology consultation and the committee meeting were inflammatory arthropathies associated with IBD in 41% (51.5% presented axial arthropathies and 48.5% presented peripheral arthropathies) and fibromyalgia in 15%. Regarding treatment changes, after the multidisciplinary committee with a rheumatologist and a gastroenterologist, changes were made in 28% of patients. Of those, 35% of patients methotrexate was added in patients with biologic treatment (in some of them patients were in monotherapy, but in others the drug was introduced for replacing thiopturines). In 24% of patients sulfasalazine was introduced instead of mesalamine. In the other patients either other biologies like golimumab associated with IBD in 41% (51.5% presented axial arthropathies and 48.5% presented peripheral arthropathies) and fibromyalgia in 15%.

Conclusion: Multidisciplinary consultation combining inflammatory bowel disease and rheumatology allows both an earlier detection of inflammatory arthropathies associated with IBD and earlier changes in treatment, thereby helping to optimize the hospital resources. Fibromyalgia is common among IBD patients, though it is important that it is detected it should not be confused with other non-inflammatory conditions.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P0105 ADALIMUMAB TROUGH LEVELS AND ANTIDRUG TROUGH LEVELS CORRELATE WITH CLINICAL AND ENDOSCOPIC ACTIVITY IN CROHNS DISEASE PATIENTS

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Introduction: Adalimumab (ADA) is a anti-TNF α drug approved for patients with refractory luminal Crohn’s disease (CD). Recently, mucosal healing (MH) emerged as a major therapeutic goal in inflammatory bowel disease. Few data are available on ADA trough levels (TL), anti-ADA antibodies (AAA) during long term follow-up of CD patients, and their potential association with MH and disease outcome.

Aims & Methods: The aim of our prospective study was to evaluate a possible association between achievement of MH, ADA TL, and AAA in CD patients. Moreover, we assessed the clinical usefulness of a possible correlation between clinical outcome and MH. We prospectively enrolled moderate to severe CD patients who were primary responders to ADA treatment. Blood samples were withdrawn at standardized time points during treatment (0-, 2-, 6-week and every 8 weeks thereafter), before ADA administration. ADA TL were measured using an homogenous mobility shift assay (HMSA; Prometheus Lab, San Diego, United States). Disease activity was assessed by means of Harvey-Bradshaw Index (HBI, definition revised by HBI < 5). As to endoscopic activity, we defined MH in case...
of a value of Crohn’s Disease Endoscopic Index of Severity below 8, so far we included only complete MH and 31% had at least a minimal residual endoscopic activity. Endoscopic evaluation was performed within two weeks of blood sampling, and at least after 6 months of ADA treatment.

Results: In our prospective study we enrolled 22 CD patients primary responders to ADA therapy (13 males; median age 34 years; range 23–67 years) who had a median treatment duration of 52 weeks (range 24–121 weeks). ADA TL were significantly higher (P = 0.0002) in patients who achieved MH (12.1 mcg/mL, range 6.8–17.2 mcg/mL) as compared to patients without MH (4.50 mcg/mL, range 1.9–9.9 mcg/mL). Receiver Operating Characteristic curve identified an ADA TL cut-off of 6.43 mcg/mL as the threshold with the highest accuracy for identification of patients who achieve MH (AUROC 0.934, specificity 100%, sensitivity 81.8%, PPV 84.6, PNV 100). Moreover, achievement of MH was associated with absence of AAA (P = 0.012). Lastly, HBI was significantly lower (P = 0.0002) in patients with MH (4, range 3–8) than in patients without (11, range 4–17).

Conclusion: In our cohort of CD patients, we observed a clear association between MH, disease development, and clinical response. In this context, particularly, elevation of 6.43 mcg/mL has been identified as the best cut-off to obtain endoscopic remission or at least a minimal residual endoscopic activity. Moreover, we observed that CD patients on ADA therapy who achieved MH had a lower disease clinical activity. Thus, we support the use of therapeutic ADA monitoring for the management of CD patients in order to obtain clinical and endoscopic remission of the disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1016 ULTRASONOGRAPHIC RESPONSE TO ANTI-TNF IS ASSOCIATED WITH BETTER OUTCOMES IN CROHN’S DISEASE
E. Calabrese1, E. Zorzi1, E. Lohi1, S. Onali1, M. C. Fantini1, L. Biancone1, C. P. Di Cello1, G. Zucchi1
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Introduction: Crohn’s disease (CD) management targets mucosal healing on ileocolonoscopy as a treatment goal.

Aims & Methods: We hypothesized that ultrasonographic response to anti-TNFs is associated with better long-term outcomes. Patients with CD treated with anti-TNFs who had a serial small intestine contrast ultrasonography (SICUS) between January 2011 and April 2017 were identified. Disease site (based on bowel wall thickness), extent of lesions, and presence of complications (stenosis, poststenotic dilation, abscess, or fistulas) were evaluated using SICUS. Inclusion required pre-therapy SICUS with follow-up SICUS after 12 months, or 2 SICUS ≥ 12 months apart while on maintenance therapy. At second SICUS, complete responders had improved lesions, and partial responders had new lesions, and partial responders had other scenarios. CD-related outcomes of corticosteroid need, hospitalization, and surgery were assessed at one year from the second SICUS.

Results: Seventy-nine CD patients treated with anti-TNFs (37% with Infliximab, 63% with Adalimumab) were identified. Most patients had ileal disease (67%) and strictureting phenotype (52%). Based on SICUS, thirty-six patients (46%) were complete sonographic responders, 30 partial (38%), and 15 non-responders (16%). Complete and partial responders at SICUS had a reduced risk for surgery in comparison with non responders [p = 0.003 (OR:34.6, CI:1.7–700), p = 0.003 (OR:12, CI:0.6–2.40)]. Complete responders at SICUS had a higher reduction of hospitalizations in comparison with non responders [p = 0.04 (OR:4.2, CI:1–17)]. Complete and partial responders at SICUS had a reduced risk for need for rescue corticosteroids in comparison with non responders [p = 0.005 (OR:7.8, CI:1.9–32.4), p = 0.002 (OR:5.2, CI:1.7–13.3)].

Conclusion: Ultrasonographic response to medical therapy is associated with significant reductions in long-term risk of surgery, hospitalizations and steroid usage among CD patients. These findings suggest the significance of response assessed by ultrasonography as a treatment target.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1017 CONTINUOUS MONITORING WITH THE TELYMEDICINE TOOL MYIBDCOACH SHOWS AN ASSOCIATION BETWEEN NOVEL STRESS AND INFLAMMATORY BOWEL DISEASE FLARES
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Introduction: Inflammatory bowel disease (IBD) is characterized by recurrent flare-ups leading to hospitalisations, surgery, and eventually disease progression. The exact role of psychosocial factors as triggers remains controversial and current literature focuses on the global presence of psychosocial symptoms preceding a flare instead of distinguishing pre-existing factors. Presently, we aim to explore the impact of newly developed symptoms of anxiety, depression, fatigue, psychological stress, and life events on IBD flares.

Aims & Methods: IBD patients were recruited from the MyIBDcoach study cohort (de Jong et al., Lancet 2017, in Press). MyIBDcoach is a telemedicine tool to monitor IBD patients at home. During the 12-month study period, participants reported on disease activity and psychosocial parameters (including psychological stress, anxiety, depression, fatigue, and life events) through MyIBDcoach every 1–3 months. Flares were defined as clinical disease activity in combination with one of the following: faecal calprotectin > 250 μg/g, disease activity on endoscopy or other imaging techniques, or dose escalation or initiation of new drug to induce remission. For all psychosocial parameters, a binary variable was created to indicate whether symptoms were newly developed or pre-existing with reference to the previous measurement, thereby correcting for invariability. A generalized estimating equation model was used to separately determine which psychosocial parameters were associated with flares in the three preceding months, correcting for immortal time bias after a flare and adjusting for gender, disease phenotype, smoking status and disease duration.

Results: In total, 2748 measurements from 381 IBD patients were included. Fifty-four (13%) were classified as a flare after clinical remission was achieved. Newly developed psychological stress was associated with a flare in the following three months (odds ratio [OR] = 3.01; 95% CI = 1.48, 6.12). Newly reported symptoms of depression (OR = 1.29; 95% CI = 0.53, 3.14), anxiety (OR = 1.06; 95% CI = 0.46, 2.34), fatigue (OR = 1.07; 95% CI = 0.39, 2.93), or the occurrence of a life event (OR = 2.07; 95% CI = 0.94, 4.55) were not significantly associated, although the latter did occur more frequently before flares. Conclusion: Newly developed psychological stress is associated with disease flares in IBD patients. Therefore, continuous monitoring could be a novel method for interventions such as mindfulness and coaching might be interesting to prevent flares and eventually improve disease course.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1018 STRAIN ELASTOGRAPHY AND DIFFERENTIAL DIAGNOSIS OF INFLAMMATORY AND FIBROTIC STRICTURES IN CROHN’S DISEASE
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Introduction: Strain elastography has become a new emerging technique in ultrasound diagnostics of gastrointestinal pathology. Currently there is few published data on the use of elastography for making the diagnosis and following the course of inflammatory bowel diseases.

Aims & Methods: Objective. To assess the accuracy of strain elastography concerning stricture detection in Crohn’s disease (CD). Methods. 24 patients (13 with (<13%) flare after clinical remission was achieved. From 18 to 43y were included into the study, of 1 them having a colonic stricture, 1 patient having a stricture of ileal-transverse anastomosis and 22 patients having a stricture in the small intestine. Surgical treatment was carried out in 22 patients, in each case histopathological examination of the removed segments of the intestine was conducted. We performed transcutaneous ultrasound examination of the bowel using 7.5 MHz linear and 3.5 MHz convex probes with power Doppler mode and colonolescence in all 24 patients. Strain elastography was used during each US-examination to differentiate inflammatory and fibrotic strictures.

Results: Ultrasonographic examination invariably showed local narrowing of the intestinal lumen in stricture sites. Inflammatory stricture length was 29 mm (21.1–55.5), (median 2.5th - 97.5th percentile) with intestinal wall thickening of 6 mm (4.23-9.00) and the presence of ulcers. The lesion length in fibrotic strictures was 30 mm (20-60), wall thickness −6 mm (4.18-8.27), ulcers were visualized either. In 22.7% of cases we observed the signs of partial bowel obstruction. Strain ratio (SR) values for inflammatory strictures were 1.53 (0.43–3.71), for fibrotic strictures – 4.19 (1.57–6.42), the difference being statistically significant (Mann-Whitney test, p < 0.05). According to morphologic studies inflammatory strictures were characterized by transmural inflammatory infiltration. In fibrotic strictures we found fibrosis in submucosal layer with loci of muscularis propria involvement. No significant differences were found between ultrasonic and morphologic data, p < 0.05.
PI019 THE INFLAMMATORY BOWEL DISEASE DISABILITY INDEX INFLAMMATORY BOWEL DISEASE: RELATIONSHIP WITH DISEASE CHARACTERISTICS AND QUALITY OF LIFE IN A COHORT OF SICILIAN PATIENTS

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Introduction: IBDs are disabling conditions that negatively affect physical, psychological, familial and social dimensions of life. The concept of quantifying disability has been introduced for the goal of evaluating the impact of many other chronic diseases. Thus, specific tools have been used to assess the impact of disease and its treatment options on relevant end-points such as health-related quality of life (HRQoL), measured by the IBD-Questionnaire (IBD-Q). Recently, the IBD-Disability Index (IBD-DI) has been developed to evaluate the entire spectrum of limitations in functioning in patients with IBD. This index is inspired to the International Classification of Functioning, Disability and Health (ICF). The aim of the present study was to assess the relationship between the IBD-DI, clinical characteristics and HRQoL in a cohort of Sicilian patients with ulcerative colitis (UC) and Crohn’s disease (CD) followed up in a referral center.

Aims & Methods: IBD-Q and IBD-DI questionnaires were administered to consecutive UC and CD adults outpatients from July 2016 to April 2017. The IBD-DI consists of 28 items that evaluate the 4 domains of body functions, activities and participation, body structures and environmental factors. IBD-Q consists of 32 questions grouped into 4 dimensions: bowel, systemic, social, emotional. Scores range from 1 (poorest QoL) to 7 (best QoL) with higher scores indicating better QoL. Disease activity was assessed by partial Mayo score for UC and by Harvey-Brandshaw Index for CD. The mean differences of DI score in relation to dichotomic clinical variables were performed by Student’s t test. By linear regression analysis we assessed also the relationship between DI and IBD-Q. Data were analyzed with SPSS and statistical significance of p values was defined if p < 0.05.

Results: Data from UC and CD patients were analysed separately. 100 UC patients (59% males, median age 49 years) were enrolled; 17% were smokers. 83% had inactive or mild disease, 17% moderate disease. None of the recruited patients had severe disease. Concomitant medications at the time of the interview were conventional therapy (5-aminosalicylic acid, oral steroids) in 72 patients (72%) or immunosuppressive therapy (immunosuppressant or anti-TNF-a) in 28 patients (28%). The mean IBD-DI score was 23.15±17.492; 62% of patients had low DI ≤25 (62/100) while 7% had high DI >50. No correlations were found between IBD-DI and gender, disease duration, disease extension (Montreal Classification) and immunosuppressive therapy. IBD-DI was related to clinical disease activity (p=0.001) and extraintestinal manifestations (p=0.005).

By linear regression analysis, IBD-DI was significantly associated with IBD-Q (R²=0.63, p<0.001). Interestingly, 5% (n=5) of patients with inactive or mild disease had severe disability (≥50) and 5% (n=5) with active disease had low disability (<25). 54 CD patients (59%, males, median age 41 years) were enrolled; 22% were smokers. 94% had mild disease, 17% severe disease. Concomitant medications at the time of the interview were conventional therapy (5-aminosalicylic acid, oral steroids) in 22 patients (40%) or immunosuppressive therapy (immunosuppressant or anti-TNF-a) in 2 patients (60%). The mean IBD-DI score was 20.17±16.24; 72% of patients had low DI ≤25 (39/54) while only 2 patients had high DI >50. No correlations were found between IBD-DI and disease characteristic (gender, disease duration, disease extension, extraintestinal manifestations). By linear regression analysis, IBD-DI was significantly associated with IBD-Q (R²=0.604, p<0.001).

Conclusion: Our preliminary results show that the IBD-DI is significantly related to HR-QoL both in UC and CD. In UC IBD-DI is also related to disease activity and presence of extraintestinal manifestations. However, most of our patients were in clinical remission. A larger sample with different grades of disease activity could provide a more accurate evaluation of the reliability of this tool in measuring functional status and disability in IBD. IBD-DI could become a major endpoint in RCTs targeting the course of IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: We conducted a prospective observational study at our tertiary care centre with the aim of assessing and correlating UC disease activity by clinical criteria, endoscopy, histology, serum and fecal biomarkers and PET-CT. 60 eligible patients of UC were enrolled into 3 groups (26 remission, 24 moderate and 10 severe activity) as per Mayo score and $^{18}F$ FDG PET-CT was performed within 72 hours of endoscopy. ESR, CRP and fecal calprotectin levels were determined for all patients.

Results: Of 60 enrolled patients, 10% patients had proctitis, 43.3% had left-sided colitis and 46.7% had extensive colitis. ESR, CRP, fecal calprotectin levels and rectal PET activity were significantly higher in patients with moderate and severe disease activity as compared to those in remission. Rectal PET activity showed a significant correlation with the Mayo score ($r=0.465$, $p<0.001$), endoscopic sub-score ($r=0.526$, $p<0.001$), histological score ($r=0.496$, $p<0.001$), and fecal calprotectin levels ($r=0.279$, $p=0.031$). Extent evaluation by PET-CT and colonoscopy also showed a significant correlation ($r=0.582$, $p<0.001$) with each other. We found that CRP at a cut-off level of $<12$mg/L had a sensitivity of 70.59% and specificity of 92.3%, and fecal calprotectin at a cut-off $<143$µg/g had a sensitivity of 82.35% and specificity of 88.46% to predict remission. Besides, PET-CT identified sacroilitis in 5, mesenteric stranding in 4, and adenocarcinoma in 1 patient.

Conclusion: PET-CT is a reliable non-invasive tool for assessing disease activity in UC with good correlation with the Mayo score, endoscopic score, histology and fecal calprotectin. It is an accurate measure to determine disease extent, and a good predictor of remission. Thus, with a better patient compliance, it holds promise in replacing colonoscopy where it is refused or difficult to perform.

Disclosure of Interest: All authors have declared no conflicts of interest.

**Disclosure of Interest**

**A520**

**THE IBD STANDARDS GROUP.**

**Reference**

1. THE IBD STANDARDS GROUP. http://s3-eu-west-1.amazonaws.com/file-s.crohnsandcolitis.org.uk/Publications/PPR/ibd_standards_13.pdf [online]
**P1024 EMERGING ROLE OF IL-33/ST2 LEVELS IN PREDICTING MISSIONAL RESPONSE TO ANTI-TNF THERAPY IN UCLEAR COLITIS**

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**Introduction:** Tumor necrosis factor (TNF) inhibitors (anti-TNF) are considered to be the first-line therapy for inflammatory bowel disease (IBD). The role of IL-33 and its receptor ST2 in modulating the IL-33/ST2 axis in inflammatory conditions is under investigation. The aim of our study was to explore the potential role of the IL-33/ST2 axis in the mucosal healing process mediated by anti-TNF therapy in UC.

**Aims & Methods:** The induction period was associated with remission in inflammatory conditions.

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**Conclusion:** IFX-TL (> 24 µg/mL) was associated with remission at week 22 (ROC 0.83; S: 61.5%; Sp: 81.3%) and at week 54 (ROC 0.79; S: 60%; E: 80%). On week 14, IFX-TL > 11 µg/mL was associated with remission at week 22 (ROC 0.80; S: 41.7%; Sp: 93.8%) and at week 54 (ROC 0.70; S: 44.4%; Sp: 86.7%). **Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1025 INFliximAB TROUGH LEVELS IN THE INDUCTION PHASE ARE ASSOCIATED WITH PROLONGED REMISSION IN CROHN’S DISEASE PATIENTS**

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**Contact E-mail Address:** mmartinarranz@sahud.madrid.org

**Introduction:** Higher infliximab (IFX) serum concentrations have been associated with higher rates of clinical remission in inflammatory bowel disease patients.1 However, the correlation between IFX trough levels (TL) during the induction period and the correlation between clinical, endoscopic and histological scores is undefined.

**Aims & Methods:** To assess, in a prospective study, the correlation between IFX TL in Crohn’s disease (CD) patients and the correlation between clinical, endoscopic and histological scores.

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**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

active in 5% (12%), in remission in 35 (8%) pts. Endoscopic activity: CD. Colonoscopy was incomplete in 2/40 pts. In the 34 pts with no previous surgery, SES-CD was: 0 (n = 4); 1 (n = 4) (n = 3); 2 (n = 5) (n = 3); 3 (n = 2); 4 (n = 1); 5 (n = 1).

Table 1: Continued

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Conclusion: Upon analysis of 57,861 infliximab and adalimumab patient samples from 2012–2016, 43% exhibited anti-drug antibodies. We found that low-titer antibodies do not appear to impact drug levels. Our findings are consistent with American Gastroenterological Association Critical Care Pathways for Crohn’s Disease. Ulcerative Colitis and Crohn’s Disease. Comprehensive antibody scenarios were managed very differently (increase drug/consider immunomodulator vs. switch drug within class). High resolution antibody assays may be helpful in dosing TNF inhibitors and in other treatment and management decisions.

Reference

Table 2: Anti-Adalimumab Antibody Distribution and Corresponding Mean Free Drug Levels

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Reference
which IM therapy is used concomitantly with VDZ and potential impact on outcomes in real-world clinical practice.

Disclosure of Interest: M. Rahay Callado: Mirica Rahay Callado is a full-time employee of Evidera.
R. Carroll: Robert Carroll is a full-time employee of Evidera.
R. Curtis: Employee of Takeda Development Centre Ltd.
M. J. Khalid: Employee of Takeda Development Centre Ltd.
H. Patel: I am currently an employee of Immunity Consulting Inc., which received funding from Takeda Development Centre Ltd.

P1029 MOLECULAR SURROGATES OF HISTOLOGIC ACTIVITY IN CROHN’S DISEASE

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2Clariﬁcate Analytics, Boston/United States of America/MA

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Introduction: Biomarkers of inﬂammatory bowel disease activity have been researched for decades but objective markers of disease severity that support clinical decision-making is still needed. Well-established markers include serum C-reactive protein and fecal calprotectin, but their use as a standalone surrogate for disease activity has been controversial. We hypothesize that novel objective markers of tissue inﬂammation are best identiﬁed at the site of disease with a tissue-level assessment of disease activity.

Aims & Methods: Biopsy samples were obtained from participants in the UNITI trials of ustekinumab in moderate-to-severe Crohn’s disease. The UNITI induction trials included two cohorts, patients who failed ≥1 TNF antagonists (UNITI-1) or patients who failed conventional therapies (UNITI-2). Pairs of adjacent biopsies were taken from the rectum, splenic ﬂexure, and ileum. One biopsy from each pair was assessed by Global Histology Disease Activity Score (GHAS) while the other was submitted to microarray analysis. Partial least squares regression and random forest were used to identify biomarkers associated with histological severity in the UNITI-1 cohort. Robustness of the resulting models was assessed using cross-validation within the training set and multiple external validation sets (deﬁned within the UNITI-1 and UNITI-2 cohorts).

Results: In UNITI-1, a single multivariate model comprising 16 genes was identiﬁed that predicted histological activity in rectum or splenic ﬂexure biopsies. This model was characterized by R² = 0.78 for the training set, and R² = 0.59, 0.54, and 0.32 on external validation sets also from UNITI-1. A separate 14-gene model capturing histological activity in ileal biopsies was characterized by R² = 0.5 for the training set and R² = 0.45 in the external validation set. In general, both models contained genes related to tissue degradation, barrier function, and immune regulation, including CXCL11 (I-TAC). Both models retained performance in external validation datasets from UNITI-2 but exhibited lower performance. De novo models generated from UNITI-2 also exhibited lower performance. Indeed, weighted gene co-expression network analysis indicated weaker associations between gene expression and histology scores for UNITI-2 compared to UNITI-1 subjects.

Conclusion: Our analysis supports the ability of biopsy transcriptionomics combined with machine learning approaches to capture disease-relevant variability in Crohn’s disease and, more importantly, supports the use of similar approaches to identify additional surrogate markers. Interestingly, this approach was more successful in the TNF antagonist failure cohort compared to the conventional therapy failure cohort. We hypothesize that this is related to increased strength of the transcriptional signal in the TNF antagonist failure cohort. We identiﬁed speciﬁc genes that could be used together as surrogates for histologic measurement, which may not be susceptible to the subjectivity inherent in GHAS scoring. Finally, the speciﬁc genes identiﬁed by our analysis provide insight into the molecular processes driving histological disease activity in Crohn’s disease.

Disclosure of Interest: C. Monsat: Janssen Research & Development, LLC employee
K. Li: Janssen Research & Development, LLC employee
E. Myshkin: Consultant to Janssen Research & Development, LLC employee
C. Brodmerek: Janssen Research & Development, LLC employee
J. Friedman: Janssen Research & Development, LLC employee
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Reference

P1030 INDIRECT TREATMENT COMPARISON OF USTEKINUMAB VERSUS OTHER BIOLOGICS IN MODERATE-TO-SEVERE CROHN’S DISEASE PATIENTS HAVING FAILED ANTI-TNF THERAPY – A 1-YEAR TREATMENT SEQUENCE ANALYSIS INCLUDING DELAYED RESPONDERS

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Introduction: Indirect evidence is needed to inform the clinical efficacy of ustekinumab in Crohn’s disease (CD). Indirect treatment comparisons in CD are challenged by withdrawal trial designs limiting placebo arm attractivity. This treatment sequence analysis builds on previous work proposing a solution to challenges inherent to CD data to compare one year efficacy of biologics in CD patients having failed anti-TNF therapy. Analyses accounted for delayed responders (induction non-responders attaining response after additional doses) to generate more comprehensive estimates of biologics’ relative efficacies.

Aims & Methods: A systematic literature review identiﬁed randomized controlled trials in CD patients having failed anti-TNF therapy for induction and maintenance of ustekinumab (UST), adalimumab (ADA), or vedolizumab (VDZ). Clinical response (CDAI-100 point reduction) and remission (CDAI ≤150) were assessed. The probability of achieving response after induction was multiplied by the conditional probability of maintaining response/achieving remission at one year. Separate calculations were conducted for early and delayed responders. Their respective treatment sequence rates were summed to obtain overall response and remission rates. Placebo rates were imputed using data from patients induced and maintained on placebo from the IM-UNITI study, adjusted for responder and remitter induction rates. Bayesian analyses generated relative effect estimates that were compared to the primary direct evidence presented in the previous manuscript. A sensitivity analysis was conducted to investigate the impact of the induction response rate on the results.

Abstract: P1028. Table 1: Characteristics and outcomes among patients newly started on vedolizumab stratified by IBD type and history of immunosuppressive therapy

<table>
<thead>
<tr>
<th>CD (N = 388)</th>
<th>UC (N = 179)</th>
</tr>
</thead>
<tbody>
<tr>
<td>With history of IM use (N = 225)</td>
<td>Without history of IM use (N = 163)</td>
</tr>
<tr>
<td>Mean (SD) age, years</td>
<td>43 (14.8)</td>
</tr>
<tr>
<td>Female, %</td>
<td>64.9%</td>
</tr>
<tr>
<td>Mean (SD) time from diagnosis to VDZ initiation, years</td>
<td>6.0 (3.9)</td>
</tr>
<tr>
<td>Pre-index exposure to anti-TNF therapy, %</td>
<td>78.2%</td>
</tr>
</tbody>
</table>

IBD-related measures in the 365 days pre-index

<table>
<thead>
<tr>
<th>Hospitalisations</th>
<th>Surgeries</th>
<th>Flares</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD (N = 388)</td>
<td>42.2%</td>
<td>18.7%</td>
</tr>
<tr>
<td>UC (N = 179)</td>
<td>28.8%</td>
<td>6.7%</td>
</tr>
</tbody>
</table>

Note: IM therapy included use of azathioprine, 6-mercaptopurine, methotrexate, mycophenolate mofetil, cyclosporine, and Tacrolimus.
odds ratios (OR), credible intervals (CrI), and posterior distribution probabilities for superior of UST.

**Results:** Accounting for delayed responders, the absolute proportions of patients having maintained response and being in remission at one year were 30% of patients receiving UST every 8 weeks, 19% of those receiving VDZ every 4 weeks, and 5% of patients receiving ADA every other week or weekly. Results on a one-year treatment sequence analysis, probabilities for UST to be better than VDZ for achieving and maintaining response and remission were 99% (OR[CrI]:1.94[0.79;3.48]) and 98% (OR[CrI]:1.32[1.00;2.38]), respectively. UST had higher likelihoods of remission than ADA given weekly (OR[CrI]:1.36[0.72;2.58]) or every other week (85%, OR[CrI]:1.41[0.74;2.68]).

**Conclusion:** This approach deals with methodological issues inherent to CD trial data. In CD patients having failed anti-TNF therapy, ustekinumab had higher likelihood of response or remission than adalimumab and vedolizumab over a one-year treatment sequence. Additional induction doses and continued maintenance therapy with ustekinumab have demonstrated benefits in delayed responders compared to other biologics. Previous research is limited to indirect treatment comparisons in early responders only. Including delayed responders provides a more accurate picture of CD patients' response to biologics and better informs clinical practice.

**Disclosure of Interest:** L. Mesana: Consultant to Janssen Scientific Affairs, LLC M. Pacou: Consultant to Janssen Scientific Affairs, LLC D. Naessens: Janssen Scientific Affairs, LLC employee S. Sloan: Janssen Scientific Affairs, LLC employee A. Gauthier: Consultant for Janssen Scientific Affairs, LLC

**Reference**

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**P1031 INDIRECT TREATMENT COMPARISON OF USTEKINUMAB VERSUS OTHER BIOLOGICS IN MODERATE-TO-SEVERE CROHN'S DISEASE PATIENTS HAVING FAILED CONVENTIONAL THERAPY – A 1-YEAR TREATMENT SEQUENCE ANALYSIS INCLUDING DELAYED RESPONDERS**

L. Mesana, M. Pacou, D. Naessens, S. Sloan, A. Gauthier

**Aims & Methods:** Clinical response (CDAI-100 point reduction) and remission (CDAI ≤150) for achieving and maintaining response and remission were assessed. The probability of achieving response after induction was multiplied by the conditional probability of maintaining response/achieving remission at one year. Separate calculations were conducted for early and delayed responders. Their respective treatment sequence rates were then summed to obtain overall response and remission proportions. Placebo rates were imputed using data from patients induced and maintained on placebo from the IM-UNITI study and adjusted for responder and remitter induction rates. Bayesian analyses generated relative odds ratios (OR), credible intervals (CrI), and posterior distribution probabilities for superiority of ustekinumab.

**Results:** When accounting for delayed responders, the absolute proportions of patients having maintained response and being in remission at one year were of 50% in patients receiving UST, 39% in those receiving VDZ, and 33 or 36% in patients receiving ADA every other week or weekly, respectively. Based on a one-year treatment sequence analysis, probabilities for UST to be better than VDZ for achieving and maintaining response and remission were 84% (OR[CrI]:1.39[0.73;2.62]) and 69% (OR[CrI]:1.19[0.59;2.38]), respectively. UST had higher likelihoods of remission than ADA given weekly (75%, OR[CrI]:1.33[0.83;2.02]) or every other week (82%, OR[CrI]:1.47[0.64;3.33]).

**Conclusion:** This approach deals with methodological issues inherent to CD trial data. In CD patients having failed conventional therapy, higher likelihoods of response or remission were observed for ustekinumab versus adalimumab and vedolizumab over a one-year treatment sequence. Additional induction doses and continued maintenance therapy with ustekinumab in delayed responders have demonstrated benefits compared to other biologics. Previous research is limited to indirect treatment comparisons in early responders only. Including delayed responders provides a more accurate picture of CD patients' response to biologics and better informs clinical practice.


**Reference**

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**P1032 EFFICACY AND TOLERABILITY OF INITIATING, OR SWITCHING TO, INFLIXIMAB BIOSIMILAR CT-P13 IN INFLAMMATORY BOWEL DISEASE (IBD): A LARGE SINGLE-CENTRE EXPERIENCE**

R.P. Ratnakamaran, N. To, D. Gracie, C. Selinger, T. Clark, N. Carey, G. Dowson, K. Leigh, B. Lourner, A.C. Ford, P. J. Hamlin

**Introduction:** Anti-TNF therapies have revolutionised the management of IBD. Recently, the infliximab (IFX) biosimilar (CT-P13) received market authorisation for IBD allowing cost benefits with switches to CT-P13 with annual savings estimated at £5400 per patient (70 kg patient receiving 5 mg/kg every 8 weeks). We present our experience of switching patients from the original IFX to CT-P13 for new and existing patients.

**Aims & Methods:** Recorded baseline characteristics included indication, age, sex, disease duration, treatment duration, concomitant immunomodulators, baseline CRP and Hb/Mayo scores. Response to IFX induction was assessed retrospectively using symptoms and CRP. Treatment response and remission rates, primary and secondary loss of response, and adverse events in patients who initiated IFX in the 12 months pre-Feb 2016 were compared with those who initiated CT-P13 in the 12 months post-Feb 2016. Sustained response was measured before switch and at 3, 6, and 12 months post.

**Results:** 53 patients commenced IFX in the 12 months pre-Feb 2016 (26 Crohn's Disease (CD), 13 fistulating CD, 3 UC, and 10 Crohn's Disease/UC). Baseline characteristics did differ, with a greater proportion of UC patients in the CT-P13 cohort (51% vs 24.5% (p = 0.003)). This group had a higher mean CRP (20.2 v 10.6 (p = 0.008)) although a lower median Mayo score (5 v 11 (p = 0.007)). There was no difference in response (12(23%) v 15 (21.74%) (p = 0.905)), remission (14(26%) v 29(42%) (p = 0.074)), primary non-response (8(15%) v 45.8% (p = 0.087)), secondary loss of response (12(23%) v 15(21.74%) (p = 0.905)), or adverse events (6(11%) v 6(11%) (p = 0.629)) in those who initiated original IFX compared with CT-P13. Following switch, patients who initiated IFX in the 12 months post-Feb 2016, 19 patients were still on original IFX on 12 months post-switch. There was no difference in the response (21%) in v 24.5% (p = 0.797), remission (94.7% v 115(58.1%) (p = 0.367)), secondary loss of response (84% v 74.6% (p = 0.087)), primary non-response (0% v 0% (p = 0.971)), and adverse events (0% v 0% (p = 1)). Between the original IFX and CT-P13 respectively. Drug and antibody levels were available pre-switch to CT-P13 for 134 patients. Therapeutic drug levels with no significant antibodies were associated with clinical remission 12 months post-switch compared with undetectable drug levels with significant antibodies (60.6/7%) v 0% (p = 0.0008). Loss of response or discontinuation of therapy at 12 months post-switch was significantly lower in those with therapeutic drug levels and no significant drug antibodies compared with patients low/undetectable drug levels and significant antibodies (18/20%) v 7(100%) (p < 0.0001) and 67(6%) v 6(86%) (p < 0.0001) respectively.

**Conclusion:** There was no significant difference in response and remission rates, primary and secondary loss of response, or adverse events between originator IFX and CT-P13 during the first 12 months after switching. The presence of low/undetectable drug levels and significant antibodies pre-switch was associated with loss of response and discontinuation of treatment. Switching to CT-P13 in 191 patients in our unit lead to >£1million in savings.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1033 SAFETY AND EFFICACY OF HELICOBACTER PYLORI ERADICATION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE**

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Disclosure of Interest:

With active disease.

Without affecting eradication rate, but may not improve disease activity, suggest

L. Kecili

All other authors have declared no conflicts of interest.

Mitsubishi Tanabe Pharma.

T. Hibi: Received advisory and lecture fees from Zeria Pharmaceutical; advisory

Pharma, and Eisai.

AbbVie, Zeria Pharmaceutical, JIMRO, and Ajinomoto Pharmaceuticals; and

T. Kobayashi: Received research grants and lecture fees from Mitsubishi Tanabe

Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai.

T. Fujii: T. Fujii has received a research grant from Eisai, and lecture fees from

Tanabe Pharma, AbbVie, EA Pharma, and Eisai.

HP eradication therapy does not exacerbate disease activity of IBD.

We then aimed to clarify the safety and efficacy of HP eradication in patients with IBD.

Aims & Methods:

This was a multicenter, retrospective cohort study in 26 institutions.

Patients who eradicated HP by proton pump inhibitor and amoxicillin-

based triple therapy after the diagnosis of IBD (ulcerative colitis (UC) or Crohn’s disease (CD)) from March 2005 to July 2015 were enrolled. Two IBD patients without a history of gender, age at diagnosis, severity, and observation

period were matched with each HP-eradicated patient were enrolled in the same institution. Disease activity of IBD at baseline, 2 and 6 months after observation (eradication) was investigated. Eradication of IBD was defined as increase/addition of IBD drug, IBD-associated hospitalization or surgery; and physicians’ assessment was also analyzed. Factors associated with exacerbation of IBD were assessed by univariate and multivariate logistic regression analyses.

Results:

A total of 429 IBD (378 UC and 51 CD) patients, including 144 patients who eradicated HP (eradication group) and 285 control patients (non-eradication group), were enrolled. IBD exacerbation rates in 2 and 6 months of observation were 16.2% (12/74) and 11.8% (17/144) in eradication group, which showed no significant differences compared with those of 4.9% (14/285) and 7.7% (22/285) in non-eradication group. Physicians’ assessment showed similar results in terms of disease exacerbation, but in 2 months of observation no patient was improved in eradication group whereas 3.2% (9/285) of patients was improved in non-eradication group (P = 0.019). Multivariate analysis revealed that the independent factor of IBD exacerbation after HP eradication was active disease at base-

line (OR 5.3 (95% CI: 1.5–16.9), P = 0.011). HP was eradicated in 82.9% (102/ 123) of patients using clarithromycin as first-line treatment and 90.4% (19/21) using metronidazole as second-line, both of which were comparable with previous reports in non-IBD patients.

Conclusion: HP eradication therapy does not exacerbate disease activity of IBD without affecting eradication rate but may improve disease activity, suggesting that careful observation is necessary after eradication, especially for patients with active disease.

Disclosure of Interest: S. Shizuki: I have received lecture fees from Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai. T. Fujii: T. Fujii has received a research grant from Eisai, and lecture fees from Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai. S. Bamba: Received lecture fees from Mitsubishi Tanabe Pharma, AbbVie, and EA Pharma. T. Kobayashi: Received grants research and lecture fees from Mitsubishi Tanabe Pharma and Eisai; research grant from Otsuka Pharmaceutical; lecture fees from AbbVie, Zeria Pharmaceutical, JIMRO, and Ajinomoto Pharmaceuticals; and consulting fees from Nepton Kaya. H. Tanaka: Received lecture fees from Mitsubishi Tanabe Pharma, AbbVie, EA Pharma, and Eisai. A. Yamada: Received lecture fees from AbbVie, and EA Pharma. T. Hibit: Received advisory and lecture fees from Zeria Pharmaceutical; advisory fees from Eisai, consulting fees from AbbVie, AstraZeneca Pharmaceuticals, EA Pharma, and Takeda Pharmaceutical; and lecture fees from JIMRO and Mitsubishi Tanabe Pharma.

All other authors have declared no conflicts of interest.

P1034 EVALUATION OF PHARMACOKINETIC PROFILES OF SB2 AS A BIOSIMILAR OF REFERENCE INFILXIMAB

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Introduction: Based on the totality of evidence with similar analytical, pharmacokinetic (PK) and clinical results, SB2 was approved by European Medicines Agency and U.S. Food and Drug Administration as a biosimilar of the reference infliximab (INF) for all indications for which INF has been approved. Here we report the PK profiles of SB2 compared to that of INF in two animal models, healthy subjects and patients with rheumatoid arthritis (RA).

Aims & Methods: The pre-clinical PK profiles were evaluated in single and repeated dose studies (1, 3, and 10 mg/kg of SB2, European Union sourced INF [EU-INF] or United States sourced INF [US-INF]) in two animal models (Sprague Dawley [BD] rat and transgenic Tg197 mouse). The clinical Phase I study for PK was conducted in healthy subjects and patients with rheumatoid arthritis. The clinical Phase I study was conducted in healthy subjects and patients with rheumatoid arthritis and pre-clinical and clinical studies.

Results: In pre-clinical studies, all PK profiles from animal studies showed no significant differences in Cmax and AUC0–C6h between SB2, EU-INF and US-INF.

In healthy subjects, the 90% CIs for the primary PK parameters were within the pre-defined equivalence margin of 0.8 to 1.25 between SB2 and reference products (SB2 vs. EU-INF and SB2 vs. US-INF). In RA patients, the mean trough level was comparable between SB2 (ranging from 1.915 to 17.965 μg/mL) and EU-INF (ranging from 2.224 to 16.954 μg/mL) from week 2 to week 30. The PK profiles were also comparable between SB2 and INF when analysed by the presence of ADA in both Phase I and Phase III clinical studies.

Conclusion: Similar PK profiles of SB2 and reference products were confirmed in both Phase I and Phase III studies. The previously demonstrated analytical similarity and the data presented here indicate that similar PK are expected in all indications approved for SB2.

References

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15Hospital de la Santa Creu i Sant Pau, Universitat Autònoma de Barcelona, Barcelona/Spain

P1036 INFLIXIMAB DOSE BANDING SHORTEST LENGTH OF STAY OF INFLAMMATORY BOWEL DISEASE PATIENTS
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2Gastroenterology, CHU de Bordeaux, Pessac/France

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Introduction: According to infliximab (IFX) license in inflammatory bowel diseases (IBD), infusion doses are based on patient weight. In daily practice, treatment is prepared by pharmacist after clinical patient assessment, leading to an increased duration of hospital stay and consequently costs. A pharmacokinetic study (1) has shown that a weight-based dose (WBD) strategy does not reduce interindividual variability of IFX trough levels when compared to fixed doses. According to these findings, our hospital implemented dose banding (DB) of IFX infusions, defined by doses rounded up or down according to one of eight pre-determined standard doses with a maximum theoretical deviation of ±5%, that allowed to prepare infusions at the pharmacy before patient admission.

Aims & Methods: The aim of the study was to compare hospitalisation length of stay (LOS) between IFX DB as compared to those treated with IFX WBD. From February to March 2017, we conducted a prospective, case-control study in our unit, including all IBD patients admitted for an IFX infusion. Patients who should receive an IFX dose between 250 and 800 mg were included in the DB group (treatment pre-prepared at the pharmacy, sent to the hospital unit before patient admission and administered just after the clinical validation). Patients who should receive an IFX dose below 250 mg or above 800 mg were included in the WBD group (treatment prepared after clinical validation including weight, and then sent to the hospital unit). Patients were analysed only when precise length of stay could be obtained and measured in minutes. Primary objective was to compare the length of stay at hospital in both groups. Secondary objective was to compare the proportion of IFX doses cancelled, reattributed and wasted, and the saved or wasted price associated (reimbursement price of one 100 mg IFX vial: 382.28 €).

Results: Among the 373 IBD patients treated by IFX during the study period, 116 (31%) patients (51M/65F; median age: 41 years) were included in the study (75 in the DB group and 41 in the WBD group) corresponding to 128 infusions (84 in DB and 44 in WBD groups). Mean length of hospitalisation stay were 238±21 minutes in the DB group and 308±32 minutes in the DB group, respectively (p < 0.001). DB was associated with a mean reduction of length of stay of 23%, corresponding to 70 minutes per patient. DB reduced significantly the mean duration of stay by decreasing the waiting time between clinical assessment and start of the infusion: 16min ± 84 min with WBD (p < 0.001). During the study, none of the 44 (0%) infusion in the WBD group was cancelled while 3/84 (3.5%) were cancelled in the DB group (p < 0.001). Two out of these three infusions could be reattributed to other patients, saving 2801€.

Conclusion: When used routinely in IBD, IFX DB is associated with a shortened length of stay as compared to WBD, with a mean reduction of 70 minutes per patient. As IFX DB seems having similar efficacy to weight-based doses, it may allow to prepare infusions at the pharmacy before patient admission and administered just after the clinical validation.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. Fasanmade, A. A., Adedokun, O. J., Blank, M., Zhou, H., Davis, H. M. (2016) "Rapidity of response to ADA neither other anti-TNF therapeutics. The aim of this trial was to evaluate the rapidity of onset of clinical response to ADA therapy.

Aims & Methods: Adult anti-TNF naïve patients with active luminal (Harvey-Bradshaw Index (HBI) ≥ 8) moderate-to-severe CD (excluding penetrating and fistulizing disease), with no response to a full and adequate course of therapy with corticosteroids and/or immunosuppressants, were enrolled in this prospective, open-label, single arm and multicenter clinical trial. Patients received standardized ADA treatment (160 mg – 80 mg – 40 mg every 2 weeks). The HBI was evaluated to determine the response at day 4 and week 1; and clinical remission at weeks 2, 4, and 12. Response was defined as a decrease of at least, 3 points in the HBI global score and remission was defined as HBI global score < 5. CRP (C Reactive Protein) and fecal calprotectin (FC) were analyzed at baseline, day 4, week 1, 2, 4, 12. The modified intention to treat (mITT) population was the primary population for efficacy analysis and consisted of those patients enrolled in the study who had received at least one dose of ADA. Treatment-emergent serious adverse events (AEs) were recorded to assess safety throughout the study until 70 days after last treatment dose.

Results: 86 anti-TNF naïve patients were analyzed. A response at day 4 and week 1 was experienced by 60% and 74% of patients, respectively. Remission was achieved by 53.5% of patients at week 2, 61.6% at week 4 and 54.7% at week 12. The median time to obtain response was 4 days (95% confidence interval (CI): 1.0, 4.0) and the median time to remission was 7 days (95% CI: 4.0, 14.0).

During the study, 42.5% of the patients suffered from any adverse event (AE). Only 3 patients (3.5%) showed a serious AE.

Conclusion: ADA produces rapid clinical remission and response since day 4 in patients with moderate-to-severe CD unresponsive to therapy with corticosteroids and/or immunosuppressants.

Disclosure of Interest: F. Casellas: Dr. Francesc Casellas has received research funding from AbbVie, MSD, Shire, Ferring and Zambon.
M. Esteve: Dr Esteve has served as a consultant for AbbVie, MSD, Takeda and Tillots Pharma and has received speaker fees from MSD and AbbVie.
S. García-López: Dr. Santiago García has received research and funding from AbbVie, MSD, Shire, FAES and Ferring and has served occasionally as a consultant for AbbVie and MSD.
A. Echarri: Dr Ana Echarri has received research funding from AbbVie and Shire, and speaker fees from AbbVie, Takeda, MSD, Shire, Pfizer.
S. García-López: Dra. Marisa García-López has served as a consultant for AbbVie and MSD, and speaker fees from AbbVie, MSD, Ferring, Shire Pharmaceuticals, Zambon and Allergan.
J. Huguet: Dr. Jose Maria Huguet Malaves has received research funding from AbbVie and MSD, and speaker fees from AbbVie, Takeda, and speaker fees from MSD.
P1038 HIGH-DOSE INTRAVENOUS IRON ISOMALTOSIDE IN PATIENTS WITH GASTROINTESTINAL DISEASES

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Introduction: Patients with gastrointestinal diseases such as inflammatory bowel disease (IBD) often suffer from iron deficiency anemia (IDA) and have a high annual iron need. Intravenous administration of high-dose iron is the most efficient approach to replenish iron stores. The present analysis evaluates safety and efficacy of high doses of iron isomaltoside in patients with gastrointestinal diseases.

Aims & Methods: This is a pooled analysis of 3 trials of iron isomaltoside performed in patients with gastrointestinal diseases and IDA [1–3]. Outcome measures were adverse drug reactions (ADRs) and haemoglobin (Hb) measurements.

Results: 357 patients (108 men, 249 women) were included in the analysis of which 255 were diagnosed with IBD and 102 with other gastrointestinal diseases, incl. bariatric surgery, gastrointestinal bleeding etc. A cumulative dose of 

<table>
<thead>
<tr>
<th>ADR</th>
<th>Patients (%)</th>
</tr>
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<tbody>
<tr>
<td>≤1000 mg iron isomaltoside N = 199</td>
<td>&gt; 1000 mg iron isomaltoside N = 158</td>
</tr>
<tr>
<td>Flushing</td>
<td>3.0</td>
</tr>
<tr>
<td>Constipation</td>
<td>0</td>
</tr>
<tr>
<td>Increased hepatic enzyme</td>
<td>1.5</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>0.5</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>0</td>
</tr>
<tr>
<td>Headache</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypersensitivity</td>
<td>1.0</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypertension</td>
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<tr>
<td>Hypotension</td>
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</tr>
<tr>
<td>Nausea</td>
<td>1.0</td>
</tr>
<tr>
<td>Urticaria</td>
<td>1.0</td>
</tr>
</tbody>
</table>

No ADRs of hypophosphatemia were reported. In patients dosed with ≤1000 mg iron isomaltoside, Hb increased with a mean of 1.72 (95% confidence interval (CI) 0.12 g/dL from baseline to week 3, 2.00 (0.12) g/dL to week 4, and 2.32 (0.13) g/dL to week 8. In patients dosed with >1000 mg iron isomaltoside, Hb increased with a mean of 2.04 (0.10) g/dL from baseline to week 3, 2.51 (0.09) g/dL to week 4, and 3.01 (0.12) g/dL to week 8. The observed increase in Hb was statistically significantly higher in patients dosed with >1000 mg iron isomaltoside (p < 0.04). In the IBD subgroup, a similar dose-dependent statistically increase in Hb was observed at week 3 and onwards (p < 0.02).

Conclusion: No dose-response for ADRs was observed with administration of high cumulative doses of iron isomaltoside whereas Hb increased more after 3 weeks with doses >1000 mg. Thus, high doses (>1000 mg) of iron isomaltoside can be administered without additional safety concerns including concerns of hypophosphatemia and with efficacious increases in Hb in patients with gastrointestinal diseases.

Disclosure of Interest: R. Derman: Richard Derman has been a consultant for Pharmacosmos A/S, and the investigator/institution received a fee per patient J.F. Dahlerup: The investigator/institution received a fee per patient W. Reinisch: The investigator/institution received a fee per patient.

References

P1039 EFFICACY AND SAFETY OF GOLIMUBAM IN ULCERATIVE COLITIS. PRELIMINARY DATA FROM A MULTICENTER ITALIAN STUDY

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Introduction: Golimumab is an Anti TNF alpha antibody approved for the treatment of Ulcerative Colitis (UC) patients. Its efficacy and safety were studied in randomized, double blind trials [1], but its effectiveness and safety in daily clinical practice are still little known [2].

Aims & Methods: The aim of this study was to assess the effectiveness and safety of Golimumab in daily clinical practice.

All UC patients from 21 centers of south of Italy, treated with Golimumab, were consecutively enrolled starting from June 2015. Demographic information’s (age, gender, smoking status) and clinical data (extension and duration of UC, previous therapies, comorbidities) were collected. Clinical, laboratory and endoscopic data during the treatment with Golimumab were collected every three months.

Results: A total of 190 patients (120 males) were enrolled. The mean age at diagnosis and mean duration of disease were respectively 38.8 ± 14.6 years, and 9.1 ± 7.0 years. Only 21 patients were active smokers (11%). About the extension, 111 were pancolitis (58%), 72 was distal colitis (38%), and 7 a proctitis (4%). At enrollment, the median Partial Mayo Score (PMS), Total Mayo Score (TMS) and Endoscopic Mayo Score (EMS), were respectively 6 (IQR 4–7), 9 (IQR 7–10), and 2 (IQR 2–3). The median values of ESR, C Reactive Protein and faecal calprotectin were respectively 25 mm/1h hour (IQR 15–38), 3 mg/dl (IQR 1–9), and 250 mg/kg (IQR 174–500). One hundred twenty five patients (66%) were naïve to anti TNF alpha, while 65 have been treated with Infliximab (n = 42), Adalimumab (n = 5) or both (n = 19). The indications for Golimumab were: 11 were pancolitis (58%), steroid-dependence in 130 (68%), extra-intestinal manifestations in 6 (3%), and Anti TNF alpha failure in 17 (9%). Twenty two patients (12%) were treated with concomitant Golimumab and immunosuppressants. A total of 142 patients have been completed at least 3 months of therapy. Of these patients, a significant reduction of mean PMS (n = 142; p < 0.001), TMS (n = 45; p < 0.001), EMS (n = 45; p < 0.001), ESR (n = 125; p < 0.001), and CRP (n = 134; p < 0.001) were observed after 3 months. The rate of responders (reduction of ≥2 points of PMS) was 66%; while the rate of clinical remission (PMS < 2) was 39%; and the rate of mucosal healing (EMS ≤ 1) was 53%. Among the 85 responder patients, 67 (79%) have also completely discontinued the steroids. At univariate analysis for predictive factors of response (gender, duration of disease, smoking status, previous Anti
 associated with an increased risk of flare. Although not statistically significant, the presence of ATI in selected patients with undetectable IFX levels and positive ATI is not associated with the best response (p = 0.002), while Anti TNF resistance with the best response (p = 0.002). At multi-variable analysis only TNF-α (p = 0.001), OR 1.5 - CI95% 1.2-1.8) and Naive to Anti TNF alpha (p = 0.015, OR 3.0 - CI 1.2-7.5) were confirmed associated to better response. To date, only 33 patients have discontinued Golimumab (17%). A total of 15 adverse events (3 serious) were recorded in all patients. Ten non-responding patients underwent to colectomy (7 of them were refractory to other anti TNF alpha).

Conclusion: Golimumab was safe and effective in induction of response in UC patients in daily clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1040 OUTCOMES OF PATIENTS IN REMISSION WITH INFLAMMATORY BOWEL DISEASE WITH UNDETECTABLE INFlixIMAB TROUGH LEVELS AND POSITIVE ANTIBODIES TO INFlixIMAB

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Introduction: The formation of antibodies to infliximab (ATI) is associated with increased drug clearance. Patients with undetectable infliximab (IFX) levels and positive ATI may indicate a group who may no longer benefit from the drug. However, the optimal treatment decision when the patient is clinically well remains unclear.

Aims & Methods: The aim was to assess the course of disease of patients in remission, with undetectable IFX levels and positive antibodies. IFX trough levels and ATI were measured in all patients attending for IFX infusions from May 2016 to April 2017 at a large single referral centre. Results were retrospectively reviewed in March 2017 to identify patients with undetectable (< 0.8 mg/L) IFX trough levels and positive ATI (≥ 10 mg/L). A local guideline suggested that in all well patients of this cohort, patients should be switched to an alternative biologic if duration of IFX treatment was < 12 months, or if the duration of therapy was ≥ 12 months to consider withdrawal of IFX or to assess disease activity - withdrawal of IFX in inactive disease or a switch to an alternative biologic for active disease. Trough levels for IFX and ATI were measured using direct solid phase immunoassays (Biohit, UK). Relapse was defined as worsening of symptoms attributable to the inflammatory bowel disease, requiring an alteration in treatment. Kaplan-Meier with Tarone-Ware test was used to explore survival curves for models used to analyse the impact of the different treatment decision on the rate of relapse.

Results: 47/223 patients had undetectable IFX drug levels with positive ATI. Follow-up data was available in 45 patients. 17 patients were assessed as having active disease (2 primary, 15 secondary loss of response). Of the 28 in remission, 14/28 flared (38%), compared to 1/7 in those who continued on IFX (14%). In those who were switched to a different biological therapy 3/8 flared (38%), compared to 1/7 in those who continued on IFX (14%) and 4/13 in those who were withdrawn from IFX (31%): median follow up duration of 7.5 months (range 2-10 months). There was no significant difference in the survival curves regarding rate of relapse based on the different management decisions taken (p = 0.81; Figure 1). Patients withdrawn from IFX were not at an increased risk of relapse compared to those who remained on treatment (hazard ratio 1.62, p = 0.59) nor those who were switched to an alternative biologic (hazard ratio 1.42, p = 0.65). Figure 1. Kaplan Meier of the rate of relapse during follow-up of patients in clinical response with undetectable IFX levels with positive ATI who continued on IFX (n = 7), switched to an alternative biologic (n = 8) and withdrawn from IFX (n = 13) (p = 0.81).

Conclusion: Our data suggests that withdrawal of IFX in selected patients with undetectable IFX levels and positive ATI is not associated with an increased risk of flare. Although not statistically significant, the rate of relapses in those who continued on infliximab was lower compared to those who were switched or withdrawn from therapy, however further follow-up and analysis is needed in this group.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1041 PHARMACOKINETIC SIMILARITY OF ABP 710 TO INFlixIMAB: RESULTS FROM A RANDOMIZED, SINGLE-BLIND, SINGLE-DOSE, PARALLEL-GROUP STUDY IN HEALTHY SUBJECTS

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Introduction: ABP 710 is being developed as a biosimilar to infliximab, an anti-tumour necrosis factor monoclonal antibody. Analytical and functional comparability studies have been completed. This report describes the results of a Phase 1 pharmacokinetic (PK) equivalence study comparing ABP 710 with infliximab.

Aims & Methods: This was a single-blind, single-dose, 3-arm, parallel-group study in healthy adults, 18-45 years of age and with a body mass index of 18 to 30 kg/m². Subjects were randomised to receive a 5 mg/kg intravenous (IV) infusion of ABP 710 or infliximab sourced from the EU and the US after pre-treatment with an antihistamine and acetaminophen 30 minutes prior to start of infusion. The primary objective was demonstration of PK similarity of ABP 710 with infliximab EU and with infliximab US based on area under the serum concentration-time curve from time 0 to infinity (AUCinf) as the primary endpoint. The criteria to achieve PK equivalence were for geometric mean (GM) ratio and its 90% confidence interval (CI) to be within the range 0.80 to 1.25. Secondary endpoints included maximum observed serum concentration (Cmax), safety, and immunogenicity.

Results: A total of 148 subjects received study treatment (ABP 710: n = 49; infliximab EU: n = 49; infliximab US: n = 50). After a single dose, the adjusted least square (LS) GM of AUCinf and Cmax were as follows: ABP 710, 33559 µg*h/mL and 123 µg/mL; infliximab EU, 37068 µg*h/mL and 121 µg/mL; infliximab US, 37523 µg*h/mL and 127 µg/mL. The ratios of adjusted LS GM (90% CIs) for AUCinf and Cmax between ABP 710 and infliximab EU were 0.996 (0.9042, 1.0963) and 1.021 (0.9624, 1.0827) and that between ABP 710 and infliximab US were 0.894 (0.8122, 0.9488) and 0.972 (0.9167, 1.0301). The ratios of adjusted LS GM (90% CIs) of AUCinf and Cmax between infliximab US and infliximab EU were 1.113 (1.0115, 1.2252) and 1.05 (0.9906, 1.1388). The 90% CIs of these ratios were fully contained within the 0.80 to 1.25 interval, confirming PK similarity between ABP 710 and infliximab, as well as between infliximab EU and infliximab US. None of the deaths, serious adverse events, or treatment-emergent adverse events (TEAEs) leading to discontinuation from the study; 1 subject in the infliximab EU group developed polyarthrosis that resolved with treatment and the subject completed the study. The incidence of TEAEs was similar in the 3 groups (ABP 710: 83.7%; infliximab EU: 83.7%; infliximab US: 86.0%), the majority was mild or moderate. The most frequently reported TEAEs were somnolence, headache, nasopharyngitis, upper respiratory tract infection, nausea, and lethargy. All subjects tested negative for antidrug antibodies (ADAs) prior to dosing. At the end of treatment (Day 57), 40% subjects on ABP 710, 27% on infliximab US and infliximab EU were positive for binding ADAs; 13% on ABP 710, 19% on infliximab EU and 10% on infliximab US were positive for neutralising ADAs.

Conclusion: Results of this study demonstrate PK similarity between ABP 710 and infliximab sourced from the EU and the US, as well as between infliximab US and infliximab EU following a single 5 mg/kg IV infusion in healthy subjects. The safety and immunogenicity profiles were comparable among treatment groups.

Disclosure of Interest: V. Chow: I am a full time employee and stockholder of Amgen Inc
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P. Kaur: I am a full time employee and stockholder of Amgen Inc
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E. Krishnan: I am a full time employee and stockholder of Amgen Inc

P1042 EPIDEMIOLOGY AND BURDEN OF COMPLEX PERINATAL FISTULAS IN PATIENTS WITH CROHN DISEASE- A SYSTEMATIC LITERATURE REVIEW

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Introduction: Complex perianal fistulae (CPF) are common among Crohn’s disease (CD) patients and are associated with substantial morbidity. The burden and management of CPF are poorly studied.

Aims & Methods: To systematically review the literature on epidemiology, global disease burden, and treatment outcomes for CPF in CD patients. PubMed, Embase, and Cochrane were searched for relevant articles published from 2000
forward; congress abstracts were searched from 2011 forward. CPFs were defined as fistulas with interphincteric, transphincteric, suprasphincteric, extrasphapsincteric, or horseshoe tracts. 

Results: 353 records were reviewed by 2 independent researchers, and 63 relevant articles and abstracts were selected for inclusion (including 3 epidemiology and 3 burden; the rest were treatment guidelines/patients or treatment outcome studies). The estimated cumulative incidence of CPF in CD, based mostly on studies conducted in referral centers, ranges from 12%-14% (2 studies). CPF can result in significant morbidity and greatly diminished quality of life; up to 99% of patients (1 study) are at risk of fecal incontinence. Treatment options include a combination of medical and surgical interventions. However, across all options identified, a high proportion of patients experience treatment failure (lack of or inadequate response) and relapse (Table). Only 4 identified studies were conducted specifically in patients refractory to anti-tumor necrosis factor (TNF)-α agents—a population with high unmet needs (one study of perfustial injections of infliximab, and three studies of surgical interventions). Available data suggest that anti-TNF-α dose escalation or switching between different anti-TNF-α agents is of limited value (2 studies). Table – Rates of treatment failure and relapse or reoccurrence among patients with complex peristomal fistulae.

Conclusion: CPFs in CD pose substantial clinical burden. There is a high unmet need for effective treatment options for CPF in CD patients, especially those refractory to anti-TNF-α agents, as evidenced by high treatment failure and relapse rates.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**P1043 VITAMIN D IS RELATED TO THE EFFECTS OF ANTI-TNF TREATMENT IN CROHN’S DISEASE PATIENTS**

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Introduction: Vitamin D deficiency is common in patients with Crohn’s disease (CD). It is believed that this deficiency is related to the CD activity. Vitamin D supplementation have many effects, including immunomodulation. However, the role of Vitamin D (VD) in severe CD patients using Anti-TNF is still unclear.

Aims & Methods: To evaluate the results of the VD replacement at different doses; check possible immunomodulatory action of vitamin D in CD patients with Anti-TNF. We conducted a double-blind, randomized, prospective study. 42 patients were selected with history of moderate to severe CD in use of anti-TNF, of both sexes, between 18 to 60 years, with dosage of 25-hydroxyvitamin D (SWIBREG). Duration of golimumab-treatment was illustrated by Kaplan-Meier curves. Univariate and multivariate Cox proportional hazard regression analysis was performed using the Cox proportional hazard model.

Results: Results: BIDQ improvement was observed in all groups with statistically significant results in G2 (p = 0.04) and G3 (p = 0.01). Increased VD were observed in all groups (adjusted SD ± mean ± SD): G1 - (19.5 ± 5.1 ± 26 ± 6.7) p = 0.07; G2 - (19.1 ± 4.1 ± 26 ± 5.8) p = 0.04; G3-19.5 ± 6.4 ± 46 ± 12.7) p < 0.0001. CRP dosage were reduced, although not statistically significant, at G2 and G3 (5.8 ± 4 ± 3 ± 2 ± 3.6) p = 0.18; (5.2 ± 7.3 ± 2.4 ± 3.6) p = 0.2; and increased in G1 (8.1 ± 10 ± 3 ± 13 ± 4 ± 19.9) p = 0.3. There was a significant decrease in FC in G3 (1014 ± 850 ± 483 ± 564) p = 0.04, no significant decrease in G2 (767 ± 751 ± 823 ± 535) p = 0.2, and increase in G1 (1101 ± 744 ± 1357 ± 819) p = 0.4. 52 with follow for showed that recurrent disease activity were predominat in patients with VD < 30 (p = 0.0004) and statically significant results were observed in disease activity recurrence rate (p = 0.006), FC (p = 0.02) and CRP (p = 0.01) when compared patients with VD > 30 and VD < 30.

Conclusion: 50.000 U/week was the best dosage for VD replacement and is related to immunomodulation. Most of patients with CD in Anti-TNF therapy have recurrent disease when VD < 30 and a high remission rate with VD > 30.

Disclosure of Interest: All authors have declared no conflicts of interest.

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**P1045 CLINICAL EFFECTIVENESS OF GOLIMUMAB IN CROHN’S DISEASE – AN OBSERVATIONAL STUDY BASED ON THE SWEDISH NATIONAL QUALITY REGISTRY FOR INFLAMMATORY BOWEL DISEASE**

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Introduction: Golimumab is approved for the treatment of moderate to severe ulcerative colitis, but not Crohn’s disease (CD). Therefore, its potential efficacy in CD remains largely unknown. Off-label use of drugs is not prohibited in Sweden, and golimumab may have been used for CD treatment.

Results: The study cohort consisted of 95 patients with a median age of 37 (IQR 27-48) years, of whom 40% were men. The majority of the patients (90.5%) had previously experienced treatment failure for at least one anti-TNF agent. At the start of golimumab, 41% were on a concomitant immunomodulator and 16% on corticosteroids. After a median follow-up time of 21 (IQR 10-36) months, 60 (63%) patients had stopped treatment with golimumab. Reasons for discontinuation were inadequate response; n = 45 (75%), intolerance; n = 11 (18%) and other reasons; n = 4 (7%). Estimated drug continuation rates were 73% at 12 weeks and 42% at 52 weeks. Concomitant treatment with corticosteroids at baseline seemed to be associated with a higher risk of discontinuation of golimumab (unadjusted HR: 1.97; 95% CI: 1.04-3.73; p = 0.04), although the association did not remain significant after adjusting for potential confounding factors (adjusted HR: 1.76; 95% CI: 0.84-3.67; p = 0.13).

Aims & Methods: We aimed to describe the CD population that is treated with golimumab in Sweden and to assess the long-term effectiveness, defined as drug continuation rate, as well as identify predictors of drug discontinuation. Patients with CD who received at least one injection of golimumab were identified through the Swedish national quality registry for inflammatory bowel disease (SWIBREG). Duration of golimumab-treatment was illustrated by Kaplan-Meier curves. Univariate and multivariate Cox proportional hazard regression models were used to identify predictors of golimumab discontinuation. The variables sex, age, duration of disease, location, perianal disease, smoking status, previous surgery, concomitant treatment with corticosteroids or immunomodulators at baseline, prior anti-TNF therapy and CRP at baseline were included in the models.

Abstract: P1042

<table>
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<th>Rates, %</th>
<th>Number of patients</th>
<th>Number of studies</th>
<th>Relapse/recurrence</th>
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44 studies reported treatment outcomes for CPF in CD patients. Most studies identified were small and/or non-comparative, and study methodologies, populations, endpoint definitions, and duration of follow-up varied. For studies with mixed populations, only results for patients with CD and CPF were considered. Defined as lack of or inadequate response to therapy (i.e. lack of complete response). Defined as standard of care used at each centre excluding anti-TNFs and surgery in 2 studies and as standard medical care at each centre including anti-TNF and surgery in 2 studies.
PI0146 EArly IMPROVEMENT IN QUALITY OF LIFE IN PATIENTS WITH LUMINAL CROHNS DISEASE Treated with ADALimumAB: DATA FROM RAPiDA TRiAL


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Introduction: Clinical response and patient’s quality of life improve as a result of the direct benefit of Crohn’s disease (CD) effective treatment. Rapidity of response to treatment in CD is a field of major interest, due to the importance of achieving remission and clinical benefit in the shortest possible time. There are no studies specifically designed for early evaluation of the quality of life in patients with active CD receiving adalimumab therapy. The aim of this study was to evaluate the rapidity of improvement of quality of life in response to adalimumab therapy in adult antiTNF naïve patients with active luminal (Harvey-Bradshaw Index ≥8) moderate-to-severe CD, and with no response to a full and adequate course of therapy with corticosteroids and/or immunosuppressants. Aims & Methods: To this purpose we designed an interventional, prospective, open label, single arm and multicenter clinical trial. Quality of life was evaluated by using the validated questionnaires EuroQol-5D (EQ-5D) and the 36 items version of the Inflammatory Bowel Disease Questionnaire (IBDQ-36). Questionnaires were administered at baseline, day 4 and weeks 1, 2 and 12 with standardized adalimumab treatment (160 mg - 80 mg – 40 mg c/w). The modified intention to treat (mITT) population was the primary population for analysis and consisted of those patients enrolled in the study who had received at least one dose of adalimumab. Statistical analyses were performed by the t-test or the Wilcoxon signed rank test, as applicable.

Results: Eighty-six patients were included. At baseline, the median EQ-5D index score was 0.68. EQ-5D scores improved significantly versus baseline, at day 4 and weeks 1, 2 and 12, with median changes of 0.05 (p = 0.0055), 0.05 (p < 0.001), 0.11 (p = 0.0001) and 0.11 (p = 0.0001), respectively. Similarly, EQ-5D VAS median scores also improved significantly, compared to baseline (median score at baseline: 55.00), at day 4 and thereafter, with median changes of 5.00, 5.50, 9.50, 10.00 and 12.00, respectively (p < 0.0001 at all time-points). The EQ-5D index versus baseline, the IBDQ-36 overall score (median score at baseline: 142.50) at day 4 and weeks 1, 2 and 12, also yielded statistically significant differences, with median improvements of 14.0, 18.0, 29.0, 42.0 and 35.5 respectively (p < 0.0001 at all time-points). Restoration of normal health (IBDQ-36 score ≥29) was obtained in 9% of patients at day 4 and increased to 35% at week 12.

Conclusion: Adalimumab produces rapid improvement of quality of life since day 4 in patients with moderate-to-severe Crohn’s disease.

PI0147 EVALUATION OF QUALITY OF LIFE IN IBd PATiENTS TREATED WITH anTI-TNFa THERAPY

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Introduction: Anti-tumor necrosis factor-α (anti-TNFa) agents are commonly used treatment options for moderate to severe Crohn’s Disease (CD) and Ulcerative Colitis (UC). However, despite their clinical effectiveness, few data regarding the role on quality of life (QoL) are available.

Aims & Methods: To prospectively evaluate disease activity and QoL in a single-centre cohort of CD and UC patients, after introduction of anti-TNFa agents (infliximab or adalimumab). All consecutive adult CD and UC patients who started Infliximab (IFX) or Adalimumab (ADA) from 2014 to 2015 at Padua University Hospital were enrolled. Disease severity was evaluated through laboratory tests (Haemoglobin, C-reactive protein (CRP) and Fecal calprotectin) and commonly used scores (Harvey Bradshaw Index (HBI) for CD and Modified Truelove and Witts Severity index (MTWSI) for UC) at each patient, before anti-TNFa introduction and 12 months thereafter. QoL was assessed through the Short-Inflammatory Bowel Disease Questionnaire (S-IBDQ).

Results: A total of 115 patients were consecutively evaluated, 33 patients were excluded due to non-compliance (13.7%) or drop-out for adverse events or primary non response (17.3%) within 12 months. Eighty-two (71.5%) were included in the statistical analysis (M/F: 53/29, median age 43 years, CD/UC 42/40). Forty, 42 patients started IFX and ADA, respectively. QoL was significantly higher in CD than UC at baseline (median S-IBDQ 49 vs 32, p = 0.004). In CD patients, anti-TNFa determined significant reduction of HBI (median 3 vs 1; p < 0.01), CRP (median 5 vs 2.9 mg/L; p = 0.004), fecal calprotectin (median 429 vs 119 μ g; p < 0.001) but not haemoglobin (median 13.6 vs 13.2 g/dL; p = 0.25). QoL significantly improved (median S-IBDQ 49 vs 59; p < 0.001), both in IFX and ADA groups (IFX: p < 0.001; ADA: p = 0.02). In UC patients, anti-TNFa therapy improved disease activity (median MTWSI 7 vs 4; p = 0.03), haemoglobin levels (median 11.6 vs 13.2 g/dL; p = 0.006), fecal calprotectin (median 1600 vs 108 μ g/g; p = 0.004), but not CRP (median 5 vs 2.9 mg/L; p = 0.08). QoL improved at 12 months (median S-IBDQ: 32 vs 56, p = 0.001) both in patients treated with IFX (p = 0.003) and ADA (p = 0.005). No adverse events were reported during the study period.

Conclusion: Anti-TNFa therapy is safe and improves disease activity and quality of life of UC and CD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI0148 ENDOSCOPIC AND HISTOLOGIC FINDINGS CORRELATE WITH FREE INFLIXIMAB FOUND IN UNINFLAMED TISSUE IN IBd PATiENTS

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Introduction: Anti-TNF agents are widely used in the treatment of inflammatory bowel diseases (IBD). Despite the fact that the intestine is the main therapeutic area of action of anti-TNF drugs, anti-TNF treatment may result in the development of subclinical extraintestinal inflammation (EEI). This EEI may result in the accumulation of free anti-TNF in uninvolved tissues. The aim of the current study was to evaluate the correlation between endoscopic and histological findings in IBD patients with EEI and the presence of free anti-TNF in uninvolved tissue. The study was performed in a tertiary hospital in Israel.

Materials and Methods: We conducted an observational, non-randomized, single-center, retrospective analysis of IBD patients with EEI. EEI was defined as the presence of extraintestinal signs (e.g., skin lesions) or symptoms (e.g., arthralgia) in the absence of active bowel disease. All patients who had undergone endoscopy and histology within the past 12 months were included. The main outcome measures were endoscopic and histological findings in IBD patients with EEI and the presence of free anti-TNF in uninvolved tissue. The study was approved by the institutional review board and all patients provided written consent.

Results: A total of 100 patients were included in the study. The endoscopic findings were as follows: active bowel disease in 42 patients (42%), EEI in 58 patients (58%), and uninvolved tissue in 70 patients (70%). The histological findings were as follows: inflammation in 52 patients (52%), no inflammation in 28 patients (28%), and uninvolved tissue in 70 patients (70%). Free anti-TNF was detected in 42 patients (42%) in uninvolved tissue. The endoscopic and histological findings were significantly associated with the presence of free anti-TNF in uninvolved tissue (p < 0.001). The endoscopic and histological findings were significantly associated with the presence of free anti-TNF in uninvolved tissue (p < 0.001).

Conclusion: The presence of free anti-TNF in uninvolved tissue in IBD patients with EEI is associated with endoscopic and histological findings in uninvolved tissue. The results of this study highlight the importance of considering EEI in the management of IBD patients. Further studies are needed to investigate the clinical implications of EEI and free anti-TNF in uninvolved tissue.

Disclosure of Interest: None declared.
target, little or no information is available regarding the ratios of free and TNF-bound infliximab in intestinal tissue.

Aims & Methods: We aimed to assess the presence of free versus TNF-bound infliximab in the intestinal tissue of IBD patients and its possible association with clinical outcomes. Protein was extracted from frozen intestinal tissues of infliximab treated patients. Infliximab and TNF-bound infliximab were detected using ELISA and normalized to tissue protein concentration. Concurrent serum drug levels (SDL), anti-drug antibodies (ADA), serum TNF-bound infliximab levels, patient’s pharmacotherapy, clinical response based on physician global assessment, endoscopic appearance (severity determined according to mayo scoring in ulcerative colitis and endoscopist’s assessment of ulceration severity, extent of disease and affected area in Crohn’s disease) and pathological results (severity determined by observing pathologist graded as normal, mild, moderate and severe disease) at the time of colonoscopy were determined. Correlation were performed using Spearman’s rank correlation test.

Results: Twenty-four biopsies from 13 patients (11 Crohn’s disease and 2 ulcerative colitis patients) were tested. Non-inflamed tissue infliximab levels, but not inflamed tissue levels, correlated with SDL (R = 0.8499, p = 0.0037, FDR = 0.0185) and were negatively correlated with the endoscopic appearance (R = –0.7214, p = 0.0185) and pathological severity (R = –0.7959, p = 0.0059). TNF-bound infliximab was measured in both inflamed and non-inflamed specimens and did not correlate with drug levels in the serum or tissue. ADA was only detected in a single patient, precluding statistical analysis. Notably, no TNF-bound infliximab was measured in the serum.

Conclusion: These findings show that pharmacokinetic-pharmacodynamics interaction, as measured by SDL, better reflects drug levels in healthy mucosa rather than the inflamed one, and suggest a more complex drug/target interaction in inflamed tissue, which cannot be explained by target binding only. Future studies assessing changes during the different stages of mucosal healing may allow their use as surrogate markers for this purpose.

Disclosure of Interest: B. Ungar: Bella Ungar has received consultancy fees from Abbvie and Janssen.

S. Ben-Horin: SBH has received consultancy and/or advisory board fees from Schering-Plough, Abbvie, Celltrion, Pfizer, Ferring, Janssen and Takeda; and has received research support from Celltrion, Abbvie & Takeda Y. Chowers: YC declare Abbvie grant support, lecture and advisory fees, Janssen lecture and advisory fees, Takeda grant support lecture and advisory fees, Medtronic advisory fees

All other authors have declared no conflicts of interest.

P1051 ANTIBODIES TO INFlixIMAB OCCUR THROUGHOUT TREATMENT BUT DEVELOPMENT IS DELAYED BY IMMUNOSUPPRESSION


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Introduction: Infliximab (IFX) is an important agent in the treatment of inflammatory bowel disease (IBD). However, its use may be limited by the development of antibodies to infliximab (ATI). The aim of this study was to assess the timing and significance of ATI development in clinical practice.

Aims & Methods: Since May 2016, all IBD patients receiving intravenous IFX for maintenance treatment, at a large, single, referral centre, have undergone therapeutic drug monitoring (TDM). Serum IFX trough levels and ATI were both measured at each fortnightly dose of IFX. Antibody-associated complications and functional outcomes were evaluated. Antibody development is defined as a Harvey Bradshaw Index or Simple Colitis Activity Index < 4. Risk factors for ATI development were assessed by binary logistic regression model, using 522 sera taken from patients on maintenance therapy. Time to develop ATI, undetectable IFX levels and loss of response to treatment was assessed by Cox regression and Kaplan-Meier analysis.

Results: Male sex (OR = 2.1; p < 0.001), week of treatment (OR for each extra week of treatment = 0.999; p < 0.038) and use of concomitant immunosuppression (IS) (OR = 0.373; p < 0.001) were associated with ATI formation. During the period of observation, those not taking IS were more likely to develop ATI at any time throughout their IFX treatment (Hazard Ratio = 2.4; p = 0.003). 59/199 patients were ATI positive at their first TDM, of whom 2 were in their first 6 months of IFX treatment. 199 patients were ATI negative at their first TDM. During follow-up, we observed 32 patients develop ATI (19 patients developed antibodies within 6 months of starting IFX treatment, 5 between 6–12 months treatment and 8 after 12 months). At any given time, patients with positive ATI are 3.4 times as likely (p = 0.002) to develop undetectable levels than ATI negative patients. Transient ATI formation was seen in only 5/162 patients. Figure 1. Graph showing effect of concomitant immunosuppression on time to become antibody to infliximab positive.

Conclusion: Although IS therapy protects against ATI formation, the risk of antibody development continues throughout treatment. If concomitant is aimed at reducing ATI formation, then this also needs to be continued for the duration of IFX therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1052 A DRUG-RESISTANT ASSAY CAN BETTER DIRECT THE NEED FOR ADALimumab Dose-ESCALATION AFTER INDUCTION THERAPY IN ANTI-IFX NAIVE PATIENTS WITH CROHN’S DISEASE

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Introduction: Antidrug antibodies (ADA) may develop in up to 35% of patients with Crohn’s disease (CD) receiving adalimumab (ADA). Although ADA to ADM are predominantly neutralizing, standard drug-sensitive assays do not allow ADA measurement in patients with detectable trough levels (TL) and drug-tolerant assays are suboptimal in case of high TL.

Aims & Methods: We aimed to identify ADA using a drug-resistant assay, instead of standard assays, to correlate their presence with clinical outcome. Therefore, we identified 152 patients with CD who had received ADM as first biological therapy. After retrospective chart assessment, 116 patients with baseline disease activity [defined by a patient-reported outcome (PRO)2 of at least 8 points] were included for further analysis. Clinical remission was defined as an average daily stool frequency ≤2.8 and an average abdominal pain score ≤1. Serum samples were available in 70/116 at week 12 after ADM initiation. ADA presence was determined via both a monoclonal drug-sensitive assay in case of undetectable TL, and via an in-house developed drug-resistant assay regardless of TL [1].

Results: The drug-resistant assay identified presence of ADA in 14 of the 70 (20.0%) patients at week 12, whereas a drug-sensitive assay could detect ADA
in just one of these 14 patients (1.4%) (p < 0.001). Median (IQR) TL was significantly higher in the ADA negative group compared to the ADA positive group [9.21 (7.00-12.99) vs. 3.45 (1.72-5.44) μg/mL, p < 0.001]. A significant correlation between TL and ADA levels could be found (Spearman’s ρ = 0.582, p < 0.001). Although the presence of these ADA was not significantly associated with clinical remission at week 12, a clear tendency to increase was observed (p = 0.136). During median (IQR) follow-up of 1.46 (0.32-3.48) years, 43 out of 116 patients (37.1%) needed ADM dose-escalation. Importantly, escalation-free-survival significantly differed between ADA positive and negative patients (p = 0.001). Univariate analysis could not identify any more factors (weight, BMI, gender, disease behaviour, disease location, CRP, serum albumin, PRO2, comorbid condition, smoking) associated with ADA presence at week 12. Interestingly, 50% of the ADA positive patients had TL above 4 μg/mL, which would not have been dose optimized proactively according to current practice. Thus, 3 out of these 7 patients needed dose-escalation afterwards which could have been expected based on the ADA positivity.

**Conclusion:** A drug-resistant assay can identify ADA to ADM before all drug has become undetectable. As these ADA at week 12 are significantly associated with need for dose-escalation and can appear before TL drops below the threshold of 4 μg/mL, they may be better to identify those patients who could benefit from dose-escalation. Moreover, the differences in TL between patients at week 12 can finally be explained by the presence of ADA measured with a drug-resistant assay.

**Disclosure of Interest:** B. Verstockt: Bram Verstockt received lecture fee from Ferring Pharmaceuticals.

G. Van Asche: Financial support from Abbott, Ferring, Janssen, MSD and Abbott, PDL BioPharma, UCB Pharma, Sanofi-Aventis, Abbott, Abbvie, Ferring, Novartis, Biogen Idec, Janssen Biologics, NovoNordisk, Zealand Pharma A/S, Takeda, Shire, Novartis and IMS.

S. Vermeire: Financial support from MSD, Abbvie and UCB Pharma; lecture fees from Abbott, Abbvie, MSD, Ferring Pharmaceuticals and UCB Pharma; consultancy fees from Pfizer, Ferring Pharmaceuticals, Shire Pharmaceuticals Group, MSD, and AstaZeneca Pharmaceuticals.

A. Gils: Speaker for MSD, Janssen Biologics, Abbvie, Pfizer, and Takeda. Consultant for UCB and Takeda. License of (anti)-infliximab, (anti)-adalimumab, and vedolizumab ELISA to apDia and infliximab, adalimumab lateral flow to R-Biopharm AG.

M. Ferrante: Financial support from Takeda; lecture fees from Ferring, Boehringer-Ingelheim, Chiesi, MSD, Tillotts, Janssen Biologics, AbbvieTakeda, Mitsubishi Tanabe, Zeria; consultancy fees from Abbvie, BoehringerIngelheim, Ferring, MSD, and Janssen Biologics.

All other authors have declared no conflicts of interest.

**Reference**


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**P1053 ADHERENCE TO MAINTENANCE THERAPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE BEFORE AND AFTER THE INTRODUCTION OF THE SHARED MEDICATION RECORD**

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**Introduction:** Complacency is a significant problem in the medication of patients with chronic diseases, especially during periods when patients are completely unaware of their disease and just take their drugs to prevent disease recurrence. (1) During the last years Shared Medication Record (SMR) was introduced in Denmark. SMR is a national database containing information on current medication of all Danish residents. SMR include information on where, when, and how much medicine the patients by at the pharmacies. Therefore with SMR it becomes possible for doctors to see if patients retrieve the prescribed medicine at the pharmacy. Patients with chronic inflammatory bowel diseases (IBD), ulcerative colitis (UC) or Crohn’s Disease (CD), have periods of flares of the disease but in many cases also long periods when the disease is in remission. The majority of patients need medication to reduce the risk of recurrence of disease which means that they need to take medicine even if they have no symptoms of disease. Previous American studies have shown that a number of patients in this situation do not take their medication and thus are at increased risk for relapse of the disease (1). There are no corresponding data for Danish patients. We wanted to find out the proportion of Danish IBD patients in remission who buy the prophylactic treatment as prescribed, and whether this proportion will change when the patients are informed about that the doctor can see if they pick up the medicine at the pharmacy.

**Aims & Methods:** The purpose of this study was to investigate whether Danish patients with IBD in remission buy the prophylactic treatment as prescribed, if these patients buy a larger part of their medicine when they know that the doctor can see which medicines they buy at the pharmacy. 100 consecutive patients with UC and CD in remission for at least six months and treated with a fixed dose of Mesalazine, azathioprine, or Mercaptopurine during the preceding six months were enrolled from Randers Regional Hospital Adult Gastroenterological Outpatient Clinic. Patients were randomized 1:1 either to receive information that the doctor could follow their pharmacy refills, or not to get information on this. The patients were not informed that they participated in a study. All patients had a second visit six to 12 months later. Patients who had flares in disease activity during the study period was excluded. Adherence to the treatment was defined as pharmacy refills according to the prescribed dose for at least 80% of the period of the preceding six months. Fisher’s exact test was used as test of independence between groups.

**Results:** 67% of the patients in the study were adherent to their medical treatment during the first study period decreasing to 48% during the second study period (p < 0.001). There was no difference in in adherence between patients informed about SMR and those who were not informed. Younger patients were less prone to adherence compared to older patients at the first study visit (Age groups: 19-39: 40-59:60+ Years, adherence 48/71/81%) (p < 0.05). We found no differences related to disease (UC/CD), sex, 5-ASA/antiparasins, or administration route (oral/rectal).

**Conclusion:** Adherence to treatment fell from the first visit when the disease had been in remission for at least six months, to the second study visit when the disease had been in remission for at least 12 months. This was independent of whether the patients were aware that the physician could follow their medication refills or not. This might indicate that adherence to medical treatment of IBD decreases over time when the disease is in remission.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


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**P1054 CLINICAL EFFICACY AND SAFETY OF GOLIMUBAB IN BIOLOGIC NAÏVE AND EXPERIENCED PATIENTS WITH ACTIVE ULCERATIVE COLITIS NON-RESPONDER OR INTOLERANT TO CONVENTIONAL THERAPIES**

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**Introduction:** Golimumab (GOL) is a fully human monoclonal antibody to TNFα approved for the treatment of patients with moderate to severe ulcerative colitis (UC) with inadequate response or intolerance to steroids or immunosuppressive therapies. The aim of this study is to evaluate the efficacy and safety of GOL in both biologic naïve (BN) and biologic experienced (BE) patients.

**Aims & Methods:** Data were prospectively collected from a cohort of UC patients treated with GOL from March 2015 to March 2017 at two centers. Data were analyzed from two patient cohorts, namely BN patients and patients who have already undergone treatment with infliximab or adalimumab (BE). Patients received GOL 200 mg sc. at week 0, GOL 100 mg sc. at week 2, then 50 mg or 100 mg sc. every 4 weeks depending on body weight. The primary outcomes were clinical response rate and incidence of adverse events (AEs).

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**P1055 PATIENT CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Total</th>
<th>Biologic Naïve (BN)</th>
<th>Biologic Experienced (BE)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients (n, %)</td>
<td>59 (100)</td>
<td>27 (46)</td>
<td>32 (54)</td>
</tr>
<tr>
<td>Sex (n, %)</td>
<td>28 (47)</td>
<td>13 (48)</td>
<td>15 (47)</td>
</tr>
<tr>
<td>Female</td>
<td>31 (53)</td>
<td>14 (52)</td>
<td>17 (53)</td>
</tr>
<tr>
<td>Charlson Comorbidity index (n, %)</td>
<td>56 (95)</td>
<td>26 (95)</td>
<td>30 (94)</td>
</tr>
<tr>
<td>≥3</td>
<td>3 (6)</td>
<td>1 (4)</td>
<td>2 (6)</td>
</tr>
<tr>
<td>Charlson Global index (n, %)</td>
<td>55 (77)</td>
<td>18 (67)</td>
<td>37 (85)</td>
</tr>
<tr>
<td>Age at diagnosis (years) (median, IQR)</td>
<td>33 (24-45)</td>
<td>33 (22-45)</td>
<td>32 (24-45)</td>
</tr>
<tr>
<td>Disease duration (years) (median, IQR)</td>
<td>8 (4-14)</td>
<td>8 (4-15)</td>
<td>9 (3-14)</td>
</tr>
<tr>
<td>Montreal classification (n, %)</td>
<td>3 (6)</td>
<td>0 (0)</td>
<td>2 (6)</td>
</tr>
<tr>
<td>E1</td>
<td>33 (56)</td>
<td>17 (63)</td>
<td>16 (50)</td>
</tr>
<tr>
<td>E2</td>
<td>24 (41)</td>
<td>10 (37)</td>
<td>14 (44)</td>
</tr>
<tr>
<td>Endoscopic disease activity (Mayo score) (n, %)</td>
<td>2 (3)</td>
<td>0 (0)</td>
<td>2 (6)</td>
</tr>
</tbody>
</table>

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surgery. By year, it was found a positive trend in the number of both total and "endoscopies carried out within this period (p = 0.017 and p = 0.027, respectively) (table). Table

Patients underwent surgery

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>( n )</td>
<td>75</td>
<td>83</td>
<td>79</td>
<td></td>
</tr>
</tbody>
</table>

Patients with endoscopy within first year after surgery, (n)%

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>( n )</td>
<td>24.38</td>
<td>36.43</td>
<td>36.46</td>
</tr>
<tr>
<td>( p )</td>
<td>0.047</td>
<td>0.197</td>
<td>0.197</td>
</tr>
</tbody>
</table>

Patients with "planned endoscopy within first year after surgery, (n)%

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>( n )</td>
<td>20.00</td>
<td>35.10</td>
<td>21.27</td>
</tr>
<tr>
<td>( p )</td>
<td>0.043</td>
<td>0.027</td>
<td>0.027</td>
</tr>
</tbody>
</table>

Treatments received by patients at discharge were Immunosupressants (30.8%), antibiotics (21.3%), mesacolazine (19.1%), mesalazine (12.1%) and antiTNFa (9.9%). A total of 235 patients (74.8%) had a medication change throughout the follow-up period, mainly within the first year after surgery (47.1%, n = 148). Median time to first medication change was 10 (IQR 4–22) months. More often therapeutic decision was the introduction or dose escalation of thiopurines or change to a more potent agent (61.8%, n = 160) by the following of an antiTNFa drug or dose escalation (51.4%, n = 121). Ninety-two out of 95 patients with planned endoscopy within first year had surgically scoring (RS) available, 37 (40.2%) and 55 (59.7%) showed RS ≤2 and ≤2 respectively. More patients with a RS ≤2 had a medication change as compared to patients with a RS >2, but the differences didn’t reach statistical significance (48% vs 36.36%). Reasons for medication change were “endoscopic without clinical recurrence” (52.9% RS ≤2 vs 10.0% RS >2, p = 0.010), “clinical recurrence” (29.4% RS ≤2 vs 25.0% RS >2 and “others” (23.5% RS ≤2 vs 66.0% RS >2, p = 0.045).

The number of planned endoscopies carried out within the first year after surgery increased significantly from 2007 to 2010 showing a steady implementation of guidelines recommendations. Changes in medication within this period were more frequent in the setting of endoscopic recurrence. Acknowledgements. Funded by Merck Sharp & Dohme of Spain

Disclosure of Interest: All authors have declared no conflicts of interest.
Results: Overall, 205 patients enrolled in GO-COLITIS and received at least one dose of GLM. Of these, 140 patients responded in the induction phase and received GLM in the maintenance phase. Clinical response was maintained through week 54 in 52/140 patients (37.1%; 95% CI, 29.1% to 45.7%) and 42/140 patients were in remission at week 54 (30.0%; 95% CI, 22.6% to 38.3%). Improvements in PMS subscores from baseline to week 54 were noted in stool frequency (mean change, −1.9; SD, 1.1 [n = 59]), rectal bleeding (mean change, −1.5; SD, 0.8 [n = 59]), and physician’s global assessment (mean change, −1.8; SD, 0.8 [n = 57]). Normal CRP levels at week 54 were seen in 50/59 patients (response rate, 84.7%; 95% CI, 73.0% to 92.8%). IBDQ and EQ-5D results are summarised in the Table. Serious adverse events (SAEs) occurred in 49/205 patients (23.9%), with 3 SAEs considered treatment-related.

Table: Mean (SD) Change from baseline to week 54 in IBDQ and EQ-5D.

| IBDQ total score | 138.116.4 (32.7) | 59.186.2 (27.1) | 59.66.8 (36.7) |
| EQ-5D index score | 136.07 (0.2) | 60.09 (0.2) | 58.02 (0.3) |

Conclusion: In the maintenance treatment with GLM phase of GO-COLITIS, 37.1% and 30.0% of patients achieved moderate to severe UC in the UK demonstrated clinical response and remission at week 54, respectively. Improvements in patient-reported quality of life measures (IBDQ, EQ-5D) were seen; the degree of improvement in IBDQ total score exceeded the IBDQ increase cut-off (i.e., >20 for patient-defined remission previously identified as representative of a patient defined improvement in an assessment of UC clinical endpoints. Adverse events were consistent with previous observations.


Reference

analysis adjusted by significant socio-demographic, clinical and disease severity covariates. Pizier, Jansen, & Takeda; and has received research support from Celltrion, AbbVie & Takeda.

B. Ungar: I received consultation fees from AbbVie and Jansen.

All other authors have declared no conflicts of interest.

P1060  TREATMENT EXPERIENCE WITH TOPICAL PRODUCTS FOR ULCERATIVE COLITIS–THE PATIENTS PERSPECTIVE IN EUROPE AND THE USA

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Introduction: Topical therapies for ulcerative colitis have shown evidence of good efficacy and can induce better responses and earlier improvement in distal ulcerative colitis (UC) when compared with oral therapies. Despite this attractive targeted approach of delivering medications topically to the left colon a certain resistance to the use of topical therapy seems to exist.

Aims & Methods: The goal of this market research was to assess the familiarity with and perceptions of patients towards topical products. A qualitative market research study was performed in the USA and 3 European countries (Germany, UK and Italy). The primary patient recruitment sources were online web portals, e-mail campaigns and social networking sites. Informal feedback gathered from outreach patient activists to identify the right sources was also used. In order to select patients with more advanced disease and/or a longer disease history current or past steroid medication was mandatory as a qualification for inclusion in the market research. A structured questionnaire covering 14 items was pre-tested and modified in phone interviews, which was then subsequently used in telephone interviews or as a web based interactive survey, both in local language.

A total of 148 patient responses were obtained via 10 phone interviews and 138 web-survey, 60 patients came from the US, 27, 25 and 36 from Germany, UK and Italy, respectively.

Results: In this survey cohort patients had been diagnosed with UC for > 5 years on average, 2/3 of patients had left-sided disease and less than a third had extensive disease. The majority of patients experienced at least 1–2 flare-ups each year and less than 18% of patients had them only rarely. ASA and steroids were the most commonly used medications in all countries, biological treatments were reported as highest in 35% (US) to the lowest 16% (UK) as stated by the patients. The vast majority of patients stated that they had treatment experience with oral products. More than 60% of patients had experienced slighter lower number in the US (83%) compared to the EU countries (Range 89-92%). Rectal enemas were the most common formulation delivery for topical ASA products in all markets (79%) followed by suppository (25%) and foam (13%). A total of 53% of patients were not concerned about the rectal mode of administration, while 47% reported some concerns. These mainly comprised the need to hold the enema in place, a generally uncomfortable feeling with rectal medications and painfull administration.

Conclusion: Despite a certain resistance to use topical therapy almost all patients stated to have used rectally administered products at some point during their disease journey and even patients in the USA were very familiar with these medications. Although physicians see patients as the primary driver for the resistance to use topical products in UC, less than 50% of the patients were actually concerned about the use of topical therapy in this study, thereby calling for better physician-patient communication.

Disclosure of Interest: T. Buryhoffer: Consultancy for Index Pharmaceuticals A. Thompson: Consultancy for Index Pharmaceuticals T. Knitl: Consultancy, CMO position and shareholding of Index Pharmaceuticals

P1061 SELF-MANAGEMENT IN INFLAMMATORY BOWEL DISEASE: A PERSPECTIVE OF NURSES AND PHYSICIANS

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Introduction: Over the last years, self-management (SM) has been advocated as an instrument to empower and increase patient involvement and reduce healthcare costs in chronic diseases. Although many SM programs have been developed for inflammatory bowel disease (IBD) patients, little research has been performed on needs and wishes of IBD physicians, nurses and patients. Nurses and physicians play an important role in providing and stimulating SM.12

Aims & Methods: This study aimed to gain insight in what caregivers consider good SM options, and which patients- or disease-related factors they consider of influence on the degree of SM a patient is willing to apply. During a nurses IBD survey by email with a link to the survey. The survey contained questions regarding the caregivers’ views on ways for patients to apply SM in an outpatient setting (12 options were given). Caregivers were asked to state whether they thought these options would be valuable to patients or not, and to name their top three options. Also, caregivers were asked their views on factors that could

Disclosure of Interest: Y. Chowers: Abbvie - grant support, lecture and advisory fees Janssen - lecture and advisory fees Takeda - grant support lecture and advisory fees Medronics - advisory fees U. Kopylov: Speaker fees - abbbie Research support, speaker and advisory fees janssen S. Ben-Horin: SBH has received consultancy and/or advisory board fees from AbbVie, Schering-Plough, AbbVie, Genentech, Roche, Merck & Co.; and has received research support from Celltrion, AbbVie & Takeda.

A. Ungar: I received consultation fees from AbbVie and Jansen.

All other authors have declared no conflicts of interest.

P1059 CAN EARLY DRUG AND ANTI-INFLIXIMAB-ANTIBODY LEVELS PREDICT PRIMARY NON RESPONSE TO INFlixIMAB THERAPY?


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Introduction: Infliximab has been shown to induce and maintain long-term clinical remission in inflammatory bowel disease (IBD) patients. However, 10-30% of patients show no clinical benefit by the end of induction (week 14) and are considered primary non-responders. The mechanisms underlying primary non-response have not yet been clearly defined.

Aims & Methods: In this study we aimed to evaluate to which extent pharmacokinetics (early induction infliximab and anti-infliximab-antibody (ATI) levels) and socio-demographic, clinical and disease severity parameters were associated with lower response rates.

Methods: A prospective observational study of 105 primary responders for a total of 140 patients. A retrospective observational case-control study of patients with IBD attending the Gastroenterology Department of Sheba medical center and with infliximab between 2009 and 2016 was performed. Clinical scores were determined and sera were collected prospectively before infusions. Infliximab and ATI levels were measured by our previously described drug-tolerant ELISA assay.

Results: Thirty five primary non responders have been identified and matched at 1:3 ratio with 105 primary responders for a total of 140 patients. Both week 2 and week 6 infliximab levels were significantly lower among primary non-responders compared to others (Crohn’s: week 2, 2.43 [2.07–2.85] UC: week 2, 2.37 [2.07–2.72] and bone-related conditions (Crohn’s: 1.88 [1.74–2.03]; UC: 1.77 [1.67–1.89]). The strongest predictors for serious hepatic events were IS + OCS (Crohn’s: 2.38 [1.72–3.31]; UC: 2.36 [1.75–3.21]). Infliximab and ATI levels were measured by our previously validated method in 20 patients from week 2 and 6. Infliximab levels were significantly lower among primary non-responders compared to others. Infliximab and ATI levels were measured by our previously validated method in 20 patients from week 2 and 6. Infliximab and ATI levels above 4.33 g/ml-mg before the second infusion (week 2) or 5 g/ml (AUC g/ml-1) were considered primary non-responders. The mechanisms underlying primary non-response have not yet been clearly defined.


P1058 TOPICAL THERAPY VS. ORAL THERAPY FOR ULCERATIVE COLITIS ASSESSED FROM THE PERSPECTIVE OF PATIENTS WITH IBD IN EUROPE AND THE USA


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Introduction: The aims of this study were to test and modify an interview test on preferences of topical therapy versus oral therapy in patients with IBD. The study was performed on needs and wishes of IBD physicians, nurses and patients. Although limited sample size (n=32) the results can be used to guide future market research.

Aims & Methods: In this survey cohort patients had been diagnosed with UC for > 5 years on average, 2/3 of patients had left-sided disease and less than a third had extensive disease. The majority of patients experienced at least 1–2 flare-ups each year and less than 18% of patients had them only rarely. ASA and steroids were the most commonly used medications in all countries, biological treatments were reported as highest in 35% (US) to the lowest 16% (UK) as stated by the patients. The vast majority of patients stated that they had treatment experience with oral products. More than 60% of patients had experienced slight lower number in the US (83%) compared to the EU countries (Range 89-92%). Rectal enemas were the most common formulation delivery for topical ASA products in all markets (79%) followed by suppository (25%) and foam (13%). A total of 53% of patients were not concerned about the rectal mode of administration, while 47% reported some concerns. These mainly comprised the need to hold the enema in place, a generally uncomfortable feeling with rectal medications and painfull administration.

Conclusion: Despite a certain resistance to use topical therapy almost all patients stated to have used rectally administered products at some point during their disease journey and even patients in the USA were very familiar with these medications. Although physicians see patients as the primary driver for the resistance to use topical products in UC, less than 50% of the patients were actually concerned about the use of topical therapy in this study, thereby calling for better physician-patient communication.

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influence the degree of SM a patient is willing to apply, such as: disease duration, activity, health literacy, self-efficacy, patient’s age, and level of trust between patient’s and their IBD team. Caregivers were asked per item whether they thought this factor would be of influence and to name the three most important factors.

Results: 38 nurses (mean age 42 years) and 32 physicians (mean age 44 years) responded to the survey. The three most appealing options for nurses regarding SM were: availability of a SM web-app, Skype/Face-time consultation with nurse/physician, and an at-home faecal-calprotectin test. Physicians preferred the availability of a SM web-app, an at-home faecal-calprotectin test, and making patients in charge of their patient records. When comparing the value of each of the 12 possible choices in which patients could apply SM, only one option was valued differently between nurses and physicians, 56% of physicians favored patients being in charge of patient records compared to 18% of nurses (p = 0.001). Physicians thought that the 3 most important factors influencing SM in patients were: level of trust between physician and patient, self-efficacy, and disease perception. Also, 41% of the physicians found health literacy to be an important factor. Factors suggested that self-efficacy and disease perception and disease activity were most important. One factor was valued differently between nurses and physicians: 78% of nurses thought that patient’s age was an important factor in patient’s SM, compared to 34% of physicians (p = 0.029).

Conclusion: The level of trust between physician and patient, self-efficacy, and disease perception is an important factor in patient’s SM. Nurses and physicians agree that patient characteristics, in contrast to disease characteristics, influence SM, with self-efficacy being the most important. This study calls for further research on what patients and caregivers, want and need from SM, as SM is a team sport.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Infliximab and adalimumab are considered as anti-TNF therapy if patients show loss of response, but there are scarce data about the influence of trough levels on prognosis. Aims & Methods: Our aim was to compare real life efficacy of anti-TNF mono-therapy (IFX and ADA) and anti-TNF+IS for UC maintenance. This was a retrospective study of patients with UC treated with IFX or ADA in 2 Belgian academic and regional Hospitals. Patients with at least 3 months of treatment periods were included. A combination therapy treatment was defined as anti-TNF + IS for at least 3 months, a failure semester as anti-TNF withdrawal for secondary loss of response, intolerance or non-adherence, and eradication for withdrawn due to lack of disease activity or drug adverse effects. Results: 478 patients in 60 patients with IFX and 175 patients in 33 patients with ADA were included. The mean IFX and ADA treatment duration were respectively 49 (±33) months and 58 (±49) months. Within patients treated with IFX, 32/60 patients received IFX + IS during the first semester. IFX was administrated as monotherapy in 361/478 semesters (76%). Respectively 218/478 (46%) and 49 (19) months. Within patients treated with ADA, 19/33 patients received IS for at least 3 months, a failure semester as anti-TNF withdrawal for secondary loss of response, intolerance or non-adherence, and eradication for withdrawn due to lack of disease activity or drug adverse effects. Results: 478 patients in 60 patients with IFX and 175 patients in 33 patients with ADA were included. The mean IFX and ADA treatment duration were respectively 49 (±33) months and 58 (±49) months. Within patients treated with IFX, 32/60 patients received IFX + IS during the first semester. IFX was administrated as monotherapy in 361/478 semesters (76%). Respectively 218/478 (46%) and 78/478 semesters (16%) with IFX required dose escalation and corticosteroids course. IFX + IS was associated with more semesters with failure (5% vs 3%, p = 0.02) and numerically more semesters with discontinuation (64% vs 28%, p = 0.06). There was no difference in corticosteroids use (p = 0.63). IS during the first semester was not associated with lower risk of IFX failure (p = 0.41) nor with a longer survival without IFX withdrawal (p = 0.20). Continuing the IS treatment beyond the first semester was not associated with fewer semesters with failure (p = 0.18). Within patients treated with ADA, 19/33 patients received IS during the first semester. ADA was administered as monotherapy in 93/175 semesters (55%). Respectively 54/175 (48%) and 42/175 (24%) semesters with IS during the first semester were associated with less semesters with failure (7% vs 5%, p = 0.58), less semesters with corticosteroids use (p = 0.63). More semesters with ADA + IS was required dose escalation (61% vs 30%, p = 0.01). IS during the first semester was associated with less risk of failure (p = 0.01) and with lower risk of withdrawal without ADA withdrawal (p = 0.78). Continuing the IS treatment beyond the first semester was not associated with fewer semesters with failure (p = 0.20). Conclusion: In this real-life experience, combination therapy of IFX or ADA with IS during the first semester or prolonged after the first semester was not associated with less dose escalations, steroid courses or treatment failures.
Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1067 EFFICACY AND SAFETY OF ADALIMUMAB AFTER INFLEXIMAB FAILURE IN PEDIATRIC ULCERATIVE COLITIS: A REAL-LIFE EXPERIENCE FROM THE SIGENP-IBD REGISTRY


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Introduction: The objective of the present study was to evaluate the effectiveness and safety of adalimumab (ADA) in children with ulcerative colitis (UC) who experienced previous infliximab (IFX) failure or intolerance.

Aims & Methods: This retrospective study included all children with UC from a national pediatric registry who received ADA therapy. The primary endpoint was the rate of corticosteroid (CS) free remission (PUCAI < 10) at week 52. Secondary outcomes were: the rate of continuous clinical response and remission, primary non-response and loss of response at Weeks 12, 30, and 52 and rate of mucosal healing (MH) at week 52.

Results: A total of 32 children with UC received ADA (median age 10±4 years). Median disease duration before ADA therapy was 27 months. All patients received previous IFX therapy (43% intolerant, 50% non-responders, 7% positive anti-IFX antibodies). Fifty-two weeks after ADA initiation 13 patients (41%) were in CS-free remission. MH occurred in 9 patients (28%) at 52 weeks. The cumulative probability of clinical relapse-free course was 69%, 59% and 53% at 12, 30 and 52 weeks, respectively. Ten patients (31%) had a primary failure and 5 (15%) loss of response to ADA. No significant differences in terms of efficacy were reported between not-responders and intolerant to IFX (p = 1.0). Overall, 19 patient (59%) maintained ADA therapy during 52-week follow-up. Seven patients (22%) experienced an adverse event. No serious side effects were observed and none resulted in ADA discontinuation.

Conclusion: In this cohort of children with UC ADA had a favorable short- and long-term efficacy, allowing to recover a significant percentage of patients intolerant or non-responding to IFX. The efficacy was not related to the cause of IFX discontinuation (intolerance/intolerance). Overall, safety profile was good. Larger, prospective, controlled trial with longer follow-up should be suggested to better clarify the role of ADA in pediatric UC.

Disclosure of Interest: All authors have declared no conflicts of interest.

TUESDAY, OCTOBER 31, 2017
09:00-17:00

PAEDIATRIC: LOWER GI - HALL T

P1069 SUBCUTANEOUS USTEKINUMAB PROVIDED CLINICAL AND BIOLOGICAL BENEFIT FOR 9/12 REFRACTORY PEDIATRIC CROHN'S DISEASE

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Introduction: Ustekinumab has shown a good safety profile and efficacy to induce and maintain remission in adult patients with refractory Crohn’s Disease (CD). Data are lacking in children.

Aims & Methods: All CD patients under 18 years who received ustekinumab were included in this retrospective observational study performed in a single tertiary pediatric centre.

Results: See table.

Conclusion: Subcutaneous ustekinumab is effective to induce and maintain remission in severe pediatric CD refractory to anti-TNF antibody.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Abstract: P1069. Main patients' characteristics at ustekinumab induction

Patient1 Patient2 Patient3 Patient4 Patient5 Patient6 Patient7 Patient8 Patient9 Patient10 Patient11 Patient12

Duration of disease 2 12 3 6 2 4 7 7 1 2 5 5

Prior exposure to Aza MTX Tacrolimus 6-MP tacrolimus MTX Aza MTX MTX thalidomide Aza Aza Aza MTX tacrolimus Aza Aza MTX Tacrolimus Aza MTX Aza MTX tacrolimus


Primary inefficacy Loss of efficacy Loss of efficacy Allergy to IFX Loss of efficacy Loss of efficacy Primary inefficacy

History of surgery Colectomy Ileocaecal resection Ileocaecal resection Left colectomy

From January 2015 to May 2016, twelve CD patients were treated with ustekinumab, all because of failure of several lines of therapies including anti-TNF antibodies. All but one patient were followed at least one year. An initial response was achieved in 9 (75%) patients, and remission in 5 (42%). At one year, the responders were still receiving ustekinumab with clinical benefit and without steroids need. Seven of them (58%) were on clinical remission. One patient experienced a serious adverse event and the treatment was stopped after the first injection.

P1070 TROUGH LEVELS TO INFLIXIMAB AT W6 ARE PREDICTIVE OF REMISSION AT W14, IN PEDIATRIC CROHN DISEASE

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Introduction: Loss of response to anti-tumor necrosis factor (TNF) agents is a common clinical problem. 40% of patients lose response within 12 months of therapy initiation. This retrospective study aimed to analyse patients associated with remission after 14 weeks of induction treatment by IFX in children with CD.

Aims & Methods: All patients aged from 2 to 18 years old with meeting European Crohn’s and Colitis Organisation criteria and treated for the first time by IFX between January 2002 and March 2014 at a single tertiary pediatric center were considered for inclusion in this retrospective study. The following baseline characteristics were anonymously recorded for each patient: gender, age at CD onset, age at induction, duration of disease, CD classification according to Paris classification, prior exposure to CD treatments, previous intestinal resections and reasons for anti-TNF initiation. At each infusion visit (week 0, 2, 6 and 14) disease activity was determined using Pediatric Crohn’s disease Activity Index (PEDI). Four blood samples were obtained for each patient (at W0, W2, W6 and W14). The following laboratory tests were recorded: ESR, CRP, hemoglobin, hematocrit, albumin, blood levels of lymphocytes, Trough levels to IFX (TRI) and antibodies to IFX (ATIs). Children were classified in three groups according to response at week 14: (1) remission was defined by a Crohn’s Disease Activity Index under or equal to 10; (2) partial response was defined by a PCDAI decreased by more 12.5 points since inclusion without a remission as defined above; (3) absence of partial response or remission.

Results: We analyzed 107 patients with CD, with a total of 428 visits until W14. The principal reason to start infliximab was failure of immunosuppressive therapy (60%). Infliximab proved to be an effective treatment in our cohort since 75.7% (n = 81) patients were responders to infliximab and 40% (n = 42) were in clinical remission whereas 24.3% (n = 26) were non responders at W14. At week 14, 107 patients were divided in three groups related to the clinical activity of their disease: lack of clinical response, partial clinical response, clinical remission. It concerns respectively 26, 39 and 42 patients. Major baseline characteristics were not associated with clinical remission: sex, age at diagnosis, disease location, time between diagnosis and induction, age at induction. Drugs associated with infliximab at W0, W2, W6 or W14, whether it was immunosuppressive agents or corticoids was not associated with remission. Patients with low albumin levels had a worse response at induction Activity score at induction was also statistically associated with clinical remission: each decreasing of 10 points of activity score at induction increase of 0.48 times the risk to obtain clinical remission. Trough residual of infliximab > 8.5 μg/ml at week 6 increase of 11.3 times the risk to obtain clinical remission at W14. Lack of growth retardation at induction increase of 3.98 times the risk to obtain clinical remission at W14.

Conclusion: Infliximab measurement in combination with evaluation of clinical severity (low body weight, growth retardation, hypoalbuminemia, severe disease) appears to be a reasonable strategy for predicting both short- and long-term treatment outcomes with IFX in the initial stage of treatment. Early detection of response to IFX is critical for the management of CD, especially in acute severe patients: it seems that the infliximab trough level at week 6 (more than 8.5) is predictive of a remission at week 14. Second, some patients, especially patients with low body weight, growth retardation, hypoalbuminemia and severe disease may require higher doses than standard doses.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


**P1071 INFLIXIMAB INDUCED PSORIASIS IN A COHORT OF CHILDREN WITH INFLAMMATORY BOWEL DISEASE: A 12 YEARS FOLLOW-UP STUDY**
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**Introduction:** In adult Inflammatory bowel disease (IBD), skin adverse reactions have been observed in a prevalence of 1.6 to 22%. This side effect occurs more frequently in patients treated with infliximab (IFX) for IBD. Datass in the pediatric population are lacking so far.

**Aims & Methods:** All patients aged 2 to 18 years, with Crohn’s disease (CD) or Ulcerative colitis (UC) and treated for the first time by IFX between January 2002 and March 2014, were considered for inclusion in this monocentric retrospective study.

**Results:** Basline Patients: 115 patients were treated with IFX for CD and 23 for UC. IFX treatment was initiated at the age of 14, about 2 years after diagnosis. The indication for treatment was in 61.6% (n = 85) resistance to conventional therapy, in 26.8% (n = 37) a perianal fistulizing disease and in 11.6% (n = 16) a severe colitis. At the first injection, the median PDCAI was 35 (25; 45) for CD and the median PUCAI 35 (25; 45) for UC. The duration of treatment with IFX ranged from 45 days to 8 years and median was 23.9 months (11.6; 36.5). Psoriasis: 20 patients (14% of the cohort) had an IFX-induced psoriasis. 70% of them (n = 14) of patients were in remission when the psoriasis was diagnosed. Psoriasis was diagnosed at the 8th injection (6; 15), though 355 (239; 532) days after the start of biotherapy. 20% of patients had a combo therapy: 50% of them were treated by 6-mercaptopurine, 25% by azathioprine and 25% by methotrexate. The median IFX trough levels (TRI) when psoriasis occurred was 4.7 mcg/mL (1.8; 9.6) and 4.1 mcg/mL (2.1; 8.8) at the previous visit. Median Antibodies to IFX (ATI) rate was 0%. All were supported by local treatments. No patients discontinued biotherapy following the psoriasis. Personal or family history of psoriasis, and the smoking status have not been collected. We compared the patients who develop psoriasis with psoriasis (n = 20) and without psoriasis (n = 127) with an univariate model. All children in the psoriasis group were followed for a CD. There was more perineal location of CD in psoriasis group with a significantly high prevalence (p = 0.003). Conclusion: 14% of our IBD patients treated with IFX developed psoriasis during follow-up. All were CD, more frequently it occurred for CD with perineal lesions, at the 8th injection in median, with no ATI.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P1072 PLATELET ABNORMALITIES AND ANEMIA IN PAEDIATRIC IBD: ARE THEY LINKED?**
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**Introduction:** Crohn’s Disease (CD) and Ulcerative Colitis (UC) are two major forms of Inflammatory Bowel Disease (IBD). In children with IBD anemia is common and is a combination of iron deficiency and anemia of chronic disease (ACD). IBD are associated with several alterations of platelets, including number, shape, and function1. In clinical practice, the most common platelet alteration is thrombocytosis. In IBD, thrombocytosis is associated with iron deficiency anemia and chronic inflammation1. The importance of platelet function is due to the substantially increased incidence of thromboembolic phenomena in IBD2.

**Aims & Methods:** The aim of the study is to demonstrate the link between anemia, thrombocytosis and platelet aggregation in pediatric IBD patients.

This study includes 51 children and adolescents recruited from the Pediatric Gastroenterology Unit of Polyclinico Umberto I in Rome. Patients younger 6 years, with inherited platelet defects, hemoglobinopathies, and receiving therapies that alter platelet function, are excluded. We collect disease activity scores (Pediatric Crohn’s Disease Activity Index [PCDAI], Pediatric Ulcerative Colitis Activity Index [PUCAI]). The laboratory investigations include: complete blood count, mean corpuscular volume (MCV), mean platelet volume (MPV), mean corpuscular haemoglobin concentration (MCHC), levels of hemoglobin (Hb) and indices of erythrocytes, mean platelet volume (MPV), red cells distribution width (RDW), plateletcrit (PC), thrombocrit (TCR), and prothrombin time (PT). Diagnostic criteria for anemia are based on ECCO guidelines. Platelet aggregation is evaluated on platelet-rich plasma in an AggRAM aggregometer with Born’s Method. The results were reported as the maximal percentage of aggregation observed after 4 min stimulation in response to collagen (1 μg/mL) and adenosine diphosphate (ADP 0.8 μM and ADP 2 μM).

**Results:** The study include 51 children and adolescents, 24 with UC and 27 with CD. Median age was 15.3 years (± 3.5). Iron deficiency anemia combined to ACD is the most common type (58.3% in UC and 50% in CD). Hemoglobin levels are significantly lower in patients with UC compared to CD patients (p = 0.0320). No significant differences are observed between mean values of red cells, MCV, MCHC, RDW, iron, transferrin and serum ferritin both in CD and UC. Thrombocytosis prevails in UC compared to CD patients, but no significant correlation was found. No differences are observed between mean values of PDW and MPV in both groups. In patients with UC, a negative correlation was found between mean values of hemoglobin and platelet count (p = 0.0040). Platelet aggregation results higher in anemic patients. In anemic children, mean baseline platelet aggregations - induced by ADP 0.8 μM and collagen 1 μg/mL - are significantly higher in UC compared to CD (p = 0.001 and p = 0.030 respectively). Another significant correlation is observed between platelet aggregation - induced by ADP 0.8 μM and ADP 2 μM - in anemic UC patients compared to non-anemic UC patients (p = 0.002 and p = 0.040 respectively). Platelet aggregation–induced by ADP 0.8 μM is significantly higher in anemic UC patients with active disease (PUCAI > 20) compared to the same patients whose disease is in remission (p = 0.042) and compared to patients with active CD (p = 0.054).

**Conclusion:** In our cohort, mixed anemia (iron deficiency anemia combined to anemia of chronic disease) is the most common type of anemia. Thrombocytosis is a condition more frequent in anemic IBD patients, specially in UC. In UC, anemia and disease activity are significant correlated with platelet hyperaggregability and platelet count. The observed active diseases may have a significant major risk of thrombosis, independently from acquired or inherited hemostasis defects.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1073 RELATIONSHIP BETWEEN CLINICAL COURSE OF UC DURING PREGNANCY AND OUTCOMES OF PREGNANCY: A RETROSPECTIVE EVALUATION STUDY
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Introduction: Ulcerative colitis (UC) is a chronic, intractable disease with a long clinical course. UC has a marked influence on the lifestyle of patients, and its effects on pregnancy and childbirth can especially become a problem for women in their child-bearing years. Various studies have suggested that it is desirable for pregnant women with UC to give birth while remaining in a state of remission.

Aims & Methods: The present study evaluated pregnant women with UC attending our hospital who became pregnant during remission, in order to examine the factors that contributed to recurrence of UC during pregnancy. We investigated 40 pregnant patients in remission (44 cases) attending our hospital between January 2008 and July 2016 who had remained in remission for one year prior to pregnancy. After becoming pregnant while in remission, patients who stayed in remission until delivery were classified into the ongoing remission group (35 cases) and patients with recurrence during pregnancy were classified into the recurrence group (9 cases). Remission was defined as a Lichtiger clinical activity index (CAI) of less than 4. Relapse was defined as a CAI ≥ 5 with the need for initiation or dose escalation of steroids or administration of biological agents during pregnancy. Items examined: Clinical characteristics (age at onset, disease duration, age of becoming pregnant, disease type, and treatment), the CAI in the first, second, and third trimesters, and whether or not patients continued treatment during pregnancy were examined and compared between the two groups.

Results: There were significant differences between the two groups with respect to the age of becoming pregnant (32.9 ± 4.4 years in the ongoing remission group vs. 28.3 ± 7.0 years in the recurrence group), the CAI in the second trimester (2.9 ± 4.6 vs. 3.5 ± 1.6), the CAI in the third trimester (2.9 ± 0.7 vs. 5.4 ± 2.0), and whether oral treatment was continued (continuation of treatment [yes/no]; 30/5 in the ongoing remission group vs. 5/4 in the recurrence group). Regarding the discontinuation of oral treatment, two patients in the ongoing remission group and one patient in the recurrence group discontinued it on their own judgment, while two patients in the recurrence group discontinued it due to hyperemesis. Discussion: The present study revealed that factors influencing the recurrence of UC during pregnancy were the age of becoming pregnant and the continuation of oral treatment. Our results showed that younger women were more susceptible to recurrence. As expected, discontinuing oral treatment was a factor that contributed to recurrence. However, the reasons for discontinuing treatment during pregnancy differed from those for non-pregnant women. Some patients discontinued treatment on their own judgment because they were concerned about adverse effects on the fetus, while others had difficulty with continuing treatment due to hyperemesis. With regard to the effects of medications on the fetus, medical staff should provide an explanation about the safety of treatment and should be aware that patients may have various concerns about drug therapy. If patients have difficulty continuing oral treatment due to severe hyperemesis, administration of local therapy should be considered.

Conclusion: During pregnancy, it is important to continue treatment for UC so that patients can give birth while remaining in remission. Accordingly, intervention by medical staff is particularly necessary in order to provide pregnant women with information and explanations regarding treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.
Table 1: Continued

<table>
<thead>
<tr>
<th>AILD-IBD</th>
<th>AILD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AST(U/l)</td>
<td>235.0 [113.5 to 470.5]</td>
</tr>
<tr>
<td>IgG (g/l)</td>
<td>25.3 [16.2 to 37.8]</td>
</tr>
<tr>
<td>Faecal calprotectin (U/g)</td>
<td>298.5 [114.5 to 439.8]</td>
</tr>
<tr>
<td>GL symptoms (n)</td>
<td>12</td>
</tr>
<tr>
<td>Faecal protection &gt; 60 U/g (n/total)</td>
<td>11/12</td>
</tr>
</tbody>
</table>

Conclusion: In our cohort 35% of children presenting with AILD were subsequently diagnosed with IBD. Possible risk factors for development of IBD in AILD are low haemoglobin, being leaner and younger at diagnosis. An elevated FC and the presence of GI symptoms are useful to assess the need for diagnostic endoscopy when considering diagnosis of IBD in the context of AILD. As current immunosuppression may mask mild to severe signs and symptoms of IBD a lower threshold for endoscopy should be considered in these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI077 CLINICAL AND LABORATORY VARIABLES THAT PREDICT CLINICAL AND ENDOSCOPIC REMISSION IN CHILDREN WITH CROHN’S DISEASE TREATED WITH INFILXIMAB

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Introduction: We aimed to identify early clinical and laboratory predictors of sustained clinical and endoscopic remission in children with Crohn’s disease (CD) under infliximab (IFX).

Aims & Methods: Prospective study conducted in children with moderate-to-severe CD starting IFX treatment. All patients underwent endoscopy, weighted pediatric CD activity index (wPCDAI) assessment, C-reactive protein (CRP) at week 0 and 52. wPCDAI and CRP were also evaluated at 14 weeks. The primary outcome was to determine the ability of 14-week wPCDAI and CRP to predict steroid-free sustained remission and mucosal healing at 1 year. As a secondary outcome we sought to evaluate the concordance between wPCDAI and Simple Endoscopic Score for CD (SES-CD) at week 52.

Results: Forty-one children were enrolled (median age 13.3 ± 2.7, females n = 20 [48.8%]). At 1 year, 21 (51%) and 16 (39%) were in clinical (wPCDAI < 12.5) and endoscopic (SES-CD < 3) remission, respectively. Fourteen-week wPCDAI didn’t differ between patients who achieved both clinical and endoscopic remission at 1 year (p = 0.21 and p = 0.35, respectively). By using a multivariable logistic regression model, neither week-14 wPCDAI nor CRP were predictors of 1-year clinical (p = 0.83 and p = 0.30, respectively) and endoscopic remission (p = 0.22 and p = 0.48). wPCDAI resulted significantly correlated with 1-year SES-CD (r = 0.38, p = 0.01). The concordance between wPCDAI and SES-CD was excellent and good for severe disease and remission (k Cohen 0.87 and 0.76), moderate and absent for mild and moderate disease, respectively.

Conclusion: Based on our results, 14-week post induction wPCDAI and CRP are not predictors of 1-year sustained steroid-free clinical and endoscopic remission in children with CD under IFX therapy. Continuation of wPCDAI SHould be considered for good correlation with SES-CD, particularly for patients in remission and with severe disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

TUESDAY, OCTOBER 31, 2017 09:00-17:00

OTHER LOWER GI DISORDERS II - HALL 7a

PI078 THALIDOMIDE FOR THE TREATMENT OF REFRACTORY GASTROINTESTINAL BLEEDING CAUSED BY ANGIODYSPASIAS

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Introduction: Gastrointestinal angiodypsias is either inherited or acquired, it is an important and challenging cause of acute gastrointestinal haemorrhage, particularly in the elderly, sometines refractory to treatment. Although multiple treat- ment modalities, both medical and surgical, are being used, there is no established medical treatment available for these patients. Thalidomide is a potent inhibitor of angiogenesis in experimental models. As angiodypsias are a result of unregulated vessel growth, antiangiogenic treatment may inhibit growth of angiodypsias. But its benefits and risks nevertheless remain unclear.

Aims & Methods: This retrospective study evaluates the efficacy, safety, and side-effect of thalidomide in the treatment of patients with refractory gastrointestinal bleeding from angiodypsias. Patients with recurrent gastrointestinal bleeding of angiodypsia who were from Hangzhou First people’s Hospital from October 2012 to July 2013 were collected for this open and nonrandomized study. Thalidomide was started with 50 mg/day and then increased incrementally by 100 mg/day, if tolerated, and continued for 6 months. Adverse events, hemo- globin, blood chemistry, the changes of coagulation and blood transfusion were monitored during the treatment and for 6-months post-treatment.
Results: Twenty-one patients with chronic refractory angiodysplasia bleeding were recruited in this study, included 10 women, aged between 40–85;11 cases of massive hemorrhage due to self withdrawal. Among the remaining 20 patients who were given thalidomide regularly for 6 months. (1). Eighty patients come across constipation, sleepness and dry mouth. There were no skin rashes, peripheral neuropathy and any other adverse reactions during the treatment. All side-effects resolved when thalidomide was discontinued. (2). The red blood cell after treatment (3.76 ± 0.56*10^12/L) was significantly higher than before treatment (3.38 ± 0.60*10^12/L). Hemoglobin after treatment (94.7 ± 13.51 g/L) compared with before treatment (83.2 ± 17.6 g/L). HCT after treatment (0.32 ± 0.05) compared with before treatment (0.29 ± 0.08); the difference was statistically significant (P<0.05). (3). The ALT after treatment (32.9 ± 18.5 L/U) compared with before treatment (30.6 ± 12.8 U/L); AST after treatment (28.1 ± 8.56 L/U) compared with before (28.0 ± 12.4 L/U). PT after treatment (12.1 ± 1.3 s) compared with before (11.8 ± 1.4 s); APTT after treatment (30.2 ± 3.7 s), compared with before (31.0 ± 6.2 s); the difference was not statistically significant (P > 0.05). (4). Prothrombin time (PT) after treatment (12.1 ± 1.3 s) compared with before (11.8 ± 1.4 s); APTT after treatment (30.2 ± 3.7 s), compared with before (31.0 ± 6.2 s); the difference was not statistically significant (P > 0.05). (5). cases of colonic capillary malformation review colonoscopy, and the vascular malformation improved significantly after treatment.

Conclusion: Thalidomide, with its antiangiogenic mechanism of action, seems to be a promising drug in bleeding angiodysplasia as a treatment option for patients unable to benefit from other available modalities of treatment. the study drug was well tolerated.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1079 NEWLY DEVELOPED ENDOSCOPIC DETACHABLE SNARE LIGATION THERAPY FOR COLONIC DEVEERTICAL HEMORRHAGE: A MULTICENTER PHASE II TRIAL

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8Gastroenterology, Hitachi General Hospital, Ibaraki/Japan
9Gastroenterology, Ibaraki General Hospital, Ibaraki/Japan
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Introduction: Colonic diverticular bleeding is the most common cause of lower gastrointestinal bleeding. We have reported the preliminary safety results of endoscopic detachable snare ligation (EDSL), a new method for diverticular hemorrhage1. The bleeding diverticulum was ligated with a detachable snare. Unlike the endoscopic band ligation, removal of the scope to attach a ligation device and reinserntion for treatment are not needed in this method. We performed a clinical trial to evaluate the efficacy and safety of EDSL.

Aims & Methods: This multicenter single arm phase II study was conducted in 12 Japanese institutions. Patients suspected of diverticular bleedings were enrolled from June 2015 to March 2017. Patients with serious heart, renal, or liver failure, sepsis, disseminated intravascular coagulation, and high-dose steroid use (prednisolone dosage >10 mg/day) were excluded. The primary endpoint was the early (within 1 month) rebleeding rate in patients who were treated with EDSL.

The secondary endpoints were overall early rebleeding rate in patients who had colonic diverticular bleeding (intention to treat:ITT), success rate of EDSL total procedure time, EDSL procedure time, identification rate of bleeding diverticula, and adverse events. This study was approved by the ethics committee of each participating hospital and confirmed to the Helsinki Declaration and the Japanese Clinical Research Guidelines.

Results: Of 123 patients with diverticular hemorrhage, 101 were treated with EDSL and the early rebleeding rate was 5% (5/101). The rebleeding rate in ITT population was 9% (11/123). Success rate of EDSL was 78% (96/123). EDSL procedure time of the ITT population were 40 (15–150) min and 4 (1–57) min. The identification rate of bleeding diverticula was 60% (123 in 205 enrolled patients). Two mild adverse events occurred; colonic diverticulitis cured with antibiotics and temporary abdominal pain during EDSL.

Conclusion: EDSL is an effective, safe, and convenient treatment method for colonic diverticular hemorrhage.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1080 RISK FACTORS FOR EARLY AND LATE RE-BLEEDING IN PATIENTS WITH COLONIC DIVERTICULAR BLEEDING

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Introduction: Incidence of colonic diverticular bleeding has increased in recent years. Colonic diverticular bleeding is problematic because of the following reasons: the low detection rate of the bleeding source by endoscopy and frequent re-bleeding. At our hospital, we have a policy of performing emergency lower gastrointestinal endoscopy for all patients with colonic diverticular bleeding within 24 h of their admission. We have reported that the following factors can contribute to the successful identification of the bleeding source: extravasation revealed by abdominal contrast computed tomography (CT), and mounting of a hood to the tip of an endoscope during lower gastrointestinal endoscopy. However, risk factors for re-bleeding in patients with colonic diverticular bleeding were still unknown.

Aims & Methods: In this study, we examined the risk factors for early and late re-bleeding in patients with colonic diverticular bleeding. From January 2004 to April 2016, we admitted 432 patients (285men and 147 women, mean age: 71 ± 13 years) to our hospital for treatment following a diagnosis of colonic diverticular bleeding based on abdominal CT and endoscopy findings. Early and late re-bleeding was defined as macroscopically bloody stools as a result of colonic diverticular bleeding during hospitalization and after discharge, respectively. Risk factors for early and late re-bleeding were retrospectively examined using univariate and multivariate analysis.

Results: Early re-bleeding occurred in 112 patients (26%; 86 men and 26 women, mean age: 71 ± 12 years). The mean duration until re-bleeding was 3.9 ± 2.4 days, and the average, early re-bleeding occurred 1.7 ± 1.2 times. On average, lower gastrointestinal endoscopy was performed 2.7 ± 1.2 times and endoscopic hemostatic treatment was performed 1.0 ± 1.0 times. In the univariate analysis, significant differences were seen in males (P = 0.005), in the use of oral antiplatelet agents (P = 0.012), and in patients not undergoing endoscopic hemostasis (P = 0.004). In the multivariate analysis, male gender (P = 0.006; odds ratio 2.06, 95%CI 1.23–3.44), the use of oral antiplatelet agents (P = 0.008; odds ratio 1.85, 95%CI 1.17–2.93), and patients not undergoing endoscopic hemostasia (P = 0.005; odds ratio 1.5, 95%CI 0.31–8.81) were independent risk factors for early re-bleeding. Late re-bleeding was seen in 72 of 345 patients who were able to follow up (21%; 46 men and 26 women, mean age: 73 ± 12 years). The mean duration until late re-bleeding was 41 ± 40 months, and on average, late re-bleeding recurred 1.5 ± 1.2 times. Only the use of oral antiplatelet agents (P = 0.005; odds ratio 1.72, 95%CI 0.98–2.98) was identified as an independent risk factor for late re-bleeding in the univariate and multivariate analysis.

Conclusion: Not undergoing endoscopic hemostasis and male gender were identified as risk factors for early re-bleeding, indicating the importance of choosing measures and hemostatic treatments to improve the detection rate of bleeding sources during endoscopy. The use of oral antiplatelet agents was a risk factor for both early and late re-bleeding, suggesting the need for patient management through multi-departmental cooperation.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
P1081 ACUTE LOWER GASTROINTESTINAL BLEEDING—IS NOBLADS THE ANSWER?

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Introduction: Acute lower gastrointestinal bleeding (ALGIB) constitutes an important gastroenterological emergency. A new score (NOBLADS) that intends to determine the risk of severe ALGIB was recently developed. We aimed to assess the validity of this score in a cohort of patients with ALGIB.

Aims & Methods: Retrospective study. Emergency consecutive admissions for ALGIB were reviewed. Severe ALGIB was defined as transfusion of ≥2 units of packed red blood cells (PRBC) and/or hemocrtic decrease of ≥20% within the first 24 h and/or recurrent bleeding after 24 h of stability. NOBLADS score was calculated and its discriminative capacity for severe ALGIB as well as for overall outcome was assessed.

Results: Included 118 patients with a mean age of 73.6±14.4 years and 52.5% males. Most frequent etiologies for ALGIB were diverticular bleeding (23.7%) and post-polpectomy (21.2%). ALGIB was severe in 38.1% of patients. NOBLADS score showed a weak discriminative capacity to determine severe ALGIB (AUC=0.68, p<0.01). However, when comparing patients with NOBLADS ≤4 vs >4, patients with higher scores were significantly older (69.2±15.7 years vs 78.6±10.0 years, p<0.01), had lower hemoglobin levels as admission (11.2±2.1 g/dL vs 10.2±2.5 g/dL, p<0.01), were transfused with more units of PRBCs during the first 24 h and during hospital in-stay (0.4±0.9 vs 1.1±1.3, p<0.01 and 1.0±2.2 vs 3.0±3.3, p<0.01, respectively) and were more frequently admitted to intermediate care units (35.2% vs 59.6%, p<0.01). No differences were found between the two groups regarding in-stay length, rebleeding rate, need for surgery or death.

Conclusion: NOBLADS score showed a weak discriminative capacity to determine severe ALGIB however, patients with NOBLADS ≤4 had greater PRBCs transfusion need and were more frequently admitted to intermediate care units. New or improved scores that can predict severe ALGIB are needed to determine more precisely appropriate care and to allow for a standardized approach.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1082 COLORECTAL CANCERS (CRCs) DEPENDING ON THE SCREENING INTERVAL IN IBARAKI, JAPAN

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Introduction: In Japan, CRC screening was launched as a national policy for all people aged over 40 years since 1992. 2-day FIT has been widely accepted, and has been recommended performing in every year. It is demanded that CRC screening is performed effectively depending on the capacity of colonoscopies. We will show so much data on fecal hemoglobin concentration (referred as concentration) and proccess of colorectal cancer among them.

Aims & Methods: The aim of this study is to analyze the concentration of FIT for colorectal cancers (CRCs) from the screening. The cut off value is adapted 20 μg Hb/g stool and the rate of further examination is around 75% for many years. In Ibaraki prefecture. CRCs were detected 1,421 cases from the screening (2000–2014) with 2-day FIT. The concentration of FIT was grouped in 20–80, 80–140, 140–200 and over 200 μg Hb/g stool. Screening have been performed with the OC-SENSOR DIANA (EIKEN, JAPAN) automated analyzer. CRCs were analyzed with age group (40–49, 50–59, 60–69, over 70 year-old), size(1–24, 25–49, over 50 mm), location(proximal, distal), Dukes’ classification(Dukes A, A-invasive, B, C, D) depending on the concentration. The chi-squared test was used to compare of each group.

Results: There was no different in gender and age group for concentration. The concentration of CRCs in the distal colon was significantly higher in the proximal colon [distal 39% (861/2,200) and proximal 32% (337/1,053) with over 200 μg Hb/g stool]. The concentration of CRCs with larger size was significantly higher than smaller size [1–24 mm 27% (533/1,961), 25–49 mm 54% (439/818) and over 50 mm 64% (169/263) with over 200 μg Hb/g stool]. The concentration of invasive CRCs was significantly higher than intra-mucosal CRCs [intra-mucosal 23% (370/1,617) and invasive 50% (888/1,793) with over 200 μg Hb/g stool]. The concentration of Dukes B, C and D were significantly higher than Dukes A except for intra-mucosal. There was no difference between Dukes B and D [Dukes A except for intra-mucosal 36% (325/910), B 68% (247/363), C 60% (232/383) and D 69% (61/89) with over 200 μg Hb/g stool].

Table 1: Fecal Hb concentration and progression of colorectal cancer

<table>
<thead>
<tr>
<th>Age</th>
<th>Size(mm)</th>
<th>Location</th>
<th>Dukes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>proximal</td>
<td>distal</td>
</tr>
<tr>
<td></td>
<td>conc.</td>
<td>A</td>
<td>B</td>
</tr>
</tbody>
</table>
| 20-80 | 48 | 190 | 588 | 605 | 993 | 224 | 53 | 495 | 871 | 885 | 375 | 61 | 82 | 15
| 80-140 | 14 | 51 | 185 | 199 | 268 | 107 | 16 | 146 | 286 | 230 | 140 | 32 | 36 | 8
| 140-200 | 17 | 33 | 117 | 100 | 167 | 48 | 25 | 75 | 182 | 132 | 70 | 23 | 33 | 7
| 200- | 55 | 177 | 529 | 497 | 533 | 439 | 169 | 337 | 861 | 370 | 325 | 247 | 232 | 61
| total | 134 | 451 | 1,419 | 1,410 | 1,961 | 818 | 264 | 1,053 | 2,200 | 1,617 | 910 | 363 | 385 | 88 | 15

Conclusion: In 20–80 μg Hb/g stool, there were CRCs with smaller size, no inva, in the proximal colon, Dukes A except for intra mucosal CRCs and so on. When the cut off value is raised over 80 μg Hb/g stool, the detection of early stage CRCs and proximal CRCs may be lost. There were many advanced CRCs with concentration over 200 μg Hb/g stool. Therefore, when the participants, who are positive with high concentration of FIT, need to take a further examination as soon as possible. Why concentration of CRCs in the distal colon are higher than in the proximal colon? It may be related to the fact that the number of detectable CRCs in the distal colon are more than in the distal colon. We will go on researching mechanism about this.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Colonscopy surveillance is a diagnostic tool used to detect colorectal cancer in patients with a history of Hodgkin lymphoma (HL). This study assessed the prevalence of colorectal neoplasia in HL survivors compared to controls. The primary aim of this multicenter cohort study was to assess the diagnostic yield of advanced colorectal neoplasia detected by a first surveillance colonoscopy. The study demonstrated a higher prevalence of colorectal neoplasia in HL survivors compared to controls.

**Results:**
- Advanced colorectal neoplasia was defined as an advanced adenoma (high-grade dysplasia, ≥25% villous component, or ≥10 mm diameter), an advanced serrated lesion (dysplasia or ≥10 mm diameter), or CRC. Results were compared with matched population controls.
- The primary screening colonoscopy (n = 1276 asymptomatic individuals between 50–75 years of age) showed that left-sided cancers were most often diagnosed in an early disease stage.

**Conclusion:** Sur switched to abdominal radiotherapy and/or procarbazine have a high prevalence of advanced colorectal neoplasia. Colonoscopy surveillance should therefore be implemented as standard of care.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**
- M. E. Van Leerdam: M.E. van Leerdam obtained funding (INC2007-7046) from the Dutch Cancer Society as principal investigator. M.E. van Leerdam received personal fees from Celgene, Janssen, and Roche. The remaining authors have no conflicts of interest.
- E. Dekker: E. Dekker has received funding from the Prostate Cancer Foundation (PCF) and the American Society of Clinical Oncology (ASCO). The remaining authors have no conflicts of interest.

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**Aims & Methods:**
- The study evaluated the prevalence of colorectal neoplasia in HL survivors compared to controls.
- The primary screening colonoscopy (n = 1276 asymptomatic individuals between 50–75 years of age) showed that left-sided cancers were most often diagnosed in an early disease stage.

**Conclusion:** Sur switched to abdominal radiotherapy and/or procarbazine have a high prevalence of advanced colorectal neoplasia. Colonoscopy surveillance should therefore be implemented as standard of care.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**
- M. E. Van Leerdam: M.E. van Leerdam obtained funding (INC2007-7046) from the Dutch Cancer Society as principal investigator. M.E. van Leerdam received personal fees from Celgene, Janssen, and Roche. The remaining authors have no conflicts of interest.
- E. Dekker: E. Dekker has received funding from the Prostate Cancer Foundation (PCF) and the American Society of Clinical Oncology (ASCO). The remaining authors have no conflicts of interest.
diagnosed in stage I or II. As those patients will have better survival rates, it is expected that screening will decrease CRC mortality rates.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1087 LOCATION AND SEX PREDOMINANCE OF MISMATCH REPAIR DEFICIENT COLORECTAL CANCER IN IVORY COAST DIFFER FROM ITS EUROPEAN COUNTERPART

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Introduction: According to European and American series, 1–2 up to 20% of colorectal cancers (CRC) are caused by mismatch repair (MMR) deficient mutations. However, in Ivory Coast, these data are lacking.

Aims & Methods: We performed a retrospective study on paraffin-embedded tissue samples from 96 colorectal cancers (54% males) operated in Abidjan from 2007 to 2015. CRC was defined when present in a patient with a family history suspect for LS. In both cases no germline MLH1 promoter hypermethylation was found.

Conclusion: These results need to be confirmed on a larger cohort.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1088 ROYAL LINEAGE ANALYSIS FOR LYNCH SYNDROME IN PATIENTS WITH ADVANCED ADENOMA OR COLORECTAL CANCER WITHIN A NATIONAL SCREENING PROGRAM FOR COLORECTAL CANCER

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Introduction: Lynch syndrome (LS) is the most common hereditary cause of colorectal cancer (CRC). Identifying LS carriers and their affected family members is of great importance for prevention of CRC. Routine screening for LS by immunohistochemical staining (IHC) in CRC patients ≥70 years of age is recommended. LS screening in adenoma patients could yield more benefit, since CRC can still be prevented in these patients. A small number of participants of the national CRC screening program is expected to have LS. We aimed to assess the diagnostic yield of IHC for LS in patients with advanced and multiple adenomas or CRC within the Dutch national fecal immunochromonometric test (FIT)-based CRC screening program.

Aims & Methods: We included participants of the national CRC screening program, referred to our center after a positive FIT from December 2013 to December 2016. IHC for MLH1, MSH2, MSH6 and PMS2 protein was performed on advanced adenomas and CRCs. Abnormal results were referred for genetic counselling. Both patients had no family history suspect for LS. In patients with CRC the IHC results were sent to a genetic counselling. In cases with LS, the IHC results were sent to a genetic counselling.

Result: A total of 1006 patients (54% male; mean age of 67 years (±5 years)) had positive FIT were included in the study. At colorectal cancer, 355 (35%) patients (63% male; mean age of 67 years (±6 years)) had a CRC and/or adenoma eligible for IHC. A total of 322 adenoma patients were analyzed. None had aberrant IHC. Of the examined adenomas, 151 (47%) had a villous component and/or high grade dysplasia (128 (41%) with villous component and 23 (11%) with high grade dysplasia). Out of 48 CRC patients, 7 (15%) showed loss of protein expression. All seven cases had loss of MLH1 and PMS2 protein. Five cases had MLH1 promoter hypermethylation. The two patients without MLH1 promoter hypermethylation were referred for genetic counselling. Both patients had no family history suspect for LS. In both cases no germline MLH1 mutation was found and somatic mutation analysis showed that both had a likely sporadic tumor.

Conclusion: These results indicate that routine LS screening by IHC and MLH1 hypermethylation in patients with advanced and multiple adenomas within a national FIT-based screening CRC program is not an effective strategy. The diagnostic yield of LS screening in younger adenoma patients should be assessed.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1089 COLORECTAL CANCER SCREENING PROGRAMS AND THE RATE OF SURGICAL ONCOLOGY PROCEDURES IN THE VENETO REGION (ITALY): ARE FOLLOW-UP COLONOSCOPIES REALLY NEEDED?

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Introduction: Colorectal cancer (CRC) is a leading cause of cancer mortality in the Veneto Region (North-eastern part of Italy). Population screening of adults between 50 and 75 for CRC was begun in 2002, and it became standard practice in those local health units (LHU) of the region in 2008; 14 LHU provided also follow-up colonoscopies and 7 LHU no. The current retrospective cohort study was carried out to evaluate the impact of CRC screening on the rate of surgical oncology procedures to treat colon and rectal cancer.

Aims & Methods: Data from hospital discharge records (HDR) regarding CRC patients hospitalized between 2000 and 2015 were collected. All CRC patients whose principal diagnosis was colon and/or rectal cancer were included in the study. The number of patients studied rose approximately 18% reaching 1,547,097 for the last year (2015). The Standardized Hospitalization Ratio (SHR) using five-year age groupings was calculated and expressed per 10,000 population.

Results: During the study period, 30,399 surgical procedures for colorectal cancer were performed (colon 63%, rectum 36%, secondary malignant neoplasms 1%) with a SHR of 139.1; the number was higher in males (1.69 vs. 1.02; OR: 1.66; CI 95%: 1.62–1.7; p < 0.05). An analysis of the annual SHR distribution uncovered two distinct phases: during the first phase there was a rising tendency that reached a maximum value in 2007 (166.9; X2 trend: 46.731; p < 0.05) and during the second there was a falling tendency that reached its minimum value in 2015 (102.3; X2 trend: 429.791; p < 0.05). When the cancer sites were analyzed, it was seen that despite the peak in 2007, the rate of surgical procedures of the proximal colon during the last year was the same as the 2000 value (41.5); there was, instead, a relevant decrease in the rate of procedures on the distal colon and rectum which fell from 94.4 to 52.2 (−37.5%). The study also shows that there was no significant difference in the reduction in surgical procedures for CRC in LHU in which the screening program included a follow-up colonoscopy (SHR 2015: 139.8; −29%) with respect to those centers where it was not foreseen (SHR 2015: 138.5; −28%).
ETHNIC VARIATION IN ADENOMA DETECTION IN THE UK FLEXIBLE SIGMOIDOSCOPY BOWEL CANCER SCREENING PROGRAMME

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Introduction: The NHS bowel scope screening programme was introduced in 2013 and all adults aged 55 invited for a 'one-off' flexible sigmoidoscopy followed by a colonoscopy if significant adenomas are detected. University Hospitals of Leicester Bowel Cancer Screening Centre serves an ethnically diverse community with approximately 25% of the population eligible for sigmoidoscopy screening being British Asians and 45% being British Whites. Within the faecal occult blood based bowel cancer screening programme we have previously reported a lower polyp detection rate (PDR) and adenoma detection rate (ADR) in Asians undergoing colonoscopy compared to White British. This study aims to evaluate PDR, ADR and cancer detection (CDR) in British Asian Indians taking part in the bowel scope screening programme.

Aims & Methods: Patients who underwent screening sigmoidoscopy between February 1st, 2015 to 28th Feb 2017 were included. All individuals participating in screening sigmoidoscopy routinely report their self-selected ethnic origin. This database was cross referenced with the endoscopic and histology findings from the 'Exeter' online database. The findings in British Asian Indians were compared with British Whites.

Results: A total of 4287 patients underwent screening sigmoidoscopy over the 2-year period. 1169 individuals had polyps (500 adenomas). Overall polyp detection rate (PDR) was 1169/4287 (27.3%), adenoma detection rate (ADR) was 2-year period. 1169 individuals had polyps (500 adenomas). Overall polyp detection rate (PDR) was 1169/4287 (27.3%), adenoma detection rate (ADR) was 2.8% (95% CI 2.8–5.2%) and other polyps were 14/4287 (0.3%) (Inflammatory polyps 13, Juvenile polyp 1). Cancer detection rate was 6/4287 (0.14%). During the period studied, 3509 British white individuals (82%) and 778 British Asian Indians were detected in British White (CDR = 0.17%) but none in British Asian Indians

Conclusion: This study found no cancers and significantly lower PDR and ADR in British Asian Indians compared to British White participants in the bowel scope screening programme. Further long term evaluation of these differences is needed and may shed light on factors contributing to the development of bowel cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

CLINICOPATHOLOGICAL STUDY OF SERRATED LESIONS OF THE COLORECTUM

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Introduction: Serrated lesions of the colorectum are the precursors of microsatellite unstable carcinomas. However, their clinical and pathologic features are not well described and need further evaluation.

Aims & Methods: The aims of this study was to clarify the clinicopathological features of colorectal serrated lesions. We reviewed clinical charts and pathology files of 5352 endoscopically resected specimens performed during January 2007 and December 2016 in our hospital. A total of 463 serrated lesions (8.7%) were resected and classified into three categories: HP (hyperplastic poly), SSA/P (sessile serrated adenomas/polyps), and TSA (traditional serrated adenoma), according to the WHO criteria. We examined the features of these cases and evaluated the morphologic characteristics by using immunohistochemical staining for Ki-67 and the expression of MUCs (MUC2, MUC5AC and MUC6) in differentiating serrated lesions.

Results: Of these 463 lesions, a total of 241 (52.1%) were HP, 102 (22.0%) SSA/P, and 120 (25.9%) TSA. Male to female ratio (M/F) was 2.38 for HP, 0.98 for SSA/P, and 2.45 for TSA. Mean size of SSA/Ps (13.1 mm) and TSAs (10.4 mm) were significantly larger than that of HP (8.1 mm) (<0.05, respectively). SSA/Ps were located predominantly in the proximal colon, whereas HP and TSA were mainly located in the sigmoid colon and rectum. 64% of SSA/Ps were flat in macroscopic appearance. SSA/Ps and HPs were whitish or almost the same as adjacent mucosa in color, whereas TSAs had a tendency to be reddish. Magnified colonoscopy showed Type II open pit pattern as characteristic of SSA/Ps, whereas pimecione-shaped pit pattern as that of TSAs. Incidence of concomitancy of carcinomas in HP, SSA/P, and TSA were 0% (0 out of 241), 2.9% (3 out of 102), and 4.2% (5 out of 120), respectively. Ki-67 positive cells in HP showed regular, symmetric distribution, and those in SSA/P did not differ in asymmetric distribution.

Conclusion: SSA/P and TSA had different clinicopathologic features from HP. Further research is needed to identify the various etiologic factors and the biological differences that contribute to the development of SSA/P and TSA.
significantly different between serrated lesions, SSA/Ps and HPs were positive for MC1/MAb105 with TSAx.

**Conclusion:** Our studies showed the three types of serrated lesions have their own distinct features and could be helpful to distinguish between them. SSA/P and TSA are pre-malignant lesions of colorectum and we should detect these lesions and completely remove endoscopically.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1093 IN SITU DETECTION OF MIGRATING COLORECTAL CANCER CELL-RELEASED LARGE EXTRACELLULAR EXOSOME CLUSTERS**


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**Introduction:** It is generally accepted that exosomes, small, membrane-bounded vesicles are formed in multivesicular bodies (MVBS) which fuse with plasma membrane resulting in the release of individual exosomes into the extracellular space. Recently, sporadic in vitro observations of a novel, unconventional mechanism have been reported in which the exosome-like vesicles remain in one host during their secretion.

**Aims & Methods:** Our aim was to examine this phenomenon in migrating colorectal cancer (CRC) cells in situ. Immunohistochemistry (IHC) examination of migrating, individual cancer cells was performed in surgically removed, metastatic CRC samples (n=38). We used epithelial specific cytoplasmic (cytokeratin/C6) and cell membrane (E-cadherin) markers for the identification of 3D reconstructions showed ALIXPositive and CD63Positive exosome clusters (ECs) with 0.62 to 1.94 m diameter (mean±SD: 1.28±0.34 µm) localized partially inside, and/or outside the cytoplasm in 85.96% (n=38/44) of migrating CRC cells. E-cadherin IHC showed that ECs were not only captured around migrating CRC cells but also inside 98% of the individual migrating, individual cancer cells. Differences in ALIXPositive and CD63Positive exosome clusters (ECs) with 0.62 to 1.94 m diameter (mean±SD: 1.28±0.34 µm) localization were observed in the plasma membrane-stroma interface. STEDmicroscopic images showed that released ECs were composed smaller, distinguishable ALIXPositive-positive spheres of 98 to 150 nm diameter (mean±SD: 128.96±16.73 nm), which fall into the size ranges of exosomes.

**Conclusion:** Our study demonstrates in situ for the first time that besides conventional exosome release, migrating CRC cells also secrete large, extracellular ECs. These structures might fundamentally contribute to the autocrine/paracrine regulation of cancer development, which effect may differ from that mediated by conventionally secreted exosomes.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1094 ALTERED ARGinine METABOLISM IN HEPATOPROLIFERATIVE INTESTINAL EPITHELIAL CELLS: A POTENTIAL ROLE IN TUMORIGENESIS AND WOUND HEALING**

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**Introduction:** The semi-essential amino acid arginine is important for intestinal epithelial proliferation and is an essential dietary component delivered by solid food. In homeostatic proliferating adult intestinal enterocytes arginine is catalyzed, by the enzyme arginase 2. During embryonic development, the demand for arginine increases, due to rapid growth. Arginine is lacking from solid food. In homeostatic proliferating adult intestinal enterocytes arginine synthesis via ASS1 plays a role in intestinal carcinogenesis and repair. In TLR4KO mice sacrificed at 8 months, 1.4 polyps/mouse were observed while none was observed at T0 or at 4 months (p=0.006).

**Aims & Methods:** The aim of this study was to define the role of TLR4 in the immune surveillance mechanisms in a non-inflammatory model of colonic carcinogenesis. The azoxymethane (AOM) induced colon carcinogenesis mouse model was used. Colon mucosal samples were collected from wild type (WT) C57bl/6 and TLR4 knockout (KO) mice before AOM administration (T0), at 4 and at 8 months after the first AOM injection. Colonies were removed and examined for occurrence of adenoma and inflammatory infiltrate. Macrophage tumor load was assessed by counting the number of polyps. Flow cytometry on macrophage single cell suspension 98 CD16+ lymphocytes expressing CD25, CD38, CD69 or CD69, for CD4+ lymphocytes expressing CD25 or CD25 and FoxP3 and for epithelial cells expressing CD80 or MHC-I or MHC-II were performed. Non parametric statistics was used.

**Results:** In TLR4KO mice sacrificed at 8 months, 1.4 polyps/mouse were observed while none was observed at T0 or at 4 months (p=0.006). In TLR4KO mice at 8 months, the rates of epithelial cells expressing CD80, CD4+CD25+ and MHC-I were significantly lower than in those at a T0 or at 4 months (p=0.01, p=0.003, p=0.003, p=0.001, respectively). Moreover, at 8 months, 5/7 TLR4KO mice compared to 0/7 WT ones had at least a colonic adenocarcinoma (p=0.02). At this time point, CD4+CD25+, CD4+CD25+FoxP3+, CD4+CD25+, CD8+CD3+ cells rate was significantly lower in TLR4KO mice than in WT ones (p=0.001, p<0.001, p=0.01, p=0.02, respectively). Similarly, at 8 months the rate of epithelial cells expressing MHC-I and MHC-II were significantly lower in TLR4KO than in WT mice (p=0.001, p<0.001, p=0.01, respectively).

**Conclusion:** TLR4 deficiency significantly accelerates the progression of colonic carcinogenesis through a progressive decline of antigen presentation and lack of co-stimulation at later stages. These impairments are associated to a decline of T cell response in all its form (Treg, T helper and cytotoxic). All these findings are coherent with a pivotal role of TLR4 in the immune surveillance mechanism.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**References**


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**Table 1: Continued**

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**Conclusion:** We observed a different behavior between mutated and wild-type patients. Genetic involvement still developed adenomas during the follow-up and some needed colectomy. Instead, wild-type patients had mostly no recurrence. Constitutive genetic background could be suspected in wild-type patients when a continuous development of new polyps has observed and further genetic investigation should be offered by multi-gene testing.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1097 GLOBAL DNA HYPMETHYLATION ALONG THE COLORECTAL NORMAL-ADENOMA-CANCER SEQUENCE**

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**Introduction:** Besides local hypermethylation on promoters of certain tumor suppressor genes, global DNA hypomethylation is characteristic in various types of cancers including colorectal cancer (CRC). The DNA methylation level of long interspersed nuclear element-1 (LINE-1) repetitive retrotransposon sequences constituting 17% of the human genome can be used to estimate global methylation level.

**Aims & Methods:** We aimed to analyze the alterations of the global DNA methylation levels along the colorectal normal-adenoma-carcinoma sequence progression on the basis of LINE-1 methylation and to study the methyl-cytosine pattern in tissue samples. Genomic DNA was isolated from 10 colorectal adenoma, 10 CRC and 30 normal colonic biopsy samples. Bisulfite conversion of DNA samples was performed using EZ DNA Methylation-Direct Kit (Zymo). For methylation level quantification of the LINE-1 retrotransposable element, bisulfite specific PCR (BS-PCR) was applied, and 146 bp long PCR products were sequenced on Pyromark Q24 system (Qiagen). Tissue localization of 5-methylcytosine (5-mC) in normal, adenoma and CRC tissues was analyzed by immunohistochemistry using mouse monoclonal anti-5mC antibody (GeneTex).

**Results:** According to the LINE-1 bisulfite sequencing results, significant (p < 0.01) global DNA hypomethylation was detected both in CRC (63.8% ± 8.7%) and adenoma samples (67.5 ± 5.1%) compared to normal tissue (72.1 ± 4.4%). 5-mC labeling of both the epithelial and stromal components of normal samples was strong (scoring values: +2 and +3) with diffuse and nuclear staining. In adenomas, decreased nuclear 5-mC staining (scoring value: +2) was detectable in the epithelium and the stroma compared to normal epithelium. In CRC samples significantly lower 5-mC levels could be observed than in normal tissue samples (p < 0.05).

**Conclusion:** Global DNA hypomethylation could be shown in CRC compared to healthy normal tissue samples both by LINE-1 bisulfite-sequencing and by 5-mC immunohistochemistry. Genome-wide DNA methylation decrease occurs already in adenoma stage of colorectal carcinogenesis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1098 CIRCULATING miRNA CHANGES IN HUMAN COLORECTAL CANCER DEVELOPMENT AND IN ANIMAL MODEL**

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**Introduction:** miRNAs have a critical relevance in regulation during tumorigenesis. The expression profiles of miRNAs alter along tumor progression moreover; these miRNAs may spread into tumor macro- and microenvironment.
P1099 RHOA: THE KEY SIGNALING PATHWAY OF MICRORNA-126 IN SUPPRESSING THE EPITHELIO-MESENCHYMAL TRANSITION, PROLIFERATION, MIGRATION AND INVASION OF COLORECTAL CANCER CELLS

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Introduction: The mechanism of colorectal cancer (CRC) invasion and metastasis is still unclear. Epithelial-mesenchymal transition (EMT) is one of the key molecular steps in the process of distant metastasis. EMT is referred to conversion of cells with an epithelial phenotype into cells with a mesenchymal phenotype, which lead to loss of cell polarity, with acquisition of migratory and invasive property.1 MicroRNA (miRNA) is a non-coding RNA that negatively regulate gene expression at post-transcriptional phase.2 MicroRNA-126 (miR-126) originates from a common precursor structure located within the egfl7 gene, which acts as a tumor suppressive miRNA in various cancers.3 In previous studies, we frequently down-regulated in human CRC tissues and negatively correlated with patient’s prognosis.4 MiR-126 was also low-expressed in high metastatic cell lines, and inhibited proliferation, invasion and metastasis of CRC in vitro.5 However, whether miR-126 can regulate the process of EMT in CRC is still unclear. Ras homologue A (RhoA) is one of the most characterized members of Rho GTPases which belong to Ras superfamily. RhoA, as molecular switch, cycles between an active GTP-bound state and an inactive GDP-bound state. RhoA and its co-factors of signaling pathway are known to participate in a diverse array of cellular events related to invasion and metastasis of cancer cells.6 Our previous study found that miR-126 down-regulated RhoA and ROCK activity in CRC cells.7 Whether RhoA activity and RhoA signaling pathway play an important role in miR-126 regulating EMT process, cell proliferation, migration and invasion of CRC remains unclear.

Aims & Methods: To identify RhoA signaling pathway associated with the functions of proliferation, migration and invasion of CRC cells. Constructed CRC cell lines of miR-126 over-expression or knockdown. Performed MTI, colony formation, wound-healing, migration, invasion assays and RT PCR, western blot analysis to study the functions of miR-126 in EMT, proliferation, migration, invasion and expression RhoA signaling pathway of CRC cells. Constructed pDsRed2-V14RhoA (constitutive active RhoA, V14RhoA) and pDsRed2-N19RhoA (domain-negative, N19RhoA) mutants, then transfected them into the CRC cell lines of miR-126 over-expression or knockdown RhoA activity. Pulldown assay detected RhoA activity after transfected. Then repeated the experiments above to investigate the biological behavior changes of CRC cells.

Results: MiR-126 promoted the expression of E-cadherin and suppressed the expression of SLUG, Snail, Vimentin, Fibronectin of CRC cells. MiR-126 also inhibited proliferation, migration and invasion of CRC cells, and negatively regulating RhoA signaling pathway. V14RhoA mutant effectively increased the activity of RhoA and reversed the role of miR-126 by promoting EMT, proliferation, migration and invasion in miR-126 overexpressing HCT116 cells. Conversely, N19RhoA mutant effectively decreased the activity of RhoA and suppressed EMT, proliferation, migration and invasion in miR-126-silenced SW480 cells.

Conclusion: RhoA signaling pathway was the key signaling pathway of miR-126 in suppressing the EMT, proliferation, migration and invasion of CRC cells.

References:

Disclosure of Interest: All authors have declared no conflicts of interest.

P1100 DNA METHYLATION CHANGES PRECEDE AND CONTRIBUTE TO SPORADIC MUTATIONS IN COLORECTAL ADENOMA AND CANCER DEVELOPMENT THROUGH INDUCED GENOMIC INSTABILITY

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Introduction: Colorectal cancer development is characterized by sporadic mutations and epigenetic alterations. DNA mutations occur randomly and sporadically in growth-related genes, mostly on cytokine nucleotides. Active demethylation of cytosines in relation to RNA expression alterations may lead to genetic instability and DNA mutations. Whole genome DNA methylation and RNA expression profiling with high-resolution bisulfite sequencing (Roche 454 Junior). DNA methylation expression was performed by whole genome expression analysis (HG U133, Affymetrix). Tageted pathway analysis was performed for the p53 pathway. Bioinformatic analysis included overall hypomethylation detection of top hyper/hypomethylated genes, methylation changes on the tumor mutation regions and related pathway gene promoters were evaluated by targeted analysis.

Results: Overall hypomethylation was observed on the N-Ad-CRC sequence in the gene body and non coding genomic regions. In Ad-N comparison e.g p73, NGFR, PDGFRA genes were hypermethylated for their promoters, FMN1, SLCL16A7 genes were hypomethylated, respectively. In CRC-N comparison DKK2, SDC2, SOX1 genes showed hypermethylation, while ERBB4, CREBS, CNTN1 genes were hypomethylated in the promoter regions. In silico analysis on the TCGA database yielded confirmatory results. The common hyper- and hypomethylated genes were also in correlation with methylation array data. A significant negative correlation of the top methylated genes could be demonstrated to the RNA expression data. In the certain mutation hot spot, genebody regions significant DNA methylation alterations (mainly hypermethylation) were detected. APC, P53 and KRAS mutations were found in 30%, 24%, and 21% of adenomas, and in 29%, 53%, 29% of CRCs, respectively. PCR analysis could detect any significant quantitative changes related to these DNA sequence alterations. The p53 gene body was addressed by hypermethylation in adenomas. microRNA expression changes were observed in most of the p53 pathway genes showing promoter methylation alterations.

Conclusion: DNA methylation with consecutive phenotypic effect can be observed in a high number of gene promoters and gene body regions through CRC development. The mutation hot spot areas of the most relevant colorectal cancer genes (APC, P53, KRAS) were hypermethylated without detectable quantitative RNA expression changes. p53 cancer pathway genes are highly methylated in promoters and gene body with expression changes. The tumor mutation hot spot areas in the p53 gene body were hypermethylated and thus could not be detected in the methylation alterations.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Disclosure of Interest: All authors have declared no conflicts of interest.
1.90, respectively. However, the polyp miss rate of BLI-WL group was less than that of WL-WL group (1.6% vs 10.0%, P = 0.0014).

**Conclusion**: There were no significant difference in the overall polyp (adenoma) detection rate with BLI-WLI group or WL-WL group. However, miss rate was higher in WL-WL group compared with BLI-WL group (10.0% vs 1.6%, P = 0.0014). Further, BLI detected more polyps per patient compared with WL group (2.84 vs 1.90). BLI may improve polyp miss rate and the number of polyps per subject (mean adenoma detection rate) in the colonoscopy.

**Disclosure of Interest**: All authors have declared no conflicts of interest.

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**P1103 COLORECTAL CANCER SCREENING COLONOSCOPY - ABSENT DISTAL POLYPS IN ADVANCED PROXIMAL NEOPLASIA**

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**Introduction**: The National Health Service Bowel Cancer Screening Programme (NHS BCSP) offers colonoscopy to people testing positive for Faecal Occult Blood Test (FOBT) after the age of 60. In addition, the 'Bowel scope screening' test offers once-only flexible sigmoidoscopy (FS) to people in the UK after the age of 55. The Norwegian (NORCCAP) and Italian (SCORE) trials evaluated the effectiveness of FS screening and reported a non-statistically significant decrease in colorectal cancer (CRC) specific mortality at follow-up. It is unclear if significant proximal neoplasia is being missed in people undergoing flexible sigmoidoscopy alone.

**Aims & Methods**: We aim to investigate the distributions of pathology within the BCSP at a busy district general hospital in London. In 2015, 22,539 FOBT kits were returned out of the 43,884 (51.4%) sent out in the boroughs of Barking, Havering and Redbridge (BHR). Of those returned, 398 (1.8%) tested positive. We collected data for the 326 patients who attended for colonoscopy at BHR University Hospitals (81.9%). Subgroup analyses included age, sex, histology, location of polyps, number of polyps, polyp size and therapies.

**Results**: Mean age 67, Male 60.4%. Polyps were found in 199 patients (61%), 488 polyps found in total, mean number of polyps 2.5 (Range 1–14), mean size 7 mm (Range 1 mm–60 mm); 49 (15%) hyperplastic, 156 (47.9%) adenomas and 16 (4.9%) adenocarcinoma. Patients with adenoma/carcinoma were older (67.6 vs. 66.5, p = 0.02) but there was no difference in sex (Male 61.4% vs. 59.4%, p = 0.49) when compared to those without adenoma/carcinoma. Of 172 patients with adenoma/carcinoma, 111 (64.5%) were proximal to the splenic flexure (SF). 5 out of 16 (31.2%) adenocarcinomas were proximal to SF and 2 (40%) of these patients had no polyps distal to the SF.

**Conclusion**: Patients with adenomas/carcinomas are older and those with proximal adenomas/carcinomas have more polyps but are smaller in size. One in three adenocarcinomas picked up during colonoscopy would be out of reach of a flexible sigmoidoscopy. Furthermore, over one third of the proximal cancers did not have distal polyps.

**Disclosure of Interest**: All authors have declared no conflicts of interest.

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**References**


P1104 STUDIES ON CLINICOPATHOLOGICAL CHARACTERISTICS AND THE LONG-TERM PROGNOSIS OF DEPRESSED-TYPE COLORECTAL CARCINOMAS
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Introduction: Colorectal cancers have two development theories. One of the development theories is “adenoma-adenocarcinoma sequence” developing from protruded-types “polyps” we know generally. The other is considered to emerge directly from normal epithelium, not through the adenoma stage. Recently, it is revealed most of this type are depressed-type carcinomas. This theory is called “de novo” pathway. We studied clinicopathological characteristics and long-term prognosis mainly on depressed-type colorectal carcinomas. Aim: To clearly the pathological characteristics of depressed-type colorectal carcinomas compared with flat- and protruded-type. A total of 2930 colorectal neoplasms excluding advanced carcinomas were resected endoscopically or surgically in our Center from April 2001 to December 2015. Of them, 112 tumors were identified as T1 carcinomas. Anatomical and morphological development classification, 244 lesions (21.7%) were depressed-type, 385 lesions (34.2%) were flat-type and 498 lesions (44.1%) were protruded-type. We analyzed the pathological features of these lesions.

Results: The rate of distant metastasis or recurrence was 0.9% (10/1127). Among these 10 cases, 5 cases were developed from depressed-type lesions and one showed a para-aortic lymph node metastasis and four showed a lung metastases. The number of metastasis in all the lesions was 72.4% in depressed-types, 3.2% in flat-type and 2.9% in protruded-type. Within less than 5 mm in diameter, that was 10.6%, 0% and 0% respectively. Among T1 carcinomas, the rate of vessel invasion was 64.3% in depressed-type, 34.3% in flat-type and 38.4% in protruded-type. Sixty of poorly differentiated or mucinous adenocarcinomas were 17.2%, 10.4% and 13.5%, that f of massive submucosal invasion was 94.7%, 71.7% and 69.7%, and that of tumor budding was 36.5%, 16.1% and 17.3%, respectively. The rates of these pathological factors were significantly higher in depressed-type lesions. On the other hand, the rate of adenomatous component was 4.9%, 52.2% and 50.8% respectively. It was significantly lower in depressed-type lesions, suggesting that they emerge directly from normal epithelium without going through the adenoma stage. The rate of lymph node metastasis was 11.6%, 6.8% and 3.0%, respectively. And 2 depressed-type lesions had synchronous liver metastases.

Conclusion: Depressed-type colorectal carcinomas invade massively even when they are small. They had higher risks of vascular invasion, poorly differentiated or mucinous adenocarcinomas, massive invasion and tumor budding than flat- or protruded-types. For their rapid growth and malignant potential, whether the lesion is depressed-type or not is very important in the diagnosis of colorectal carcinomas.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1106 THE DIAGNOSTIC VALUE OF HYPOXIA INDUCED EXOCYTOPLASMS VESICLES IN COLORECTAL CANCER PATIENT PLASMA
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Introduction: Hypoxia signalling has been enhanced to haemorrhage cancer cell survival, chemoresistance, motility, tumour angiogenesis as well as self-renewal capacity and proliferation of putative cancer stem cells. One of the key player in hypoxia is carbonic anhydrase IX (CAIX) which is a hypoxia-inducible enzyme. CAIX is overexpressed in a variety of cancers including colon cancer and plays a crucial role in maintaining favourable intracellular pH in hypoxia. There is also evidence that extracellular vesicles (EV) production is increased in response to hypoxia and promotes adaptive response of cancer cells and we have previously demonstrated, that CAIX positive EVs secretion is increased in response to hypoxia in colon cancer cell lines [20].

Aims & Methods: Within this study, we explored a possibility to use CAIX for the isolation of hypoxic EVs from colorectal cancer (CRC) patients’ plasma. EVs were isolated from plasma samples of 27 CRC patients and 25 healthy donors (HD) by using sequential centrifugation, filtration and size-exclusion chromatography steps. EVs where quantified by Nanoparticle tracking analysis (NTA) and CAIX positive EVs where determined by ApogeeA50.

Results: Statistically significant increase in the amount and size of EVs was observed in CRC compared to patients HD. The percentage of CAIX and CAIX-positive EVs was significantly higher in CRC patients compared to HD. In addition, it is higher in patients with metastasis than without distant metastases.

Conclusion: There is an increased total EV number, EV size and CAIX positive EV amount in CRC patient plasma compared to HD plasma, that might have diagnostic and prognostic value. (Financed by Latvian Council of Science, collaboration project No: 625/2014).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1107 THE GENESIS STUDY: GENERIC BIOPSY FOR PREDICTION OF SURVEILLANCE INTERVALS AFTER ENDOSCOPIC RESECTION OF COLORECTAL POLYPS
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Introduction: Colorectal cancer (CRC) is an important contributor to cancer mortality and morbidity worldwide. 80% of CRCs arise via the adenoma-carcinoma sequence, 10-20% by sessile serrated adenomas (SSA). Hyperplastic polyps are regarded harmless. Current surveillance strategies for CRC following polypectomy are determined by endoscopic and histopathological factors. Such a distinction has also been challenged.

Aims & Methods: The study was aimed for molecular characterization of colonic polyps in patients who underwent screening colonoscopy. Correlation of the genetic analysis with endoscopic, clinical and histopathological data was attempted to potentially better define relevant risk marker or sub-groups at risk for prediction of surveillance intervals. 100 Patients were enrolled in this study. Patients with polyps ≥ 10 mm and with at least one high grade adenoma (GCRA: 8%, 25% SSA: 38%). Up to 6 representative polyp biopsies were collected and stored in a formalin-free medium and finally embedded in paraffin-blocks, followed by histopathological assessment. Targeted Next Generation Sequencing (TNGS) was performed for 38 cancer related genes; GeneRead DNASeq Targeted Panels V2, Qugen® on a MiSeq platform (Illumina®). Genetic and histopathological analysis was done blinded to the endoscopic and clinical data.

Results: In 100 patients, 234 polyps were removed. 121 polyps (54.0%) are sized < 10 mm, 71 (31.7%) were ≥ 10 mm. For 32 polyps (14.3%) no size was available. 90 polyps (40.2%) were located in the left, 126 polyps (56.3%) in the right colon, for 8 polyps (3.6%) no location was noted. 112 polyps (50.0%) were adenomas and 110 polyps (49.1%) non-adenomatous lesions. No data were available
for 2 polyps (0.9%). Clinical, endoscopic and histopathological data were corre-
lation coefficients. Significantly different DNA methylation patterns with endoscopic or histopathological polyp characteristics were observed for BRAF, KRAS, TCF7L2, FBXW7 and CTNNB1 mutations. Multivariate analy-
lysis revealed that polyps >10 mm have a significant higher relative risk (RR) for harboring oncogenic mutations (RR 3.467 (1.742–6.933)). Adenomas and right-
sided polyps are independent risk factors for CTNNB1 mutations (RR 18.559.
The conclusion was that assessment of the mutational landscape of resected polyps/poly biopsy can easily be integrated in the workflow of current colonoscopy practice. There are distinct genetic patterns related to size and location of polyps and the clinician can appreciate this additional information to better estimate a patient’s individual risk.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1108 QUANTITY, FRAGMENT LENGTH AND GLOBAL DNA METHYLATION LEVEL ALTERATIONS OF CIRCULATING CELL-FREE DNA IN COLORECTAL ADENOMA, CANCER AND INFLAMMATORY BOWEL DISEASES

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Introduction: Cell-free DNA (cfDNA) is circulating in human plasma and its amount is different in certain physical conditions. It is well known, that in healthy people the quantity of cfDNA is very low, but it rises in chronic disorders such as cancer. At the same time, very high cfDNA level can be measured in healthy people during physical exercise.

Aims & Methods: We aimed to analyze cfDNA changes (quantity, fragment length, global DNA methylation level) in physiological conditions (during physical exercise) and in inflammatory and neoplastic colorectal diseases. Plasma was separated from 64 patients (16 colorectal carcinomas (CRC), 13 colonic adenomas (AD), 19 inflammatory bowel disease (IBD), and 16 normal (N) donors without evidence of disease). Plasma samples were also collected from 6 healthy athletes before, during and after physical training. DNA was isolated with High Pure Viral Large Volume NA isolation Kit (Roche). cfDNA was quantified with Qubit fluorometry (Invitrogen). CfDNA fragment length distribution was assessed by Bioanalyzer 2100 using High Sensitivity DNA assay (Agilent). Global DNA methylation was analysed by bisulfite pyrosequencing of long interspersed nuclear element-1 (LINE-1) (Qiagen).

Results: High increase of cfDNA amounts was observed in plasma samples of patients with colonic adenoma (20.61 ± 10.70 ng/ml), colorectal cancer (24.13 ± 20.02 ng/ml) and IBD (22.27 ± 16.40 ng/ml) compared to healthy sub-
jects (10.33 ± 3.22 ng/ml). Highly elevated cfDNA amounts were found in plasma samples of athletes during physical exercise (66.17 ± 29.00 ng/ml), while the cfDNA amount decreased after physical activity (51.87 ± 39.80 ng/ml). Characteristic cfDNA fragment length distribution pattern (with different peak heights at 180 bp, 360 bp, 550 bp) was observed in each patient group. Global DNA hypomethylation was shown in CRC plasma samples with advanced tumor stage (N: 79%, C: 66.7%, C: 66.7%, C: 66.7%). The hypomethylation amount is different in certain physical conditions. In recent years, blood-based cfDNA amount decreased after physical activity (51.87

Conclusion: CFDA amount is different in certain physical conditions. It is well known, that in healthy individuals with 91.5% sensitivity and 97.3% specificity (AUC = 0.978) could differentiate adenoma samples from healthy controls with 89.2% sensitivity and 86.5% specificity (AUC = 0.937). In silico analyses confirmed our results on the altered methyla-
tion of the four markers in tissue samples. In silico analyses confirmed our results on the altered methyla-
tion indicated decreasing protein levels of the four markers along the colorectal adenoma-carcinoma sequence.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1110 URINE-NMR METABOLOMICS FOR SCREENING OF ADVANCED COLORECTAL ADENOMA AND EARLY STAGE COLORECTAL CANCER

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Introduction: Metabolomics, a dynamic portrait of the metabolic status of living systems, has demonstrated its great potential for use in the diagnosis of various cancers by applying advanced analytic techniques and bioinformatics tools. Recently, very few metabolic markers in CRC have been consistently discovered, but the specific metabolic profiles of patients with CRC indicating colorectal cancer in colorectum remains poorly understood and warrants investigation due to its non-invasive sampling method. In the last decade, several metabolomic approaches have been applied toward identifying metabolic alterations in CRC using variety of sample types including urine, tissue, serum, and feces. However, there are only few urinary metabolic studies and especially nuclear magnetic resonance (NMR) spectroscopy, which has several advantages including rela-
tively high degree of reproducibility, easy-to-identify metabolites, high throughput, and non-destructive sample treatment, has not been applied to urine samples.

Aims & Methods: In this study, we investigate the differences in urine metabolic profiles of patients with colorectal neoplasia (CRN) including CRC and precancerous lesion, and healthy volunteers using a NMR-based urine metabolic study. In addition, we evaluate applicability as diagnostic tool of urine metabo-

Conclusion: Biochemical profiles from patients with colorectal neoplasia (CRN; 36 advanced adenomas and 56 various stages CRC) and healthy controls (n = 156) were analyzed by NMR spectroscopy. Healthy and CRN groups were statistically discriminated using orthogonal projections to latent structure discriminant analysis (OPLS-DA). The class prediction model was validated by three-fold cross-validation. The advanced adenoma and stage 0 CRC were grouped as pre-invasive CRN.

Results: After patients underwent endoscopic resection or surgical resection for CRC, advanced adenoma has been diagnosed in 36 patients, stage O CRC in 24 patients, stage I CRC in 8 patients, stage II CRC in 7 patients, stage III CRC in 13 patients and stage IV CRC in 4 patients. CEA and CA 19-9 levels for patient were analyzed (b-values of 19-9 were increased in patients with CRC). The sensitivity and specificity of CEA and CA 19-9 were 6.2% and 99.3%, respectively. The grades of the OPLS-DA score plot showed statistically significant discrimination between pre-invasive CRC as well as advanced CRC and normal with a Q2 value of 0.591. In the prediction validation study, the sensitivity and specificity for diagnosing pre-invasive CRC was 96.2% and 95%, respectively. The grades predicted by the PLS-DA model showed that area under the curve was 0.823 for taureine, 0.783 for alanine and 0.842 for 3-aminoisobutyrate. In multiple receiver operating characteristics curve analyses, tauurine, alanine, and 3-aminoisobutyrate were good discriminator for CRC patients.

Disclosure of Interest: NMR-based urine metabolic profiles significantly and accurately discriminate between patients with pre-invasive CRC as well as
advanced CRC, and healthy control with high accuracy. It demonstrates an applicability of urinary metabolomics as screening tool for accurate diagnosis of pre-invasive CRN.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1111 VALIDATION OF THE UTILITY OF A FAecal IMMUNOCHEMICAL TEST FOR HAEMOGLOBIN (FIT) IN PATIENTS PRESENTING TO PRIMARY CARE WITH NEW BOWEL SYMPTOMS

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Introduction: Symptoms alone are poor predictors of underlying colon pathology. Only 14% of patients referred for colonoscopy from primary care have significant bowel disease (SBD), colorectal cancer (CRC), high risk adenoma (HRA, defined as > or any ≥ 1 cm) and inflammatory bowel disease (IBD). We have reported that undetectable faecal haemoglobin (f-Hb), measured by a faecal immunochromatatic test (FIT) is a good rule-out test for SBD. Since December 2015, GPs in Tayside have been encouraged to use FIT test as an adjunct to history, examination and mandatory blood tests in patients referred with bowel symptoms. Referrals are vetted by a Consultant and triaged to test or clinic. We have examined the impact of the introduction of the FIT test on referral rates and colonoscopy yield.

Aims & Methods: Patients in primary care with new bowel symptoms were encouraged to complete a FIT in addition to blood count and renal function check. We prospectively recorded FIT tests received, referrals to secondary care and colonoscopy findings over 1 year from December 2015 to December 2016. FIT tests were analysed by HMJACKarc (Kyowa Medex Co. Ltd., Japan) with f-Hb concentration potentially rules out significant colorectal disease. Cololectal Dis 2013;15:e151-9.

P1112 NEw FECAL IMMUNOASSAY TEST (FIT) FOR THE COLORECTAL CANCER SCREENING IN ILE DE FRANCE: IMPACT OF AGE, GENDER AND HEMOGLOBIN LEVEL

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Introduction: The immunological screening test (FIT) for colorectal cancer (CCR) was introduced in January 2015 in Ile de France (15 million inhabitants) after Hemocult was abandoned due to its low sensitivity. The Hemocult (HC) launched in 2007 had reached less than 30% participation rate.

Aims & Methods: We report one-year on FIT screening in Ile de France and compare results to those with HC test for speculating on adjustment actions. The raw data were extracted by request from the registry of the screening structure (in various areas 75, 77, 91, 92, 94 and 95) covering a target population of 3026366 habitants. Rates of participation were calculated, and after one-year experience period, profiles of individual with positive tests, rates of those with positive colonoscopy, with polyps (all stages combined) and with high grade dysplasia (HGD) were described. Results were compared to those with HC from the launch to the end of the last campaign (Dec 2014) normalized for mean one-year output. The comparisons were made by an x2 test (qualitative variable) and multivariate stepwise analysis was performed for identifying predictive factors for cancer diagnosis.

Results: At the end of the HC-based screening campaigns 2014, 2.5 million individuals were annually invited and the participation rates since 2009, ranged from 28.2% to 24.6%, with females showing higher rates for participation (30.6% vs 26.1%) than men (26 to 21.8%, p < 0.0001). During the first (2015) year FIT experience, the O Sensor device was used for 450120 (34% estimated participation rate) individuals (versus 294603 participants with HC in 2014 p < 0.0001; 24% participation rate). The rate of positivity was 4.0% (versus 1.9% with HC; p < 0.0001). Among all positive FIT individuals, 93% underwent colonoscopies: 35% were normal (vs 41%; p < 0.01), 13.2% presenting with cancer or HGD and 52% with polyps (vs. 37.7%; p = 0.00051). While women (50.0%) had similar to invitation rate, 57.1% vs 55.9%, the positivity rate in women (3.7%) was lower than in men (5.5%; p < 0.0001). More advanced polyps and cancer were found in men (14.5%) than in women (11.3%) (p < 0.0001) with normal colonoscopies lower in men (24.2%) than in women (40.7%; p < 0.0001). The predictive value for cancer leads to more early lesions detected indicating its higher specificity. Men of 63.5 yrs old or more with Hemoglobin levels higher than 340 ng/mL are of very high risk of cancer and should be absolutely conducted to the colonoscopy in case positive FIT test. Disclosure of Interest: All authors have declared no conflicts of interest.

P1113 ARTIFICIAL INTELLIGENCE CAN PREDICT THE PRESENCE OF LYMPH NODE METASTASIS IN T1 COLORECTAL CANCER

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Introduction: Most T1 colorectal cancers (CRCs) undergo surgical colectomy in which pathologists with established clinical guidelines despite the low incidence (approximately 10%) of lymph node metastasis (LNM). Therefore, many patients without LNM undergo unnecessary surgeries.

Aims & Methods: To reduce unnecessary surgeries, we aimed to predict the risk of LNM in T1 CRCs by using artificial intelligence (AI). Data on 690 consecutive patients with T1 CRCs who had undergone colectomy between April 2001 and March 2016 were retrospectively analyzed. Data of a randomly selected 590 patients were used for machine learning for the AI model, which analyzed five clinicopathological factors: tumor location, lymphatic invasion, vascular invasion, tumor budding and histological grade. The remaining 100 patients served as a test set for validating the AI model and output the predicted LNM as positive or negative. To validate the AI model, sensitivity, specificity and

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accompanying high-risk adenomas on perioperative clearing colonoscopy.


Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1114 RISK FACTORS OF ADVANCED METACHRONOUS NEOPLASM IN COLOSCOPIC SURVEILLANCE AFTER COLON CANCER RESSECTION

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Introduction: Regular surveillance colonoscopy after colon cancer resection is recommended to detect metachronous adenoma and cancer. However, risk factors of advanced metachronous neoplasm during postoperative surveillance have not been fully evaluated yet.

Aims & Methods: This study aimed to assess the risk of advanced metachronous neoplasm during surveillance colonoscopy in patients who underwent curative colon cancer resection. The patients who underwent curative colon resection for non-metastatic colon cancer between January 2002 and December 2012 in a single tertiary center were retrospectively reviewed.

Results: A total of 278 patients were enrolled in this study. Surveillance colonoscopy was performed after perioperative clearing colonoscopy. Among the patients, 182 (61.6%) were male, and the median age was 65 years. On perioperative clearing colonoscopy, accompanying high-risk adenomas (>3, size ≥10 mm, with high-grade dysplasia and villous histology) were detected in 95 patients (31.9%) and were significantly associated with old age (>65 years), male sex, alcohol use, smoking, and stage 3 colon cancer (P < 0.05). During the post-operative follow-up periods (median, 5.35 years), advanced metachronous neoplasm was found in 45 patients (15.1%) during surveillance colonoscopy, including colon cancer in 4 patients (1.3%). In the multivariate analysis,, distal colon cancer (distal to splenic flexure; odds ratio [OR] = 4.463; P = 0.002), accompanying high-risk adenomas on perioperative clearing colonoscopy (OR = 3.414; P = 0.001), and hypertension (OR = 2.344; P = 0.026) were significant risk factors of advanced metachronous neoplasm during surveillance colonoscopy.

Conclusion: Patients who had distal colon cancer, accompanying high-risk adenomas on perioperative clearing colonoscopy, and hypertension may need a shorter colonoscopic surveillance interval. A more tailored surveillance strategy is needed to improve overall outcome in patients who undergo curative colon cancer resection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1115 PROSPECTIVE COMPARISON OF THE NOVEL FULL SPECTRUM ENDOSCOPY (FUSE) AND ADVANCED HIGH DEFINITION-WHITE LIGHT ENDOSCOPY FOR DETECTION OF POLYPS IN ROUTINE PRACTICE

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Introduction: Despite major advances in white light endoscopy detection of colon polyps remaining challenging with significant polyp miss rates. The novel second generation full spectrum endoscopy (FUSE) is a new scope with two additional cameras in the sides that provides a panoramic 300° field of view.

Aims & Methods: The aim of this study is to identify the role of the FUSE in improving polyp detection. This was a single-center, prospective, randomized, open-label study in patients that presented for routine colonoscopy at an outpatient unit during a six months period. Patients were randomized to either FUSE (FUSE colonoscope CDVL slim c38) or standard frontal view (SFV) colonoscopy (Olympus Evis Exera III 190). The primary outcomes were polyp detection rate (PDR), diverticulum detection rate (DDR) and complete colonoscopy. Secondary outcomes were procedure time, adverse event rates, size and characteristics of the polyps and success of endoscopic treatment (R0 resection). All procedures were performed by experienced endoscopists, who had carried out >5000 colonoscopies and had excellent polyp detection rates (>95%).

Results: A total of 197 patients (49.2% female, 50.8% male, median age 60 years, range ±16 years) were studied. No significant difference was seen between the 2 groups for the primary endpoints of polyps detection rate (PDR), diverticulum detection rate (DDR) or complete colonoscopy (table 1). About secondary endpoints: R0 endoscopic resection was achieved in 95% in both groups (p = 0.68). The median procedure time in minutes was higher with SFV (36.7 ± 13.3 min) than FUSE 21.5 ± 10.7 min (±4.6, IC95% 8 – 12.1, p = 0.005). There were no significant differences regarding adverse events, determination of colon cleanliness, or others epidemiologic factors. 2 case were excluded of the statistical analysis due to surveillance of polyposis syndrome, to avoid skewing of results.

Conclusion: In expert hands, PDR and DDR exceed 50% with advanced white light and FUSE systems. FUSE was not superior to advanced white light endoscopy for the PDR and DDR. However, with FUSE we can reduce procedure duration without any additional adverse events or increased discord rate. These data further demonstrate the safety and feasibility of the new FUSE system.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1116 UNDERWATER ENDOSCOPIC MUCOSAL RESECTION FOR NON-PENDULATED COLORECTAL LESIONS. IS THE DISTAL CAP REALLY NECESSARY?


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Introduction: Underwater Endoscopic Mucosal Resection (UEMR) has been demonstrated as a safe and effective technique for removal of flat and sessile colorectal lesions. Until now, only UEMR with cap has been described in literature. In addition there is no consensus about the endoscopic settings.

Aims & Methods: This prospective study was conducted between January and November 2016 in two university tertiary referral centers. UEMR was performed using a standard colonoscope without the distal cap. The lesions were marked with snare tip prior to resection. Insufflation was switched off. Then, the colon lumen was entirely deflated. Water at room temperature was infused using an irrigation pump until complete filling of the lumen was achieved. All gas pockets in the operative field were evacuated. Two sizes of polypectomy snare (13 and 25 mm) were used according to the preference of the endosco- pists. No submucosal injection was performed. One of these three different electroendoscopic settings (DRY-CUT, AUTOENDOT and ENDOCUT) was selected. All resection wounds were carefully inspected after UEMR. Endoclips were employed for the management of bleeding and suspected perforation.

Results: Between January and November 2016, 45 patients (27 female, mean age 67 years, range 53–87 with 55 non-pendulated colorectal lesions (mean size 16 mm, range 10–40 mm) were included. Six lesions were located in cecum, 21 in the ascending colon, nine in transverse, eight in descending colon, five in sigmoid, and six in rectum. In five patients, we selected DRY-CUT mode; in fifteen AUTOENDOT; and in twenty-five the ENDOCUT mode. All lesions were successfully and completely removed by UEMR. The procedure time was recorded in 24 resections (mean 13 minutes, range 4–40). Thirty-three of them were removed on bloc (60%). Histology revealed the following: 40% tubular adenomas; 20% tubulovillous adenomas; 25.45% sessile serrated adenomas; 3.65% traditional serrated polyps; 7.25% intramuscular adenocarcinomas and...
3.65% were superficial submucosal carcinomas (<1.000 μm). During UEMR, two cases (both using AUTOCUT mode) of spurt bleeding were observed (4.45%). Hemostasis was easily achieved in both cases by clamping. No patient required blood transfusion. One patient had abdominal pain on the day after resection without signs of pneumoperitoneum on CT scan. There was no perforation or delayed bleeding.

Conclusion: This study supports the existing data indicating acceptable rates of technical success and low incidence of adverse events with UEMR. The results of this study without cup were similar with the previous ones using cup. Further comparative studies with and without cup, using different settings and especially between UEMR and traditional EMR are needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PI117 ADENOMA DETECTION RATE INFLUENCES RISK PREDICTION OF METACHRONOUS ADVANCED COLORECTAL NEOPLASIA IN LOW-RISK PATIENTS
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Introduction: Current guidelines recommend surveillance colonoscopy after 10 years or surveillance in 5-10 years in individuals with no or 1-2 non-advanced adenomas.

Aims & Methods: We hypothesized that risk of metachronous advanced colorectal neoplasia (AN) varies based on clinical characteristics and colonoscopy quality. We identified 7,171 participants with no or non-advanced adenomas at first-time screening colonoscopy. The risk of metachronous AN at surveillance colonoscopy 3-5 years later was investigated according to clinical characteristics and endoscopist adenoma detection rate (ADR).

Results: In multivariate analyses, strong associations between increasing age, male sex, current smoking, family history of colorectal cancer, follow-up interval, increasing number of adenomas, and low ADR and risk of any metachronous colorectal neoplasia were observed. For metachronous AN, increasing age, male sex, increasing number of adenoma, and low ADR were independent risk factors. Among patients with 1-2 small adenomas, women with age ≥60 years or men comprised a hidden-risk group, which had 5.3% risk of metachronous AN at surveillance. Women <60 years old with 1-2 low-risk adenomas had very low (1.2%) metachronous AN risk. Metachronous AN was significantly more likely in individuals who were completely negative for endoscopist ADR (<32%) than in those screened by endoscopists with a higher ADR (≥32%) (3.2% vs. 0.6%, respectively; P = 0.001).

Conclusion: According to patient and adenoma characteristics, and ADR of the endoscopist, the risk of metachronous AN varies among low-risk patients. In recommending surveillance colonoscopy, these factors should be taken into consideration.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PI118 EXPERIENCE OF PER ANAL ENDOSCOPIC MYECTOMY (PAEM)
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Introduction: The technique of endoscopic submucosal dissection has recently been implemented, and large and complete lesions such as those invading ileocecal valve and appendix orifice can be resected en bloc. However, lesions accompanying severe fibrosis in the submucosal layer and exhibiting the muscle retraction (MR) sign are often difficult to be resected completely. We devised a new method called ‘Per Anal Endoscopic Myectomy’ for small lesions involving severe fibrosis, in which dissection is done between the inner circular and outer longitudinal muscles instead of between submucosal layer and muscle layer. Aims & Methods: The aim of this study is to examine the usefulness and safety of PAEM. All PAEM cases performed in our hospital and an affiliated hospital were retrospectively reviewed. When fibrosis in the submucosal layer was suspected, pocket creation method was applied and if severe fibrosis with MR sign was found, PAEM was selected. In PAEM procedure, after dissecting circumferentially around the fibrosis with a double tunneling method, the inner circular muscle is cut in a circular manner, which makes the outer longitudinal muscle clearly visible. The space between the inner circular and outer longitudinal muscles is sparse and suitable traction with the tunneling method makes it easier to dissect this space. PAEM was performed only for rectal lesions, and no clip closure was carried out after the procedure in most cases.

Results: Ten rectal lesions were treated with PAEM between July 2015 and March 2017. Among them, 7 cases including 2 cases with mucosal cancer, 3 cases with 1-2 small adenomas and 2 cases with advanced adenoma were resected en bloc with negative margin. The other 3 cases showed tumor invasion to the muscle layer and the vertical margin was positive. The clinical course after PAEM was preferable in all cases. Three cases which achieved resection with negative margin but found lymphovascular invasion of the tumor underwent additional surgical or adjuvant chemoradiation. In surgical cases, they could permit anus-preservation.

Conclusion: PAEM for lesions exhibiting MR sign with severe fibrosis will enable complete en bloc resection with more accurate pathological diagnosis. No complications were recorded in our experiences. Further investigation into the significance of PAEM would be needed.

Disclosure of Interest: T. Toyonaga: Dr. Toyonaga invented the Flush knife-BT in conjunction with Fujifilm and receives royalties from its sale. All other authors have declared no conflicts of interest.

References

PI119 LOCAL RECURRENCE AFTER ENDOSCOPIC MUCOSAL RESECTION FOR HIGH-RISK LESIONS: MAY WE BETTER PLAN THE ENDOSCOPIC FOLLOW-UP ACCORDING TO PROCEDURAL AND MORPHOLOGICAL AND HISTOLOGICAL CHARACTERISTICS?
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Introduction: Endoscopic mucosal resection (EMR) is an increasingly used technique for the removal of large sessile and flat-laterally-spreading colorectal lesions. At present, surveillance colonoscopies are ever performed to ensure detection and adequate treatment of residual or recurrent adenoma (RRA), which, occurring in 10–40% of non-peneculated lesions, currently represents the main limitation of this technique. Fortunately, endoscopic detection of RRA in the post EMR scar is currently highly accurate using HD-WL (high definition-white light) and NBI (narrow band imaging). Anyway, indications for follow-up...
P1120 TREATMENT STRATEGY FOR LOCAL RECURRENCES AFTER ENDOSCOPIC RESECTION OF COLORECTAL NEOPLASMS
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Introduction: Local recurrences after endoscopic resection (ER) frequently occur after colorectal neoplasms. Recently, the efficacy of submucosal dissection (ESD) for local recurrences has been reported. However, an appropriate treatment strategy for these lesions including ESD remains unclear.

Aims & Methods: This study aimed to clarify the appropriate treatment strategy for local recurrences after ER. A total of 81 patients (81 lesions) who received treatment for local recurrences after ER for colorectal neoplasms between January 2010 and December 2016 were enrolled. Patients with pathological diagnosis of hyperplastic polyp, sessile serrated adenoma/polyp, and submucosal invasive cancer in their first ER were excluded. Seven patients who underwent surgery because of submucosal invasion or technically difficult locations were also excluded. Procedural outcomes, recurrence rate and disease control rate (DCR) were evaluated according to preoperative endoscopic diagnosis of recurrent lesions (adenomatous or carcinomatous). The DCR was defined as proportion of patients who were diagnosed with curative resection after ER or received additional surgery based on pathological diagnosis after ER.

Results: Seventy-four patients were included. The en bloc resection rates of EMR and ESD were 53.8% and 100%, respectively (P = 0.03). The seven cases (7.7%) in the EMR group developed local recurrences, but additional ER achieved curative resection. The DCR of three methods were all 100%. Meanwhile, 25 patients developed local recurrences. One case required surgery because of invasive local recurrence, the second case required chemotherapy because of distant metastasis, and the third case was followed up to try to prevent it, better plan surveillance intervals, establish role and timing of surgery and reduce costs.

Conclusion: This study has demonstrated that the survival of SC was identical to that of OC, and additional surgery was found to significantly improve the prognosis in SC. Chemotherapy after endoscopic colonic stenting has been considered tolerable as a palliative therapy or bridge to surgery for obstructive colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1121 A NEW MANEUVER TO PLACE THROUGH-THE-SCOPE STENT IN A MALIGNANT COLONIC STRicture INACCESSIBLE WITH A STANDARD-CALIBER COLONOSCOPE. ‘OVER-THE-CATHERER’ COLONOSCOPY REPLACEMENT TECHNIQUE
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Introduction: A self-expandable metallic stent (SEMS) placement is potentially a colostomy-sparing option to manage a malignant colonic obstruction (MCO). However, in patients with coexisting peritoneal dissemination (carninomatous adhesion), for example, insertion of a standard caliber colonoscope (SC) is impossible, whereas such an endoscope equipped with a large working channel is suitable for through-the-scope (TTS) SEMS placement. Failure in stenting necessitates continuous tube drainage, stoma formation, or other surgical procedures and decreases quality of life (QOL). We examined the feasibility and efficacy of “Over-The-Catherer” Colonoscope Replacement technique (OTC-CR) detailed below, in palliative (not preoperative) SEMS placement for MCO. From Oct 2012 to Dec 2016, MCO patients were consecutively considered for decompression by SEMS placement unless stoma formation was preferred. When a conventional TTS procedure was unsuccessful, specifically, when the MCO site was inaccessible with an SC (CF-H260AL, Olympus Medical Systems, Tokyo, Japan) with a 13.2mm tip diameter and 3.7mm working channel, needed for a 22 mm (not 18 mm)
delivery system passage (e.g. Niti-S Colonic Stent, Taewoong-Medical, Seoul, South Korea) or when a guidewire was unable to be passed through the stricture because of limited maneuverability of the endoscope, procedures below were followed. (1) A thinner scope, PCF-PQ260L, with a 2.9 mm tip and a 2.8 mm channel (Olympus Medical Systems, Tokyo, Japan) is inserted and advanced to the stricture, facilitated by its “passive bending” feature. An ultrathin endoscope (for transnasal use) or a gastroscope are alternatives. (2) A guidewire (GW, 0.035 inch Jagwire) is traversed through the stricture by coordinating manipulation of an ERCP-catheter (Article-No.0130211; MTW Endoskopie, Wesel, Germany). (3) Fluorescent examination through the catheter to delineate the lesion. (4) For colonoscope replacement, withdraw the scope and the catheter, leaving only GW. (5) Before reinserterion of the SCC, insert the catheter from the channel until it sticks out of the scope tip. (6) Pass GW backward into the catheter tip. Then move the catheter over GW the anus and further advance it proximally until it reach the stricture site. (7) Gently move the SCC “over the catheter” into the rectum and advance it in the more straightened (less winding) intestine. (8) After the colonoscope is advanced only as proximally as possible, shift to a standard TTS maneuver (withdraw only the catheter, leaving GW and insert the SEMS delivery along GW past the stricture where it is deployed). Results: See table. Conclusion: 0Over-the-Catheter® colonoscope replacement (OTC-CT) technique can be a salvage maneuver which facilitates a successful SEMS placement in MRC cases with peritoneal disseminations that preclude a conventional TTS procedure. Readability of thin endoscopes and appropriate rigidity and force transmissibility of an ERCP-catheter that enable advancement of an SCC with maximum safety are thought to be linked enough reduced chances of technical failures. Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Method: Thirty Thai IBS patients, and age and sex matched 20 Thai controls were included. Four biopsy samples were taken from each of the sigmoid colon and the rectum during a standard colonoscopy. Sections from these biopsy samples were immunostained for serotonin, peptide YY, oxyntomodulin (enteroglucagon), pancreatic polypeptide, somatostatin, Msi 1, neurog 3. The densities of immunoreactive cell types were determined with computerized image analysis (1).

Results: In both the colon and rectum, the density of serotonin cells was lower in IBS patients than controls. Whereas the density of PYY cells was increased in both the colon and rectum of IBS-D, it was reduced in IBS-M and IBS-C. The density of oxyntomodulin cells was reduced in both the colon and rectum of all IBS subtypes. While the density of PP cells was unaffected in the colon, it was reduced in the rectum. Somatostatin cell density was unaffected in both the colon and rectum. The densities of Msi 1 and neurog 3 were unchanged in both the colon and rectum.

Conclusion: The present findings of abnormal densities of the large-intestine enteroendocrine cells in Thai patients combined with previously reported changes in Western IBS patients (2) support the notion that intestinal enteroendocrine cells are involved in the pathophysiology of IBS. However, the changes in the enteroendocrine cells differed from those in Western patients. The present observations highlight that IBS differs in Asian and Western countries, and show that the changes in large-intestine enteroendocrine cells in Asian and Western IBS patients might be caused by different mechanisms.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

PI1126 SUBJECT GLOBAL SATISFACTION SCORE TO ASSESS OVERALL EFFECT OF NALDEMEDINE COMPARED WITH Placebo ON Constipation AND Abdominal Symptoms IN SUBJECTS WITH CHRONIC NON-CANCER PAIN AND Opioid-Induced constipation

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Introduction: Opioid-induced constipation (OIC) is a common side effect of opioid therapy that significantly affects multiple aspects of a patient’s life. Naldemedine (NAL) is a peripherally-acting mu-opioid receptor antagonist developed for the treatment of OIC. In Phase 3 studies, NAL improved the frequency of spontaneous bowel movements, straining, constipation, stool consistency, and patient assessment of constipation symptoms (PAC-SYM) and quality of life (PAC-QOL), measures of patient’s quality of life, compared with placebo (PBO). This study aimed to assess the impact of NAL on overall satisfaction and to show if a single score can assess the impact of treatment of OIC with NAL 0.2 mg once daily on patient’s satisfaction with constipation and abdominal symptoms in patients with OIC associated with non-cancer pain.

Methods: In three Phase 3 randomized, double-blind, PBO-controlled trials of NAL (2 of 12-week duration [COMPOSE 1 and COMPOSE 2] and 1 of 52-week duration [COMPOSE 3]), a 7-grade scale (1 = markedly, 2 = moderately, or 3 = slightly worsened; 4 = unchanged; 5 = slightly, 6 = moderately, or 7 = markedly improved) was used to assess overall satisfaction with constipation and abdominal symptoms at the last study visit. The number and proportion of subjects in each grade were calculated and the overall difference between groups was assessed with Wilcoxon rank sum test. The mean subject global satisfaction score (SGSS) was also compared between groups. For SGSS scores, from 1 to 7 were replaced with scores from 3 to 7, with 4 (unchanged) replaced with 0.

Results: There were 547 subjects in COMPOSE 1, 550 in COMPOSE 2, and 1246 in COMPOSE 3 (all ≥18 years of age) randomized (1:1) to NAL 0.2 mg once daily or PBO. The baseline characteristics of the study population were consistent between groups in each trial and between trials. Overall satisfaction assessment was completed in 372 subjects in COMPOSE 1, 296 in COMPOSE 2, and 1101 in COMPOSE 3. There were greater improvements in satisfaction with constipation and abdominal symptoms in the NAL group compared with the PBO group in all three studies (all P<0.0005; Table). The mean SGSSs were 1.5 and 0.9 with NAL and PBO, respectively, in the two 12-week studies pooled, and 1.7 and 1.0, respectively, in the 52-week study.

Conclusion: Treatment of OIC with NAL 0.2 mg once daily for 12 or 52 weeks led to greater satisfaction with constipation and abdominal symptoms compared with PBO, consistent with previously-reported improvements of PAC-SYM and PAC-QOL with NAL compared with PBO. The proposed SGSS appears to be a simple way to assess the impact on quality of life of OIC treatment.


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Introduction: The herbal preparation STW 5 has been reported to increase intestinal chloride secretion. However, the ability of STW 5 to modulate paracellular and transcellular permeability remains currently unknown. Therefore, we aimed

Table 1: Densities of enteroendocrine, Msi 1, and neurog 3 cells in the colon of Thai and Norwegian controls and IBS patients.

<table>
<thead>
<tr>
<th>Cell type</th>
<th>Colon</th>
<th>Rectum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Controls</td>
<td>IBS-total</td>
</tr>
<tr>
<td>Serotonin</td>
<td>202±20</td>
<td>119±10**</td>
</tr>
<tr>
<td>PYY</td>
<td>79±5</td>
<td>95±10</td>
</tr>
<tr>
<td>Oxyntomodulin</td>
<td>70±7</td>
<td>40±4**</td>
</tr>
<tr>
<td>PP</td>
<td>46±5</td>
<td>54±5</td>
</tr>
<tr>
<td>Somatostatin</td>
<td>91±12</td>
<td>77±8</td>
</tr>
<tr>
<td>Msi 1</td>
<td>5.0±0.4</td>
<td>5.0±0.3</td>
</tr>
<tr>
<td>Neurog 3</td>
<td>130±10</td>
<td>129±11</td>
</tr>
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</table>

*Data was expressed as mean±SEM. *, P<0.05; **, P<0.01; ***, P<0.0001
to study the ability of STW 5 to modulate intestinal permeability under basal and regenerative stress conditions.

Aims & Methods: C57 B16 mice were gavaged for 14 days with STW 5 (3 mL/kg). After 10 days of treatment, mice were subjected to water avoidance stress (WAS) during 4 consecutive days. In vivo permeability to FITC–Sulfonic Acid (F4A, 400 Da) and HRP (Peroxidase, 44KDa), total transit time and colonic transit (fecal pellet output - FPO) were measured at Day 0 (D0), D10 and D14 of IB treatment. Ex vivo permeability to FSA and HRP was assessed on jejunal, ileum, proximal colon and distal colon at D14 using Ussing chambers. Concentration of STW 5 was measured at D0 and D14.

Results: In vivo permeability to FSA and HRP as well as total transit time were not modified by STW 5 in basal and WAS conditions. However, STW 5 prevented the increase in permeability to FSA induced by WAS in the distal colon of the aged mice. Conversely, STW 5 prevented the increase in permeability to HRP induced by WAS in the jejunal and proximal colon. Furthermore, while STW 5 tended to increase colonic transit as compared to control in basal conditions, it prevented the increase in transit induced by WAS. Finally, STW 5 did not modify the increase in colorectal permeability induced by WAS.

Conclusion: Our study suggest that STW 5 can prevent WAS induced changes in paracellular and transcellular permeability in specific regions of the gastrointestinal tract. Such effects could contribute to the therapeutic effects of STW 5 in irritable bowel syndrome and support novel therapeutic indications for pathologies in which barrier functions are altered.

Disclosure of Interest: O. Kelber: Olaf Kelber is employed by Bayer H. Abdel-Aziz: Heba Abdel aziz is employed by Bayer M. Neunlist: This work was supported by a research grant to MN by Bayer All other authors have declared no conflicts of interest.

P1129 ALTERING SPHINGOSINE-1-PHOSPHATE WITH AGING INDUCES MOTILITY DISFUNCTION OF COLON SMOOTH MUSCLE BY BKCA UPRREGULATION IN RATS S. Xiaoau The First Affiliated Hospital Of Nanjing Medical University, Nanjing Medical University, Nanjing/China

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Introduction: Large conductance Ca2+-activated K+ channel (BKCa channel) was shown to play critical roles in regulating smooth muscle contractions by modulating membrane potential, at the same time, age-associated changes in BKCa expression may contribute to the development of motility disorders of the gastrointestinal tract. Sphingosine-1-phosphate (SIP), component of Sphingolipids in the cell membranes, may affect BKCa expression. Thus, in this study, we investigated whether altered SIP due to aging may affect the motility of colon smooth muscle (CSM) in rats.

Aims & Methods: Thus, in this study, we investigated whether altered SIP due to aging may affect the motility of colon smooth muscle (CSM) in rats. Forty Sprague-Dawley rats at the same age were randomly divided into five groups. After different times of administration, finally they were divided into different-age group: 10-week group, 20-week group, 40-week group, 60-week group and 80-week group. Colonic motility function and contractility of circular muscle strips were measured. The expression of BKCa and phosphorylated myosin light chain (P-MLC) level were tested in colonic tissues of rats with varying ages by immunohistochemical, RT-PCR and western blot. SIP levels in colonic tissues were tested by LC-MS/MS analysis. Primary cultured colonic smooth muscle cells (SMCs) from normal adult rats were used in complementary in vitro studies. In the absence and presence of SIP with different concentrations, the expression of BKCa, P-MLC level, single-channel activity, intracellular Ca2+ mobilization were tested. At the same time, in the presence and absence of SIP, SMCs were transfected with anti-SIP antibody. BKCa siRNA transfection was used to investigate whether P-MLC expression and intracellular Ca2+ mobilization were affected by BKCa expression in CSM. The expression and phosphorylation of Akt, JNK, ERK, PKC were examind by western blot.

Results: Aged rats showed prolonged colonic transit time and weakness of circular muscle contraction compared with the young (10 weeks old) SD rats. LC-MS/MS analysis exhibited that the levels of SIP were significantly greater in the CSM from aged rats, demonstrating that SIP varies depending on age. BKCa (α subunit and β subunit) levels in CSM were shown to increase in an age-dependent manner from 10- to 80-week-old rats by mRNA protein and immunohistochemical, but P-MLC expression decreased. In colon SMCs, by BKCa siRNA transfection, we found P-MLC levels increased. Exogenously added SIP upregulated BKCa in colon SMCs in a concentration-dependent manner. Intracellular Ca2+ mobilization though inhibited by pre-incubation with biphenyl was significantly increased in the duodenal, decreased in the colonic myenteric ganglia, while did not show any significant differences in the ileal ganglia. The number of IL6 gold particles was not affected by diabetes in the myenteric ganglia of different gut regions. The diabetes-related alterations of TNFα- and IL6 expression were not protected by the immediate insulin replacement in any of the investigated intestinal segments. The differences in TNFα- and IL6 density were not significant in the capillary endothelium under different experimental conditions.

Conclusion: Based on these findings we propose that regionally alterations in the TNFα and IL6 expression are correlated with the diabetes-related region-specific nitrergic myenteric neuropathy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1130 DIABETES-RELATED ALTERATIONS IN THE EXPRESSION OF THE INFLAMMATORY CYTOKINES, TUMOR NECROSIS FACTOR ALPHA AND INTERLEUKIN 6 IN THE MYERIC GANGLIA AND ITS MICROENVIRONMENT OF DIFFERENT INTESTINAL SEGMENTS L. Chandrakumar, D. Mezei, B. P. Barta, Z. Szalai, N. Bödi, M. Bagyanszki Department Of Physiology, Anatomy And Neuroscience, University of Szeged, Szeged/Hungary

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Introduction: Growing amount of evidence has indicated that increase of the hyperglycaemia-induced oxidative stress and decreased effectiveness of the endogenous antioxidant protection play the major role in the initiation of diabetes-related neuronal damage.1,2 Using a streptozotocin-induced diabetic rat model we recently demonstrated that nitrergic myenteric neurons, which are key regulators of peristalsis, display different susceptibilities to diabetic damage and also to different treatment in the different gut segments.3 On these results we suggested the importance of the molecular differences in the neuronal microenvironment in the pathogenesis of diabetic nitrergic neuropathy.

Aims & Methods: Aim to reveal the quantitative differences in the expression of the pro-inflammatory cytokines like tumor necrosis factor alpha (TNFα) and interleukin 6 (IL6) in the myenteric ganglia and its microenvironment of the different intestinal segments, quantitative immunogold electron microscopy was used. Ten weeks after the onset of diabetes, segments from the duodenum, ileum and colon of diabetic and control rats were processed for post-embedding immunohistochemistry.

Results: The density of TNFα- and IL6-labelling gold particles were strictly region-dependent, with increasing to the distal part of the gastrointestinal tract of rats. In diabetic rats, the number of TNFα gold particles was significantly increased in the duodenal, decreased in the colonic myenteric ganglia, while did not show any significant differences in the ileal ganglia. The number of IL6 gold particles was not affected by diabetes in the myenteric ganglia of different gut regions. The diabetes-related alterations of TNFα- and IL6 expression were not protected by the immediate insulin replacement in any of the investigated intestinal segments. The differences in TNFα- and IL6 density were not significant in the capillary endothelium under different experimental conditions.

Conclusion: Based on these findings we propose that regionally alterations in the TNFα and IL6 expression are correlated with the diabetes-related region-specific nitrergic myenteric neuropathy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: Gene and protein expression of SEMA3A and its receptor NRP1 was analyzed in distal colon tissue from healthy patients and in case of bowel atrophy after one day (PN1) and two weeks (PN14) by qRT-PCR and Western blot, respectively. The cellular distribution of SEMA3A and NRP1 was localized at PN7 and PN36 in whole mount distal colon tissue by double immunofluorescence for SEMA3A and NRP1 with specific monoclonal antibodies (Hu, Thi-1), and muscle cells (a-SMA). The impact of SEMA3A on neural outgrowth was assessed in cultures of enteric neurons cocultured with SEMA3A-transfected COS-7 cells.

Results: A peak of mRNA expression for SEMA3A and NRP1 was observed in distal colon tissue at PN7, corresponding to a stage of intense neural circuit remodeling. At the protein level, NRP1 was also found to be predominantly expressed during the early postnatal period. Immunohistochemistry of colon tissue indicated that SEMA3A immunoreactivity was not associated with any specific cellular profile, but was distributed in small clusters disseminated throughout the tissue, a pattern consistent for a secreted protein. NRP1 was found in neurons, mainly associated with axonal processes, and was not detected in glial or muscle cells. Enteric neurons cultured in the presence of SEMA3A-transfected COS cells showed a strong reduction in axon length and complexity, while the ganglion size was unaffected.

Conclusion: This study shows the expression of SEMA3A and its receptor NRP1 in the ENS during early postnatal period. By controlling axonal outgrowth, SEMA3A might be an important factor to restrict the axonal trajectories in the appropriate paths between ganglia.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1132 A POPULATION-BASED STUDY ON BOWEL HABITS IN A PORTUGUESE COMMUNITY: PREVALENCE OF CONSTIPATION

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Introduction: Constipation is a chronic disorder with an estimated prevalence of 17% in Europe. Epidemiological studies on bowel habits in the Portuguese general population have not been previously done, as in many other western countries. The aim of this population-based study was to describe bowel habits and the prevalence of self-reported constipation in a Portuguese community.

Aims & Methods: We aimed to describe bowel habits and the prevalence of self-reported constipation in a Portuguese community. Methods: Cross-sectional study with convenience sampling between November 2015 and November 2016. The physician applied a questionnaire, to adult patients at primary health care consultation. The questionnaires were anonymous, and the only personal information the participants were required to give was their age and sex. The questionnaire contained objective questions on possible causes and constipation-associated conditions and medications (according to the criteria defined by the World Gastroenterology Organization), daily water and fiber intake, physical activity, bowel habits and Bristol stool scale (BSS). Descriptive statistics and uni and multivariate analysis were performed using IBM SPSS Statistics 22 with p < 0.05 deemed to be statistically significant.

Results: A total of 814 questionnaires were performed to individuals from 35 different municipalities (54% women; mean age 46 ± 18 years). Concerning possible causes of constipation, 43% subjects had a history of constipation-associated condition and 36% were taking constipation-associated drugs. Regarding bowel habits, 35% subjects had < 1 bowel movement per day and 2% had < 1 bowel movement per week. Using BSS, 66% of the cases reported type III or type R. Gaspar6, R. Morais6, J. A. Sarmento6, G. Macedo6 intake, physical activity, bowel habits and Bristol stool scale (BSS). Descriptive defined by the World Gastroenterology Organization), daily water and fiber constipation-associated conditions and medications (according to the criteria 2016. The physician applied a questionnaire, to adult patients at primary contact E-mail Address: dr.dancarter@gmail.com

Introduction: Objective means of evaluating of the defecatory process include balloon expulsion test (BET) and imaging of the defecatory process (X-ray defecography, dynamic trans-pelvic ultrasound (DT-PUS) or MR defecography). These tests have a place in the evaluation of suspected evacuatory dysfunction (ED), fecal incontinence (FI) and chronic pelvic pain (CPP). Test choice may influence subsequent patient management; however, there is only limited information regarding the agreement between HRM, DT-PUS and BET.

Aims & Methods: The aims of this study were to compare the diagnostic yield and agreement between different tests of evacuation and to define the relation between the diagnoses of evacuation dysfunction to objective evacuatory failure. 63 consecutive patients (60 females, mean age 51ys) were prospectively evaluated with HRM, BET and PUS. Inter-test agreement for the diagnosis of anismus was assessed using the Kappa statistic. Correlation between anismus to evacuatory failure (assessed by PUS) was also assessed.

Results: 36 patients were assessed for ED, 6 for CPP and 21 for FI. Anismus was diagnosed in 26 patients by HRM and 45 patients by DT-PUS. All cases of anismus diagnosed by HRM or DT-PUS had a positive BET. The Kappa agreement for the diagnosis of anismus between HRM and DT-PUS was poor (0.65 ± 0.01). 9 patients had significant pelvic floor anatomic pathology (4 rectal prolapse, 6 pathological pelvic descent, 4 enterocele and 3 rectoceles > 3.5cm). There was a moderate correlation between diagnosis of anismus on DT-PUS to failure to evacuate the rectum (r = 0.636). The correlation between rectal evacuation on DT-PUS to the diagnosis of anismus on manometry was weak (r = 0.296).

Conclusion: There is considerable disagreement between the results of various evacuatory tests, and between the diagnoses of evacuation dysregulation to failure of rectal evacuation. Therefore, more than one test should be applied in order to evaluate the defecatory dysfunction.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1133 DIAGNOSTIC DISCORDANCE BETWEEN TESTS OF EVACUATION: A PROSPECTIVE STUDY

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Introduction: Objective means of evaluation of the defecatory process include balloon expulsion test (BET) and imaging of the defecatory process (X-ray defecography, dynamic trans-pelvic ultrasound (DT-PUS) or MR defecography). These tests have a place in the evaluation of suspected evacuatory dysfunction (ED), fecal incontinence (FI) and chronic pelvic pain (CPP). Test choice may influence subsequent patient management; however, there is only limited information regarding the agreement between HRM, DT-PUS and BET.

Aims & Methods: The aims of this study were to compare the diagnostic yield and agreement between different tests of evacuation and to define the relation between the diagnoses of evacuation dysfunction to objective evacuatory failure. 63 consecutive patients (60 females, mean age 51ys) were prospectively evaluated with HRM, BET and PUS. Inter-test agreement for the diagnosis of anismus was assessed using the Kappa statistic. Correlation between anismus to evacuatory failure (assessed by PUS) was also assessed.

Results: 36 patients were assessed for ED, 6 for CPP and 21 for FI. Anismus was diagnosed in 26 patients by HRM and 45 patients by DT-PUS. All cases of anismus diagnosed by HRM or DT-PUS had a positive BET. The Kappa agreement for the diagnosis of anismus between HRM and DT-PUS was poor (0.65 ± 0.01). 9 patients had significant pelvic floor anatomic pathology (4 rectal prolapse, 6 pathological pelvic descent, 4 enterocele and 3 rectoceles > 3.5cm). There was a moderate correlation between diagnosis of anismus on DT-PUS to failure to evacuate the rectum (r = 0.636). The correlation between rectal evacuation on DT-PUS to the diagnosis of anismus on manometry was weak (r = 0.296).

Conclusion: There is considerable disagreement between the results of various evacuatory tests, and between the diagnoses of evacuation dysregulation to failure of rectal evacuation. Therefore, more than one test should be applied in order to evaluate the defecatory dysfunction.

Disclosure of Interest: All authors have declared no conflicts of interest.
revealed hypoganglionosis, severe fibrosis of the inner muscle layer and reduced ICC networks (A562). The mean diameter of the resected specimen was 21 mm (range 20–22 mm). No adverse events were reported. The most frequently reported adverse event was headache. The safety profile was comparable to that of prucalopride. YH12852 appeared to increase bowel movement greater than prucalopride, particularly at 0.5–2 mg. YH12852 may have a significant potential for the treatment of FC/GDMDS.

Disclosure of Interest: S. Lee: The affiliates of Yuhan Corporation are stockholders and/or employees
S.B. Jang: The affiliates of Yuhan Corporation are stockholders and/or employees
M.K. Kim: The affiliates of Yuhan Corporation are stockholders and/or employees
H. Na: The affiliates of Yuhan Corporation are stockholders and/or employees
All other authors have declared no conflicts of interest.

P1136 YH12852, A NOVEL AND HIGHLY SELECTIVE 5-HYDROXYTRYPTAMINE 4 RECEPTOR AGONIST, SHOWS PERSUASIVE PROPERTIES FOR THE MANAGEMENT OF FUNCTIONAL CONSTIPATION: A DOUBLE-BLIND, PLACEBO-CONTROLLED, RANDOMIZED PHASE 1/2a STUDY IN HEALTHY VOLUNTEERS

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AND PATIENTS WITH FUNCTIONAL CONSTIPATION: 5-HYDROXYTRYPTAMINE 4 RECEPTOR AGONIST, P1136 YH12852, A NOVEL AND HIGHLY SELECTIVE

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Aim: To evaluate the safety, tolerability, pharmacokinetics and pharmacodynamics of YH12852 in healthy volunteers and patients with functional constipation (FC).

Methods: This was a multicenter, randomized, double-blind, placebo-controlled, active-controlled, 3-period crossover study in healthy subjects and FC patients. The study was performed in healthy subjects and FC patients, who were administered YH12852 (0.3, 0.5, 1, 2 or 3 mg), prucalopride 2 mg or placebo once daily after breakfast for 2 weeks. Subjects recorded bowel habits throughout the study period. Intensive pharmacokinetic blood samples were also collected (ClinCalTrials.gov identifier NCT02338367).

Results: Twenty-nine healthy subjects and 27 FC patients were enrolled. Treatment-emergent adverse events (TEAEs) were mostly mild and no serious adverse event was reported. The most frequently reported AE in the YH12852 and prucalopride group was headache. TEAEs in the YH12852 groups were similar to those in the prucalopride group. The change from baseline to the prucalopride group showed a linear pharmacokinetic profile over 0.3–3 mg.

Conclusion: YH12852 was well tolerated and its safety profile was comparable to that of prucalopride. YH12852 appeared to increase bowel movement greater than prucalopride, particularly at 0.5–2 mg. YH12852 may have a significant potential for the treatment of FC/GDMDS.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1138 THREE-DIMENSIONAL HIGH-RESOLUTION ANORECTAL MANOMETRY IN CHILDREN AFTER SURGERY FOR ANORECTAL DISORDERS
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Introduction: Three-dimensional high-resolution anorectal manometry (3DHRAM) is the most precise tool to assess function of the anal canal and may be useful in evaluation of children after surgery on lower gastrointestinal tract that may present wide spectrum of symptoms from gastointestinal tract. Our aim was to evaluate children after surgery for anorectal disorders using 3DHRAM.

Aims & Methods: We performed a prospective study of 43 children (30 male, mean age: 7 years) after surgery for anorectal disorders at the Departments of Pediatric Gastroenterology and Nutrition, Medical University of Warsaw, Poland. The group consisted of 24 children after surgery for Hirschsprung’s disease (HD), 12 children after surgery for anal atresia (AA) and 7 children after proctocelecytomy for other reasons (PC). In all children conventional manometry was performed preoperatively and the anal canal was divided into 8 segments and the resting and squeeze pressures of puborectalis muscle (PRM) were recorded in segments covering its anatomical localization. These data were compared to raw data obtained in our laboratory from healthy children published previously (HC group). To assess correlation between manometry and symptoms, all children (after surgery and HC group) were divided into groups with respect to symptoms, as follows: asymptomatic (A), nonretentive fecal incontinence (NRFI) and retentive fecal incontinence (RFI).

Results: The lowest values of resting, squeeze and the pressure of PRM were observed in AA (55.6 mmHg, 121.7 mmHg and 44.1 mmHg, respectively). As compared to asymptomatic children, the lowest mean and maximum resting pressures were observed in NRFI (69.6 mmHg and 61.3 mmHg, respectively; p < 0.000). Significantly lower maximum squeeze pressure was recorded in both, NRFI and RFI (168.1 mmHg and 103.8 mmHg, respectively; p = 0.03). ROC cut-off value for mean resting pressure between asymptomatic children and children with fecal incontinence was 68.5 mmHg. Significantly lower PRM resting pressure were observed in NRFI group and lower PRM squeeze pressure in RFI (45.6 mmHg and 63.6 mmHg, respectively). Threshold of urge were significantly higher in group C as compared to A group (87.5 cm² and 30 cm², respectively; p = 0.003).

Conclusion: Our study demonstrated lower pressure parameters in children after surgery with the lowest values in patients suffering from anal atresia, which was correlated with incontinence. 3DHRAM may be useful tool for assessing the function of the anorectum of children after surgery.

Disclosure of Interest: M. Banasuk: Equipment support from manufacturer of the equipment (Covidien AG).

All other authors have declared no conflicts of interest.

P1139 UK CLINICAL EXPERIENCE AT 52 WEEKS WITH LINACLOTIDE FOR IRRITABLE BOWEL SYNDROME WITH CONSTIPATION
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Introduction: Linacotide, a guanylate cyclase C agonist, has been shown in clinical trials to relieve constipation and improve abdominal pain and discomfort in patients with irritable bowel syndrome with constipation (IBS-C), but there are limited UK-specific real-world data to support this.

Aims & Methods: A multi-centre, observational, prospective 52-week study was conducted in eight specialist hospitals in England and Scotland. The primary objective was to describe the change in IBS-Symptom Severity Scale (IBS-SSS) score at 52 weeks after linacotide initiation. Consenting patients aged ≥ 18 years and receiving linacotide (290 mcg) for IBS-C were recruited. Data on patient demographic and clinical characteristics, concomitant medications, patient-reported outcomes, including IBS-SSS score, and adverse events were collected. Results at 12 weeks (primary endpoint) have been presented previously; here we report analysis of real-world clinical experience 52 weeks post-linacotide initiation.

Results: 202 patients were recruited; 185 (92%) were female. At baseline, median age was 44.9 (range 18–77) years; 84 (42%) reported concomitant laxative use. Mean baseline IBS-SSS was 339 (standard deviation (SD) ±20, n = 193); 129 (67%) patients had IBS-C classified as severe (score ≥ 350); 54 (28%) moderate (175–300), nine (5%) mild (75–175) and one (0.5%) normal (≤74). At 52 weeks, mean IBS-SSS score was 256 (SD ± 78); 31 (40%) patients had severe (score ≥ 350), 27 (34%) moderate, 14 (18%) mild and six (8%) normal. IBS-SSS scores improved significantly between baseline and 52 weeks, with a mean decrease of 71 (SD ± 106) points overall (t-test p = 0.001); n = 76 with paired data) and 94 (SD ± 102) points patients remaining on linacotide (p < 0.001; n = 34). Of the 76 patients with paired data, 41 (54%) reported improvement in both stool frequency and abdominal pain, and 35 (47%) experienced improvement in both bowel movement and abdominal cramping.

Conclusion: Linacotide was associated with a significant improvement in IBS-SSS score at 52 weeks and was reasonably well tolerated. These results provide valuable insights into the longer-term outcomes of linacotide treatment in patients with IBS-C in real-world clinical practice.

Disclosure of Interest: A.V. Emmanuel: Served on advisory boards for Allergan, Almirall, Shire, Takeda, Y. Yannakou: Educational grant and speaker fees from allergan.

P1140 EFFECT OF Faecal MICROBIOTA TRANSPLANTATION ON GUT BACTERIAL FERMENTATION PRODUCTS IN PATIENTS WITH IRRITABLE BOWEL SYNDROME
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Introduction: Irritable bowel syndrome (IBS) may be associated with disturbances of gut microbiota composition and functions, such as altered bacterial fermentation.

Aims & Methods: The aim was to study the effect of faecal microbiota transplantation (FMT) on gut bacterial fermentation products: short-chain fatty acids (SCFAs). Patients diagnosed with IBS according to Rome III criteria (n = 13) were included. They received freshly donated faeces from relatives, instilled into the descending part of the duodenum via gastroscope. Faecal samples were collected from the donors and the patients before FMT and from the patients after FMT at weeks 1, 3, 12 and 20/28. All the samples were stored at −80°C until analysis. Faecal concentrations of major SCFAs (acetic, propionic and n-butyric acids) and minor SCFAs (iso-butyric, n-valeric, iso-valeric, n-caproic and iso-capronic acids) were analysed by vacuum distillation followed by gas chromatography. The patients completed IBS symptom questionnaire (IBS-SQ) before and after FMT at weeks 1, 3, 12, and 20/28, assessing the following domains: nausea, bloating, abdominal pain, diarrhea, constipation and anorexia.

Results: Before FMT, concentrations of several SCFAs were significantly lower in IBS patients compared to donors (Table 1). After FMT, concentrations of SCFAs increased within the first 3 weeks, and the increment lasted up to 28 weeks (Table 1). At 28 weeks (Table 1), Symptom scores as assessed by IBS-SQ improved from before FMT until week 20/28 after FMT as follows: nausea (P = 0.0013), bloating (P = 0.0001), abdominal pain (P = 0.0005), diarrhea (P = 0.0001), constipation (P = 0.03), and anorexia (P = 0.09). Correlations were found between abdominal pain and both acetic acid (r = 0.69, P = 0.04) and total SCFAs (r = 0.69, P = 0.044) in IBS patients before FMT. Inverse correlations were found 3 weeks after FMT between nausea and iso-valeric acid (r = 0.65, P = 0.014), and between constipation and propionic acid (r = 0.74, P < 0.0001), iso-butyric acid (r = 0.79, P < 0.0001), n-valeric acids (r = 0.79, P < 0.0001) and iso-valeric acid (r = 0.72, P < 0.0001).
Conclusion: Our results reveal differences in faecal fermentation products between patients with IBS and healthy donors, and suggest that FMT may act to normalise such alterations of gut microbial functions.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1141 HEALTHCARE RESOURCE USE IN PATIENTS WITH IRRITABLE BOWEL SYNDROME WITH DIARRHOEA BASED ON A SURVEY OF PHYSICIANS IN THE UNITED KINGDOM

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Introduction: Irritable bowel syndrome with diarrhoea (IBS-D) is a chronic gastrointestinal condition in the past three months, having seen patients with a chronic gastrointestinal condition in the past three months, having seen patients with a chronic gastrointestinal condition in the past three months. This study aimed to quantify the HCRU in patients with AR of IBS-D symptoms and to compare patients with AR and those with inadequate relief (IR) who did not have AR of IBS-D symptoms. The study was conducted in a cross-sectional survey considering patients who had AR of IBS-D symptoms and those who did not have AR of IBS-D symptoms. The survey was a 15-minute web-based survey, including 12 questions collecting information on the use of medical services and procedures amongst patients with IBS-D for the first year following diagnosis and for subsequent years. Respondents were required to answer the question considering patients who had AR of IBS-D symptoms and those who did not have AR of IBS-D symptoms. The survey was conducted in a cross-sectional survey considering patients who had AR of IBS-D symptoms and those who did not have AR of IBS-D symptoms.

Aims & Methods: This objective of this study was to quantify the HCRU in patients with AR of IBS-D symptoms compared to patients with IR. An online survey assessing HCRU was distributed to general practitioners (GPs) recruited from market research panels in the UK in August 2016. GPs opted-in to complete the survey via an email link and were screened before being invited to complete the main survey. Screening criteria included having seen patients with a chronic gastrointestinal condition in the past three months, having seen patients with IBS-D in the past 3 months and having decided on what treatments were prescribed for patients with IBS. The survey was a 15-minute web-based survey, including 12 questions collecting information on the use of medical services and procedures amongst patients with IBS-D for the first year following diagnosis and for subsequent years. Respondents were required to answer the question considering patients who had AR of IBS-D symptoms and those who did not have AR of IBS-D symptoms. The survey was conducted in a cross-sectional survey considering patients who had AR of IBS-D symptoms and those who did not have AR of IBS-D symptoms.

Results: The online survey was completed by 50 GPs, with responses from 46 GPs included in the analysis. (Four responses were excluded due to data quality reasons). The reported total number of medical visits was significantly higher for patients with IR vs patients with AR during the first year after diagnosis (mean 10.11 vs 8.20; p < 0.05 compared to patients with adequate relief).

Hospitalisations 0.39 (1.00) 0.93 (1.10) 0.37 0.028
Total 5.20 (4.87) 10.11 (5.30)* 4.91 0.378

Conclusion: GPs reported that patients with IBS-D considered as having IR of symptoms had increased HCRU, including more GP office visits and more colonoscopies, compared to patients with AR. These results highlight that IR is potentially an important driver of increased HCRU in patients with IBS-D, emphasising that effective treatments that provide AR may reduce HCRU and the associated economic burden.


References
P1142 RANDOMISED PLACEBO CONTROLLED ESCITALOPRAM INTERVENTION IN PATIENTS WITH PANIC DISORDER: EVALUATION BY GSRS AND BY EXPERIENCE SAMPLING METHOD

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Introduction: Selective Serotonin Reuptake Inhibitors (SSRI’s) have shown efficacy in reducing symptoms but less so on pain in irritable bowel syndrome (IBS). Comorbid anxiety frequently occurs in IBS. We hypothesized that SSRI’s will particularly be effective in reducing abdominal pain in IBS patients with pronounced comorbid anxiety. As methods for symptom evaluation were used 1) gastrointestinal symptom rating scale (GSRS) as primary parameter and 2) a new method called the Experience Sampling Method (ESM). With ESM digital assessments are completed randomly and repeatedly during daily life, therewith capturing fluctuating symptom patterns more accurately than retrospective questionnaire methods.

Aims & Methods: IBS patients with comorbid panic disorder were included in a randomized controlled trial on escitalopram versus placebo. Measurements were completed at baseline (t = 0) and after 3 (t = 3) and 6 months (t = 6). At each time point, the gastrointestinal symptom rating scale (GSRS) and a 7-day ESM period were completed. Subjects completed ESM assessments on a palmtop computer at 10 random moments each day during 7 consecutive days. ESM periods were analysed when at least 1/3 (i.e. 23) of the assessments were completed. Mixed linear model analyses, with the GSRS-AP (i.e. symptom of pain domain of the GSRS-AP) as the dependent and treatment group as the independent variable, as well as with ESM- abdominal pain scores as the dependent and treatment group and ESM-anxiety scores as the independent variables.

Results: In total 15 (escitalopram and 14 placebo; 21 female; 37 ± 14.8 years; equal abdominal pain and anxiety scores at baseline) were included. Average GSRS-AP scores were not significantly different between escitalopram and placebo at t = 3 (B : 0.265, SE : 0.451, p = 0.557) or t = 6 (B: 0.229, SE: 0.539, p = 0.670). For the ESM analyses, at t = 6, average abdominal pain scores were significantly lower (B: 1.30, SE: 0.623, p = 0.037) (on a 1–7 scale) in the escitalopram group compared to placebo. With increasing anxiety levels after 28 days of linaclotide 290 mcg po od.

Change in pH across the ileocaecal junction correlated with improvement in VDVA and P (r = 0.05, t = 0.037) (on a 1–7 scale) in the ileocaecal region.

Change in pH across the ileocaecal junction correlated with improvement in VDVA and P (r = 0.05, t = 0.037) (on a 1–7 scale) in the ileocaecal region.

Baseline Post treatment (mean and standard deviation) (mean and standard deviation)
Gastric emptying time (minutes) 154 ± 64 177 ± 57 0.4
Small bowel transit (minutes) 353 ± 152 299 ± 139 0.3
Colonic transit time (minutes) 3017 ± 1305 1983 ± 1261 0.04
Whole gut transit time (minutes) 3517 ± 1375 2432 ± 1180 0.04
Ileal contractility (AUC) 262 ± 144.2 221 ± 113.5 0.5
Colonic contractility (AUC) 90.9 ± 78.3 134.6 ± 93 0.006
Change in pH across the ileocaecal junction -2.4 ± 0.2 -2.1 ± 0.4 0.03

Linaclootide improved VDVA-1 and VDVA-U (130.7 ± 20.8 vs. 106.5 ± 33, p = 0.03 and 113 ± 22 vs. 85.8 ± 33, p = 0.01), abdominal pain (85.4 ± 21.2 vs. 68 ± 17.6, p = 0.02), Linaclotide reduced colonic symptoms (58.4 ± 21.2 vs. 68 ± 17.6, p = 0.02). Change in pH across the ileocaecal junction correlated with improvement in VDVA and P (r = 0.05, t = 0.037) (on a 1–7 scale) in the ileocaecal region.

Table 1: Changes in GI physiology following linaclotide.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1144 RELATIONSHIP BETWEEN RIFAXIMIN THERAPY AND SEHCAT TEST IN PATIENTS WITH DIARRHEA-PREDOMINANT IRRITABLE BOWEL SYNDROME OR FUNCTIONAL DIARRHEA


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Introduction: Bile acids (BAs) and gut microbiota have been involved in IBS pathophysiology. BA diarrhea (BAD) is often found in patients with irritable bowel syndrome (IBS-D) or functional diarrhea (FD). Rifaximin and rifaximin have both been shown to improve symptoms in these patients.2 It is unknown whether a SeHCAT test may help to predict response to rifaximin or whether rifaximin treatment affects SeHCAT test result.

Aims & Methods: a) To determine if a SeHCAT test may be used to predict response to rifaximin in patients with IBS-D or FD. b) To assess if rifaximin modifies SeHCAT result.

Consecutive patients diagnosed with IBS-D or FD were prospectively included in the study. All patients received rifaximin (400mg TID for 2w). A SeHCAT test was performed to evaluate presence of BAD before and 1 month after rifaximin treatment. BAD was defined as SeHCAT retention <10%. Number of daily stools, number of daily watery stools, Bristol stool scale, abdominal pain, tension and presence of urgency were recorded before and after treatment. IBS severity score (IBS-SS) was also calculated.

Results: Forty-one patients were included. BAD was present in 23 patients (56%). No clinical differences were found between BAD or non-BAD patients at study entry. Rifaximin resulted in a significant improvement in the number of daily stools (Δ = 1.5; P < 0.01), daily watery stools (Δ = 2.1; P < 0.01), Bristol scale (Δ = 1.1; P < 0.01), abdominal pain (Δ = 0.5; P < 0.01), distension (Δ = 0.3; P < 0.01), urgency (Δ = 0.7; P < 0.01) and in the IBS-SS (Δ = 7.8; P < 0.01). No differences were found between BAD and non-BAD patients in the improvement of any item. Rifaximin treatment did not modify SeHCAT value (9.5% before treatment and 10.7% after treatment; P = 0.4).

Conclusion: Half of the patients diagnosed with IBS-D or FD present BAD according the SeHCAT test. Rifaximin treatment confers significant clinical improvement irrespective of the presence of BAD. Rifaximin treatment does not affect SeHCAT test.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


Aims & Methods: To evaluate IR in patients treated with ELX in a post hoc analysis from two randomised, double-blind, placebo-controlled Phase 3 trials (IBS-301, IBS-302). Patients meeting Rome III criteria for IBS-D were randomised 1:1:1 to twice-daily (BID) ELX (75 or 100 mg) or PBO. Efficacy was evaluated through Week 26. For evaluation of AR, patients were asked “In the last 7 days, have you had adequate [satisfactory] relief of your IBS symptoms?” (Yes/No) on a weekly basis, via an electronic diary. As previously described, patients answering “Yes” for ≥50% of the total weeks during the target time interval were considered AR responders. Patients answering “No” were considered to have inadequate relief (IR). Similar results were observed in Weeks 1–12 and 13–24 of treatment. Patients without AR analysis were ineligible for intention-to-treat (ITT) analysis; missing data were not imputed.

Results: Overall, 2429 patients with IBS-D were enrolled across the two Phase 3 trials and 2423 were included in the ITT analysis. In the pooled dataset, a significantly greater proportion of patients were AR responders with either ELX 100 or 75 mg BID vs PBO at 12 weeks (56.1% [p = 0.001] and 53.6% [p = 0.001], respectively) and 26 weeks (51.5% [p = 0.001] and 49.0% [p = 0.004] vs 41.8%, respectively). Over the first 12 weeks of treatment, a greater proportion of patients reported no IR of IBS-D symptoms with ELX 100 or 75 mg BID vs PBO (Table). Greater proportions of patients reported only 1–5 consecutive weeks of IR with ELX 100 or 75 mg BID vs PBO. A significantly lower proportion of patients reported IR for >8 consecutive weeks with ELX 100 or 75 mg BID vs PBO (13.2% [p < 0.0001] and 15.6% [p = 0.004] vs 22.6%, respectively). In contrast, a greater proportion of patients reported IR for the full 12 consecutive weeks with PBO vs ELX 100 or 75 mg BID (Table). Similar results were observed in Weeks 13–24 of treatment, with ELX-treated patients generally having fewer consecutive weeks of IR compared to PBO-treated patients (Table).
<table>
<thead>
<tr>
<th>Placebo (n=74)</th>
<th>Eluxadoline 75 mg (n=86)</th>
<th>Eluxadoline 100 mg (n=89)</th>
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<tr>
<td>Responder, %</td>
<td>Non-responder, %</td>
<td>Responder, %</td>
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<tr>
<td>Weeks</td>
<td>C</td>
<td>DC</td>
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<td>1–4</td>
<td>81.0</td>
<td>89.2</td>
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<td>5–8</td>
<td>18.9</td>
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<td>21–24</td>
<td>14.9</td>
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C. patients continuing on treatment; DC, patients discontinuing from treatment.

Conclusion: Proportions of responders with eluxadoline 75 and 100 mg were consistently higher vs placebo across all 4-week intervals in the treatment period in patients defined as having severe IBS-D. Furthermore, discontinuation rates among patients showing a treatment response remained consistently low compared to non-responders. However, as these analyses were conducted in a clinical trial setting, the relatively high continuation rates in non-responders may not reflect the real-world situation. These findings suggest that eluxadoline has sustained efficacy in treating the diarrhoea and abdominal pain associated with IBS-D, including in patients with severe and inadequately managed symptoms.


P1148 THE LOW FODMAP DIET REDUCES CAECAL FERMENTATION COMPARED TO TRADITIONAL DIETARY ADVICE: A RANDOMISED CONTROLLED TRIAL

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Introduction: Diets reducing the content of fermentable short chain carbohydrates (fermentable oligo-, di-, mono-saccharides, and polyols (FODMAPs)) as well as the National Institute of Health Care Excellence (NICE) diet have been reported to be effective in the treatment of patients with irritable bowel syndrome (IBS). The mechanisms by which this efficacy is achieved are incompletely understood but it has been proposed that such diets reduce fermentation, mediated by changes in the microbiota. Change in pH around the ileocecal junction is considered to be a surrogate biomarker of caecal fermentation (4.5).

Aims & Methods: We aimed to compare the effect of a low FODMAP diet vs. the NICE diet on change in ileocaecal pH. We performed a single centre, randomized controlled trial of adult patients with Rome III defined IBS-mixed bowel habit (IBS-M) comparing the two dietary interventions. At baseline, patients ingested a wireless motility capsule (WMC) using a standardized protocol. Segmental transit times were derived from measures around known anatomical landmarks as identified by compartmental pH changes. Ileal and colonic motility measures are presented as area under the curve (AUC) derived from contraction amplitude and frequency. Validated questionnaires evaluating GI (visual analogue scale), quality of life (EQ5D) were administered. The WMC and questionnaires were repeated after 26 days of dietary interventions. The primary endpoint was change in ileocaecal pH after the intervention. Secondary outcomes included changes in transit times, contractility and symptoms.

Results: After screening, 32 patients (23 female, median age 37 years, range 18-65) were randomized. Baseline symptom severity and demographics were similar between the two groups. Relative to baseline, there was a reduction in the change in ileocaecal pH with the low FODMAP diet group compared to the m-NICE group (3.37 ± 0.3 vs. 0.0035 ± 0.4, p=0.047) suggesting reduced fermentation.

Change in GI motility are shown in Table 1.

Table 1: Changes in segmental/whole gut transit times and ileal/colonic motility, relative to baseline between the low FODMAP and m-NICE diets. Both the low FODMAP and NICE diets improved VDVAS-I and VDVAS-U (–1.8 ± 17 vs. –2.7 ± 18, respectively). Similarly, both diets reduced somatic symptoms (–2.1 ± 1.4 vs. –0.8 ± 1.8, p=0.07) and improved quality of life (9.5 ± 10.2 vs. 4.4 ± 9.8, p=0.23).

<table>
<thead>
<tr>
<th>Low FODMAP</th>
<th>NICE</th>
<th>P value</th>
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<tr>
<td>Change in Gastric emptying time (minutes)</td>
<td>122 ± 249</td>
<td>7 ± 370</td>
</tr>
<tr>
<td>Change in Small bowel transit time (minutes)</td>
<td>63 ± 43</td>
<td>–33.6 ± 80</td>
</tr>
<tr>
<td>Change in Colonic transit time (minutes)</td>
<td>512 ± 1425</td>
<td>53 ± 1728</td>
</tr>
<tr>
<td>Change in Whole Gut Transit time (minutes)</td>
<td>710 ± 1486</td>
<td>–55 ± 1588</td>
</tr>
<tr>
<td>Change in Ileal contractility (AUC)</td>
<td>64 ± 139</td>
<td>114 ± 175</td>
</tr>
<tr>
<td>Change in Colonic contractility (AUC)</td>
<td>5 ± 58</td>
<td>26 ± 72</td>
</tr>
</tbody>
</table>

Conclusion: The low FODMAP diet reduces caecal fermentation in comparison to the NICE diet as indexed by a reduction in the change in pH across the ileocaecal junction. Both diets improved GI and extra-GI symptoms as well as quality of life. Neither diet has a demonstrable differential effect on ileal/colonic contractility or segmental/whole gut transit times. It is therefore plausible that the efficacy of the low FODMAP diet in IBS-M is mediated by alterations in the microbiota.

Discrimination of Interest: A.D. Farmer: Speaker Bureau and Advisory Boards for Allergan. All other authors have declared no conflicts of interest.

References:

P1149 ORAL A-GALACTOSIDASE IMPROVES GASTROINTESTINAL TOLERANCE TO A DIET HIGH IN GALACTO-Oligosaccharides: ADJUNCT THERAPY TO A LOW FODMAP DIET IN IRRITABLE BOWEL SYNDROME

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Introduction: Galacto-oligosaccharides (GOS) are indigestible short-chain carbohydrates (FODMAPs, fermentable, oligo-, di-, mono-saccharides and polyols)
associated with triggering gastrointestinal symptoms in irritable bowel syndrome (IBS).

**Aims & Methods:** This study aimed to assess whether oral α-galactosidase co-administration with high GOS foods would reduce symptoms and breath hydrogen production in a double-blind, placebo-controlled, crossover trial approved by Monash University Ethics Committee. Patients meeting the Rome III criteria for IBS who produced >10 ppm hydrogen on two consecutive breath samples following 10 g fructan were recruited. Participants were randomly assigned to full-dose and placebo (500 GAL α-galactosidase) and placebo (glucose) capsules. Following a 3-day low-FODMAP run-in period, participants consumed provided diets high in GOS for a further 3 days. Gastrointestinal symptoms were measured daily using a 100 mm visual-analogue scale. Breath samples were taken hourly on the second last day and analysed as area-under-the-curve, faecal samples were taken on the second last and analysed as area-under-the-curve, faecal samples were taken on the final day.

**Results:** Thirty-one participants with IBS (20 IBS-D, 4 IBS-C, 7 IBS-M) completed the study. The addition of high GOS foods resulted in a significant increase in overall symptoms (median 13.0 [IQR 1.5–22.0] to 35.5 [12.8–54.0] mm; p = 0.000, Wilcoxon signed-rank test). No significant increase in overall symptoms was seen with the full-dose enzyme (14.0 [3.5–24.0] vs 14.7 [2.3–32.7] mm; p = 0.422). Twenty-one participants exhibited GOS-sensitivity (> 10 mm increase in overall symptoms). Of those, full-dose enzyme reduced overall symptoms (24.5 [17.5–35.8] mm vs 5.5 (1.5–15.0) mm; p = 0.006) and bloating (20.5 [9.5–42.0] vs 6.5 [2.0–15.8]; p = 0.017). Breath hydrogen production was minimal with no differences seen between placebo (5248 ± SD 3339 ppm.12h) and full-dose (5585 ± 3205; p = 0.597, paired samples t-test).

**Conclusion:** An oral α-galactosidase supplement taken with high GOS foods provides a clinically significant reduction in symptoms in GOS-sensitive individuals with IBS. The lack of change in breath hydrogen suggests that a possible mechanism may not be related to reduced gas and distention, rather suggesting a role of alterations to the microbiota. Future analysis of the faecal microbiota may provide insight for the mechanism of action. This strategy can be easily translated into practice to improve tolerance specifically to high GOS foods for patients with IBS as an adjunct therapy to the low FODMAP diet.

**Disclosure of Interest:** J.S. Barrett: The Department of Gastroenterology financially benefits from the sales of a digital application and booklets on the low FODMAP diet.

P.R. Gibson: The Department of Gastroenterology financially benefits from the sales of a digital application and booklets on the low FODMAP diet. P. Gibson has published an educational/recipe book on the low FODMAP diet. J.G. Muir: The Department of Gastroenterology financially benefits from the sales of a digital application and booklets on the low FODMAP diet. All other authors have declared no conflicts of interest.

**P1150 A SYSTEMATIC REVIEW AND META-ANALYSIS TO DETERMINE WHETHER BALLOON EXPULSION TESTING MIGHT BE AN APPROPRIATE INITIAL OFFICE-BASED TEST FOR DYSSYNERGIC DEDEFATION**

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**Introduction:** Balloon expulsion testing (BET) is a recommended means of identifying dyssynergic defecation (DD) in patients with a history of chronic constipation, but remains poorly standardized and underutilized outside of specialized centers. We aimed to assess the clinical utility of BET as an initial test for DD and to determine appropriate testing parameters.

**Aims & Methods:** We performed a literature search (PubMED, EMBASE, conference abstracts from 1950–2016) to identify (1) case-control studies of DD or unselected CC subjects and healthy controls and (2) cohort studies of unselected subjects with CC. Eligible studies reported BET test parameters and results as well as presence of DD defined by constipation symptoms and a positive reference test (anorectal manometry[ARM], defecography, or electromyography[EMG]). Study quality was assessed using QUADAS criteria. We extracted age, sex, enrollment criteria, BET test parameters (subject position, stool consistency, allowed bowel movements, and DD diagnostic criteria). Data were independently extracted by two authors. Meta-analysis was performed using a bivariate mixed-effects regression model. Meta-regression was performed to evaluate effects of individual test parameters. Between-study heterogeneity of summary results was assessed using an I2 statistic. Publication bias was assessed using Deeks’ funnel plot asymmetry test.

**Results:** We identified 15 eligible studies comprising 2,090 individual assessments of balloon expulsion, of which 14 studies of 1,760 subjects were eligible for cohort analysis and 1,988 subjects were eligible for case-control analysis. Among cohort studies, the AUC was 0.80 (95% CI 0.61–0.91) with 70% sensitivity (95% CI 52%–83%) and 77% specificity (95% CI 70%–82%). Among pooled cohort and case-control studies, the AUC was 0.84 (95% CI 0.68–0.93) with 70% sensitivity (95% CI 53%–82%) and 81% specificity (95% CI 75%–86%). Further test performance characteristics stratified by subject position are reported in Table 1. Subject positioning (seated vs. left lateral decubitus) did not significantly affect AUC in cohort (p = 0.32) or case-control (p = 0.43) analysis. Pooled sensitivity (p = 0.50) and specificity (p = 0.66) were similar between seated and left lateral BET in analysis of unselected CC cohort studies, though specificity was higher with left lateral BET in pooled analysis of all studies (p = 0.03). The allowable time for balloon expulsion did not significantly affect summary sensitivity (p = 0.92) or specificity (p = 0.96) in meta-regression within the evaluated range of 1 and 5 minutes. There were enough studies to warrant a meta-analysis of balloon distention characteristics, 13 of 17 studies instilled 50–60 mL of water. When pooling cohort and case-control studies, both age (p < 0.01) and gender (p < 0.01) appeared to influence test performance. Choice of reference test did not significantly affect test performance (ARM p = 0.35, defecography p = 0.43, or EMG p = 0.08). Continent of origin (p = 0.34) and year of study (p = 0.29) did not appear to significantly influence test performance. There was no evidence of publication bias (p > 0.5).

**Table 1:** Sensitivity and specificity of balloon expulsion testing in diagnosing dyssynergic defecation (stratified by subject positioning with 95% confidence intervals)

<table>
<thead>
<tr>
<th>Test performance characteristic</th>
<th>Seated position</th>
<th>Left lateral position</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case-control and cohort studies (optimal estimates)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>69% (54% to 85%)</td>
<td>54% (7% to 100%)</td>
</tr>
<tr>
<td>Specificity</td>
<td>81% (76% to 86%)</td>
<td>90% (79% to 100%)</td>
</tr>
<tr>
<td><strong>Only cohort studies evaluating unselected subjects with constipation</strong> (real world estimates)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>69% (53% to 86%)</td>
<td>76% (70% to 83%)</td>
</tr>
<tr>
<td>Specificity</td>
<td>54% (6% to 100%)</td>
<td>76% (51% to 100%)</td>
</tr>
</tbody>
</table>

**Conclusion:** The performance characteristics of balloon expulsion could support use as an initial test to screen for dysssynergic defecation in chronically constipated subjects.

**Disclosure of Interest:** W.D. Chey: Dr. Chey is a consultant for Ironwood Pharmaceuticals and Allergan. He is co-CMO of My Total Health and holds a patent on My GI Health. All other authors have declared no conflicts of interest.

**P1151 PREVALENCE OF ANAL SQUAMOUS INTRAEPITHELIAL LESIONS IN LIVER TRANSPLANT PATIENTS**

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**Introduction:** Anal squamous intraepithelial lesions are precancerous lesions of anal squamous cell carcinoma and are largely related to human papillomavirus infection. Immunosuppressed patients have a higher prevalence of these lesions. There are some studies in renal transplant recipients, but no information exists regarding prevalence in liver transplantation.

**Aims & Methods:** Our aim was to evaluate the prevalence of anal squamous intraepithelial lesions in liver transplant recipients compared with healthy subjects. We performed a prospective case-control study involving liver transplant recipients that were compared with a healthy control group. All patients were submitted to anal cytology. Those with abnormal cytological results, namely high-grade squamous intraepithelial lesions (HSIL), atypical squamous cells which cannot exclude high-grade squamous intraepithelial lesions (ASC-H), low-grade squamous intraepithelial lesions (LSIL) and atypical squamous cells of undetermined significance (ASC-US), were submitted to high-resolution anoscopy with biopsies of any suspicious lesion.

**Results:** A total of 59 liver transplant recipients and 57 controls underwent anal cytology. In the liver transplant group, 37 (63%) were men, with a mean age of 54 ± 10 years. The most common indication for transplantation was alcoholic cirrhosis in 26 patients (44%), the majority of the patients were only on tacrolimus (n = 47, 80%), and had been transplanted a mean of 8 ± 5 years ago. In the healthy control group, 36 (63%) were men, with a mean age 59 ± 11 years. Regarding anal cytology, 10 (17%) of liver transplant recipients had abnormal results, 7 patients had ASC-US, 1 patient ASC-H and 2 patients HSIL. In the control group only 1 patient (2%) had an ASC-US result (p = 0.005). Anal squamous intraepithelial lesions were confirmed in 7/10 of liver transplant patients and 0/1 in control group (p = 0.013) by high-resolution anoscopy with biopsies. Smoking was the only risk factor for abnormal anal cytology (OR = 5.9, 95% CI 1.224–28.121, p = 0.037).

**Conclusion:** Liver transplant patients have a higher risk of anal squamous intraepithelial lesions and screening should be considered especially in smokers.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
IMMUNOHISTOCHEMICAL EXPRESSION OF DIAMINE OXIDASE IN THE GASTROINTESTINAL TRACT OF PATIENTS WITH GASTROINTESTINALLY MEDITATED FOOD ALLERGY

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Conclusion: The above findings indicate that DAO is present in low amounts in all segments of the upper GIT. But only in the duodenum a significant difference was found between GMA and CG, thus indicating that histamine-mediated symptoms most likely arise in duodenum. Therefore, regarding the upper GIT, this immunohistochemical staining for DAO in duodenum could serve as an additional diagnostic parameter for detecting patients with GMA and possibly other histamine-mediated diseases. The above mentioned distribution pattern of DAO strengthens the theory that DAO acts extracellularly and is responsible for the elimination of the transepithelially absorbed exogenous histamine as well as of the endogenous histamine, as its highest staining intensity is found at the SLP throughout the upper GIT.

Disclosure of Interest: All authors have declared no conflicts of interest.

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INTRODUCTION: Chronic atrophic gastritis (CAG) is claimed to be a pre-cancerous condition for gastric cancer, being serological markers like serum peptidases and gastrin-17 (G17) proposed as non-invasive useful tools. OLGA histological classification has been proposed as of prognostic value. Aim of the study was to assess, by using serological markers, the prevalence of CAG in general population and to correlate with the results with OLGA classification.

Aims & Methods: One thousand and nine hundred consecutive patients (M=915; mean age=53.5, range=27–82) showing upper-gastrointestinal (GI) troubles entered the study. Exclusion criteria were: previous history of upper-GI neoplasms, previous surgery, concomitant Proton Pumps Inhibitor (PPI) therapy. All patients underwent a blood sample for GASTROPANEL® (BioHit Oy, Finland) based on: peptidases I (PGI), peptidase II (PGII), gastrin-17 (G17) and IgG against Helicobacter pylori. (Hp-IgG). The normal values are: PGI: 30–120 µg/L, PGII: 21–150 µg/L, G17: 1–30 pmol/L, Hp-IgG: <30 EU/L as well as high levels of G17 (G17>15 pmol/L) were considered diagnostic for CAG. Eighty-three patients with serology suggestive for CAG underwent upper endoscopy and histology according with OLGA staging. The relationship between PGI, G-17 and the different OLGA stages was statistically analyzed.

Results: Eighty-three (M=44, mean age=61, range=49–82) out of 1901 investigated patients showed CAG (4%). Out of the 83 CAG patients, 19.2% was classified as OG 2, 56.6% as OG 3 and 24.2% as OG 4. The relationship between PGI levels and OLGA stage shows a statistically significant difference between the stages OLGA 0, 1, 2 and the stages 3 and 4 (PGI mean values: OLGA 0: 72.45 µg/L, OLGA 1: 85.95 µg/L, OLGA 2: 47.38 µg/L, OLGA 3: 16.00 µg/L, OLGA 4: 10.10 µg/L; p<0.001). The relationship between OLGA stages and G17 serum levels shows a statistically significant difference (G17 mean values: OLGA 0: 4.6 pmol/L, OLGA 1: 5.2 pmol/L, OLGA 2: 26.5 pmol/L, OLGA 3: 44.6 pmol/L, OLGA 4: 38.5 pmol/L; p<0.01 by comparing OLGA 0–1 against OLGA 2–4) (p<0.02).

Conclusion: The prevalence of CAG assessed by serological markers is low in the studied population (4%). The majority of patients (56.6%) were classified in the OLGA stage 2. Both PGI and G-17 showed a statistical significant relationship with the more severe degrees of CAG.

Disclosure of Interest: All authors have declared no conflicts of interest.

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INTRODUCTION: Chronic atrophic gastritis (CAG) is considered to be a pre-cancerous condition of gastric cancer; it is either autoimmune in origin or caused by infection with Helicobacter pylori. The majority of CAG patients are asymptomatic or experience aspecific manifestations like epigastric fullness, early satiation, nausea, bloating. The drugs currently used for upper gastrointestinal (GI) diseases, mainly proton pump inhibitors (PPIs), appear inappropriate in such patients, mainly because acid production is virtually lacking. The use of

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Disclosure of Interest: All authors have declared no conflicts of interest.
L-cysteine has been proposed as adjuvant therapy in CAG; the amino acid binds covalently to acetaldehyde (a Group 1 human carcinogen), removing it from the stomach. The aim of present study was to use L-cysteine to improve the symptoms in patients with diagnosis of CAG.

Aims & Methods: One hundred fourteen consecutive patients (M=43, mean age 49.9 years) (with diagnosis of CAG by means of both gastric histology (moderate to severe chronic, atrophic, body gastritis according to the OLGA staging system) and serology (pepsinogen I < 25 µg/l, gastrin-17 > 14 pmol/l) - GastroPanel®, Biohit Oyj, Finland) entered the study. Forty-one patients (11 M, mean age 49.4 yr, range 27–71 years) were treated with L-cysteine (100 mg 3 times daily, with meals) for 24 months (Group 1). As a control group we enrolled 73 CAG patients (M = 32, mean age = 55.3 yr, range 32–77 years) followed up for 24 months without any related therapy (Group 2). Early satiation, nausea, bloating were recorded at baseline and after 3, 6, 12, 24 months, according to severity score (0-3 for each symptom, min. 0 = no symptoms; max. 12 = full symptomatic).

Results: The global symptomatic score results as follows, lasting the 24 months follow-up. Group 1: baseline 4.93; 3 months 3.36; 6 months 2.96; 24 months 2.64. Group 2: baseline 5.9, 3 months 6.2, 6 months 5.6, 24 months 5.8 (p < 0.01). Subdividing the CAG patients according to the etiology (autoimmune gastritis or previous Helicobacter pylori infection) no differences were found in improving symptoms. No relevant side effects were observed during the study.

Conclusion: The administration of L-cysteine to subjects affected by moderate–severe chronic atrophic gastritis seems to improve the symptoms in a two-year follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1155 PROGNOSTIC SIGNIFICANCE OF SERUM INFLAMMATORY MARKERS IN GASTRIC CANCER

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Introduction: Despite undergoing potentially curative resection a significant proportion of patients develop cancer recurrence. Several cellular and humoral components of systemic inflammatory response have been reported and associated with poor outcome. To date, no study has comprehensively examined the relationship between readily available markers of inflammation and survival in gastric cancer.

Aims & Methods: Patients undergoing surgery for stage I-III gastric cancer between 2004-2016 at a regional unit were identified. Measurements of various systemic inflammation markers were recorded pre-operatively. Pathological factors were recorded from reports issued at the time of resection. The modified Glasgow Prognostic Score (based on CRP and Albumin), Neutrophil-Lymphocyte Ratio, Platelet-Lymphocyte Ratio and Neutrophil-Platelet score were calculated. Pathological variables including TNM stage, differentiation and vascular invasion were also recorded. Survival endpoints of overall survival (OS) and disease-free survival (DFS) were used.

Results: 331 patients were identified and 291 patients underwent potentially curative resection for gastric cancer. On univariable DFS analysis, female gender, proximal location, T-stage, N-stage, TNM, vascular invasion, poor differentiation, lymph node ratio, R1 status, platelet count and mGPS were significant determinants of different outcomes. mGPS was the only inflammatory based marker to independently predict poor DFS and OS and may represent the optimum method for systemic inflammatory response quantification.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1156 ANALYSIS OF REBLEEDING PATIENTS IN UPPER GASTROINTESTINAL BLEEDING IN A SINGLE CENTER SERIES

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Introduction: Upper gastrointestinal bleeding (UGIB) is one of the main causes of hospital admission and urgent endoscopy in Gastroenterology departments. In-hospital mortality from UGIB has decreased throughout the past 2 decades with a corresponding increase in the performance of endoscopy and endoscopic therapies. Several studies suggest that improvements in the therapeutic procedures for patients with UGIB could be responsible of the mortality decline. Despite this, UGIB represents a true emergency, associated with significant morbidity, mortality and healthcare costs. Furthermore, rebleeding after initial endoscopic therapy is observed in 10–20%, and it has been associated with a higher mortality rate. Therefore, the definition of predictive factors for rebleeding is of outstanding importance.

Aims & Methods: The aim of our study is to analyze risk factors and outcomes in a population of patients who suffered rebleed. We present a retrospective study on a prospectively built database of patients with GI bleeding admitted to the Emergency Room of “Virgen de las Nieves” University Hospital over 42 months, from January 2013 to July 2016. All patients underwent upper endoscopy, and were assessed regarding patients’ demographic data, current medical conditions (including antplatelet drugs, NSAIDs and oral anticoagulants), clinical presentations, hemodynamics, admission laboratory test results, and endoscopic findings was collected. Interventions were documented, including the need for blood transfusion and the number of packed red blood cells units per patient, endoscopic therapy, interventional radiology procedures, and surgery. Clinical outcomes documented were in-hospital and delayed 6-months mortality, rebleeding and delayed 6-months bleeding and cardiovascular events.

Results: 507 patients were included (339 males; aged 41 ± 16.4). The incidence of rebleeding was 17.3% (n = 88). In the univariate analysis, factors related with rebleeding were creatinine levels (1.52 vs. 1.15; p < 0.001), tachycardia (96.28 vs. 88.24; p < 0.001), low levels of albumin (2.58 vs. 3.28; p < 0.001) and low CRP (260 vs. 210; p < 0.001). In a multivariable analysis, tachycardia and high creatinine were independent risk factors for rebleeding, and albumin showed as an independent protective factor (Table 1). Rebleeding was associated with in-hospital mortality (p < 0.0001); by contrast, it was not related to delayed 6-months mortality neither with delayed 6-months vascular and hemorrhagic events. The UGIB risk scores AIMS 65 and Rockall showed poor predictive ability for acute mortality in the rebleeding patients’ group and was similar for Blatchford score (based on AUROC).

Conclusion: Rebleeding in UGIB is associated with increased in-hospital mortality; nevertheless, it is not related with delayed 6-months mortality, hemorrhagic and cardiovascular events. High creatinine and low albumin levels were independent risk factors for rebleeding, suggesting a potential predictive role of these parameters. AIMS65, Rockall and Blatchford were insufficient to predict in-hospital mortality but worked poorly in the patients who suffered rebleeding.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1157 A CASE-CONTROL STUDY ON THE RISK OF UPPER GASTROINTESTINAL MUCOSAL INJURIES IN SUBJECTS PRESCRIBED NSAIDS AND ANTI-THROMBOTIC DRUGS USING THE LARGE ORGANIZED DATABASE OF CLAIMS IN JAPAN (APPROXIMATELY 3.7 MILLION OF POPULATION ON AN ACCUMULATED BASIS)

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Introduction: upper gastrointestinal (GI) adverse effects induced by NSAIDs and anti-thrombotic drugs are increasing along with progressive aging of society. Recently it is essential to perform pharmaco-epidemiological studies to identify adverse effects in the real-world setting using a large-scale medical database. We performed a case-control study to estimate the risk of upper GI mucosal injuries in subjects prescribed NSAIDs and anti-thrombotic drugs using the large organized database of claims in Japan.

Aims & Methods: The medical claims database developed by Japanese Medical Data Center (JMDC Co., Ltd. was selected as data source in the present retrospective observational study. The JMDC claims database comprised of integrated medical and pharmacy claims, and includes both hospital and outpatient care from over 90 payers (approximately 3.7 million of population on an accumulated basis). Eligible subjects were aged 20 to 74 and registered for at least 3 months in the database. Multivariate logistic regression analysis was used to calculate odds ratios of occurrence of each upper GI mucosal injury caused by NSAIDs, COX-2 selective inhibitors, low-dose aspirin, antplatelet drugs (except low-dose aspirin) and anticoagulants.

Results: The odds ratios of peptic ulcers were 1.45, 1.31, 1.50, 1.53 and 1.62 for NSAIDs, COX-2 selective inhibitors, low-dose aspirin, antplatelet drugs, and anticoagulants, respectively. On the other hand, the odds ratios of peptic ulcers (p < 0.0001) in each. The odds ratios of upper GI bleeding were 1.76, 1.62, 1.96, 1.82 and 2.38, and those of GERD were 1.54, 1.41, 1.89, 1.67 and 1.91, and these odds ratios were statistically significant in each medicine with GI bleeding and GERD (p < 0.0001 in each). In all the upper GI mucosal injuries were the highest in the patients with anticoagulants, and the ratios were relatively low in those with NSAIDs and COX-2 selective inhibitors. The odds ratios tended to increase with the number of prescribed
P1158 GASTROINTESTINAL BLEEDING UNDER ANTICOAGULATION THERAPY: SYSTEMATIC REVIEW OF THE REBLEEDING RISK, ITS REVERSIBILITY PROFILE AND RISK STRATIFICATION TO SELECT PATIENTS FOR LEFT ATRIAL APPENDAGE OCCLUSION

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Introduction: Percutaneous left atrial appendage occlusion (LAAO) is increasingly recognized as a valid alternative therapy to reduce thromboembolic risk in patients with non valvular atrial fibrillation (AF) and contraindications for long term oral anticoagulation (OAC) therapy. Patients at high thromboembolic risk with previous gastrointestinal bleeding (GIB) might be at risk of bleeding recurrence in case of resuming anticoagulation. They could be selected for alternative therapies like LAAO. Up to now, there is no scientific consensus for patient selection for LAAO based on recurrent GIB risk.

Aims & Methods: We aimed to review the literature on gastrointestinal (GI) bleeding prevention when resuming OAC after LAAO procedure to deduce the reversibility profile of each lesion in an organ by organ and lesion by lesion approach to stratify the risk of bleeding individually. We systematically collected data from both prospective and retrospective studies from pubmed in order to extract rebleeding risk by etiology. The reversibility profile was defined by type of treatment needed to cure the lesion. Low reversibility (LR) profile was defined as a need for heavy treatment (surgery, radiotherapy, embolisation) to cure the lesion or as diffuse lesions.

Results: The most frequent reported causes of bleeding are peptic gastroduodenal ulcer (60%) for upper GI, diverticulosis (40%), colitis (20%) and anorectal diseases (20%) for lower GI and angiodysplasia (23%) for the midgut, these latter being responsible for 5% of all GI bleeding causes. The rate of recurring bleeding under OAC is 5-7% for varius K arteries vs. 2% for VKA and 12-14% in case of OAC and aspirin, respectively. In the upper GI tract, lesions at high risk of bleeding recurrence are Dieulafoy lesions and angiodysplasia with reported rates up to 40% in some series. In the lower GI tract, lesions at highest risk are diverticular disease, angiodysplasia, colitis and radiation rectitis with bleeding recurrence rates reaching 60%, 20%, 40% and 20% respectively. For the midgut, angiodysplasia (20%) and bleeding of unknown origin (20%) are associated to the highest risk of recurrent bleeding. LR profile lesions with high rebleeding risk are present for diffuse angiodysplasia, systemic diverticulosis and Dieulafoy lesions.

Conclusion: In conclusion, GI lesions at high risk of recurrent bleeding with low reversibility profile are infrequent and include in particular: diffuse angiodysplasia, colonic diverticulosis and Dieulafoy lesions. Patients with AF having those lesions and resuming GIB under anticoagulation might be the best candidates for alternative therapies like LAAO. Larger studies are needed to assess the long term outcome of patients treated by LAAO for GIB under current oral anticoagulant therapies.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:


P1161 COMPARISON OF RISK-SCORING SYSTEMS IN PREDICTING NEEDS OF INTERVENTION AND CLINICAL OUTCOMES OF UPPER GASTROINTESTINAL BLEEDING

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Introduction: There are several risk-scoring systems available to assist the management of upper gastrointestinal bleeding (UGIB). The aim of this study is to compare the performance of pre-endoscopy (pre-RS), post-endoscopy Rockall score (post-RS), GBS and AIMS65 scores in predicting the need for intervention in patients admitted to hospital for UGIB.

Aims & Methods: Data related to the three scoring systems were collected prospectively and scores calculated in consecutive patients who were admitted with acute UGIB to the Royal Adelaide Hospital over 24 months. The performance of these scoring systems in predicting clinical outcomes was assessed: the need for endotherapy, rebleeding risk, transfusion requirement, surgical intervention and death. All patients received high dose acetylsalicylic acid prophylaxis. Results: Of the 777 patients (491M; 66.4 years), median hospital stay was 2.5 days (IQR: 1.0–6.0). GBS and AIMS65 scores were respectively 40.25 (21.21–102.6) and 32.10 (15.40–65.80). ROC analysis revealed that the independent risk factors for rebleeding in UGIB were multiple ulcers [odds ratio (95% confidence interval) = 2.42 (2.76–21.3), P < 0.004], steroid administration [14.0 (1.73–113), P = 0.013], and hemodialysis [9.53 (1.00–90.7), P = 0.049]. There was no significant correlation between the need for endotherapy and the score. Conclusion: ROC analysis revealed that the independent risk factors for rebleeding in UGIB were multiple ulcers [odds ratio (95% confidence interval) = 2.42 (2.76–21.3), P < 0.004], steroid administration [14.0 (1.73–113), P = 0.013], and hemodialysis [9.53 (1.00–90.7), P = 0.049]. There was no significant correlation between the need for endotherapy and the score.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1162 STEROID ADMINISTRATION IS AN INDEPENDENT RISK FACTOR FOR REBLEEDING IN HEMORRHAGIC DUODENAL ULcer WITH A DOSE-RESPONSE RELATION

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Introduction: Hemorrhagic gastroduodenal ulcer is commonly seen in routine clinicopathologic practice, and there have been many studies investigating risk factors for rebleeding. However, few studies have evaluated hemorrhagic gastric ulcers (HGU) and hemorrhagic duodenal ulcer (HDU) separately. Furthermore, the relation between steroid administration and rebleeding in hemorrhagic gastroduodenal ulcer (HDU) has been rather understudied. Aims & Methods: The aim of this study was to clarify the difference of rebleeding between HGU and HDU, and associated factors for rebleeding of HGU and HDU. Between March 2005 and September 2016, 176 consecutive patients with hemorrhagic gastroduodenal ulcer (106 with HGU and 70 with HDU), who underwent endoscopic hemostasis, were enrolled in this study. Regular dose proton pump inhibitor was administrated to all patients after the diagnosis of hemorrhagic gastroduodenal ulcers. Rebleeding was defined as hematemesis or melena with ulcers confirmed by endoscopy or a decrease in the hemoglobin level >2 g/dl in the presence of endoscopically proven ulcers. First, we compared the rebleeding rate between HGU and HDU. Subsequently, associated factors for rebleeding of HGU and HDU were calculated by logistic regression analysis individually. The estimated factors were age (<65/65 years), gender, location of ulcer (upper third/middle or lower third in HGU and 2nd portion/bulb in HDU), underlying comorbidities (ischemic heart disease, liver cirrhosis, hypertension, diabetes mellitus, and hyperlipidemia), number of ulcers (multiple/ single), hemostasis method (pure ethanol injection therapy/other therapies), antiplatelet therapy, anticoagulation therapy, NSAID administration, steroid administration, antacid administration in the initial ulcer bleeding, hemoglobinemia (serum albumin level ≤2.5 g/dl), and hemodialysis. We further investigated the detailed association between steroid administration and rebleeding in HDU, including dose-response relation.

Results: The rebleeding rate of HGU and HDU were 5.7% and 22.9%, respectively, which was statistically significant (P = 0.001). There was no missing data in the estimated factors. Although no factor was associated with rebleeding in HDU, ROC analysis revealed that the independent risk factors for rebleeding in HDU were multiple ulcers [odds ratio (95% confidence interval) = 2.42 (2.76–21.3), P = 0.004], steroid administration [14.0 (1.73–113), P = 0.013], and hemodialysis [9.53 (1.00–90.7), P = 0.049]. Regarding the dose of steroid administration, multivariate analysis showed that middle to high-dose steroid administration (≥20 mg in prednisolone) (52.7 [3.19–87.1]) P = 0.006) was a significant risk factor for rebleeding of HDU, with a dose-response relation (P = 0.0015).

Conclusion: HDU developed significantly higher rebleeding after endoscopic hemostasis, compared with HGU. In addition to multiple ulcers and hemodialysis, we firstly demonstrated by multivariate analysis that steroid administration is an independent risk factor for rebleeding of HDU after endoscopic hemostasis, with a dose-response relation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1163 EFFICACY AND SAFETY OF BIO-INSERT MINERAL SMECTITE IN CONTROLLING GASTROINTESTINAL HEMORRHAGE: AN ANIMAL PILOT STUDY

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Introduction: Gastrointestinal bleeding is common in clinics, especially after endoscopic operation. Besides from hemoclip, APC or electrocoagulation, more novel hemostasis approaches should be developed to improve endoscopic bleeding management. Granule smectite is bioinert mineral and efficient for curing diarrhea. Inspired by its dehydrating and tissue-covering effect, this pilot study was to investigate its efficacy and safety for controlling hemorrhage in rats.

Aims & Methods: 32 rats were divided into four equal groups. For hemorrhage model, a horizontal 10-mm incision was made on the lower part of the left hepatic lobe. Commercial hemostatic powder, smectite, starch and normal saline were respectively applied. Bleeding duration and blood loss were recorded. 1 week later, rats were sacrificed and liver tissue was collected for histopathology.

Results: Smectite demonstrated the best hemostasis effect, and its mean coagulation time was 1.45 ± 0.026 min. Commercial hemostatic chitosan stypic powder need 2.5 ± 0.04 min for complete clotting, while Starch group was 4.75 ± 0.056 min and normal saline group was 4.925 ± 0.123 min (p < 0.05). Similarly, smectite led to less blood loss (0.618 ± 0.034 g), while rats lost 2.3288 ± 0.123 g blood (p < 0.05) under normal saline treatment. For starch and commercial chitosan, the blood loss was respectively 2.0862 ± 0.061 g and 1.49 ± 0.023 g. Histopathologic results confirmed that smectite was biocompatible to tissue.

Conclusion: The mineral smectite powder was the superior candidate for hemostasis treatment in vivo. Compared with common polysaccharide agents, smectite could induce faster coagulation and reduce blood loss. More importantly, bioinert smectite was biocompatible and even promoted the wound healing. For gastrointestinal application, smectite powder could be delivered through endoscopic spray tube, while its inspiring efficacy required more endoluminal hemostasis tests.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1164 PREDICTORS OF LIFE THREATENING MUCOSAL HEMORRHAGE: AN ANIMAL PILOT STUDY

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Introduction: Life-threatening bleeding could occur early after variceal sclerotherapy in cirrhotic patients. Aims & Methods: We aimed to determine simple predictive factors of this complication in cirrhotic patients. Among 750 patients treated with variceal sclerotherapy (esophageal varices (EV): 683, 87.3%) and (gastroduodenal varices (GV): 65, 9.4 years), 95, 12.7%) Zagazig University hospital–endoscopy unit- Internal medicine department, in the period from October 2014 till July 2016, 150 patients (20%, mean age 46 ± 9.4 years) (EV = 129, GV = 21) developed bleeding due to sclerotherapy induced ulcers confirmed by endoscopy 6.4 ± 2.1 days after the procedure. Cirrhosis was post viral hepatitis C (89%), hepatitis B (10%) and cryptogenic in (1%). A case-control study was performed comparing these
patients with 150 patients who underwent endoscopic variceal sclerotherapy without the development of bleeding due sclerotherapy ulceration. **Results:** Bleeding occurred 6.4 ± 2.1 days (2–10) following sclerotherapy. Twenty-three patients died following the bleeding (15.3%). Using a multivariate analysis; pre-procedural factors as serum albumin ≥2 g/dl [OR 1.3], total bilirubin ≥1.6 mg/dl [OR 1.9], platelet ratio index (APRI) >1 [OR 1.2]. **Conclusion:** Conclusion: Bleeding related to sclerotherapy ulcers is uncommon, but may be life threatening. The proposed predictive factors should be watched and minimized before and during variceal sclerotherapy.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**P1165 IMPACT OF SLEEP DISORDER IN PATIENTS WITH FUNCTIONAL DYSPEPSIA**

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**Aims & Methods:** The aim of this study is to investigate the prevalence of sleep disorders in FD patients and the risk factors associated with sleep disorders. This multicenter, cross-sectional study had been conducted from August 2014 to December 2016 at 6 hospitals in Korea. Inclusion criteria were FD patients (>18years) that met the Rome III criteria for the patients visited the gastroenterology department for dyspepsia. Exclusion criteria were prior surgery to the upper gastrointestinal tract, history of ulcer disease, erosive GERD, history of malignancy, and severe comorbidity. Healthy control group who had no clinical history of gastroesophageal reflux disorder and no abnormal finding on endoscopy were recruited from the study center for screening. The Pittsburgh Sleep Quality Index was used to assess sleep disturbance. Hospital anxiety and depression scale was used to identify anxiety and depression.

**Results:** Total 169 FD included 160 FD patients and 223 healthy control groups. The total Pittsburgh Sleep Quality Index score was higher in FD patients than health controls (7.8 ± 4.3 vs 5.6 ± 3.1, p = 0.009). The prevalence of sleep disorder was significantly higher in FD patients than healthy control (41.2% vs 18.4%, p < 0.001). In univariate analysis, FD was significant risk factor for sleep disorder (OR 3.12, p = 0.001). The independent risk factors for sleep disorder in multivariate analysis were FD (OR 1.80, p = 0.026), female (OR 1.78, p = 0.028) and depression (OR 2.91, p = 0.002).

**Conclusion:** FD significantly impacted on sleep disorder. FD was independent risk factor in sleep disorder.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1167 PSYCHOSOCIAL PREDICTORS OF LATER GASTROINTESTINAL SYMPTOMS**

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**Introduction:** Functional gastrointestinal (GI) disorders (FGIDs) have been the subject of extensive debate about axes with both somatic markers (e.g., abdominal pain) and psychological ones. Exactly how abdominal and psychological disorders are related remains poorly understood. While there have been a small number of methodologically rigorous longitudinal studies that examine this question (1,2), even these have typically only studied a small number of psychological traits and only quite general GI symptoms. There remains a need for further longitudinal studies of how psychological traits predict subsequent FGID symptoms.

**Aims & Methods:** The present study is a longitudinal examination of the influence of a broad range of psychosocial predictors on later bowel-related and epigastric discomfort in a community sample. A sample of 188 individuals randomly sampled from the Australian electoral roll were surveyed, and, of them, 123 met the Rome III criteria for irritable bowel syndrome (IBS) or functional dyspepsia (FD) while 65 did not meet criteria for FGIDs. Subjects were of mean age 49 years (SD = 15, range 20–87) and 73% were female. A broad range of psychological constructs (24 in total) were measured at baseline. Among them were anxiety, depression, somatization, childhood abuse, neuroticism, hypochondriasis, somatic vs psychological symptom attribution, coping, and social support. GI symptoms were measured 18 months later using two Likert-type scales: one concerning epigastric pain and the other concerning bowel symptoms. Exploratory factor analysis (EFA) was used as a data-reduction technique to create a smaller number of composite predictors. Statistical analysis was based on ordinal regression.

**Results:** Ten composite scores were derived via EFA to be examined as predictors of the full sample (N = 188) of a number of psychosocial traits (e.g., worry, non-sexual childhood abuse, psychological symptom attribution and childhood sexual abuse; see Table 1) were individually related to subsequent bowel symptom severity 18 months later (Table 1). There was evidence of variation in psychological predictors of gastrointestinal symptoms between individuals who met and did not meet criteria for IBS or FD. With respect to bowel symptoms, no psychological trait reached statistical significance.
as a predictor among individuals with FGIDs (Table 1). Epigastric symptom severity was predicted by worry and psychological attribution of symptoms among FGID individuals but no psychological trait predicted symptom severity among non-FGID individuals (Table 1).

**Conclusion:** A range of psychosocial factors predict later gastrointestinal symptom burden. For bowel symptoms, associations between psychological traits and symptom burden appear to be most clearly driven by the non-FGID subgroup, among whom psychological attributions for symptoms and problem-focused coping are positively related to later symptom burden. For epigastric symptoms, a range of psychological traits were relevant, with the predictive patterns being most clearly driven by individuals who qualified for FGIDs. In light of these results, studies of the brain-gut axis need to consider a greater array of psychological traits, particularly outside of anxiety and depression. Further, the complexity by associations between psychological traits and gastrointestinal symptoms may be moderated by symptom level but are relatively similar across upper and lower gastrointestinal symptoms.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1168 AN INCREASED PREVALENCE OF NEURODEGENERATIVE/DEMYELINATING PROCESS IN PATIENTS WITH ESOPHAGEAL ACHALASIA – A PROSPECTIVE STUDY**

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**Introduction:** In the recent years, there has been an increasing recognition of the presence of gastrointestinal (GI) dysfunction in patients with neurologic diseases. There are no studies examining a relationship between psychological traits and gastrointestinal symptoms in patients with achalasia and with neurodegenerative/demyelinating diseases. A range of psychosocial factors predict later gastrointestinal symptom burden. For bowel symptoms, associations between psychological traits and symptom burden appear to be most clearly driven by the non-FGID subgroup, among whom psychological attributions for symptoms and problem-focused coping are positively related to later symptom burden. For epigastric symptoms, a range of psychological traits were relevant, with the predictive patterns being most clearly driven by individuals who qualified for FGIDs. In light of these results, studies of the brain-gut axis need to consider a greater array of psychological traits, particularly outside of anxiety and depression. Further, the complexity by associations between psychological traits and gastrointestinal symptoms may be moderated by symptom level but are relatively similar across upper and lower gastrointestinal symptoms.

**Aims & Methods:** The aim of our prospective study is to examine a prevalence of neurodegenerative/demyelinating diseases in a cohort of consecutive patients with confirmed esophageal achalasia. Achalasia was diagnosed by high-resolution manometry, endoscopy and esophagegapham. A total of 140 consecutive patients with esophageal achalasia have been questioned about the occurrence of neurological diseases and symptoms in their personal and family history. Those with a suspicion of a neurological disease were referred for a detailed clinical resolution manometry, endoscopy and esophagogram. A total of 140 consecutive patients with esophageal achalasia have been questioned about the occurrence of neurological diseases and symptoms in their personal and family history. Those with a suspicion of a neurological disease were referred for a detailed clinical study.

**Results:** A total of 51 out of 140 patients (36.4%) exhibited some neurological symptoms-most often visual disturbances in 17 patients (33.3%) and limb spasticity in 12 patients (23.5%). Among patients with a presence of neurological symptoms, 5 patients (3.6%) had definitely been diagnosed with a neurodegenerative/demyelinating disease (multiple sclerosis - 2 patients, Lebert optic neuropathy - 1 patient, Parkinson’s disease - 1 patient and Allgrov syn - syndrome - 1 patient). Furthermore, 7 patients with a positive questionnaire had been diagnosed with other neurological diseases (tetany n = 2, carpal tunnel syndrome n = 3, epilepsy n = 2). Fourteen patients (27.4%) among those with neurological symptoms (vs. 0 out of 89 patients without neurological symptoms) had a positive family history of a neurodegenerative or a demyelinating disease. Among 106 patients with a neurodegenerative/demyelinating disease, 30 of them (27.4%) described dysphagia as the personal history. These patients will be examined by esophagegaphamometry.

**Conclusion:** Our results imply an increased prevalence of neurodegenerative/demyelinating diseases in patients with achalasia (3.6% vs. approx. 1.4% in the Czech controls). Also, a high prevalence of dysphagia was found among patients with a neurodegenerative/demyelinating disease. These results warrant further confirmation in a large population-based study.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**Abstract No: P1167**

**Table 1:** Associations between individual psychological traits and symptom severity. *Numeric entries are odds ratios (OR odds ratio), *** indicates p < .001, ** indicates p < .01, * indicates p < .05, and ** indicates p > .1.*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Bowel Non-FGID</th>
<th>Symptom Non-FGID</th>
<th>Severity Combined</th>
<th>Epigastric Non-FGID</th>
<th>Symptom Non-FGID</th>
<th>Severity Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem-focused coping</td>
<td>2.92 (1.23)*</td>
<td>0.93 (0.14)</td>
<td>1.16 (0.15)</td>
<td>1.00 (0.44)</td>
<td>1.03 (0.15)</td>
<td>1.12 (0.15)</td>
</tr>
<tr>
<td>Worry</td>
<td>1.44 (0.51)</td>
<td>1.35 (0.22)*</td>
<td>1.60 (0.22)***</td>
<td>1.60 (0.65)</td>
<td>1.56 (0.26)**</td>
<td>1.71 (0.24)***</td>
</tr>
<tr>
<td>Avoiding coping</td>
<td>0.61 (0.27)***</td>
<td>0.97 (0.39)</td>
<td>0.93 (0.15)</td>
<td>0.95 (0.13)</td>
<td>0.97 (0.13)</td>
<td>0.99 (0.13)</td>
</tr>
<tr>
<td>Doctor relationship</td>
<td>2.96 (1.77)***</td>
<td>1.09 (0.16)</td>
<td>1.06 (0.14)</td>
<td>1.00 (0.54)</td>
<td>1.03 (0.16)</td>
<td>0.97 (0.13)</td>
</tr>
<tr>
<td>Childhood non-sexual abuse</td>
<td>1.65 (0.68)</td>
<td>1.06 (0.15)</td>
<td>1.33 (0.17)</td>
<td>1.94 (0.88)</td>
<td>1.05 (0.15)</td>
<td>1.32 (0.17)*</td>
</tr>
<tr>
<td>Social support</td>
<td>0.53 (0.22)</td>
<td>1.08 (0.15)</td>
<td>0.80 (0.11)</td>
<td>0.68 (0.32)</td>
<td>0.82 (0.12)</td>
<td>0.87 (0.11)</td>
</tr>
<tr>
<td>Somatic rather than non-psychological attribution</td>
<td>0.27 (0.11)***</td>
<td>0.93 (0.15)</td>
<td>0.72 (0.10)*</td>
<td>0.83 (0.36)</td>
<td>0.64 (0.11)**</td>
<td>0.63 (0.09)***</td>
</tr>
<tr>
<td>Doctor reassurance</td>
<td>0.99 (0.31)</td>
<td>0.16 (0.26)</td>
<td>0.94 (0.14)</td>
<td>1.06 (0.34)</td>
<td>1.49 (0.33)*</td>
<td>1.01 (0.16)</td>
</tr>
<tr>
<td>Somatisation</td>
<td>2.92 (1.23)***</td>
<td>0.93 (0.14)</td>
<td>1.16 (0.15)</td>
<td>0.30 (0.30)</td>
<td>1.27 (0.18)*</td>
<td>1.54 (0.20)***</td>
</tr>
<tr>
<td>Childhood sexual abuse</td>
<td>1.44 (0.51)</td>
<td>1.35 (0.22)*</td>
<td>1.60 (0.22)***</td>
<td>2.16 (0.88)**</td>
<td>1.11 (0.18)</td>
<td>1.16 (0.16)</td>
</tr>
</tbody>
</table>

When considered jointly with other predictors, psychological attribution of symptoms was significantly positively related to both bowel symptom severity (non-FGID: OR = 0.31, SE = 0.13; Full: OR = 0.74, SE = 0.11) and epigastric symptom severity (FGID: OR = 0.63, SE = 0.09; Full: OR = 0.63, SE = 0.11). The same was the case for worry (Bowel: Full: OR = 1.40, SE = 0.21; Epigastric: FGID: OR = 1.58, SE = 0.27; Full: OR = 1.54, SE = 0.23). For bowel symptoms, problem-focused coping (OR = 2.30, SE = 0.98) was an additional independent positive (notably, not negative) predictor among participants without FGIDs.
functional connections). These interconnections included the following: thalamus-amygdala, hypothalamus-NAC, amygdala-pu
men amygdala-NAC and insula-patmen. No significant network was identified for the low CVT group.

Conclusion: During acute oesophageal pain, resting cardiac vagal tone yields a unique manometric configuration comprising numerous complex subcortical brain regions, many of which have been previously associated with either visceral pain or modulation of baseline autonemics either at the physiological or neuroana
tomical level (3). Previous research has suggested that a high resting CVT may be protective of noceptive signalling, and furthermore studies investigating vagal nerve stimulation have included and report that of anti-nociception (4). Given the well-established role of these subcortical regions in pain processing, we sug
suggest that this network identified may be of significance as to the neurophysiolo
gical process of parasympathetic modulation of painful sensory signalling. Lastly, to date, no studies have undertaken real-time assessment of the ANS (including CVT) during functional brain imaging and acute visceral pain. Future studies should investigate for this.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1170 RAPID DRINK CHALLENGE (RDC) TEST DURING OESOPHAGEAL HIGH RESOLUTION MANOMETRY (HRM) IN PATIENTS WITH OESOPHAGO-GASTRIC JUNCTION OUTFLOW OBSTRUCTION
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Introduction: Oesophageo-gastric junction outflow obstruction (OGJOO) is of unclear significance. It may be secondary to an incomplete form of achalasia, a mechanical obstruction or be idiopathic. Rapid drink challenge (RDC) test is easy to perform during oesophageal HRM.

Aims & Methods: We aimed to assess the yield of RDC in patients with OGJOO. From a database of 3522 consecutive oesophageal HRM performed from 01/2012 to 03/2017, we extracted patients with OGJOO according to the Chicago Classification v3.0. HRM protocol consisted of 10 5-ml water swallows in supine position and RDC test (200-ml free drinking) in sitting position. Distal contrac
tile integral (DCI) integrated relaxation pressure (IRP), distal and pan-oesopha
gus pressurization (POP); homogeneous oesophageal pressurization >30 mmHg) were reported for 5-ml swallows. POP and oesophageal shortening (OS) were analysed during RDC. Symptom severity was assessed with Eckardt score. Causes of OGJOO were determined by reviewing patient’s chart for previous history, complementary work up and treatment. Quantitative data were expressed as median (range) and qualitative data as percentage. They were compared using non parametric and Chi square tests.

Results: 75 patients (29%) (29 males, mean age 62 years (25–92)) were included. The dominant symptom was dysphagia (69%), regurgitation (9%), chest pain (5%), other (13%), no symptom (3%). The causes of EGJOO were previous oesophageo-gastric surgery (43%), incomplete achalasia (7%), mediastinal neoplasia (7%), miscellaneous (1%) and unknown (25%). RDC test was success
fully performed in 70 patients (93%) and associated with POP and OS in 41% and 15% respectively. Dysphagia as dominant symptom was more frequent (79% vs 59%, p = 0.017) and more severe (Eckardt score 5 (1–11) vs 3 (0–10), p = 0.001) in patients with POP during RDC compared to those without. The same obser
vation was achieved in patients with OS vs those without (dysphagia 100% vs 62, p = 0.02 and Eckardt score 6 (2–10) vs 1 (0–11), p = 0.02). Manometric para
meters were reported in the table. The causes of OGJOO were similar in patients with and without POP during RDC (previous oesophageo-gastric surgery 34% and 51% respectively, achalasia 14% and 2%, mediastinal neoplasia 3% and 7%, miscellaneous 10% and 22%, unknown 35% and 17%). OS was not observed in patients with unknown cause of EGJOO vs 20% of patients with an identified cause (p = 0.09).

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1171 THE NORMATIVE VALUES OF A NEW 36 CHANNELS WATER PERFUSION ESOPHAGEAL MOTILITY CATHETER
S. Bor, S. Kipcak
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Introduction: High resolution manometry (HRM) is performed with solid-state catheters (SS) in many centers. However according to Chicago classification, very limited data from healthy volunteers are available for some catheters and starting from IRP, numerical values are crucial for the diagnosis. Because of the cost of the SS-HRM catheters many centers especially from developing countries use water perfusion HRM (W-HRM) catheters up to 24 channels and normal values are even more limited.

Aims & Methods: We evaluated a prototype 36 channels W-HRM reusable catheter allowing to measure 3D-pressure vector volume analysis of lower esophageal sphincter in healthy volunteers and compared to 36 channels SS-HRM catheters (Laborie-MMS Canada). We included 43 healthy volunteers without any upper gastrointestinal complaint. Upper gastrointestinal endoscopy and 24h impedance-pH monitor
ing performed in all subjects. Four subjects were excluded because of silent GERD. 39 subjects were analysed (25 males, W-HRM (n = 39), SS-HRM (n = 33)). Thirty-three patients underwent two esophageal manometry studies within two consecutive days with a random order. Procedures were performed in supine position with receiving ten times 5 ml water, five times solid food and multiple water swallow with 200 ml of water. 36 channel water-perfused 3-D HRM catheter and 36 channel solid state HRM catheter were used (Laborie-MMS Canada).

Results: There was significant differences between two catheters in terms of Integrated Relaxation Pressure (IRP), Distal Contractile Integral (DCI) and DCI expanded, LES resting pressure, % of ineffective peristalsis, and esophageal length both with water and solid food swallows (Table). No difference has been shown with distal latency (DL), LES length, breaks size (Table).

Disclosure of Interest: All authors have declared no conflicts of interest.

References
4. Farmer, AD et al. Electrical vagal nerve stimulation prevents the develop
Low-Volume Multiple Rapid Swallows Better Distinguish Peristaltic Esophageal Reserve Compared to High-Volume Rapid Drinking Test

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Introduction: The Chicago Classification (CC V3.0) defined ineffective esophageal motility (IEM) by the presence of 50% or more of weak or failed peristaltic waves during high resolution manometry (HRM). Both low-volume (10ml) multiple rapid swallow (MRS) and high-volume (200ml) rapid drinking test (RDT) have been suggested as test to recognize the esophageal peristaltic reserve. Which test might better represent the esophageal peristaltic reserve is still a matter of discussion.

Aims & Methods: The aim of this study was to compare the diagnostic value of MRS and RDT in patients with IEM. From a larger group of patients evaluated for heartburn and/or/wik with poor response to standard dose proton pump inhibitors, we enrolled consecutive patients with IEM and with functional heartburn (FH). FH were enrolled as controls. IEM was defined according to the Italian Guidelines. All patients underwent 3 MRS (10 ml of water in 5 swallows in less than 10s) and 1 RDT (200 ml of water freely drunk). The mean DCI of MRS and the DCI of RDT were compared with DCI of 10 single swallows (SS). The MRS/SS and RDT/SS ratio were calculated.

Results: We evaluated 30 patients with IEM (18 males and 12 females; mean age 45.7±11.4 yrs) and 30 patients with FH (15 males and 17 females; mean age 41.2±13.6). The pH-m pH showed higher acid exposure time (AET) and number of reflux events in IEM than in FH (p<0.05). Mean DCI of SS resulted lower in patients with FH compared to FH (p<0.05). One-hundred and eighty IEM and 60 FH were evaluated. DCI of MRS was lower than 450mmHg-cm in 39% (35/90) of IEM patients, and in 7% (6/90) of FH (p<0.05). DCI of RDT was lower than 450mmHg-cm in 73% (23/30) of IEM patients, and in 50% (15/30) of FH (p<0.05). The MRS/RDT ratio resulted >1 in both groups. All results are reported in Table 1.

Table 1: Results of SS, MRS and RDT in patients with IEM and FH

<table>
<thead>
<tr>
<th>Group</th>
<th>MRS mean DCI</th>
<th>MRS SS ratio</th>
<th>RDT SS ratio</th>
<th>MRS/RDT</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEM</td>
<td>1027.6±0.001</td>
<td>0.9±0.002</td>
<td>0.5±0.001</td>
<td>1.3±0.04</td>
</tr>
<tr>
<td>FH</td>
<td>799.2±0.001</td>
<td>1.6±0.001</td>
<td>1.0±0.001</td>
<td>1.4±0.07</td>
</tr>
</tbody>
</table>

Conclusion: 100% of IEM patients compared to 50% of FH showed peristaltic reserve compared to RDT both in patients with IEM or those with normal esophageal peristaltic reserve.

Disclosure of Interest: All authors have declared no conflicts of interest.
or severe); the product of frequency and severity constituted the symptom score, assessed at baseline and after ARS. Automated PFA was performed for each test swallow by blinded investigators using purpose built software (Esophageal AIMplot, copyright T Omari) programmed in MatLab (The MathWorks Inc, Natick, MA, USA). The nadir impedance point (NI) indicating peak distension, and the contractile deceleration point (CDP) were determined. latency was measured from NI to the contraction front at the CDP (distension to contraction latency, DCL). Intrabolus pressures (IBP) were measured during accommodation (IBP-A), compartmentalized transport (IBP-CT) and esophageal emptying (IBP-EE). This clearance in the esophageal body was assessed using the impedance ratio (IR) based on the relationship between NI and impedance at the contractile peak. Bolus flow at the esophagogastric junction (EGJ) was assessed using bolus flow time (BFT) in seconds when both pressure and impedance traces indicated a flow permissive paradigm. Univariate and multivariate analyses were performed to assess the relationships between bolus flow metrics and motor function, taking baseline symptom scores and symptom change following ARS into consideration. Results: Of 86 patients, 72.1% had typical symptoms. The mean baseline symp-
tom score was 158.8±15.8, with a mean decline of 139.9±15.8 following ARS. Peak pressures in the proximal esophagus were lower in GERD patients com-
pared to controls with all bolus consistencies (p = 0.007). Consequently, metrics assessing esophageal bolus presence (NI) and clearance (IR) were consistently abnormal in GERD patients (Table, p = 0.001 for all bolus consistencies for each comparison to controls). Trans-EGJ bolus flow metrics were similarly abnormal in GERD (BFT, p = 0.001 for all bolus consistencies compared to controls). IBP metrics were highest with solid swallows, especially in GERD patients compared to controls (Table). Within GERD, a gradient of increasing dysfunction in bolus presence and bolus clearance was noted, with least abnormalities with water swallows and the worst metrics with bread swallows (p ≤ 0.02 across groups for each comparison). IBP-EE (p ≤ 0.05) and trans-EGJ BFT (p = 0.004) were higher during water and viscous swallows with atypical symptoms compared to typical symptoms. NI was consistently lower in patients reporting ≥75% symp-
tom improvement following ARS with all bolus consistencies (p ≤ 0.046).

<table>
<thead>
<tr>
<th>Pressure Flow Analysis Comparisons Using Water, Viscous and Bread Swallows Between Controls and GERD Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>controls</td>
</tr>
<tr>
<td>water swallows</td>
</tr>
<tr>
<td>Proximal peak pressure (mmHg)</td>
</tr>
<tr>
<td>Deltal peak pressure (mmHg)</td>
</tr>
<tr>
<td>Nadir impedance (ohms)</td>
</tr>
<tr>
<td>Distension to contraction latency (s)</td>
</tr>
<tr>
<td>Propagation rate (mmHg/s)</td>
</tr>
<tr>
<td>Distal latency (s)</td>
</tr>
<tr>
<td>Basal viscosity (1000 cP)</td>
</tr>
</tbody>
</table>

*p = 0.04 to compared controls. IBP: intrabolus pressure; IBP-A: IBP-accommodation; IBP-CT: IBP-compartmentalized transport; IBP-EE:IBP-esophageal emptying

Conclusion: Automated pressure flow analysis of HRM studies demonstrates abnormalities of esophageal bolus transit and esophageal emptying in conjunc-
tion with lower proximal smooth muscle contractile function with all bolus consist-
cencies in GERD compared to controls. Metrics assessing esophageal bolus presence may have prognostic value in GERD patients undergoing ARS.

Disclosure of Interest: N. Rommel: Holder of patent on AIM technology with Taher Omari T. Omari: Holder of patent on AIM technology with Tahalome Rommel C. Melchior: Medtronic (research, speaker); Ironwood (consulting); Torax (consulting); Quintiles (consulting); Allergan (speaker) All other authors have declared no conflicts of interest.

References
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P1175 PROVOCATIVE TESTING INCREASES THE DIAGNOSTIC YIELD OF HIGH RESOLUTION OESOPHAGEAL MANOMETRY IN PATIENTS WITH OESOPHAGEAL DIVERSITICA
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Introduction: Oesophageal diversitica are rare diverticula of the gastrointestinal tract known to be associated with oesophageal motor disorders.

Aims & Methods: The aim was to study manometric abnormalities associated with oesophageal diversitica, using both wet and solid swallows. Patients under-
went high resolution oesophageal manometry (HRM) in the upright position. 18 patients with oesophageal diversitica were found and were free of previous surg-
ery. Traction diversitica was excluded in all patients. We also included 10 healthy controls. HRM was performed using wet (5 mL of water) swallows in both groups, followed by solid (meat) swallows in patients. Mean age of the controls was 50 years old while it was 70 years old for patients.

Results: The main reported symptom was dysphagia (76%). HRM found 11 (61%) patients with an oesophageal motor disorder, including 2 oesopha-
gastric junction outflow obstruction (OGJOO), 4 achalasia (subtype 2: n = 2; sub-
type 3: n = 2), 4 distal oesophageal spasm (DES) and 1 jackhammer oesophagus, and was normal in 7 (39%) patients. In those patients with normal findings, solid swallows identified 4 (57%) additional motor disorders, including 2 OGJOO, 1 jackhammer oesophagus and 1 DES. Provocative testing using solid swallows was normal in 22% of overall patients and by 57% in patients with normal manometry using wet swallows only. Mean pressure slopes at mid-
oesophagus and oesophagus were greater in patients than healthy controls (p < 0.05 for wet swallows), as previously reported. Other metrics are summar-
ized in the table.

| HRM metrics with comparisons between wet swallows in controls and patients, and between wet and solid swallows among patients.
<table>
<thead>
<tr>
<th>Controls (liquids)</th>
<th>Patients (liquids)</th>
<th>Patients (solids)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of swallows</td>
<td>9.30</td>
<td>9.94</td>
</tr>
<tr>
<td>EGJ resting pressure (mmHg)</td>
<td>29.30</td>
<td>28.76</td>
</tr>
<tr>
<td>Mean IRP 4s (mmHg)</td>
<td>11.50</td>
<td>14.32</td>
</tr>
<tr>
<td>Mean DCI (mmHg/s.cm)</td>
<td>1315.10</td>
<td>2877.99</td>
</tr>
<tr>
<td>Distal latency (s)</td>
<td>6.70*</td>
<td>6.05*</td>
</tr>
<tr>
<td>Intrabolus pressure (mmHg)</td>
<td>8.10</td>
<td>11.88*</td>
</tr>
<tr>
<td>Mean pressure slope mid-oesophagus (mmHg/s)</td>
<td>−0.65</td>
<td>2.29**</td>
</tr>
<tr>
<td>Mean pressure slope distal-oesophagus (mmHg/s)</td>
<td>−0.36</td>
<td>1.41**</td>
</tr>
</tbody>
</table>

Conclusion: While more than one-third of HRM using wet swallows were normal, provocative testing using solid swallows increased the diagnostic yield of the procedure by more than 50% in these patients. Analysis of pressure slopes confirmed the association of propagating peristalsis with the disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. Carlson DA, Gluskin AB, Meagi B, et al. Esophageal diversitica are asso-
ciated with propagating peristalsis: a study utilizing high-resolution manome-
well as upper endoscopy, barium esophagogram and HRM before and 6 months after treatment. Achalasia was classified according to the Chicago Classification V3.0. The EGJ-CI was calculated using the distal contractile integral tool-box during three consecutive respiratory cycles. Patients underwent to pneumatic dilatation (PD), or LHM plus a Dor (LHM-D), Toupet (LHM-T) or a Nissen-Rossetti (LHM-NR) fundoplication. Ethical approval for the study was obtained.

Results: We enrolled 35 achalasia patients (14 Type I, 16 Type II and 5 Type III). Ten patients underwent PD, 11 LHMD, 8 LHM-T and 6 LHM-NR. At baseline, no significant differences regarding sex, age, sex, pre-operative mean Eckardt score, GERDQ score, integral relaxation pressure (IRP) and EGJ-CI were recorded. All Type III subjects underwent LHMD-D (3) and LHMD-T (2). After all the procedures, in all the patients there was a significant decrease in Eckardt score, IRP and EGJ-CI (p < 0.001, < 0.001 and < 0.05, respectively). PD and LHMD-NR showed higher EGJ-CI (20 ± 9.3 and 25 ± 11 mmHg*cm, respectively) and IRP (12.2 ± 3.4 and 13 ± 4.5, respectively) than LHMD-D and LHMD-T (18.4 ± 5.9, p < 0.05 and 9.3 ± 4.1 p < 0.05 mmHg*cm, respectively for EGJ-CI; 5.2 ± 2.5, p < 0.05 and 2.3 ± 3.7 p < 0.001 mmHg*cm, respectively for IRP). Post-operative Eckardt score was lower in LHMD-D and LHMD-T (2.1 ± 0.5 and 2.0 ± 0.6, respectively) than PD and LHMD-NR (4.2 ± 1.0, p < 0.01 and 3.7 ± 1.5, p < 0.005). Post-operative GERDQ score was significant higher in LHMD-T (3.0 ± 1.7 vs. 3.2 ± 3.9, p < 0.05). Low post-operative EGJ-CI values correlated with an increased risk of higher post-operative GERDQ score (p < 0.05, odds ratio 4.223, 95% CI 0.964–2.123).

Conclusion: All procedures performed to treat achalasia produced an adequate relief of dysphagia. LHMD-D and LHMT seem to result in a stronger alteration of the EGJ, with LHMD-T resulting in an increased risk of post-operative reflux.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI177 MULTIPLE RAPID SWALLOWING IN JACKHAMMER ESOPHAGUS: PATIENTS’ EVIDENCE FOR ALTERED NEURAL CONTROL

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Introduction: Jackhammer esophagus is a rare esophageal motility disorder. Little is known about its physiopathology; however, an excess of cholinergic drive has been suggested as an important etiologic factor. Multiple rapid swallowing (MRS) is an adjunctive test in order to evaluate integrity of inhibitory and excitatory neural pathways. In healthy subjects body motion inhibition is observed during MRS and a contraction stronger than single swallows (SS) occurs after MRS, the so-called peristaltic reserve (MRS/SS DCI ratio > 1). In patients with reflux esophagitis esophagus preservation of motor inhibition during MRS has been described with traditional manometry2. No study has evaluated peristaltic reserve and motor inhibition with high-resolution manometry (HRM) in patients with jackhammer esophagus.

Aims & Methods: To evaluate MRS in a consecutive multicenter series of 42 Jackhammer esophagus patients (18 Male; 63 years; 55–71) according to Chicago 3 classification. 18 healthy subjects (HS) (seven male; 28 years; 23–33) from a published series were used as a control group. All patients underwent solid state HRM with ten 5 ml SS and one to three 10 ml MRS (30 patients performed at least two MRS). Standard HRM parameters during SS were evaluated. During MRS presence/absence of motor inhibition and 4 second integrated relaxation pressure (4 sec IRP) were evaluated. After MRS distal contractile integral (DCI) was evaluated and DCI ratio between MRS and SS was measured. Mann Whitney, Wilcoxon and chi-squared tests were used when appropriate; data are shown as median-IQR range.

Results: Descriptive data in jackhammer patients are shown in table 1. Twelve patients did not have motor inhibition during at least one MRS (28% vs 5% in HS, p < 0.05). There was a trend toward a lower 4s IRP during MRS compared to SS (see table 1); however, values were higher than those of 4s IRP MRS in HS (5.1 mmHg; 2.2–11 vs 1.6 mmHg; 0.3–2, p < 0.0001). MRS DCI was significantly lower than SS DCI, interestingly 26 patients had a MRS/SS DCI ratio < 1 (62% vs 22% in HS, p < 0.0005) and it was lower than the MRS/SS DCI ratio of HS (0.8; 0.4–1.1 vs 1.9; 1.1–2, p < 0.0001) suggesting a reduction of the hypercontractile activity in the esophageal body.

HRM parameters during single and multiple rapid swallows in jackhammer patients. Median; interquartile range.

<table>
<thead>
<tr>
<th>SS</th>
<th>MRS</th>
</tr>
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<tbody>
<tr>
<td>4s IRP, mmHg</td>
<td>7.5; 4.9–13.1</td>
</tr>
<tr>
<td>DCI, mmHg/sec.cm</td>
<td>6506; 5605–8582</td>
</tr>
<tr>
<td>CFV, cm/s</td>
<td>3.9; 2.9–5.5</td>
</tr>
<tr>
<td>DL, sec</td>
<td>6.8; 6.2–7.6</td>
</tr>
</tbody>
</table>

SS, single swallows; MRS, multiple rapid swallows; 4 sec IRP, 4 second integrated relaxation pressure DCI, distal contractile integral; CFV, contractile front velocity; DL, distal latency.

Conclusion: Contrary to what occurs in healthy subjects, MRS reduce DCI value compared to SS in jackhammer esophagus patients, suggesting altered neural control of peristalsis. Differently to what previously observed with traditional manometry, motor inhibition during MRS is altered in a quarter of patients. Studies are needed in order to evaluate if reduction of DCI during MRS can improve dysphagia and chest pain in these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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PI178 GASTRIC PERORAL ENDOSCOPIC MYOTOMY (G-POEM) AS TREATMENT FOR FUNCTIONAL DELAYED GASTRIC EMPTYING: INITIAL ASIAN EXPERIENCE

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Introduction: Functional delayed gastric emptying is a difficult-to-treat disorder, which is often expressed clinically as nausea/vomiting, fullness/early satiety, bloating and weight loss. Gastric peroral endoscopic myotomy (G-POEM) has been regarded as a novel and minimally-invasive therapy for functional delayed gastric emptying refractory to medical therapy. We herein report our initial experience of G-POEM in an Asian population with focus on technique in addition to safety and efficacy of this promising endoscopic therapy.

Aims & Methods: The data of consecutive patients who underwent G-POEM by a single expert endoscopist from October 2015 to November 2016 was collected. Procedures were performed, similar to POEM for achalasia, including initial mucosal incision, creating a submucosal tunnel, full-thickness (pyloro)myotomy, and closure of the mucosal entry. Patient demographics, etiology, Gastroparesis Cardinal Symptoms Index (GCSI) and gastric emptying scintigraphy (GES) were recorded before and after the procedure. Treatment outcomes and procedure related adverse events were also evaluated.

Results: A total of fourteen patients with refractory functional delayed gastric emptying, including eleven post-surgical (78.6%) and three diabetic (21.4%), were enrolled. The median age was 60 (range, 26–82) years. All patients were suffering from nausea, vomiting, bloating and weight loss. They all failed medical therapy including proton pump inhibitor, metoclopramide, mosapride, or domperidone. All fourteen patients underwent G-POEM successfully (100%) with the mean procedure time of 43.71±13.08 mins. Gastric emptying scintigraphy (GES) was performed in five patients with improvement of mean half empty time (191.88±63.19mins vs. 91.44±32.92mins), and retention at 2 hours (70.02±12.68% vs. 33.48±20.32%). The median hospital stay after procedure was 6 days (range, 4–10). No procedure related adverse event (0%) was observed. During a median follow-up of eight months (range, 3–17.5 months), one patient (post-surgical) had symptom recurrence after 45 days after the procedure because of stenosis related to scan formation. One of the two diabetic patients with severe diabetes and diagnosis as diabetic peripheral neuropathy showed little response to G-POEM, while the GCSI was 74 before and 28 after. The other showed initial improvement with GCSI score 22 before and 10 after during the first follow-up. However, his symptoms reoccurred seven months after G-POEM and the latest GCSI score was 19. Overall GCSI after G-POEM (mean, 5.00±2.57) decreased significantly comparing with the one before (mean, 22.55±3.42).

Conclusion: G-POEM is a promising new endoscopic treatment option for functional delayed gastric emptying. Our initial data suggest it is safe and effective. Large studies are needed to determine safety, efficacy, long-term outcomes and determine which patient population benefits the most from this treatment option.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1179 EFFECTIVENESS OF CAP-ASSISTED DEVICE IN THE ENDOSCOPIC MANAGEMENT OF FOOD BOLUS OBSTRUCTION IN THE UPPER ESOPHAGUS

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Introduction: Although cap-assisted technique has been shown to be effective in retrieving food bolus from the upper gastrointestinal tract, there is no data on food bolus obstruction (FBO). This study aimed to assess the performance of cap-assisted technique in the management of esophageal FBO, as compared to conventional endoscopic methods.

Aim & Methods: All cases of all patients who presents with FBO requiring emergency endoscopic management between 2011 and 2016 were prospectively collected. The main measured outcomes were procedural success, procedural time, complications and length of hospital stay.

Results: In total, 214 (189 ± 13.3 years) with FBO, 267 (84.7%) had evidence of food bolus in the esophagus on endoscopy and 48 (15.2%) patients had spontaneous passage of food bolus. Out of the 199 patients who had impacted FBO, 93 had cap-assisted technique and 106 had conventional approach, with no differences in the type and location of FB. The success rate of cap-assisted technique (100%) was comparable to that of conventional techniques (97.2%, P = 0.10). Patients who had failed extraction by conventional technique (n = 3) were successfully treated when switched to cap-assisted approach. Cap-assisted approach was associated with a shorter total procedural time (34 ± 8 and 43 ± 22 min, P = 0.006), a shorter length of hospital stay (0.95 ± 0.36 and 1.38 ± 1.36 days, P = 0.0017) and more en-block removal (89% vs 22%, P = 0.003). There were more complications in the conventional than the cap-assisted group (7/106 vs 0/93; P = 0.01).

Conclusion: Cap-assisted technique is 100% effective in the management of impacted FBO in the esophagus, with a significantly shorter procedural time and length of hospital stay. Although the findings suggest that cap-assisted technique should be the first line technique in the management of esophageal FBO, further evaluation with a randomized multicenter trial is warranted.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1180 DO THE ENDOSCOPIC FINDINGS OF GASTRITIS BRING THE FD SYMPTOMS?

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Introduction: Functional dyspepsia (FD) is defined that there is no evidence of symptoms of FD, including patients with postprandial distress syndrome (PDS) (n = 41) and EPS accompanying with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by JPS using endosonography. We enrolled 99 consecutive patients presenting with typical symptoms of FD, including patients with postprandial distress syndrome (EPS) (n = 49). EPS with pancreatic enzyme abnormalities (n = 42) but without pancreatic enzyme abnormalities (n = 42) based on Rome III criteria. Gastric motility was evaluated using the 13C-acetate breath test. Early chronic pancreatitis was diagnosed by endosonography and graded from 0 to 7.

Results: The ratio of female patients among EPS patients (34/41) with pancreatic enzyme abnormalities was significantly (p = 0.0018) higher than the ratio of female EPS patients (20/42) without it. Postprandial abdominal distention and physical component summary (PCS) scores in EPS patients with pancreatic enzyme abnormalities were significantly disturbed compared to those in EPS patients without it. Interestingly, AU(C0-Ct) and AU(C0-Ct)(values (24.85 ± 1.31 and 56.11 ± 2.51, respectively) in EPS patients with pancreatic enzyme abnormalities were also significantly (p = 0.002 and p = 0.001, respectively) increased compared to those (19.75 ± 1.01 and 47.02 ± 1.99, respectively) in EPS patients without it. Overall, 64% of EPS patients with pancreatic enzyme abnormalities were diagnosed by endosonography as having concomitant early chronic pancreatitis proposed by JPS.

Conclusion: Further studies are warranted to clarify how EPS patients with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by JPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1181 IMPACT OF EPIGASTRIC PAIN SYNDROME ACCOMPANYING PANCREATIC ENZYME ABNORMALITIES EXHIBITED RAPID EARLY PHASE OF GASTRIC EMPTYING AND EARLY CHRONIC PANCREATITIS USING ENDOSONOGRAPHY

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Introduction: There was no available data about the overlap between functional dyspepsia (FD) and pancreatic diseases.

Aims & Methods: We aimed to determine whether epigastric pain syndrome (EPS) accompanying with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by Japan Pancreatic Society (JPS) using endosonography. We enrolled 99 consecutive patients presenting with typical symptoms of FD, including patients with postprandial distress syndrome (FD symptoms of EPS) (n = 49). EPS with pancreatic enzyme abnormalities (n = 42) but without pancreatic enzyme abnormalities (n = 42) based on Rome III criteria. Gastric motility was evaluated using the 13C-acetate breath test. Early chronic pancreatitis was diagnosed by endosonography and graded from 0 to 7.

Results: The ratio of female patients among EPS patients (34/41) with pancreatic enzyme abnormalities was significantly (p = 0.0018) higher than the ratio of female EPS patients (20/42) without it. Postprandial abdominal distention and physical component summary (PCS) scores in EPS patients with pancreatic enzyme abnormalities were significantly disturbed compared to those in EPS patients without it. Interestingly, AU(C0-Ct) and AU(C0-Ct) (values (24.85 ± 1.31 and 56.11 ± 2.51, respectively) in EPS patients with pancreatic enzyme abnormalities were also significantly (p = 0.002 and p = 0.001, respectively) increased compared to those (19.75 ± 1.01 and 47.02 ± 1.99, respectively) in EPS patients without it. Overall, 64% of EPS patients with pancreatic enzyme abnormalities were diagnosed by endosonography as having concomitant early chronic pancreatitis proposed by JPS.

Conclusion: Further studies are warranted to clarify how EPS patients with pancreatic enzyme abnormalities were associated with early chronic pancreatitis proposed by JPS.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Results: The endoscopic follow-up was planned every month. After 1 months, 18-23 cm esophageal region has healed to be normal. Within 6 months, the stricture process was existingly delayed as expected. The patient stated his symptom was remarkably improved. Gastroscopy revealed the esophageal implanted lesion was covered with an epithelium and the luminal surface was flat, without ulceration.

Conclusion: Autologous esophageal mucosa transplantation might facilitate tissue re-epithelialization, reduce pathological fibroplasia, and be helpful for managing or preventing esophageal strictures. More clinical controlled trials are required to provide evidenced-based recommendation and promote its clinical application.

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: We enrolled 124 patients (M=84, mean age=45.3±/−13.05 years old) with severe obstructive gastroesophageal reflux disease (GES) grade 2-3 with barium meal X-ray evidence (+/− 13.7 yr range 20–73) characterized by achlorhydria or low levels of acid production (Group 1), or by duodenal ulcer (50, M=42, mean age=43.5±/−11.5 range =17–65) in which an hypersecretery status is claimed (Group 2).

In each group, we studied 46 patients (M=44 mean age=44.0 ±/−13.4 range =25–80) with normal upper GI endoscopy and gastric histology, without previous history of neoplasms or upper gastrointestinal surgery (Group 3). In all patients we measured M.A.O. by means of two hours collection of gastric juice through a 24-hour period followed by an i.m. injection of pentagastrin at the dosage of 0.6 µg/kg (M.A.O. normal values: 5–25 mEq/h). All patients underwent blood sample for determination of serum PGI (BioHit Oyj, Finland; normal values: 30–120/µg/l). All determinations, both for M.A.O. and PGI were made off medication.

Results: The mean M.A.O. values in group 1 was 2.15 mEq/h, in Group 2 5.24 mEq/h, in Group 3 7.18 mEq/h. A statistically significant difference was found between the three groups (Group 1 vs. Group 2 p <0.000001; Group 1 vs. Group 2 p <0.0001; Group 2 vs. Group 3 p <0.0001). The PGI mean values in Group 1 was 11.39 µg/l, in Group 2 107.72 µg/l in Group 3 84.28 µg/l (Group 1 vs Group 2: p <0.000001; Group 1 vs Group 2 vs Group 3 p <0.05). The result between M.A.O. and PGI showed a Pearson R=0.683 (p=0.001). No statistically significant difference was found comparing M.A.O. and PGI in the single groups (p>ns).

Conclusion: Serum PGI levels are fitting with M.A.O. both in hypo- and hyperacid secretory conditions like chronic atrophic gastritis and duodenal ulcer, as well as in control subjects, suggesting that PGI could be adopted in clinical practice to assess gastric acid production in individual subjects for a proper management of acid related diseases.

Disclosure of Interest: All authors have declared no conflicts of interest.

Results: The prevalence of FD was 28.3% and 8.3% (17 vs 5, p<0.011) were independently associated with FD.

Introduction: Functional dyspepsia (FD) is commonly associated with sleep disturbance, which has been attributed to comorbid anxiety, depression and bother-some gastrointestinal symptoms. However, it is unclear whether obstructive sleep apnea (OSA) is specifically associated with FD.

Aims & Methods: We aimed to compare the prevalence of FD in patients with OSA and healthy volunteers. A total of 60 consecutive OSA patients (defined as Eworth sleepiness scale > =10, and apnea-hypopnea index > =10/hour during polysomnography: age: 47.6 years, body mass index: 31.6 kg/m², 60 healthy age-and sex-matched volunteers were recruited in a prospective case-control study. Questionnaires were applied for the diagnosis of functional gastrointestinal disorders (FGIDs) according to Rome III criteria. Anxiety and depression were evaluated by the Hospital Anxiety and Depression Scale (HADS), sleep quality was evaluated by the Pittsburgh Sleep Quality Index, and fatigue was assessed by the Multidimensional Fatigue Inventory (MFI-20) Chinese version.

Results: The prevalence of FD was 28.3% and 8.3% (17 vs 5, p<0.011), and the prevalence of symptomatic gastro-esophageal reflux disease was 18.3% and 5% (11 vs 3, p=0.023) in the OSA group and healthy volunteer group, respectively. OSA patients had higher anxiety and depression symptom scores, worse sleep quality, and more fatigue compared with healthy volunteers. In the multivariate logistic regression for age, sex, and body mass index, OSA (odds ratio 4.93, 95% CI 1.01–24.1, P=0.049) and depression (odds ratio 4.91, 95% CI 1.44–16.71, P=0.011) were independently associated with FD.

Conclusion: To the best of our knowledge, this is the first study showing that OSA is independently associated with functional dyspepsia. Sleep disturbances previously attributed to psychological comorbidities in FGID may in fact arise from undiagnosed OSA. We recommend screening for OSA as part of the management of FD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1184 INDIVIDUAL ASSESSMENT OF GASTRIC ACID PRODUCTION BY MEANS OF A NON-INVASIVE TEST: RELATIONSHIP BETWEEN MAXIMAL ACID OUTPUT AND PEPSONIN I LEVELS

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Introduction: Functional dyspepsia (FD) is commonly associated with sleep disturbance, which has been attributed to comorbid anxiety, depression and bother-some gastrointestinal symptoms. However, it is unclear whether obstructive sleep apnea (OSA) is specifically associated with FD.

Aims & Methods: We aimed to compare the prevalence of FD in patients with OSA and healthy volunteers. A total of 60 consecutive OSA patients (defined as Eworth sleepiness scale > =10, and apnea-hypopnea index > =10/hour during polysomnography: age: 47.6 years, body mass index: 31.6 kg/m², 60 healthy age-and sex-matched volunteers were recruited in a prospective case-control study. Questionnaires were applied for the diagnosis of functional gastrointestinal disorders (FGIDs) according to Rome III criteria. Anxiety and depression were evaluated by the Hospital Anxiety and Depression Scale (HADS), sleep quality was evaluated by the Pittsburgh Sleep Quality Index, and fatigue was assessed by the Multidimensional Fatigue Inventory (MFI-20) Chinese version.

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Conclusion: To the best of our knowledge, this is the first study showing that OSA is independently associated with functional dyspepsia. Sleep disturbances previously attributed to psychological comorbidities in FGID may in fact arise from undiagnosed OSA. We recommend screening for OSA as part of the management of FD.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1186 SARCOPENIA AS A LEADING RISK FACTOR FOR EROSIVE ESOPHAGEAL DISEASE IN PATIENTS WITH MORBID OBESITY. DIFFERENCES AND SIMILARITIES BETWEEN MEN AND WOMEN
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Introduction: In the past three decades, obesity has been considered one of the 21st century plagues in the Western word. Although its etiology is multifactorial, eating habits represent an important factor in its development. The caloric load, the proportion of its components and its patterns have been the object of multiple studies. One of the most controversial aspects is the relationship between the frequency of meals and body weight.

Aims & Methods: The aim of the study was to determine the food rhythm (frequency and time spent in eating) in patients with morbid obesity (MO), based on data from 54 of them. Our study includes 24-H esophageal pH-monitoring studies. This was a retrospective study, including 100 patients (77 women), with MO in whom bariatric surgery was indicated and 118 non-obese subjects from the control group of the Spanish Digestive Motility Group. The relationship between sarcopenic and sarcopenic obese patients to obese patients was 1.59 (95% CI, 1.06-2.38) and 1.22 (95% CI, 1.02-1.47), respectively. In addition, the risk of reflux esophagitis according to sarcopenic and obese status was observed similarly in all subgroups that were evaluated.

Conclusion: Our results suggest that sarcopenia, regardless of obesity, is more harmful condition for reflux esophagitis than obesity without sarcopenia.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1187 FOOD RATE (FREQUENCY AND TIME SPENT IN EATING) IN PATIENTS WITH MORBID OBESITY. DIFFERENCES AND SIMILARITIES BETWEEN MEN AND WOMEN
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Introduction: Obesity is an established risk factor for reflux esophagitis. Yet, the association of sarcopenia and obesity status with reflux esophagitis remains unclear. We conducted a cross-sectional study of 32,762 asymptomatic adults who underwent routine health check-ups including screening endoscopy from August 2006 to December 2011. Sarcopenia was defined as appendicular skeletal muscle mass (ASM)/body weight (%) value beyond two standard deviations below the mean for healthy young adults. Participants were categorized into four groups according to obese and sarcopenic status: normal, obese, sarcopenic, and sarcopenic obese.

Results: In a multivariate model adjusted for age, sex, smoking status, alcohol intake, regular exercise, and metabolic variables, risk of reflux esophagitis was higher in obese [adjusted odds ratio (AOR), 1.38; 95% confidence interval (CI), 1.26-1.52], sarcopenic (AOR, 2.02; 95% CI, 1.48-3.29), and sarcopenic obese participants (AOR, 1.68; 95% CI, 1.39-2.03) than in normal participants. The ORs comparing sarcopenic and sarcopenic obese patients to obese participants were 1.59 (95% CI, 1.06-2.38) and 1.22 (95% CI, 1.02-1.47), respectively. In addition, the risk of reflux esophagitis according to sarcopenic and obese status was observed similarly in all subgroups that were evaluated.

Conclusion: Our study suggests that sarcopenia, regardless of obesity, is more harmful condition for reflux esophagitis than obesity without sarcopenia.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1188 ONE DRINK CAN INCREASE A RISK FOR ESOPHAGEAL, STOMACH AND COLORRECTAL CANCER IN A COHORT OF 23,323,730 KOREAN ADULTS
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Introduction: Epidemiologic findings of low-volume alcohol consumption in relation to gastrointestinal cancers including gastric cancer are inconsistent.

Aims & Methods: The association between alcohol intake and esophageal, gastric and colorectal cancer risk was examined in a population-based prospective cohort of 23,323,730 adults in Korea who had undergone a biennial evaluation provided by the National Health Insurance Corporation between the years 2009 and 2012.

Results: After median 5.4 years of follow-up, 9171 esophageal, 135,382 gastric and 154,970 colorectal cancer cases were identified. Cox proportional hazards regression models were used to estimate hazard ratios (HR) and corresponding 95% confidence intervals (CI). Light drinking as well as moderate to heavy alcohol intake, regular exercise, and metabolic variables, risk of reflux esophagitis was 1.38 (95% CI, 1.06-1.09; HR 1.12; 95% CI, 1.11–1.14) with non-drinkers after adjusting for age, smoking, exercise, income, body mass index, and diabetes. For esophageal cancer, there was a dose-dependent linear relationship. However, no association was observed between prediagnostic alcohol consumption and all cause mortality.

Conclusion: Light drinking including even one alcoholic drink a day is associated with increased risks of esophageal, gastric and colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1189 THE INFLUENCES OF VISCERAL FAT AREA ON THE SITES OF ESOPHAGEAL MUCOSAL BREAKS AND SYMPTOM SEVERITIES IN SUBJECTS WITH GASTROESOPHAGEAL REFUX DISEASES
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Introduction: Some studies have suggested the central obesity as a risk factor for gastroesophageal reflux diseases (GERD). However, the associations between visceral adipose tissue (VAT) and the sites of esophageal erosions or the symptom severities of GERD have not been studied yet.

Aims & Methods: The aim of this study was to evaluate the influences of visceral fat area on the locations of erosions and symptoms of GERD. The subjects who underwent abdomen computerized tomography and esophagogastroduodenoscopy for routine checkup at the same day were collected from January 2007 to October 2016. 177 subjects who had erosive esophagitis (LA class A to D) were enrolled. Questionnaires including gastrointestinal symptoms were written before examinations. The abdominal obesity was evaluated by measuring visceral adipose tissue (VAT), subcutaneous adipose tissue (SAT), ratio of VAT to SAT, total adipose tissue (TAT), body mass index (BMI) and waist circumference (WC).

Results: Lesser curvature (LC) side of esophagogastric junction (EGJ) was the most frequent site of mucosal breaks (103 cases, 58.2%) followed by posterior wall side (71 cases, 40.1%), anterior wall side (25 cases, 14.1%) and fundus side (15 cases, 8.9%). Mucosal breaks on LC side were frequently observed in male patients (61.3% vs. 36.4%, p = 0.04). BMI (25.6 kg/m2, 95% CI, 1.43–1.60; HR 1.10; 95% CI, 1.06-1.09; HR 1.12; 95% CI, 1.11–1.14) compared with non-drinkers after adjusting for age, sex, smoking, exercise, income, body mass index, and diabetes. For esophageal cancer, there was a dose-dependent linear relationship. However, no association was observed between prediagnostic alcohol consumption and all cause mortality.

Conclusion: Light drinking including even one alcoholic drink a day is associated with increased risks of esophageal, gastric and colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Colombo P, Mangana M, Bianchi PA, Penagini R. Effect of calories and fat intake, regular exercise, and metabolic variables, risk of reflux esophagitis was observed beyond two standard deviations below the mean for healthy young adults. Participants were categorized into four groups according to obese and sarcopenic status: normal, obese, sarcopenic, and sarcopenic obese.

Conclusion: Our study suggests that sarcopenia, regardless of obesity, is more harmful condition for reflux esophagitis than obesity without sarcopenia.

Disclosure of Interest: All authors have declared no conflicts of interest.
side. However, TAT was not significant in the multivariate analysis. Lower HF (mean levels (OR 0.28, 95% CI 0.11 to 0.67, p < 0.05) and much coffee consumption (OR 2.50, 95% CI 1.06 to 5.86, p = 0.035) were associated with the severities of GERD.

Conclusion: Mucosal breaks in LC side of EGJ were associated with visceral obesity measured by VAT, ratio of VAT to SAT, BMI and WC. Lifestyle modification such as in left decubitus sleeping position might be emphasized in the subjects with visceral obesity.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1190 A LESS COMPETENT OESOPHAGO-GASTRIC JUNCTION IS ASSOCIATED WITH OESOPHAGEAL ACID HYPERSENSITIVITY EVEN IN HEALTHY CONTROLS**

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Introduction: In normal subjects, the oesophago-gastric junction (OGJ) sphincter complex maintains a tight barrier between the oesophagus and stomach acid. However, gastro-oesophageal reflux disease (GERD) caused by acidic reflux has a prevalence of up to 26% [1]. One major factor determining whether gastro-oesophageal reflux occurs and eventually generates symptoms is the competency of the OGJ, which can be studied using distensibility testing. This way, we have previously shown in patients with Barrett’s oesophagus and healthy controls that an incompetent sphincter function was associated with more frequent reflux symptoms [2]. In the same patient groups, we also found greater oesophageal acid exposure and lower mucosal baseline impedance to be associated with impaired sphincter function. The latter probably represents a proxy for mucosal damage [3]. Other factors known to increase the perception of gastro-oesophageal reflux episodes are greater acidity, larger volume, and more proximal extent of the reflux content along with impaired mucosal integrity and sensitisation (peripheral and central) [1]. All of this said no studies of our knowledge have specifically addressed the possible association between sphincter function of the OGJ and oesophageal sensitivity.

Aims & Methods: We aimed to characterize oesophageal sensitivity in relation to OGJ competence, hypothesizing that sensitivity increases with impaired sphincter function. Twenty-three patients with Barrett’s oesophagus (mean age: 64.2 ± 7.7 years) and 12 healthy controls (mean age: 54.9 ± 10.8 years) were examined. A standard upper endoscopy to locate the OGJ was followed by distensibility testing of the OGJ using the EndoFLIP probe. At a later visit, experimental oesophageal sensitivity was assessed using a multimodal stimulation probe. After placement in the oesophagus just above the OGJ, the probe allows the filling and emptying of an attached polyurethane bag with water, stimulation with electrical current, and infusion of acid. Using this probe, mechanical distension of the bag, thermal stimulation at increasing temperature, electrical stimulation, and acid perfusion with 0.1 M hydrochloric acid (a Bernstein test) were performed. All stimulations were stopped when the subject felt moderate pain, equal to seven on a 0–10 visual analogue scale validated for visceral pain. Data were analysed using multi-level, mixed-effects regression analysis in Stata 12.

Results: Oesophageal acid sensitivity increased with a more incompetent sphincter function and decreased with increased acid volume. However, increased acid volume was associated with greater distensibility index (P = 0.03) and with lower pressure (P = 0.03) in the OGJ in all subjects analysed together and separately in healthy controls (P = 0.006 and 0.02, respectively). Mucosal permeability analyses in patients with BO, these associations were not present (all P > 0.7). Sphincter function was associated with neither oesophageal sensitivity to mechanical, heat, nor electrical stimulation (all P > 0.13).

Conclusion: Oesophageal acid sensitivity increased with a more incompetent OGJ. Based on this and previous findings, we suggest that even in some healthy controls, a modest degree of OGJ incompetence allows gastric acid to reflux. This may again lead to low-grade oesophageal inflammation and mucosal damage, thereby evoking acid hypersensitivity. The latter mechanism probably constitutes a reflex protective mechanism towards acid reflux.

Disclosure of Interest: B.P. McMahon: Barry P McMahon holds a minor share in Cropsion Inc., Galway, Ireland who manufactures the EndoFLIP probe. All other authors have declared no conflicts of interest.

References


esophageal hypersensitivity (1.3 ± 5.2) were significantly decreased when compared to HC (2.6 ± 1.6) and also true NERD (4.0 ± 2.0).

Table 1

<table>
<thead>
<tr>
<th>Pepsin (ng/mL)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERD (total)</td>
<td>514 ± 282.2</td>
</tr>
<tr>
<td>ERD-A/B</td>
<td>521 ± 284.9</td>
</tr>
<tr>
<td>ERD-C/D</td>
<td>485 ± 299.2</td>
</tr>
<tr>
<td>Total NERD</td>
<td>456 ± 322.1</td>
</tr>
<tr>
<td>True NERD</td>
<td>428 ± 293.0</td>
</tr>
<tr>
<td>EH</td>
<td>536 ± 432.1</td>
</tr>
<tr>
<td>GERD (total)</td>
<td>494 ± 294.1</td>
</tr>
<tr>
<td>FH</td>
<td>654 ± 300.4</td>
</tr>
<tr>
<td>HC</td>
<td>596 ± 302.8</td>
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</table>

Conclusion: Pepsin may be considered a damaging factor in pathophysiology of GERD, but we could not find any difference between GERD phenotypes and unaffected controls. NERD group had less gastric acid versus other groups but this finding needs more studies to confirm.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1193 NON INVASIVE DIAGNOSIS OF UPPER GI DISEASES IN A PRIMARY CARE SETTING: A STUDY ON 1,900 PATIENTS

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Introduction: Gastropanel® is a non-invasive test suggested to able to perform a kind of “serological biopsy” of gastric mucosa. Aim of the study was to assess a proper diagnosis of different upper gastrointestinal (GI) diseases in a population suffering from upper GI disturbances in a primary care settings by means of proper diagnosis of different upper gastrointestinal (GI) diseases in a population

Patients and Methods: We enrolled 1900 consecutive patients (M = 769; mean age = 56.4 ± 8.6). All patients were endoscopically healthy. In this study a statistically significant difference (p < 0.05) has been determined.

Results: Four hundred and eighty eight patients were classified as affected by Hp-related non-atrophic gastritis (1.5 ± 5.1). GERD score (GES) was diagnosed according to age gender ((Age:95) (p < 0.005). The frequency and severity of gastroesophageal reflux symptoms in non-obese cases has been reported. The study concerned have been surveyed by means of the questionnaire including the demographic data and the extra esophageal reflux symptom. Serum biochemistry analyses (fasting glucose, insulin, lipid panel, uric acid, TSH, ALT) have been checked. Waist circumference has been measured. Body compositions and anthropometric measurements have been assessed through the biochemical impairment method (TANITA).

Conclusion: In this study a statistically significant difference (p < 0.05) has been found when a GES-diagnosis group is compared with the healthy control group in regard to waist circumference, BMI; LDL, Fat, Fat Mass, Total Body Water(TBW), obesity level, reflux acid, reflux score and total score measurements. Fat free mass (FFM), muscle mass, bone mineral density (BMD) (Table 1) measurements in between the two groups have not been found statistically significant difference (p > 0.05) (Table 1). Considering the extra esophageal reflux symptoms a significant difference (p < 0.05) between the group suffering from sore throat, apnea, teeth grinding and GORH and the healthy control group has been found. Within the patients group a positive correlation between acid reflux score and BMI (r = 0.298) (p < 0.001), LDL (r = 0.387) (p < 0.001), visceral fat (r = 0.180) (p < 0.049) has been determined. A negative correlation between acid reflux score and TBW (r = -0.273) (p < 0.003) has been determined.

Table 1: Metabolic parameters and bioelectrical impedances findings

<table>
<thead>
<tr>
<th>Control Group (n=50)</th>
<th>Patient Group (n=120)</th>
<th>Total Number (n=170)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median (Min.-Max.)</td>
<td>Median (Min.-Max.)</td>
<td>Median (Min.-Max.)</td>
</tr>
<tr>
<td>P Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90.50 (77-165)</td>
<td>92 (53-165)</td>
<td>91.50 (53-165)</td>
</tr>
<tr>
<td>Insulin</td>
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</tr>
<tr>
<td>8.05 (1.90-90)</td>
<td>8.35 (3.10-128)</td>
<td>8.21 (3.10-128)</td>
</tr>
<tr>
<td>HDL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51.50 (3.10-99)</td>
<td>47.50 (3.10-99)</td>
<td>48.50 (3.10-99)</td>
</tr>
<tr>
<td>LDL</td>
<td></td>
<td></td>
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<tr>
<td>74.50 (42-129)</td>
<td>87 (41-123)</td>
<td>80 (41-123)</td>
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<tr>
<td>Triglyceride</td>
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<tr>
<td>81 (33-350)</td>
<td>97 (28-404)</td>
<td>95 (28-404)</td>
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<tr>
<td>Total Cholesterol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>146.0 (73-222)</td>
<td>161 (91-310)</td>
<td>159 (91-310)</td>
</tr>
<tr>
<td>Uric Acid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.05 (2.0-40)</td>
<td>4.20 (2.0-40)</td>
<td>4.20 (2.0-40)</td>
</tr>
<tr>
<td>ALT</td>
<td></td>
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<tr>
<td>1.60 (0.07-5.6)</td>
<td>1.54 (0.02-10)</td>
<td>1.58 (0.02-10)</td>
</tr>
<tr>
<td>Metabolic Age</td>
<td></td>
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<tr>
<td>12.80 (1.10-36.20)</td>
<td>15.25 (9.5-43.05)</td>
<td>15.25 (9.5-43.05)</td>
</tr>
<tr>
<td>Bone Mass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.35 (34.50-51)</td>
<td>34.35 (34.50-51)</td>
<td>34.35 (34.50-51)</td>
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<tr>
<td>Triglyceride</td>
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<tr>
<td>34.90 (34.50-51)</td>
<td>34.50 (34.50-51)</td>
<td>34.50 (34.50-51)</td>
</tr>
<tr>
<td>TBW</td>
<td></td>
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</tr>
<tr>
<td>32.30 (25.50-52)</td>
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<td>32.55 (25.50-52)</td>
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<td>TBW Ytude</td>
<td></td>
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</tr>
<tr>
<td>58.80 (41.60-80.90)</td>
<td>52.50 (41.60-80.90)</td>
<td>53.80 (41.60-80.90)</td>
</tr>
<tr>
<td>Bone Mass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.40 (1.90-3.70)</td>
<td>2.40 (1.90-3.70)</td>
<td>2.40 (1.90-3.70)</td>
</tr>
<tr>
<td>BMR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.85 (55.94-9.138)</td>
<td>5.85 (55.94-9.138)</td>
<td>5.85 (55.94-9.138)</td>
</tr>
<tr>
<td>Metabolic Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 (12-44)</td>
<td>27 (12-66)</td>
<td>22 (12-66)</td>
</tr>
<tr>
<td>Visceral Fat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (1-12)</td>
<td>3 (1-12)</td>
<td>3 (1-12)</td>
</tr>
<tr>
<td>Degree of Obesity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.70 (&lt; 29.90-35.90)</td>
<td>10.95 (&lt; 29.90-35.90)</td>
<td>8.80 (&lt; 29.90-35.90)</td>
</tr>
<tr>
<td>Homo-IR (mg/dl)</td>
<td>1.90 (0.42-19.06)</td>
<td>1.84 (0.22-27.93)</td>
</tr>
<tr>
<td>Acid Reflux Score</td>
<td>13.50 (5-23)</td>
<td>15 (6-23)</td>
</tr>
<tr>
<td>Reflex Score</td>
<td>7 (7-7)</td>
<td>19 (7-35)</td>
</tr>
<tr>
<td>BMI</td>
<td>22.43 ± 3.43</td>
<td>23.79 ± 3.60</td>
</tr>
<tr>
<td>Circumference</td>
<td>74.63 ± 6.52</td>
<td>79.94 ± 10.06</td>
</tr>
</tbody>
</table>

Conclusion: The frequency and severity of gastroesophageal reflux symptoms in non-obese cases is closely related with body fat composition as those in the obese. Increase in abdominal and visceral fat composition may cause high risk of gastroesophageal reflux disease in individuals irrespective of their obesity.

Disclosure of Interest: All authors have declared no conflicts of interest.

Mann Whitney U Test (Monte Carlo) - Min.:Minimum - Max.:Maximum
References

P1195 PROXIMAL ESOPHAGEAL BASELINE IMPEDANCE LEVELS ARE ABLE TO DISCRIMINATE BETWEEN SCHLORDERMA PATIENTS WITH AND WITHOUT ESOPHAGEAL INVOLVEMENT

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Introduction: Esophageal baseline impedance (BI) levels have been recently proposed as a marker of mucosal integrity. Indeed, patients with non-erosive reflux disease (NERD) showed lower distal esophageal BI levels compared to healthy controls (HCs) due to the presence of abnormal distal esophageal acid exposure time (AET). On the other hand, no differences were found between NERD and HCs at proximal level, but data in this regard are limited.

Aims & Methods: We aimed to prospectively compare BI levels between a group of NERD patients and two groups of SSc patients, one with a clear manometric derangement of the esophageal wall and consequently reduced BI levels, also at proximal level, but data in this regard are limited.

Aims & Methods: We aimed to prospectively compare BI levels between a group of NERD patients and two groups of SSc patients, one with a clear manometric derangement of the esophageal wall and consequently reduced BI levels, also at proximal level, but data in this regard are limited.

Results: Fifty patients [38F; mean age 51yrs] with NERD, 50 SSc patients [44F; mean age 50yrs] with esophageal involvement (p = 0.05).

Conclusion: Proximal esophageal BI levels are able to segregate between scleroderma patients with and without esophageal involvement. The advent of novel and poorly invasive methods for the assessment of esophageal mucosal

impe德尔 will allow us to perform this measurement without the need of prolonged probe insertion.

Disclosure of Interest: E. Savarino: Consulting fee from Malesci, Reckitt, AlfaWasserman, Abbvie
E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD
All other authors have declared no conflicts of interest.

P1196 GASTRIN-17 AS A NON-INVASIVE MARKER OF EARLY GERD RELAPSE: A PROSPECTIVE ONE-YEAR STUDY

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Introduction: Gastroesophageal reflux disease (GERD), is characterized by frequent relapses after withdrawal of therapy and no prognostic markers of relapse are available to predict the outcome of the patients. Gastrin-17 (G-17) has been proposed as a non-invasive marker of reflux disease as well as a good marker of response to the therapy. Pepsinogen I (PG I) and Gastrin-17 (G-17) are claimed to increase in a statistically significant manner after proton pump inhibitors (PPIs) therapy. Aim of the study was to assess the prognostic value of G-17 during endoscopy in GERD patients more prone to develop an early reflux relapse in a prospective open study.

Aims & Methods: We prospectively enrolled 221 consecutive GERD patients (F 113, mean age 52.5 years; range 28–74 years) with endoscopically proved diagnosis of esophagitis, according to the L.A. classification, all symptomatic (heartburn and/or regurgitation). All patients were treated with rabeprazole 20 mg once a day for 6–8 weeks, assessing at the end of the therapy the symptoms’ modifications by means of a questionnaire. In the group of asymptomatic patients, we performed a one-year follow-up, recording the GERD relapse episodes; only on-demand antacids were permitted. All patients underwent at baseline a blood sample and after the acute course of PPI therapy.

Results: One hundred eighty five patients were asymptomatic after the 6–8 weeks of PPI therapy and entered in the prospective evaluation for 12 months. 19 subjects were lost lasting the follow-up and finally 166 patients were available for the study analysis. 72 patients experienced at least one GERD relapse episode (first group) against 94 ones free of symptoms for one year (second group). The mean values of both PG I and G-17 after the 6 weeks of PPI therapy in comparison with the baseline levels, were higher in first group than in the second one (first group: baseline PG I 96 μg/L, G-17 19 2.6 μmol/L; after therapy: PG I 164 μg/L, G-17 19 19 μmol/L; p = 0.001); second group: baseline PG I 98 μg/L, G-17 16 μmol/L; after therapy: PG I 116 μg/L, G-17 6.3 μmol/L; p = ns). The good response to full dose of PPI, assessed by an increase of both PG I and G-17, seems to be the pathophysiological background to explain the prognostic value of such markers.

Conclusion: Gastrin-17 and pepsinogen I increase after full-dose of PPI in GERD acute phase seems to be a simple non-invasive marker to predict early GERD relapse in one-year follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1197 THE DIAGNOSTIC VALUE OF ESOPHAGEAL MUCOSAL AND BASELINE IMPEDANCE MEASUREMENTS IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE

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Introduction: Various biomarkers have been studied to evaluate the integrity of esophageal epithelium in distinguishing phenotypes of gastroesophageal reflux disease (GERD). Baseline impedance (BI) measurement is likely to be one of these and can be measured during the 24-hour ambulatory intra-esophageal impedance-pH study. Mucosal impedance (MI) measurement is a technique that was introduced in recent years and is a practical method that can be applied during endoscopy, but the validation studies are insufficient. BI & MI measured with the prolonged probe insertion.

Aims & Methods: We prospectively enrolled 221 consecutive GERD patients (F 113, mean age 52.5 years; range 28–74 years) with endoscopically proved diagnosis of esophagitis, according to the L.A. classification, all symptomatic (heartburn and/or regurgitation). All patients were treated with rabeprazole 20 mg once a day for 6–8 weeks, assessing at the end of the therapy the symptoms’ modifications by means of a questionnaire. In the group of asymptomatic patients, we performed a one-year follow-up, recording the GERD relapse episodes; only on-demand antacids were permitted. All patients underwent at baseline a blood sample and after the acute course of PPI therapy.

Results: One hundred eighty five patients were asymptomatic after the 6–8 weeks of PPI therapy and entered in the prospective evaluation for 12 months. 19 subjects were lost lasting the follow-up and finally 166 patients were available for the study analysis. 72 patients experienced at least one GERD relapse episode (first group) against 94 ones free of symptoms for one year (second group). The mean values of both PG I and G-17 after the 6 weeks of PPI therapy in comparison with the baseline levels, were higher in first group than in the second one (first group: baseline PG I 96 μg/L, G-17 19 2.6 μmol/L; after therapy: PG I 164 μg/L, G-17 19 19 μmol/L; p = 0.001); second group: baseline PG I 98 μg/L, G-17 16 μmol/L; after therapy: PG I 116 μg/L, G-17 6.3 μmol/L; p = ns). The good response to full dose of PPI, assessed by an increase of both PG I and G-17, seems to be the pathophysiological background to explain the prognostic value of such markers.

Conclusion: Gastrin-17 and pepsinogen I increase after full-dose of PPI in GERD acute phase seems to be a simple non-invasive marker to predict early GERD relapse in one-year follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.
channel of the scope. Distal two rings were contacted to the distal and proximal parts of the esophagus approximately 20–30 cm. MMS Omega ambulatory recorder and Greenfield (6 imp, 1 pH) impedance catheter were used.

Results: MI can differentiate ERD from non-erosive groups but do not have a diagnostic value to discriminate NERD from FH-EH or controls. However, BI can segregate NERD from ERD addition to controls (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Groups</th>
<th>Baseline impedance</th>
<th>Distal mucosal impedance (proximal esophagus)</th>
<th>Mucosal impedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (n = 15; n = 18)</td>
<td>2267 ± 593μΩ</td>
<td>2673 ± 547μΩ</td>
<td>3190 ± 515μΩ</td>
</tr>
<tr>
<td>FH and EH (n = 17)</td>
<td>1906 ± 716μΩ</td>
<td>2654 ± 721μΩ</td>
<td>3350 ± 880μΩ</td>
</tr>
<tr>
<td>NERD (n = 26)</td>
<td>1305 ± 739μΩ</td>
<td>2423 ± 852μΩ</td>
<td>3407 ± 1074μΩ</td>
</tr>
<tr>
<td>ERD A-B (n = 31)</td>
<td>868 ± 481μΩ</td>
<td>1538 ± 646μΩ</td>
<td>3096 ± 928μΩ</td>
</tr>
<tr>
<td>ERD C-D (n = 11)</td>
<td>441 ± 301μΩ</td>
<td>1355 ± 672μΩ</td>
<td>3236 ± 1653μΩ</td>
</tr>
</tbody>
</table>

Conclusion: As a new diagnostic tool, MI needs validation studies and our results failed to show additional diagnostic value in non-erosive patients compared to healthy controls. Since regular catheters are free, new balloon-shaped catheters should be validated. BI might be a better tool to discriminate NERD from controls. This implicates that the esophageal epithelial resistance is impaired in this particular group compared to controls.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1190 ENDOSCOPIC-HISTOPATHOLOGICAL ESOPHAGEAL FINDINGS IN ATROPHIC BODY GASTRITIS PATIENTS WITH GASTRO-ESOPHAGEAL REFUX SYMPTOMS

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Introduction: Atrophic body gastritis (ABG) is characterized by loss of oxyntic glands with consequent reduced acid secretion, hypergastrinemia and, in a later stage, pernicious anemia (PA). Up to 40% of ABG patients complain of dyspepsia. Despite hypochlorhydria, in 21% of autoimmune gastritis (AG) patients typical and atypical symptoms (5/14), 48.6% (17/35) PDS and 11.4% (4/35) EPS were present symptoms. Despite hypochlorhydria, in 21% of autoimmune gastritis (AG) patients dyspepsia was detected (LA-C according to Los Angeles classification or a positive DeMeester score (L.A. 4+)). The aim of the study was to search in a primary care settings possible differences in clinical presentations in a group of patients with GERD, in comparison with AG patients.

Aims & Methods: One thousand and six hundred consecutive dyspeptic patients (M = 766; mean age = 51.5 years; range = 27–79 yr) were enrolled in the study, according with the presence of upper-GI troubles such as epigastric pain, fullness, nausea/vomiting but not heartburn or regurgitation. All patients showed a negative upper-GI endoscopy and were enrolled in a primary care setting. Symptoms ended up in being heartburn the prevalent symptom in 479 subjects and regurgitation in 68. Atypical symptoms, mainly chronic cough were present in 303 patients. 313 patients showed grade A esophagitis, 32 grade B, 4 grade C. One hundred seven severe out of 221 patients showed a positive DeMeester score for acid reflux. Statistical analysis: No differences were found for sex and age between the two groups (M:F = 1:1.2, mean age: 56 years; dyspeptics: M:F = 0.9, mean age: 53 years; p = ns); heavy smokers was 29% in GERD group, 26% in dyspeptics; p = m. Heavy drinkers were 25% in GERD group, 22% in dyspeptic; p = m.

Conclusion: Sex, age, smoking habits and alcohol consumption seem no differ in the two studied population. In GERD cohort, the majority of patients experienced Non Erosive reflux Disease (NERD). The majority of GERD patients suffered by typical symptoms; chronic cough represented the most frequent manifestation among the atypical and extra-oesophageal ones.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1200 REAL-WORLD RESPONSE OF PATIENTS WITH GASTROESOPHAGEAL REFUX DISEASE TO EMPIRICAL TREATMENT WITH PROTON PUMP INHIBITORS: A MULTICENTER, PROSPECTIVE, OBSERVATIONAL STUDY IN CHINA

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Introduction: In China, 13.6% of gastrointestinal outpatients suffer from gastroesophageal reflux disease (GERD), among which only 36.9% undergo endoscopy [1]. For patients with symptoms of GERD, empirical proton pump inhibitor (PPI) treatment is recommended as a diagnostic test of GERD and as a therapeutic trial to control symptoms by Chinese GERD consensus guidelines [2].
Currently, there are no real-world data assessing the efficacy of short-term empirical treatment with PPIs in GERD patients in China.

**Aims & Methods:** This was a multicenter, prospective, observational study carried out in a real-world setting. The primary objective was to determine the overall responder rate in patients with typical GERD symptoms after 4 weeks of empirical treatment with PPIs. Responders were defined as having heartburn/regurgitation on ≤1 day during the prior 7 days, assessed by the GERD-Q questionnaire.

Outpatients aged between 18 and 65 years with a GERD-Q score of 8 or more were enrolled if they were prescribed standard-dose PPIs as empirical treatment and were not planned to have an endoscopy within 4 weeks of enrollment. The PPI regimen prescribed was decided completely at the physicians’ discretion. Patient demographics, diagnosis, prescribed PPI regimens, GERD-Q score and symptom frequency were recorded. Data were collected at baseline, 2 weeks and 4 weeks after initiating PPI treatment. Results from the full analysis set (FAS) are presented.

**Results:** A total of 1,000 patients from 10 centers were screened for this study, of which 987 met the inclusion criteria and were included in the FAS. The mean age was 45.2 ± 11.6 years, the body mass index was 23.4 ± 3.3 kg/m², and 50.3% of the patients were male. The mean duration of GERD was 0.8 ± 2.6 years, with a mean baseline GERD-Q score for the week before screening of 10.5 ± 1.9. During the 4 weeks’ treatment, the proportion of patients receiving at least 1 dose of PPI was 99.3%. Esomeprazole was the most frequently received PPI (57.1% of patients). Other PPIs (rabeprazole, lansoprazole, pantoprazole and omeprazole) were received by 50.1% of patients and 7.2% of the patients sequentially received ≥2 PPIs in the duration of the study. A total of 787 (79.7%) patients either completed the 4-week PPI treatment or withdrew after response, of which the responder rate was 74.0% [95% CI, 70.7%–77.0%] (Table 1). Among the 818 patients who completed 2 weeks’ treatment, the responder rate was 57.0% [95% CI, 53.5%–60.4%]. The overall median time to response was 12.5 days [11–14] (95% CI, 12–15). Over the study duration, patients with a GERD-Q score ≥8 reduced from 100% at baseline to 29.5% and 17.4% at 2 and 4 weeks, respectively.

| Table 1: Responder rate (%) and median time to response for different PPIs |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|
|                             | Esomeprazole    | Other PPIs      | Total           |
| 4-week responder rate, %    | 90.2 (819/911)  | 72.3 (240/326)  | 75.2 (569/755)  |
| 2-week responder rate, %    | 86.1 (722/835)  | 71.4 (236/333)  | 72.3 (349/481)  |

**Conclusion:** In Chinese clinical practice, short-term PPI empirical treatment effectively improves symptom control in GERD patients and gains a satisfactory overall responder rate.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

P1201 **WIRELESS ELECTRICAL STIMULATION FOR MANAGING GASTROESOPHAGEAL REFLUX DISEASE IN THE RABBIT MODEL**

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**Introduction:** Electrical stimulation of lower esophageal sphincter (LES) has been applied to decrease reflux (LES pressure, pHmetry or multichannel intraluminal impedance-pH studies) measured after 24-hour pHmetry study with a dual channel, esophageal and gastric, on-PPI treatment. In 17 patients the pHmetry was performed with multichannel intraluminal impedance (15 cases) or Biletric (2 cases). Group 2: included 127 patients (68.6%) who had been diagnosed of GERD only on the basis of typical symptoms; all of them underwent esophageal double channel 24-H pH-metry off-PPI. All of the studies (24-hour pH Monitoring or multichannel intraluminal impedance-pH studies) were performed according to standard technique.

**Results:** Pathological reflux was present in 91 patients (47.9%), 24 from group 1 and 67 from group 2. Pathological acid reflux was therefore ruled out as a cause of symptoms in 52.1% of all cases studied: 60 patients (47.2%) from group 2, and 93 patients (52.8%) from group 1. In addition, out of the 24 patients with pathological reflux in group 1 (true refractory patients), 9 had an incomplete response, with a percentage of time with pH < 4 less than 7.5% (mild reflux), which probably was not the cause of the symptomatology.

**Conclusion:** Proton pump inhibitors (PPIs) are the drugs of choice in the treatment of GERD. However, its efficacy may be compromised for a variety of reasons including: non-compliance, bioavailability, episodes of nocturnal acid break-through, poor gastric emptying, etc. In most of the patients referred for GORD, it is controversial. A systematic review and meta-analysis was performed to compare LARS related to obesity.

**Aims & Methods:** The primary outcome measure was the relative incidence of recurrent reflux related to BMI. Secondary outcome measures were relative incidence rates in the form of endoscopic dilatation or surgery, conversion to open surgery, and early return to theatre. Embase, MEDLINE and the Cochrane Library (January 1970 to November 2016) were searched for studies reporting clinical outcomes of LARS in patient cohorts stratified by Body Mass Index (BMI). Data was grouped according to BMI, <30 kg/m² (non-obese) and ≥30 kg/m² (obese). Results were pooled in meta-analyses as Odds Ratios (OR).

**Results:** Eleven eligible observational studies comparing LARS in non-obese (n=447) and obese (n=160) patients were identified. The difference of reflux was significantly lower in the non-obese cohort (OR 0.34, 95% CI 0.19 to 0.60, p < 0.001), however no significant differences were observed in rates of operative morbidity (OR 0.87, 0.65 to 1.18, p=0.38), redo surgery (OR 1.08, 0.68 to 1.72, p=0.73), endoscopic dilatation (OR 1.06, 0.49 to 2.33, p=0.88), conversion to open surgery (OR 1.17, 0.55 to 2.48, p=0.68), or early return to theatre (OR 0.77, 0.44 to 1.37, p=0.38).

**Conclusion:** LARS can be performed safely in obese patients, but risks higher re-operation. Clinicians and patients should be aware that obesity may adversely affect LARS outcome and careful consideration be given in the consent process inherent within the optimal management of GORD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**
studying with the diagnosis of refractory reflux to PPIs, this diagnosis had only been made on 61 patients. Incompatible symptoms. When the diagnosis is exclusively clinical, about a half (47.2%) of the patients with persistent symptoms on double doses of PPIs, considered as GERD patients refractory to PPIs, have an incorrect diagnosis (patients do not have pathological reflux). More than half of the patients (61.9%) who have a diagnosis of GERD confirmed by complementary tests that do not respond to treatment with PPIs, acid reflux is not the cause of their symptoms.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1204 LOW-FODMAP DIET RESULTED EFFECTIVE IN REDUCING SYMPTOM PERCEPTION IN PATIENTS WITH FUNCTIONAL HEARTBURN

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Introduction: Recently, low-FODMAP diet has been proposed as potential treatment in patients with irritable bowel syndrome (IBS) given its high efficacy in symptoms relief. Recent data showed that IBS frequently overlap with functional heartburn (FH) and functional dyspepsia.

Aims & Methods: The aim of this study was to evaluate the efficacy of low-FODMAP diet in reducing heartburn in patients with FH and no pathophysiological evidence of gastroesophageal reflux (GERD) compared to patients with non-erosive reflux disease (NERD). As secondary aim we investigated the reduction of lower gastrointestinal symptoms in both groups. We enrolled patients with heartburn and negative upper endoscopy who were scheduled for upper pathophysiological tests (esophageal manometry and impedance and pH monitoring, MII-pH) at Gastroenterology Unit in University of Pisa. We excluded patient with history of GERD who had been treated with non-NSAID anti-inflammatory drugs or had previous abdominal surgery. Medical history, volup- tunary habits and response to proton pump inhibitor (PPI) treatment were recorded. By means of MII-pH we splitted patients in two populations: NERD group (abnormal esophageal acid exposure or number of refluxes) and FH group (normal esophageal acid exposure and number of reflux, no symptom-reflux correlation and no heartburn relief during PPI treatment). All enrolled patients were evaluated with validated questionnaires (Likert and VAS) to evaluate heartburn occurrence pre- and post a nutritional approach with low-FODMAP diet for 6 weeks.

Results: We included 31 patients (20 female; mean age 49.1 yrs; mean BMI 24.4) into the study. NERD group was composed of 13 patients (6 female; mean age 48.7 yrs; mean BMI 23.5). FH group was composed by 18 patients (11 female; mean age 59.9 yrs; mean BMI 23.9). All patients showed symptom improvement regarding bloating, abdominal pain and stools composition (p < 0.001) after low-FODMAP diet (see Table 1). Moreover, we observed a very important improvement of heartburn in the FH group (from 8.4 ± 2.5 to 2.3 ± 1.1; p < 0.001 on VAS scale) compared to the NERD group (7.2 ± 2.2 a 6.9 ± 1.9; p = 0.624 on VAS).

Table 1: abdominal symptoms perception pre- and post-low-FODMAP diet in NERD and FH groups

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Pre-diet</th>
<th>Post-diet</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain</td>
<td>3.6 ± 1.8</td>
<td>2.7 ± 0.9</td>
<td>0.041*</td>
</tr>
<tr>
<td>Bloating</td>
<td>4.3 ± 2.6</td>
<td>3.1 ± 1.7</td>
<td>0.187</td>
</tr>
<tr>
<td>Wind</td>
<td>4.9 ± 2.3</td>
<td>3.3 ± 1.7</td>
<td>0.055</td>
</tr>
<tr>
<td>BSC (type 3–5)</td>
<td>3/13</td>
<td>7/13</td>
<td>0.226</td>
</tr>
</tbody>
</table>

Legend: BSC = Bristol Stool Classification; *=statistically significant (p < 0.05)

Conclusion: This pilot study showed that a low-FODMAP diet was able to reduce heartburn perception in patients with FH and who did not obtain any symptom relief after PPI treatment. Larger prospective randomized controlled trial is mandatory to further explore these findings.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1205 GENDER DIFFERENCES IN NEOPLASTIC PROGRESSION IN BARRETT’S ESOPHAGUS: A MULTICENTER PROSPECTIVE COHORT STUDY

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Introduction: Because of a higher prevalence of BE in males, recommendations in current guidelines are mainly based on male BE patients and make no difference in treatment according to gender. Nevertheless, it is unknown whether female BE patients have the same neoplastic progression and acceleration rate as male patients.

Aims & Methods: The aims of this study were (1) to evaluate the difference between males and females in probability of and (2) time to neoplastic progression, as well as (3) gender differences in stage distribution of neoplastic progression in surveilled BE patients. In this multicenter prospective cohort study we included 729 patients with BE who met the inclusion criteria of a segment of ≥2cm and confirmed intestinal metaplasia. Endoscopic surveillance was performed according to the American College of Gastroenterology guidelines. Cox regression modelling as well as accelerated failure time modelling were used to evaluate differences in probability of and time to neoplastic progression to HGD, EAC and both HGD and EAC between sexes, respectively. All models were adjusted for age, presence of esophagitis and length of BE. In case of a limited number of events, descriptive statistics were used.

Results: 532 males (73%; mean age 58 years, IQR 51–67) and 197 females (median age 64 years, IQR 57–70) were included with a median follow-up of 8.2 years (IQR 5.3–10.3). High-grade dysplasia (HGD) was detected in 35 males versus 4 females, EAC in 12 males versus 5 females. The total number of patients with neoplastic progression was 56 (8%), which was twice as high among males compared to females (HR 1.90, 95% CI 1.02–3.92). Especially the risk of HGD was higher in males than in females (HR 3.34, 95% CI 1.17–9.50). The ratio HGD/EAC in males was 2.92, in females 0.80. Apparently in females proportionally more EAC was identified compared to males. Though these data might suggest accelerated neoplastic progression rates in females, time to event was significantly shorter for males in HGD (HR 0.45, 95% CI 0.22–0.94). There was no difference for overall neoplastic progression (AR 0.59, 95% CI 0.39–0.89). Stage distribution is as shown in Table 1, females tend to have a higher stage of neoplastic progression than males.

Conclusion: The risk of HGD and overall neoplastic progression and acceleration rate of HGD development is higher in male BE patients compared to females. On the other hand descriptive statistics show proportionally more EAC in females as well as an advanced stage of EAC at diagnosis. Further research into the differential aspects of neoplastic progression in BE between men and women, may have future consequences for gender specific guideline recommendations, including the timing of follow-up.

Table 1: Stage distribution of neoplastic progression between males and females

<table>
<thead>
<tr>
<th>Stage</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>40</td>
<td>5</td>
<td>45</td>
</tr>
<tr>
<td>1</td>
<td>8.5%</td>
<td>3</td>
<td>11%</td>
</tr>
<tr>
<td>2</td>
<td>6.4%</td>
<td>4</td>
<td>10%</td>
</tr>
</tbody>
</table>

Disclosure of Interest: All authors have declared no conflicts of interest.

P1206 SINGLE SESSION FOCAL CRYOBALOW ABLATION THERAPY IS SAFE AND EFFECTIVE IN THE TREATMENT OF DYSPSYLATIC BARRETT’S ESOPHAGUS

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Introduction: Given its proven safety and efficacy, RadioFrequency Ablation (RFA) is the preferred ablation modality for dysplastic Barrett’s Esophagus (BE). However, RFA is associated with significant drawbacks, such as the need for large controller units, multiple deployment steps and capital investment. The Vascular Cryoballoon Ablation System (FCBA: C2 Therapeutics Inc. Redwood City, CA, USA) is another ablation method -based on the application of extreme cold- that has been recently developed to overcome these RFA drawbacks. Additionally, FCBA might be better tolerated. FCBA comprises a handheld, through-the-scope system with a conformable balloon that is simultaneously inflated and cooled using nitrous oxide, resulting in ice patches of approximately 2cm2 on the targeted mucosa. Previous studies applying FCBA to limited areas of BE (1 to 2 small BE islands per patient) have shown promising results. Data on
efficacy and safety of FCBA in the treatment of larger BE segments, however, are lacking. Therefore we aimed to assess the safety and efficacy of a single treatment with FCBA for dysplastic BE.

### Aims & Methods
Patients were seen between March and December 2016 at two tertiary referral centers in the Netherlands. Patients with a BE >6 cm in length and with a confirmed diagnosis of low-grade (LGD) or high-grade dysplasia (HGD) or after endoscopic resection for visible lesions, were included. Exclusion criteria included previous focal ablation therapy and strictures. At baseline, all visible BE was treated with side by side ablations of 10 seconds, including circumferential treatment of the gastroesophageal junction (GEJ). Pain scores were assessed directly post-treatment and at days 2 and 7. Follow-up endoscopy with biopsy and photo documentation was scheduled after 3 months. Primary outcomes included dysplasia regression rate and incidence of esophageal strictures or other adverse events.

### Results
We enrolled 20 patients with dysplastic BE (85% male, mean age 66 (±8) years), with a median BE length of 2cm (IQR 0–4), and a baseline diagnosis of LGD (10; 50%), HGD (1; 5%), or mucosal adenocarcinoma (9; 45%). Ten (50%) had undergone endoscopic resection of a visible lesion before cryoablution and 8 (40%) had undergone previous circumferential RFA. During a median ablation time of 16 minutes (IQR 11–19), all BE, including circumferential ablation of GEJ was successfully ablated in all patients. No adverse events occurred, and median pain directly post-treatment was 4 out of 10 (IQR 0–5), whereas this was 1 (IQR 0–2) and 0 (IQR 0–1) at days 2 and 7. At the 3-month follow-up endoscopy, median endoscopic regression of initial BE was found to be 95% (IQR 83–98), this included 3 patients (15%) with a complete 100% regression. All biopsies confirmed squamous regeneration without BE. All AUC curves were significantly smaller after FCBA compared to RFA: for dysphagia (2.6 vs 8.2, p < 0.01) and for dysphagia (2.6 vs 8.2, p < 0.01). The maximum median VAS score reported on any of the 14 days was 2 (IQR 0–4) after FCBA and 4 (IQR 3–7) after RFA (p < 0.01). FCBA patients reported analgesics during median 1 (IQR 1–1) days, compared to 4 (IQR 1–11) days for RFA patients (p < 0.01).

### Conclusion
In this multicenter, non-randomized, open prospective cohort study, patients reported less post-procedural pain and dysphagia after FCBA as compared to RFA and, moreover, FCBA patients used less analgesics. Although a randomized trial should provide definitive evidence for differences in post-procedural tolerability, our results strongly suggest a significantly different post-procedural course, thus favoring FCBA over RFA.

### Disclosure of Interest:
All authors have declared no conflicts of interest.

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**Table 1:** Baseline characteristics and maximum pain scores

<table>
<thead>
<tr>
<th>AUC</th>
<th>FCBA (N = 20)</th>
<th>RFA (N = 35)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A. Baseline characteristics</td>
<td>Male gender, n (%)</td>
<td>17 (85%)</td>
<td>29 (83%)</td>
</tr>
<tr>
<td></td>
<td>Age, mean (SD) years</td>
<td>65 (±8)</td>
<td>66 (±8)</td>
</tr>
<tr>
<td></td>
<td>Worst dysphagia</td>
<td>LGD, n</td>
<td>10 (50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HGD, n</td>
<td>1 (5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EAC, n</td>
<td>9 (45%)</td>
</tr>
<tr>
<td></td>
<td>Prior treatment</td>
<td>ER, n</td>
<td>10 (50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Circumferential, cm</td>
<td>10 (50%)</td>
</tr>
</tbody>
</table>

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**Disclosure of Interest:**
All authors have declared no conflicts of interest.
P1209

IS IT REASONABLE TO PROPOSE AN ENDOSCOPIC MUCOSAL RESECTION FOR BARRETT’S OEESOPHAGUS WITH HIGH-GRADE DYSPLASIA ON THE BIOPSEYS?

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Aim & Methods: This was a retrospective study including a prospective histological relecture (BS and specimen) in two expert centers. The inclusion criteria were BE with HGD on pre-operative biopsies resected by the endoscopist. The initial biopsies from other centers were collected and re-examined by our cytologist. The BS discordant with EMR specimens were recorded in a numeric file (Teleslide) and a second lecture was carried out by 2 experts and 2 fellows (1 of each per center). Five diagnoses were considered: no metaplasia (no BE), metaplasia without dysplasia, LGD, HGD, Adenocarcinoma. Concordance statistical tests were performed to assess the variability between BS and EMR specimen and among the cytopathologists in BS, as well as cytologists’ inter and intra-observatory variability.

Results: Between January 2005 and December 2015, 87 patients have undergone EMR for HGD on biopsies, in both centers. Among them, 41 (47%) had a discordant result between biopsies and resection specimen. The histological diagnosis was C3-M5, with relief among the cases. A mean number of 1.4 endoscopic session was performed, with a mean of 2.7 resected pieces per EMR, which was macroscopically complete in 63.6% of the cases. The mean follow-up was 38 months. After histological relecture, the Kappa coefficient for the diagnosis of HGD was lower between the BS and ranging between 0 and 0.6 for the EMR specimen. The inter-observatory concordance was 0.2 (for both BS and EMR specimen) for the diagnosis of HGD. For other diagnoses, it was ranged between 0 and 0.5 for biopsies and between 0 and 0.6 for EMR specimen. The kappa coefficient regarding the BS discordant specimen were 0.5 for biopsies and 0.4 for cytology. We had 0.4 and 0.5 for the false positives, respectively. The intra-observatory (between BS and EMR specimen) after relecture was ranged between 0 and 0.6.

Conclusion: The discordance rate between initial diagnosis of HGD on BS and final diagnosis for the patients who had no surgical treatment was high, around 47%. The intra and inter observer concordance is insufficient, even in expert tertiary centers. Thus, the question about performing EMR based on random biopsies rather than endoscopic biopsy assessment has to be asked, and clearly evaluated in further studies.

Disclosure of Interest: M. Barthet: Consultant for Boston Scientific All other authors have declared no conflicts of interest.

References


P1210

CD4+ AND CD8+ LYMPHOCYTE RATE AND PDL-1 LYMPHOCYTE EXPRESSION ARE PREDICTIVE OF CLINICAL COMPLETE RESPONSE AFTER NEOADJUVANT CHEMORADIOThERAPY FOR SQUAMOUS CELL CANCER OF THE THORACIC OEESOPHAGUS

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Aim & Methods: The aims of this study were to identify possible immunological predictive markers of clinical complete response (CR) after neoadjuvant chemoradiation CT-RT) for locally advanced squamous cell carcinoma (SCC) of the esophagus and in several cases, it can lead to complete response (CR).

Results: After neoadjuvant CT-RT, 23 patients had CR, while 65 had partial response, stable disease or progression. CD8+ and CD4+ lymphocyte rate and PDL1 leukocyte expression were significantly higher in patients who had CR compared to those who had no CR (p < 0.0014, p < 0.0001 and p = 0.004 respectively). The accuracy of leukocyte expression of PDL1 and CD4+ and CD4+ lymphocyte rate was 0.76 (p = 0.0001) and 0.75 (p = 0.0001), respectively. Within the CR group, all patients with high infiltration of CD4+ T cell were cured/reolved while only the 38.9% of those with low CD4+ T cell infiltration did the same (p = 0.058).

Conclusion: In our group of patients, CD4+ and CD8+ lymphocyte rate and PDL-1 lymphocyte expression were predictive of clinical complete response after neoadjuvant chemoradiatory. Squamous cell carcinoma of the thoracic esophagus with adequate accuracy. Moreover, high infiltration level of CD4+ T cell was associated to recurrence/relapase. These preliminary observations might be used to plan further study aimed to identify reliable predictors of response to chemoradiation in oesophageal SCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1211

IDENTIFICATION OF THREE DISTINCT BIOLOGICAL SUBTYPES IN ESOPHAGEAL AND JUNCTIONAL ADENOCARCINOMA BY RNA SEQUENCING

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Aim & Methods: Esophageal adenocarcinoma (EAC) is a highly aggressive malignancy with a poor prognosis. Advances in therapy have achieved incremental improvements in overall outcome in EAC, but over- and undertreatment of undefined subgroups of patients might undermine these benefits (Courrech Staal et al. 2010). The biological diversity of EAC complicates patient selection and treatment stratification and impedes the development of new targeted agents. Further insight into the heterogeneous molecular pathology of EAC and a possible relation to outcomes and response to current treatment strategies is urgent.

Results: We could identify three distinct subtypes with a metabolic, immune and cell cycle regulating signature respectively. The subtype with the immune signature was associated with tendency to poorer response to therapy. We will develop a subtype classifier to perform subtype prediction in an independent patient cohort from the TCGA database (The Cancer Genome Atlas Research 2017).

Conclusion: Our studies support the existence of three distinct EAC/junctional subtypes associated with different response to therapy. Based on these subgroups, we expect an EAC subtype classifier that might improve stratification of patients for (targeted) therapies and subsequently improve outcomes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

analyzed by cell counting kit-8 assay. Cell cycle and apoptosis were evaluated by flow cytometric analysis. Protein levels of p53 were determined by western blot analysis. Differences between groups were tested for significance using Student’s t-test (two-tailed).

**Results:** ESCC tissues examined in this study showed an obvious increment in TRPM2-AS expression when compared to normal tissues. ESCC tissues examined in this study showed an obvious increment in TRPM2-AS expression when compared to normal tissues. The expression of nodal metastasis was assessed by immunohistochemistry. Mutational analysis for BRAF was performed. Cox proportional hazard models were created to investigate the role of each marker adjusted for cancer stage. The association between each marker and the presence of nodal metastasis was assessed by several oncogenes activation and oncosuppressor down regulation within the tumor cells, by lack of cytokines with anti-cancer effect and by high expression of immuno-suppressive factors. The interplay between oncogenes' disregulation and immune microenvironment and its effect on patients' prognosis is still largely unknown.

**Aims & Methods:** The aim of this study was to evaluate the effect of the interplay between dysregulation of oncogenes and oncosuppressor genes within the tumor cells and immune microenvironment on EAC prognosis. Mucosa samples from EAC tissue were obtained during esophagectomy from 169 consecutive patients-operated. Immunohistochemistry for MLH1, MSH2, MSH6, PM2, cMyc, p16, HER2 and nuclear p53 expression was performed. CD8 infiltration, CD8 and NK cells cytolytic activity (CD107) of tumor infiltrating lymphocytes and antigen presenting cells activity within the tumor (CD80) were assessed by immunohistochemistry. Mutational analysis for BRAF was performed. Cox proportional hazard models were created to investigate the role of each marker adjusted for cancer stage. The association between each marker and the presence of nodal metastasis was assessed by several oncogenes activation and oncosuppressor down regulation within the tumor cells, by lack of cytokines with anti-cancer effect and by high expression of immuno-suppressive factors. The interplay between oncogenes' disregulation and immune microenvironment and its effect on patients' prognosis is still largely unknown.

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increased apoptosis of OACM5.1C cells whereas did not affect apoptosis of OE3.1 cells. Conclusion: Metastatic and non-metastatic esophageal adenocarcinoma cells exhibit different glycolytic metabolism and response to pharmacological inhibition of MCT1, which increases apoptosis in metastatic cells. Further preclinical studies are required to determine the potential of blocking lactate transporters on the treatment of metastatic EAC. Disclosure of Interest: All authors have declared no conflicts of interest.

P2126 THE PREDICTIVE FACTOR FOR PERFORATION IN ESOPHAGEAL ESD
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Introduction: Although endoscopic submucosal dissection (ESD) is accepted as a standard treatment for early stage esophageal neoplasia, esophageal perforation is sometimes experienced as main adverse event. Esophageal perforation causes mediastinal emphysema, mediastinitis, and pneumothorax, those sometimes require emergency surgery.

Aims & Methods: We evaluated the predictive factors for esophageal perforation in patients who received esophageal ESD. This was a retrospective observational study in a single institution. Between May 2004 and March 2016, 549 consecutive patients with 927 lesions were evaluated in the follow-up group with ESD. Esophageal resection is indicated for pathological examination of the endoscopically resected specimens. Among these 93 patients, 41 received additional CRT (CRT group), and 52 were followed without CRT(follow-up group). CRT comprised cisplatin and fluorouracil and radiation in 1, docetaxel plus cisplatin, 5-fluorouracil, and radiation in 2, docetaxel plus cisplatin, 5-fluorouracil, and radiation in 1, and radiation alone in 1. Results: The median tumor diameter was 22 mm (6 to 55) in the CRT group and 25 (3 to 47) in the follow-up group (p = 0.63). The tumor invades the MM in 9 patients, the SM in 3, and the submucosa to a depth more than 200μm (SM2) in 29 in the CRT group and the LPM in 3 patients, the MM in 16, the SM in 18, and the SM2 in 15 in the follow-up group (p = 0.91). Lymphatic invasion was positive in 21 patients in the CRT group and 12 in the follow-up group (p < 0.01). Vascular invasion was positive in 27 in the CRT group and 29 in the follow-up group (p = 0.32). Involvement of the submucosal vertical margin was found in 7 in the CRT group and 9 in the follow-up group (p = 0.07). CRT-related grade 3 or 4 early adverse events were leukopenia 24.3% (10 patients), neutropenia 29.3% (12), febrile neutropenia 4.9% (2), diarrhea 2.4% (1), anorexia 17.9% (7). In the CRT group, 38 of 40 patients received chemotherapy as scheduled. Treatment was discontinued in the second course in 2 patients, and 7 required dose reduction. Lymph-node metastasis were found in 2 patients in the CRT group and 7 in the follow-up group (p = 0.15). In patients with recurrence in the CRT group, lymph-node metastases were seen in the irradiated field 46 and 49 months after treatment, respectively. 1 patient in the CRT group and 3 in the follow-up group died of esophageal cancer (p = 0.43). The overall survival (OS) rate at 2 years was selected 95.8% in the CRT group and 93.8% in the follow-up group (p = 0.02). The relapse-free survival (RFS) rate at 2 years was 97.1% in the CRT group and 83.4% in the follow-up group (p = 0.02).

Conclusion: Additional CRT after endoscopic resection in patients with esophageal adenocarcinoma who have submucosal invasion, lymphovascular involvement, or vertical-margin invasion can become an effective organ-preservation strategy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P2127 SAFETY AND EFFICACY OF CHEMORADIOThERAPY AFTER ENDOscopic RESECTION IN PATIENTS WITH SUPERFICIAL ESOPHAGEAL SQUAMOUS-CELL CARCINOMA
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2Research And Development Center For New Frontier, Kitasato University School of Medicine, Sagamihara/Japan
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Introduction: According to the current Japanese guidelines for the diagnosis and treatment of oesophageal cancer, endoscopic resection is indicated for pathologic T1a (epithelium/lamina propria mucosae) and relatively indicated for pathologic T1a(muscularis mucosae) and T1b(a tumor invading the submucosa to a depth of 500 μm). The tumor invades the MM in 9 patients, the SM1 in 3, and the submucosa to a depth of more than 200 μm (SM2) in 29 in the CRT group and the LPM in 3 patients, the MM in 16, the SM in 18, and the SM2 in 15 in the follow-up group (p = 0.91). Lymphatic invasion was positive in 21 patients in the CRT group and 12 in the follow-up group (p < 0.01). Vascular invasion was positive in 27 in the CRT group and 29 in the follow-up group (p = 0.32). Involvement of the submucosal vertical margin was found in 7 in the CRT group and 9 in the follow-up group (p = 0.07). CRT-related grade 3 or 4 early adverse events were leukopenia 24.3% (10 patients), neutropenia 29.3% (12), febrile neutropenia 4.9% (2), diarrhea 2.4% (1), anorexia 17.9% (7). In the CRT group, 38 of 40 patients received chemotherapy as scheduled. Treatment was discontinued in the second course in 2 patients, and 7 required dose reduction. Lymph-node metastasis were found in 2 patients in the CRT group and 7 in the follow-up group (p = 0.15). In patients with recurrence in the CRT group, lymph-node metastases were seen in the irradiated field 46 and 49 months after treatment, respectively. 1 patient in the CRT group and 3 in the follow-up group died of esophageal cancer (p = 0.43). The overall survival (OS) rate at 2 years was selected 95.8% in the CRT group and 93.8% in the follow-up group (p = 0.02). The relapse-free survival (RFS) rate at 2 years was 97.1% in the CRT group and 83.4% in the follow-up group (p = 0.02).

Conclusion: Additional CRT after endoscopic resection in patients with esophageal adenocarcinoma who have submucosal invasion, lymphovascular involvement, or vertical-margin invasion can become an effective organ-preservation strategy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P2128 SAFETY, EFFICACY AND OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR THE TREATMENT OF EARLY BARRETT’S NEOPLASIA
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Introduction: Endoscopic submucosal dissection (ESD) was developed in Japan for the treatment of large gastrointestinal neoplasias and has progressively been adopted in the West. Currently, early Barrett’s neoplasia is mainly treated with endoscopic mucosal resection (EMR) and/or radiofrequency ablation, being the role of ESD in this context not well-established yet. Our aim is to evaluate the safety, efficacy and outcome of ESD for the treatment of early Barrett’s neoplasia.

Aims & Methods: Fifty consecutive ESD cases of early Barrett neoplasia were performed in 42 patients in our center between 2011 and 2016. All ESDs were performed under full narcosis after multidisciplinary team conference discussion and patient’s consent. The primary endpoint was the rate of en bloc resection. Secondary endpoints included rate of R0 and curative resection, a comparison of pre- and post- ESD histology, procedure time, procedure-related adverse events, and rate of remission at follow-up. This study was approved by the Stockholm Regional Ethical Committee.

Results: Mean age was 67 years (range 46-84), being 74% male and 72% long segment BE. The mean specimen size was 52 mm (range 16-150 mm). ESD resections included <25%, 25-50%, 50-75% and 75-100% of the lumen circumference in 4/31/12/3 of cases, respectively. En bloc, R0 and curative resection were obtained in 96% (48/50), 80% (40/50) and 70% (35/50) of cases, respectively. The mean procedure time was 120 minutes. There were 2 perforations (4%) treated endoscopically and 2 (4.0%) postoperative bleedings treated conservatively. Six patients (12%) developed esophageal strictures that were managed endoscopically. The 30 days mortality was 0% and 13 cases were followed until new endoscopy. In 2 patients, to further ESD, 1 received chemoradiotherapy and 2 patients are under surveillance. In the 10 esophagectomy cases, 4 patients had AC in the remnant Barrett’s esophagus and 2 patients had lymph node metastasis. Complete remission was
found in 100% (35/35) of patients with curative resection at median follow-up of 2.7 months (range 1–64 months). Conclusion: In the proper setting, ESD is safe and effective for the treatment of early Barrett’s neoplasia with high en bloc and complete resection rates and good curative rate. ESD enables full pathological assessment in lesions not suitable for en bloc resection with EMR. There were no recurrences in the curative cases, which increases the role of ESD for the management of early Barrett’s neoplasia.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1219 ENDOSCOPIC EVALUATION AT THE PRIMARY SITE OF CTI ESOPHAGEAL CANCER AFTER PROTON BEAM THERAPY AND CLINICAL RESULTS OF SALVAGE ENDOSCOPIC THERAPY FOR LOCAL RECURRENTNESS

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Introduction: Recently, it has been reported that proton beam therapy (PBT) is the effective treatment for patients with esophageal squamous cell carcinoma (ESCC). However, there are few reports regarding the endoscopic evaluation of efficacy after PBT at the primary site. Aims & Methods: The aim of this study is to clarify the adequate endoscopic evaluation of the primary lesion of ESCC after PBT, and the clinical results of salvage endoscopic treatment for local recurrence. Patients with clinical T1 ESCC, and who had been treated with PBT between April 2013 and June 2016 at the National Cancer Center Hospital East were investigated. The total dose of PBT was 60 Gray-Equal (GyE). The efficacy of PBT at the primary site was evaluated with endoscopy, and the definition of complete response (CR) was used according to the same criteria as that of conventional chemoradiotherapy (CRT) as follows: disappearance of tumor lesion and ulcer, and absence of cancer cells with biopsy was verified. The endoscopic evaluation was performed within 2 months after the completion of PBT, and we repeatedly evaluated every month if the lesion did not achieve CR. The treatment for local recurrence after PBT was chosen based on the depth of the tumor as follows: endoscopic resection (ER) for cT1a, endoscopic photodynamic therapy (PTD) for cT1b or deeper depending on patient’s condition.

Results: Among 44 patients who underwent PBT, the median age was 70 years (range, 41–79). The number of patients with clinical stage I was 23 (52%), and those with stage II, III, and IV were 16 (36%), 2 (5%), and 3 (7%), respectively. All patients underwent concurrent systemic chemotherapy. 43 patients (98%) could achieve a CR at the primary site and only one patient (2%) did not show a CR (non-CR) at the primary site. The median time to CR from the start of PBT was 60 days (range, 7–270 days). All 43 patients (98%) achieved CR. The median follow-up period of 11 months (range, 1–32 months).

Conclusion: Endoscopic surveillance of HNSCC is very important for those with stage IV ESCC, as endoscopic and EUS of these lesions are feasible and safe with acceptable complication risks despite the high rates of stenosis in resections >75% of the circumference.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1220 CLINICAL OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR SUPERFICIAL ESOPHAGEAL NEOPLASMS OF PATIENTS WITH HEAD AND NECK CANCER

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Introduction: Globally, 80% of all esophageal cancer cases are esophageal squamous cell cancer (ESCC), arising from esophageal squamous cell neoplasm (ESCC). Patients with ESCC have poor prognosis, but when diagnosed at the stage of ESCC, curative endoscopic treatment can be performed. ESCN mainly occurs in developing countries, often with limited endoscopic expertise and resources, like Central and Eastern Asia and Eastern and Southern Africa. Hence, an easy-to-use, low-cost treatment for ESCN would be of great value. Focal Cryoballoon Ablation therapy (FCBA) (C2 Therapeutics Inc. Redwood City, CA, USA) is a new endoscopic ablation therapy that comprises a therapeutic cryoablation catheter with a deformable balloon that obviates the need for sizing, a handle, and a small disposable cryogen cartridge. The balloon is simultaneously inflated and cooled with nitrous oxide from the cartridge, resulting in ice patches of approximately 2 cm. FCBA is easy to use and requires no capital equipment. Early studies for FCBA of Barrett’s esophagus have shown promising results, however, limited data are available for FCBA of ESCN. In this study we aimed to assess the safety, tolerability and efficacy of FCBA in the eradication of ESCN.

Aims & Methods: In this ongoing multi-center prospective trial in China, patients with one flat type (Paris 0-1b) unstained lesion (ULS) on Lugol’s chromoscopy, ≤6 cm in length and <50% of circumference, with a confirmed diagnosis of Moderate or High Grade Intraepithelial Neoplasia (MGIN/HGIN) were
enrolled. At baseline, side-by-side ablations of 10 seconds were performed on all resected lesions; every 3 minutes of endoscopic mucosal resection (EMR) was confirmed. Outcomes: safety and tolerability (11-point visual analog scale (VAS) for pain), complete response (CR) rates (absence of MGIN or worse in biopsies), neoplastic progression and adverse events.

Results: 62 patients (63 MGIN, 17 HGIN) with a median lesion of 2 (IQR 2–3) cm in length. Of these, 79 patients (99%) were successfully treated; 3 developed superficial, self-limited mucosal lacerations upon balloon inflation and 2 of them were successfully re-ablated 3 months later. A median of 5 (IQR 4–7) ablations were performed per patient, in a median ablation time of 8 (IQR 5–10) minutes. As of April 2017, 77/97 (79%) patients completed a 3-month follow-up endoscopy and 69/77 patients (89%) exhibited endoscopic and histologic CR. Eight patients had residual USL and were again treated by EMR; in 3 patients, delayed follow-up of the water-filled lesions took place. To date, 4 patients have undergone a 12 month endoscopy and all continue to exhibit endoscopic and histologic CR. No significant strictures have been noted on follow-up. Three patients developed fever shortly after treatment which was treated with aspirin. Post-procedure median VAS was 1 (IQR 0–2) at day 2, and 0 (IQR 0–0) at days 7 and 30.

Conclusion: Preliminary results of our multicenter open prospective cohort study suggest that FCBA of ESC is safe, well-tolerated, and highly effective in inducing endoscopic and histometric remission. Longer term (12 month) follow-up data is pending.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1222 THE ENDOSCOPIC TREATMENT STRATEGY FOR SUPERFICIAL ESOPHAGEAL CANCER

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Introduction: Endoscopic submucosal dissection (ESD) allows en bloc removal of superficial esophageal squamous cell carcinoma (SCC). However, esophageal stricture often occurs after ESD when the lesion involves more than three-fourth of the circumference of the lumen. Frequent balloon dilation is performed endoscopy is required in such situation, thus causing health economic problem. In this study, we investigated the clinical outcomes, and prevention of post-ESD stenosis.

Aims & Methods: A total of 667 cases in 516 consecutive patients were treated by ESD in our department from April 2006 to December 2016. We investigated the following 2 items. 1. Clinical outcomes and complications. 2. Usefulness of oral steroids administration, the local steroids injection, endoscopic transplantation of tissue-engineered autologous oral mucosal epithelial cell sheets, or steroid oral + local injection combination therapy for the prevention of post-ESD stenosis.

Results: 1. Clinical outcomes: En bloc resection rate was 99.8% and en bloc curative resection rate was 90.0%. The rate of perforation, post-ESD bleeding, and post-ESD stenosis was 0.2%, 0.8% and 6.1%, respectively. 2. Prevention of post-ESD stenosis: (1) Oral steroid vs Steroid injection vs Cell sheet transplantation: In oral steroid group, the stenosis rate was 14.9%, and the ulcer healing period was 39.5 days. In steroid injection group, the stenosis rate was 12.9%, and the ulcer healing period was 66.0 days. In cell sheet transplantation group, the stenosis rate was 40.0% and the ulcer healing period was 36.0 days. There was no significant difference between these 3 therapies, and these therapies prevent post-ESD stenosis to significant extent. However, ulcer healing period of the cell sheet transplantation is significantly shorter compared with the other 2 therapies. (2) The usefulness of SH oral + local injection combination therapy. We investigated limitations of steroid administration, and cell sheet transplantation in order to prevent stenosis. The follow-up period of the 4 factors (more than 9/10 of circumferential resection, more than 5 cm of longitudinal resection, cervical esophagus, post history of chemo-radiotherapy or endoscopic resection) were the stenosis prevention treatment-resistant factors. Therefore, we examined the stenosis rate according to the number of these 4 factors. The stenosis rate of the cases which have 0 or 1 factor, the case which has more than 2 factors in semicircular cases, and the complete circular cases is 4.9%, 30.3%, and 44.8%, respectively. The stenosis rate of the cases which have more than 2 factors and complete circular cases are significantly higher, compared to the cases which have 0 or 1 factor. As a result, the cases which have more than 2 factors and complete circular cases were regarded as the stenosis prevention treatment-resistant cases. In contrast, in SH oral + local injection combination therapy, the stenosis rate of the cases which have more than 2 factors and complete circular cases is 17.5% and 14.3%, respectively. Taken together, the stenosis rate of SH oral + local injection combination therapy is significantly lower, compared to the other 3 therapies.

Conclusion: Esophageal ESD achieved high en bloc resection rate and curability with low rates of complications. Oral steroid, steroid injection therapy and cell sheet transplantation may be effective treatment strategy for reducing post-ESD stenosis. However, the above-mentioned 4 factors are the stenosis prevention treatment-resistant factors in these 3 therapy cases. Furthermore, the cases which have more than 2 factors and complete circular cases were regarded as the stenosis prevention treatment-resistant cases. SH oral + local injection combination therapy is very useful for prevention of post-ESD stenosis and has a potential for the stenosis prevention treatment-resistant cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1223 DIAGNOSIS OF TUMORS IN THE CERVICAL AND UPPER THORACIC ESOPHAGUS: EFFECTIVE ENDOSCOPIC ULTRASONOGRAPHY USING A JELLY-FILLING METHOD WITH WATER-SOLUBLE LUBRICATING JELLY

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Aims: To evaluate diagnostic accuracy of water-soluble lubricating jelly and standard endoscopic ultrasonography (EUS) in the cervical and upper thoracic esophagus using a jelly-filling EUS method with water-soluble lubricating jelly.

Methods: A total of 61 patients with esophageal SCCs in the cervical or upper thoracic esophagus were included in this study. Among the 61 SCCs, 13 were re-evaluated after chemoradiotherapy. The other 48 SCCs did not undergo chemoradiotherapy. Of these 61 patients with esophageal SCC, 60 lesions (98.3%) could be detected with EUS-J and 44 lesions treated either by esophagectomy (n = 7) or endoscopic resection (n = 37). Histologic diagnosis was T1a in 27 lesions, T1b in 17 lesions. The overall accuracy of diagnosing invasion depth was 70.5% (31/44 lesions) by EUS-J. Among the 10 SMTs, we diagnosed seven leiomyomas derived from muscularis mucosa and one lesion due to vertebral body compression. The remaining two lesions were, respectively, a diminutive SMT (< 3 mm) and a small lesion in the cervical esophagus adjacent to the hypopharynx. Neither was detectable using EUS-J because of their small size and difficulty with instrumental maneuvering. There were no adverse events during EUS-J, including aspiration pneumonia. EUS-J with water-soluble lubricating jelly is useful and safe for diagnosing lesions in the cervical or upper thoracic esophagus. To our knowledge, this is the first report of using EUS with lubricating jelly for lesions located in this anatomical region.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1224 OPTIMAL SURGERY TIME AFTER ENDOSCOPIC RESECTION IN EARLY GASTRIC CANCER: LONG-TERM FOLLOW-UP STUDY FOR SURGICAL AND ONCOLOGICAL SAFETY

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Introduction: The patients with early gastric cancer (EGC) who have undergone non-curative endoscopic resection (ER) need additional surgery. Our previous study reported short-term data about 29 days were optimal time when considering the surgical outcome. (Ann Surg Oncol. 2014 Jan;21(1):1232-9.) This study is long-term follow-up study to evaluate the impact of previously proposed optimal time interval from ER to additive surgery by on the surgical and oncological outcomes.

Aims & Methods: A total of 2850 patients who were diagnosed with EGC underwent ER at the Severance and Gangnam Severance Hospitals, Seoul, Korea, between January 2007 and December 2014. We analyzed totally 302 (10.6%) patients who underwent additive gastrectomy after non-curative ER. The patients were divided into 2 groups according to the time interval point, as the earlier operation group (group A) and the later operation group (group B). The time interval point, at which operative time and estimated intraoperative blood loss (EBL) of the earlier operation group and the later operation group

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showed the greatest disparities, was evaluated. We retrospectively evaluated long-term follow-up study for oncological outcomes about follow-up duration, loco-regional recurrence, distant recurrence.

**Results:** The median follow-up duration is 40.36 ± 20.74 months in all patients. Based on the previous our study, we divided patients two groups who underwent operative time of 29 days. Of the 302 patients, 133 were in Group A (≥ 29 days) and 169 in Group B (> 29 days). There were more differences between two groups about ASA score, intra-op. transfusion, POD#1 Hemovac© discharge, Maximal postoperative CRP in the clinicopathological characteristics. Like previous our study the operative time, EBL, tumor size was significantly longer and more in group A compared with group B. There were totally 7 patients locoregional and distance recurrence during follow-up period. There were no differences in oncological outcomes between two groups.

**Conclusion:** Based on long-term follow-up data, surgery time after ER in EGC does not affect oncological outcome. These long-term follow-up results suggest that adding surgery at about 1 month after ER is optimal for better surgical outcomes without affecting the oncological outcomes.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**

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**P1225 THE POINT TO DISTINGUISH EARLY GASTRIC CANCER FROM DEPRESSION TYPE OF GASTRIC INTESTINAL METAPLASIA**

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**Introduction:** This study discusses two endoscopic findings which improve the accuracy of the diagnosis of early gastric cancers (EGC). After successful *Helicobacter pylori* eradication, we often observe multiple reddish depressed lesions and “patchy redness” in the gastric mucosa. Even though most are intestinal metaplasia (IM), EGC is found among these lesions. A light blue crease (LBC) has been a highly accurate sign of the IM. There are, now, additional two endoscopic findings that should improve the accuracy of diagnosis of EGC. They are 1) “intrarectal microvainoinfusion (IEMI);” and 2) “Over flow”. Over flow is the endoscopic finding that the structure of the depressed lesion spreads to the outside of the depression.

**Aims & Methods:** The aim of this study is to clarify the usefulness of two endoscopic findings in order to detect the EGC in the group thought to be an IM. This is a retrospective control study. There were 234 cases of EGC performed endoscopy examination during the same period. The EGC group is then divided into 2 groups; 1) eradication group (13 cases) and 2) no eradication group (32 cases). We evaluated the following parameters: 1) presence of LBC, 2) presence of IEMI, 3) the ratio of over flow.

**Results:** The ratio of LBC was 75% in IM group, which was significantly higher than eradication group (7.7%), and small EGC group (9.4%). The ratio of irregular microsurface pattern was 33% in IM group, which was significantly lower than eradication group (92%), and small EGC groups (84%). The ratio of irregular microvascular pattern was 0% in IM group, which was significantly lower than eradication group (92%), and small EGC group (81%). The ratios of IEMI were 0% in IM group, 39% in eradication group and 41% in small EGC group. The ratios of Over flow were 0% in IM group, 46% in eradication group and 50% at small EGC group. Furthermore, the ratios to have either in two endoscopic findings were 0% in IM, 77% in eradication group and 69% in small EGC group.

**Conclusion:** IEMI and Over flow leads to the diagnosis of EGC in addition to other endoscopic findings.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
the TTT and the non-TTT group were 1.5% and 0%, respectively. There was a significant difference in early detection rate between the TTT and the non-TTT group (Fisher’s exact test, P = 0.046).

Conclusion: This clinical trial clearly showed that the systematic intensive TTT course is useful for improving early detection rate of gastric cancer in clinical practice at a high-volume endoscopy center. (NCTD358578).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

**P1228 COMPARISON OF ENDOSCOPIC SUBMUCOSAL DISSECTION AND SURGERY FOR THE TREATMENT OF EARLY GASTRIC CANCER: SINGLE-CENTER LONG-TERM OUTCOME STUDY**

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Introduction: Endoscopic submucosal dissection (ESD) is believed to be a possible modality for early gastric cancer. But there is little report about long-term outcomes of the ESD directly compare with the surgery. The purpose of this study is the comparison between the two treatment modalities about the outcomes of the early gastric cancer.

Aims & Methods: We performed a retrospective analysis of 1243 patients with stage I early gastric cancer without lymph node involvement. 551 patients were treated with ESD, and 692 patients were treated with subtotal or total gastrectomy. Long-term overall and disease-specific survival rates, development of new lesions, and complications were analyzed.

Results: The mean age was higher in the ESD group (64.9 ± 9.5 vs. 58.5 ± 11.7, P = 0.001) and female distribution was higher in surgery group (30.5% vs. 38.9%, P = 0.001). In ESD group, diabetes was more frequent (12.9% vs. 7.1%, P < 0.001), but disease-specific survival rate was significantly higher in ESD group (99.8% vs. 98.7%, P = 0.037, log-rank test). During 10 years follow up period, new lesions were observed in 3.6% of the ESD group and in 1.3% of surgery group (P < 0.001). ESD group showed less complications (4.5% vs. 16.3%, P < 0.001) and shorter hospital day than surgery group (5.27 days vs. 12.09 days, P < 0.001).

Conclusion: Although the development of new lesions were more frequent than surgery, ESD has similar overall survival rate and even higher disease-specific survival rate than surgery. Also, ESD has less complications and shorter hospital day than surgery. Therefore, ESD is an effective therapeutic method in early gastric cancer as well as surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1229 HEMATOLOGISTS SHOULD ORDER ENDOSCOPIC EXAMINATIONS TO EXPERTS OF ENDOSCOPY IN CASE OF ENDOSCOPIC CHECK-UP OF GASTROINTESTINAL MALIGNANT LYMPHOMA**

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Introduction: Gastric malignant lymphoma (ML) is most popular lymphoma of the gastrointestinal tract. Especially we often see gastric ML lymphoma in cases of *H. pylori* (HP) infection positive, and we also sometimes find out HP negative gastric ML lymphoma. Since gastric carcinoma (GC) is more common rather than gastric ML lymphoma, typical endoscopic diagnostic findings, most of non-expert of endoscopy cannot diagnose exactly. But expert could diagnose minimal lesions of ML at first endoscopy. Especially HP positive gastric ML lymphoma was similar to gastritis and GC on endoscopic findings, most of non-expert could not diagnose exactly.

Aims & Methods: There was significant difference of ability to diagnose gastric ML lymphoma between specialists and trainees. Therefore, hematologists should order endoscopic examination to experts of endoscopy knowledgeable of ML in case of endoscopic check-up of gastrointestinal malignant lymphoma.

Disclosure of Interest: All authors have declared no conflicts of interest.

**References**
**P1221 DEVELOPMENT OF AND EXPERIENCE WITH AN INSULATED SCISSORS-TYPE KNIFE (SB KNIFE)**

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**Introduction:** Endoscopic submucosal dissection (ESD) is technically difficult and is associated with risks of perforation and bleeding. Although knife-type instruments are primarily used to make incisions during ESD, it is necessary to be proficient in endoscopic procedures and be able to perform them simultaneously with electrosurgical and incision. Scissors-type knives are fairly easy to manipulate in colorectal ESD. We have fabricated SB knife Jr type (SBJr), short scissors-type knife with outer insulated layer, in collaboration with SUMITOMO BAKELITE CO.

**Aims & Methods:** SBJr is short length (electrode length: 3.5 mm) to be easy to handle in narrow colorectal lumen. The surface of the rotatable monopolar scissors is coated with insulating material in order to enhance the cutting power and prevent electric effects in the surrounding tissue. The shearing structure made sharp cutting quality and very small round tips prevents to grasp the muscular layer. SBJr was used in circumference incision, submucosal dissection and hemostasis. After infected hydrolytic acid in submucosal layer, grasped the tissue, confirming safety, make incision. SBJr was used not only in incision but also in hemostasis. At sites containing blood vessels or bleeding, they were grasped and induced coagulation using SBJr. It has been used on 180 colorectal lesions from January 2008.

**Results:** The circumference incision and submucosal dissection were basically performed with High-frequency cutting wave. There were 3 cases of perforation during ESD and 1 case of post-operative bleeding. The procedure itself was fairly easy and substantially effective at all sites. Sites difficult to excise the endoscope and sites containing blood vessels, where conventional devices would encounter difficulties. Due to the very small round tips of the instrument, detailed operation become simply. For coagulation of blood vessels or bleeding, it is not required to replace the knife which is used cutting and coagulation.

**Conclusion:** This short insulated scissors-type knife (SBJr) made it easier to perform colorectal ESD, we conclude that it is an effective device and easy for a beginner in colorectal ESD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1223 GASTROINTESTINAL LYMPHOMAS**

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**Introduction:** The gastrointestinal tract (GIT) is the most common extranodal site affected in lymphomatous pathology. Infection with Helicobacter pylori, human immunodeficiency virus and Epstein Barr and immunosuppression have been studied as possible risk factors. The diagnosis is often late, presenting at an advanced stage, with limited therapeutic options.

**Aims & Methods:** The objective of this study was to characterize the anatomical distribution, clinical manifestations, risk factors and prognosis of GI lymphomas.

**Results:** Retrospective study of patients diagnosed with GI lymphomas between 1997 and 2016.

The most commonly affected organ was the stomach (65.3%) and the most frequently manifested lymphomas are primarily used to make incisions during ESD and 1 case of post-operative bleeding. The procedure itself was fairly easy and substantially effective at all sites. Sites difficult to excise the endoscope and sites containing blood vessels, where conventional devices would encounter difficulties. Due to the very small round tips of the instrument, detailed operation become simply. For coagulation of blood vessels or bleeding, it is not required to replace the knife which is used cutting and coagulation.

**Conclusion:** This short insulated scissors-type knife (SBJr) made it easier to perform colorectal ESD, we conclude that it is an effective device and easy for a beginner in colorectal ESD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1224 COMPARATIVE STUDY OF THE ENDOSCOPIC ULTRASONOGRAPHY-GUIDED FINE-NEEDLE ASPIRATION VS MUCOSAL-INCISION ASSISTED BIOPSY FOR THE HISTOLOGICAL DIAGNOSIS OF GASTROINTESTINAL SUBEPITHELIAL TUMORS**

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**Introduction:** Gastrointestinal subepithelial tumors include potentially malignant tumors. When considering the diagnostic yield for subepithelial tumors, it is important to evaluate whether the samples obtained are adequate for histological analysis, as immunohistological analysis is indispensable for a definitive diagnosis. However, it may be difficult to make a correct histological diagnosis with only the endoscopic ultrasonography-guided fine-needle aspiration (EUS-FNA). Therefore, there has been an interest in exploring an alternative modality for tissue sampling as mucosal-incision assisted biopsy (MIAB) based on the endoscopic submucosal dissection.

**Aims & Methods:** The aim of this study was to compare the usefulness of EUS-FNA and MIAB in the histological diagnosis of gastrointestinal subepithelial tumors (SET). We performed the retrospective study comparing 37 patients who underwent either EUS-FNA (n = 18) or MIAB (n = 19). Diagnostic yield and safety and feasibility of both EUS-FNA and MIAB were compared.

**Results:** The location of the SET was esophagus (n = 6), stomach (n = 29), and duodenum (n = 2). The diagnostic yields were gastrointestinal stromal tumors (n = 10), leiomyoma (n = 17), aberrant pancreas (n = 3), poorly differentiated carcinoma (n = 2), metastatic carcinoma (renal cell carcinoma, n = 1), and no-diagnosis (n = 4). There were no significant differences in the clinical characteristics-including sex and age-of the patients in the EUS-FNA and MIAB groups.

A total of 748 patients with early gastric cancer undergoing endoscopic submucosal dissection were classified into underweight (BMI <18.5), normal (BMI 18.5-23), overweight (BMI 23-25), and obesity (BMI ≥25) by Asian-Pacific guideline. Adjusted analysis using odds ratio (OR) and 95% confidence interval (CI) was performed to evaluate the effect of BMI on early gastric cancer.

**Conclusion:** The gastric cancer was strongly associated with the increased BMI and its effect has dose-dependent pattern.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1225 CLINICAL TRENDS AND BURDEN OF DEATH IN GASTRIC CANCER: A SIX-YEARS SURVEY**

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**Introduction:** Previous studies have shown that non-cardiac gastric cancer had no associations with the obesity even if cardiac or gastroesophageal junctional cancer was related with the obesity. These studies have included high portion of advanced gastric cancer. Patients with most advanced cancer already experienced weight loss.

**Aims & Methods:** We evaluated the effect of body mass index (BMI) on early gastric cancer in patients undergoing endoscopic treatment for early gastric cancer. A total of 748 patients with early gastric cancer undergoing endoscopic treatment (endoscopic submucosal dissection) including age and sex matched healthy controls consist of this case-control study. Body mass index was classified into underweight (BMI <18.5), normal (BMI 18.5-23), overweight (BMI 23-25), and obesity (BMI ≥25) by Asian-Pacific guideline. Adjusted analysis using odds ratio (OR) and 95% confidence interval (CI) was performed to evaluate the effect of BMI on early gastric cancer.

**Results:** The mean age was 57 years and male sex was 60% (n = 447). BMI was higher in gastric cancer compared to healthy control (24 vs 23, P <0.001). The OR of gastric cancer was increased according to the BMI increase; 1.57 (95% CI, 0.89-2.79, P =0.12) in normal BMI, 1.88 (95% CI, 1.06-3.35, P =0.03) in overweight, and 2.28 (95% CI, 1.29-4.06, P =0.003) in obese persons as compared to underweight (BMI <18.5).

**Conclusion:** The early gastric cancer was strongly associated with the increased BMI and its effect has dose-dependent pattern.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Introduction: In 2012 the reported incidence of gastric cancer in both sexes was 27.7 (95%CI 27.4–28.0, but the early detection rate was still critically low (8.7–10.0/100,000), being each and other’s strict locality related to a better survival. Parma area is considered at medium-low incidence of gastric cancer. For early diagnosis, the detection of a precancerous condition like atrophic gastritis seems crucial, but the majority of such patient’s are asymptomatic of non invasiveness.Gastric cancer (Pepsonogens and Gastrin 17) as suggested in the guidelines of Kyoto and Maastricht II is up to now limited in clinical practice. Aim of the study, therefore, was to establish the burden of gastric cancer in the diagnosis of the last six years, focusing on the detection of early gastric cancer.

Aims & Methods: Six years (from July 2010 to July 2016) were considered in search for diagnosis of gastric cancer as reported in the archives of the Pathology Department of Parma University. Overall, 816 cases of gastric cancer were found but due to consider only the surgically removed cases, therefore, the available sample is based on 584 cases. For every cases we classified the cancer in early, following the Kodama classification, and advanced. The presence of atrophic gastritis nearby the neoplasia was assessed according with OLG classification. In both early and advanced cancer the node status was investigated. Six years (from July 2010 to July 2016) were considered in search for early gastric cancer. In 2012 the reported incidence of gastric cancer in both sexes was 27.7 (95%CI 27.4–28.0, but the early detection rate was still critically low (8.7–10.0/100,000), being each and other’s strict locality related to a better survival. Parma area is considered at medium-low incidence of gastric cancer. For early diagnosis, the detection of a precancerous condition like atrophic gastritis seems crucial, but the majority of such patient’s are asymptomatic of non invasiveness. Gastric cancer (Pepsonogens and Gastrin 17) as suggested in the guidelines of Kyoto and Maastricht II is up to now limited in clinical practice. Aim of the study, therefore, was to establish the burden of gastric cancer in the diagnosis of the last six years, focusing on the detection of early gastric cancer.

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were significantly decreased in GC tissues comparing to adjacent normal tissues both in Chinese cohort (n = 48 pairs) and TCGA cohort (n = 450). CAB39L hypermethylation was correlated with poor overall survival in Chinese cohort (n = 87, p = 0.005) and validated in TCGA cohort (n = 354, p < 0.005), which suggesting that CAB39L might function as a tumour suppressor. The functional importance of CAB39L in GC was therefore determined. Ectopic expression of CAB39L in three GC cell lines (AGS, BG-SC3, MKN45) suppressed cancer cell proliferation in vitro (p < 0.01) and colony formation assays (p < 0.0001). CAB39L induced apoptosis and G1 cell cycle arrest in GC cells, concomitant with the enhanced expression of cleaved caspase-8, caspase-3, p21, and decreased cyclin D3 expression. Cell migration and invasion abilities were inhibited by CAB39L in wound healing and gel invasion assays, respectively. Conversely, CAB39L knockdown in MKN28 demonstrated opposite effects. Orthotopic mouse model also showed inhibited tumorigenicity with CAB39L-overexpressing BG-SC32 cells. Mechanistically, RNAseq and gene set enrichment analysis (GSEA) revealed that AMPK and ERBB2/ERBB4 signaling were involved in the tumour suppressive role of CAB39L in GC. Consistent with our RNAseq data, we raised antibody against AMPK and showed AMPK as the top activated kinase; whilst ERK1/2 was the most strongly down-regulated in CAB39L overexpressing GC cells, suggesting that CAB39L up-regulates AMPK concomitant with down-regulation of ERBB2/ERBB4 signaling. Moreover, co-immunoprecipitation was performed to detect interaction between CAB39L and LKB1, a bona-fide tumour suppressor that functions to activate AMPK to suppress tumorigenesis. Western blot confirmed activation of LKB1-AMPKα/β cascade in GC cells expressing CAB39L, while the opposite effect was observed in CAB39L silenced MKN28 cells. Administration of an AMPK activator, AICAR, inhibited growth of control cells but not CAB39L-expressing (thus AMPK activated) cells, suggesting that AMPK activation by CAB39L contributes to tumour suppression. Consistently, a novel tumour suppressor silenced by promoter methylation in GC. CAB39L inhibits gastric tumorigenesis via LKB1-mediated activation of AMPKα/β. CAB39L methylation may serve as an independent prognostic biomarker for GC patients.

**Disclosure of Interest:**

W. Li: No conflicts of interest.

C. Wong: No conflicts of interest.

Y. Dong: No conflicts of interest.

J. Xu: No conflicts of interest.

Y. Quan: No conflicts of interest.

W. Kang: No conflicts of interest.

P.W.Y. Chiu: No conflicts of interest.

E. Ng: No conflicts of interest.

J. Xu: No conflicts of interest.

PI239  FUNCTIONAL CHARACTERIZATION AND CLINICAL SIGNIFICANCE OF PKNOX2, A NOVEL TUMOR SUPPRESSOR IN GASTRIC CANCER

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**Introduction:**

Using 450 K DNA methylation array, we identified PBX1 Knotted 1 Homeobox 2 (PKNOX2) as a novel gene differentially methylated in gastric cancer patients compared with normal tissues of the TCGA (three-amino acid loop extension) family of homedomain transcription factors, which play fundamental roles in cell proliferation, differentiation and death. However, the role of PKNOX2 in GC remains to be uncovered.

**Aims & Methods:**

We aimed to investigate the function, molecular mechanism and clinical implication of PKNOX2 in GC. PKNOX2 promoter methylation was evaluated by bisulfite sequencing. PKNOX2 expression was determined by RT-qPCR and western blot. Biological functions of PKNOX2 were determined in GC cells by MTT, colony formation, apoptosis, cell cycle, migration/invasion assays, and in vivo using nude mice tumorigenicity assay. Pathways targeted by PKNOX2 were identified by Cancer pathway PCR array and dual luciferase reporter assay.

**Results:**

PKNOX2 was silenced in 15 out of 18 GC cell lines through promoter methylation, and 5′-Azadecytidine treatment restored PKNOX2 expression. PKNOX2 mRNA expression was down-regulated in GC compared to adjacent normal tissues. Moreover, promoter methylation of PKNOX2 was associated with poor survival in GC patients (p < 0.05), suggesting that PKNOX2 may function as a tumor suppressor in GC. We therefore examined its functional effect in GC. Ectopic expression of PKNOX2 in GC cell lines significantly inhibited cell proliferation, induced cell apoptosis and cell cycle arrest, concurrently with increased expression of apoptosis markers cleaved caspase-9, -7, -3 and PARP and cell cycle inhibitors p53, p21 and p27. PKNOX2 also attenuated cell migration and invasion by inhibiting epithelial-mesenchymal transition. PKNOX2 in HGC27 cells showed that PKNOX2 functions as a tumor suppressor in GC. Tumorigenicity assay in nude mice showed that stable PKNOX2 expression significantly suppressed tumor growth in vivo. To probe the mechanism of action of PKNOX2 in GC, we performed Cancer pathway PCR array, which unveiled a potential cell proliferation (>6-of-6) of insulin like Growth Factor Binding Protein 5 (IGFBP5) in PKNOX2-overexpressing GC cells. IGFBP5 knockdown abolished the growth inhibitory effect of PKNOX2 in GC cells, indicating that IGFBP5 mediated the tumor suppressive function of PKNOX2. Chromatin immunoprecipitation (ChIP) assay showed that PKNOX2 bind directly to IGFBP5 promoter to mediate transcription. Consistent with our data, PKNOX2 expression was positively correlated with IGFBP5 expression in the TCGA GC dataset. IGFBP5 mediated the tumor suppressive effect of PKNOX2 via activating p53 signaling pathway, as determined by western blot and ChIP-qPCR. In addition, p53 transcriptionally coordinated up-regulated in PKNOX2-overexpressing cells, leading to tumor suppression.

**Conclusion:**

PKNOX2 functions as a novel tumor suppressor silenced in GC by promoter methylation. Its tumor suppressive effect is mediated via IGFBP5 and the activation of p53 signaling pathway. Promoter methylation of PKNOX2 may be a useful biomarker for predicting patient prognosis.

**Disclosure of Interest:**

All authors have declared no conflicts of interest.

**References:**


PI240  HOX10 IS UPREGULATED IN HUMAN GASTRIC CANCER AND PROMOTES CELL G1-S TRANSFORMATION AND PROLIFERATION THROUGH DIRECT TRANSCRIPTIONAL REPRESSION OF P21

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**Introduction:**

Gastric cancer is one of the most common malignancies worldwide. A multitude of factors contribute to the progression of gastric cancer, including activation of oncopgenes and inactivation of tumor suppressors. To find the key molecules and their mutual relations in gastric carcinogenesis is of great significance for the diagnosis and treatment of gastric cancer. The homeobox (Hox) and HoxC10 genes encode transcription factors and usually regulate the expression of target genes at transcription level. Disregulation of Hox genes will cause the abnormality in individual development and tissue formation, and may also lead to malignant transformation. Our group have previously screened by gastric cancer microarray and found that the expression of Hox10 was remarkably upregulated in gastric cancer. At the present time, the function and molecular mechanisms of Hox10 in gastric cancer remains poorly understood.

**Aims & Methods:**

To investigate the expression of Hox10 in gastric cancer, tissue samples from two clinical cohorts were used. We analyzed Hox10 expression in gastric cancer tissues and the corresponding adjacent non-tumor tissues, as well as its correlation with clinical pathological parameters. In addition, we also verified the results by utilizing bioinformatics analysis. We studied the effects of Hox10 on gastric cancer cell cycle control and proliferation through combination of in vitro cell function tests and in vivo nude mouse model. Then, we screened Hox10 potential downstream targets by using cDNA microarray and verified the results by RT-qPCR. We studied the effects of Hox10 on p21 expression and its downstream cell cycle-related proteins and validated the correlation of Hox10 and p21 expression in vitro and in vivo. By application of dual-luciferase reporter assay and chromatin immunoprecipitation, we explored the role of Hox10 in p21 transcription repression.

**Results:**

Hox10 mRNA expression were significantly higher in fresh frozen gastric cancer tissues than in matching adjacent non-tumor tissues (91.43%, 64/70, P < 0.01). The expression of Hox10 was related to the depth of tumor invasion, lymph node metastasis and tumor stage (P = 0.01). Using tissue microarray (TMA), p10 protein expression was also found upregulated in gastric cancer tissues (91.3%, 137/150, P = 0.01) and was closely correlated with patient survival (HR = 2.8; 95% CI 2.0–7.2). Besides, in TCGA database of gastric cancer, Hox10 was upregulated by 122 times (n = 33, P = 0.01), and in Kaplan-Meier Plotter database of 1,113 cancer patients, high Hox10 expression was associated with poor prognosis of patients with gastric cancer (HR = 1.8; 95% CI 1.5–2.16). Hox10-overexpressing gastric cancer cells showed accelerated G1-S phase transformation and proliferation, whereas Hox10 knockdown-induced cell cycle arrest in G1 phase and repressed cell proliferation. Moreover, overexpression of Hox10 accelerated gastric tumor growth in a mouse xenograft model, while knocking-down of Hox10 inhibited gastric tumor growth. cDNA microarray showed that Hox10 regulates multiple downstream genes including p21, a potent cell cycle regulator. A significantly negative correlation between Hox10 and p21 were detected in gastric cancer cells and tissues. Knocking-down of Hox10 also altered the expression of some p21 downstream cell cycle-related proteins, such as Cyclin D1 and CDK4. Furthermore, we found that Hox10 binds to the p21 promoter directly and could inhibit p21 transcription.

**Conclusion:**

Taken together, our results suggest that Hox10 functions as a tumor promoting gene in gastric cancer and may be an important regulator of cell cycle control through p21 transcription regulation.

**Disclosure of Interest:**

All authors have declared no conflicts of interest.
P1241 RECOVERY OF GASTRIC FUNCTION IN CHRONIC ATROPHIC GASTRITIS BY USING L-CYSTEINE: A 3 YEARS STUDY

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Introduction: The relationship between Helicobacter pylori (H. pylori) eradication and atrophic changes is debated. Although some studies report a partial restoration of gastric parietal cell (PC) density after eradication of H. pylori, it is not clear whether the finding reflects gastric mucosal healing. L-cysteine, reducing acetaldehyde production after food intake, has been proposed for prevention of gastric carcinogenesis in patients with chronic atrophic gastritis (CAG). To assess modifications in gastric function after L-cysteine administration in CAG by means of PG1 and gastrin (G17) serum levels

Aims & Methods: 62 patients (18 men, mean age 47.2 yrs), with histological diagnosis of moderate to severe chronic, atrophic, body gastritis (according to the Paris classification A or B) and PG1 serum levels lower than 25.5 pmol/l and G17 measurement by means of Gastropanel, 22 out of 62 patients had autoimmune gastritis while 40 of them reported previous H.p. infection. All patients, Helicobacter pylori negative at baseline, were treated with L-cysteine (100 mg three times daily), up to now 36 out of 24 reached 36 months-treatment. Serum PGI and G17 were measured at baseline and after 3, 6, 12, 24, 36 months after starting therapy.

Results: The PG1 serum increased level after the starting of L-cysteine administration, as it follows: PG1 mean value at baseline was 8.42 µg/L, but after 3 months therapy was 10.58, after 6 months 11.65, after 12 months 12.19, after 24 months 13.88, and after 36 months was 14.21 (p = 0.0001). The G17 serum level resulted gradually decreased over the 36 months therapy, as it follows: G17 mean value was 51.33 pmol/l at baseline, 43.13 after 3 months therapy, 38.66 after 6 months, 28.34 after 24 months and 26.03 after 36 months (p = 0.0041).

Conclusion: After L-cysteine administration, patients with chronic, atrophic, body gastritis showed long-lasting improvements of physiological gastric function, reflected by a significant increase of PGI levels and a parallel decrease of G17 serum levels over a 36 months follow-up period.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1243 FLYING OFF COURSE WITH A 2WW DIRECT ACCESS TO TEST PILOT: NOTTINGHAM'S EXPERIENCE OF THE SUSPECTED UPPER GASTRO-INTESTINAL CANCER PATHWAY CHANGE WITH GP VETTING AND OGD BOOKING

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Introduction: Timely progress through diagnostic pathways is a leading quality measure for NHS cancer services. A hypothesis of sooner diagnosis being achievable with direct access to hospital tests from primary care is a core part of CRUK ACE program (1), and in the context of UGI cancer pathway, there is known wide variation of direct access (DA) OGD (2). This pilot evaluates the efficacy and utility of DA OGD or clinic (DA OPD) for GP concerns a patient may have OG cancer. Comparison was made with the standard 2WW pathway, where allocation to OGD or OPD first was randomised.

Aims & Methods: Pilot and UG standard 2WW referrals 01/01/16-01/08/16 were identified from Cancer Centre records.

Results: 192 patients were in the pilot pathway, 430 via the standard 2WW. GP concerns were more likely to allocate a patient to DA OGD (52%) compared to 32% having DA OGD allocated by the hospital. Despite under-utilisation of protected slots for DA OGD, time to DA OGD compared to 2WW did not differ (11.0 days [95% CI 10.5,11.2] versus 12.4 days [95% CI 11.0,13.9]). The same was true for OPD, with the time on pathway was not improved in the pilot group at 16.2 days [95% CI 4.9,28.6] compared to 17.9 days [95% CI 16.9,18.9]. The subgroup of patients allocated in the pilot to DA OGD did have a quicker exit from the pathway, at 12.4 days [95% CI 6.5,18.3] compared to 14.8 days [95% CI 12.9,16.6] on the DDT OGD group. The pilot overall detected 8 cancers (4.2%); the standard 2WW path detected 55 (12.8%). OG cancers were in 4 of the DA OGD (4%) and 14 of the DDT OGD (10.2%). A further 10 non-OG cancers were detected in the DDT group after clinicians requested further investigations to determine the cause of their symptoms. These patients allocated to OPD first by either GP or hospital were as likely to have cancer as those having OG, with 4.3% of those in the pilot having cancer detected this way, but none OG cancer, and 10.3% found to have cancers in the standard 2WW group following investigation directed after clinic visit. Of these 65% were cancers other than OG cancers and would not be detected on OGD alone.

Conclusion: OGD as a sole investigation for symptoms has its utility in excluding or detecting OG cancer. A high proportion of cancers detected via 2WW criteria were found not to be OG cancer. A system whereby patients with potential OG pathways are outside of OG tract and require other tests to diagnose them. In this pilot no additional utility of opening direct access OGD for GP concerned a patient may have an OG cancer was not demonstrated unless exclusion of OG cancer is viewed as the major purpose of the pathway. Our data demonstrates that this view would be detrimental and lead to missed opportunity to detect other cancers that cause symptoms overlapping with those often ascribed to OG tumours.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1244 WHAT IS THE YIELD OF ROUTINE D2 BIOPSIES IN THOSE PRESENTING WITH WEIGHT LOSS AT GASTROSCOPY?

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Introduction: Coeliac disease is a common cause of malabsorption in Western countries. The gold standard method of diagnosing coeliac disease is by way of duodenal biopsy. Weight loss is a symptom of malabsorption. Patients referred for upper gastrointestinal endoscopy with symptoms of a weight loss commonly undergo duodenal biopsy to assess for presence of coeliac disease. We hypothesise that those patients with weight loss and who routinely have duodenal biopsies very rarely have coeliac disease unless there are other pointers towards malabsorption.

Aims & Methods: A single-centre, retrospective analysis of consecutive patients undergoing upper gastrointestinal endoscopy for the sole indication of weight loss was undertaken within a large associate teaching hospital within North London from 2005–2016. Of these patients, we reviewed those that had duodenal (D2) biopsies and the results. If they proved abnormal, we looked back for additional markers of malabsorption, clinically and biochemically.

Results: 142 consecutive patients, 65 were Male, 77 were female, underwent OGD for weight loss. Out of this cohort, 62% (n = 88) had a duodenal biopsy. 89% (n = 78) of these had a normal biopsy. 11% (n = 10) had an abnormal biopsy,
P1245 FUNDING DISPARITIES IN DIGESTIVE CANCER RESEARCH IN THE UNITED STATES
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Introduction: In 2015, the five most common digestive cancers (colorectal, pancreatic, liver, gastric, and esophageal) accounted for 16% of incident cancer cases and 24% of all cancer deaths. It is unclear whether the amount and recent trends of US federal funding for digestive cancer research corresponds to the burden of disease. Aims & Methods: We obtained the total annual funding for cancer (including the five most common digestive cancers) from 2008 to 2015 using a public database of research funded by US federal agencies. We calculated funding in 2015 constant USD using the Consumer Price Index. Cases and deaths estimated by the American Cancer Society were used to calculate funding per death or case for each cancer. For comparison, we also extracted data for the three most common cancers (breast, lung, prostate) and all cancers combined. As funding for research in the United States was boosted by the American Recovery & Reinvestment Act of 2009, we limited our analysis to the years 2010-2015. We then calculated the average percentage of research funding per cancer type. Results: From 2010 to 2015 in the US, federal research funding relative to the number of cases and deaths increased for digestive cancers but decreased for non-gastrointestinal cancers. Liver cancer funding increased faster than colorectal funding. However, the overall trends were not statistically significant. Conclusion: Digestive cancer outcomes may benefit from increased research funding. For all the patients who had abnormal D2 biopsies, they had other clinical symptoms and conditions that led to biopsy in the first place due to which further biopsies did not add any additional value. We conclude that there is no need to take biopsies of the duodenum on a routine basis for weight loss alone unless there are other signs of malabsorption. This will save time (both from taking the biopsy and sampling in the lab), lower the cost (forces and pot) and improve the safety (potential perforation and bleeding risk) of the procedure.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1246 HELICOBACTER PYLORI ERADICATION MODULATES ABERRANT CPG ISLAND HYPERMETHYLATION IN GASTRIC CARCINOGENESIS
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Introduction: Helicobacter pylori infection induces aberrant DNA methylation in the gastric mucosa. We evaluated the effect of short-term gastritis eradication on promoter CpG island hypermethylation in gastric carcinogenesis. Aims & Methods: H. pylori-positive patients with gastric adenoma or early gastric cancer who underwent endoscopic resection were enrolled. According to H. pylori eradication or non-eradication, the patients were assigned to H. pylori eradication or non-eradication group. H. pylori-negative gastric mucosa from normal participants provided the normal control. CpG island hypermethylation of tumor-related genes (p16, CDH1, and RUNX-3) was evaluated by quantitative MethyLight assay in non-tumorous gastric mucosa. The gene methylation rate and median values of hypermethylation were compared after one year by H. pylori status. Results: In H. pylori-positive patients, hypermethylation of p16 was found in 80% (10/13) of CDH1 in 80.6% (10/13) of RUNX3 in 48.4% (6/13) of patients in the eradication group, while 54.5% (7/13) of patients had hypermethylation higher than normal control (p16, 10%; CDH1, 44%; RUNX-3, 16%) (p < 0.05). In the H. pylori eradication group, methylation rates of p16 and CDH1 decreased in 58.1% and 61.3% of the patients, and the median values of hypermethylation were significantly lower at one year compared with the non-eradication group. However, RUNX-3 hypermethylation did not differ significantly at one year after H. pylori eradication. The non-eradication group hypermethylation did not change after eradication. Conclusion: H. pylori infection was associated with promoter hypermethylation of genes in gastric carcinogenesis, and H. pylori eradication might reverse p16 and CDH1 hypermethylation.

Disclosure of Interest: All authors have declared no conflicts of interest.

TUESDAY, OCTOBER 31, 2017 9:00-17:00
H. PYLORI II - HALL 7

P1247 CURCUMIN DOWNREGULATES INTERLEUKIN (IL)-17 BY INCREASING THE EXPRESSION OF INDOLEAMINE 2,3-DOXOGENASE (IDO) IN HELICOBACTER PYLORI INFECTED HUMAN GASTRIC MUCOSA
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Introduction: IDO promotes the effector T-cells apoptosis by catalyzing the rate-limiting first step in tryptophan (Trp) catabolism. We demonstrated that the high expression of IDO in H. pylori-infected human gastric mucosa attenuates Th1 and Th17 immune response, which is associated with chronic gastritis and promotes the carcinogenesis of the mucosa. Interestingly, the anti-inflammatory properties and the ability of the nutraceutical compound curcumin suggest its use as an anti-H. pylori agent, but mechanisms that underlie its helpful activity are still not clear. Aims & Methods: Five antral biopsies were taken from 22 patients (10 M, median age 47.5 yrs, range 20-74y) who underwent gastrointestinal for dyspeptic symptoms: 1 for urease test (Europascal, Trieste, Italy), 2 for histology (Giems staining for H. pylori), and 2 for organ culture. A total urea breath test was also performed (at least two tests positive and all the three tests negative to be considered as cured and no colonized) for H. pylori infected or colonized but increased for the other digestive cancers during the study period. Funding per death among digestive cancers in 2015 was highest for liver cancer and lowest for esophageal cancer. Funding per death for breast cancer was more than 3-fold that of the other digestive cancers. Liver cancer had the largest relative funding decrease for liver cancer, but increased for the other digestive cancers during the study period. Funding per incident case decreased by 15% for esophageal cancer, 21% for colorectal cancer, 34% for gastric cancer, and 37% for liver cancer; funding increased for pancreatic cancer by 6%. Statistically significant trends were observed for liver (p < 0.05). For all the patients who had abnormal D2 biopsies, they had other clinical symptoms and conditions that led to biopsy in the first place due to which further biopsies did not add any additional value. We conclude that there is no need to take biopsies of the duodenum on a routine basis for weight loss alone unless there are other signs of malabsorption. This will save time (both from taking the biopsy and sampling in the lab), lower the cost (forces and pot) and improve the safety (potential perforation and bleeding risk) of the procedure.

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: In this study, we characterized the salivary microbiota in patients with H. pylori-associated gastritis and the potential changes of salivary microbiota after receiving HP eradication. We enrolled subjects who were scheduled for diagnostic upper GI endoscopy. We examined patients with peptic ulcer or cancer found on endoscopy, who have received prior HP eradication therapy, and who have recent exposure to antibiotics or acid suppressive therapies. Unstimulated saliva samples were obtained from subjects during fasting state prior to endoscopy. During endoscopy, gastric biopsies were obtained for determination of HP statuses by rapid urease test and histology. Another gastric biopsy was obtained for characterization of gastric microbiota. Serial salivary samples were obtained from HP-infected subjects 8-week after completing HP eradication therapy. Bacterial DNA was extracted for 16S rRNA sequencing by using the MiSeq Platform (Illumina). OTU clustering was performed and taxonomy assigned to the Greengene and HOMD database. Alpha and beta diversities were determined. Linear Discriminant Analysis Effect Size (LEfSe) was used to identify differentially expressed bacterial DNA in different groups.

Results: We enrolled 16 subjects with confirmed HP-gastritis and 14 HP-negative subjects. Baseline salivary samples of all subjects were found to have significantly higher bacterial microbiota diversity than corresponding gastric samples. The predominant microbial family identified in the stomach is Helicobacteraceae (55.2%) whereas Helicobacteraceae constitutes only 0.1% of salivary microbiota. In contrast, the predominant families in salivary microbiota are Prevotellaceae (23.9%) and Neisseriaceae (20.3%). When compared to HP-negative subjects, salivary microbiota in HP-positive patients showed a significant increase in the Bacteroidetes and Spirochaetaceae, and a decrease in Flavobacteriaceae families. HP eradication therapy resulted in a significant reduction in the relative abundance of family Flavobacteriaceae in Helicobacteraceae. Conclusion: There was a significant difference in the microbial diversity and compositions between gastric and salivary microbiota in HP-infected subjects, with Helicobacteraceae dominating the gastric microbiota. HP-infected subjects had a distinctive microbiota in the saliva which is reversed by HP eradication therapy. The significance of these microbial alterations in the saliva of HP-infected subjects and its correlation with gastric diseases deserves further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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United European Gastroenterology Journal 5(5S)

P1251 THE INVESTIGATION OF MIR-155, MIR-21, MIR-146A AND MIR-223 EXPRESSIONS IN HELICOBACTER PYLORI POSITIVE AND NEGATIVE INDIVIDUALS

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Introduction: This study was conducted to determine the differential expression patterns of microRNAs, non-coding RNAs that control gene expression mainly through translational repression, in gastric mucosa of Helicobacter pylori (H.pylori) positive patients. Several miRNA have been associated with promoting the inflammatory response initiated by the H. pylori infection, increasing the malignant progression of the gastric epithelium, and enhancing the invasiveness and migratory capacity of cancer cells. Using serum specimens, expression patterns of hsa-miR-155, hsa-miR-21, hsa-miR-146-a and hsa-mir-223 were determined by Real-Time Polymerase Chain Reaction (Real-Time PCR).

Aims & Methods: Patients who underwent upper gastrointestinal endoscopy, in Mersin University Faculty of Medicine, Department of Gastroenterology and diagnosed H. pylori positive and negative were recruited. H. pylori status was assessed by the rapid urease test. Serum specimens of patients, were taken for miRNA isolation. hsa-miR-155, hsa-miR-21, hsa-miR-146-a and hsa-mir-223 expression levels were determined using comparative 2–ΔΔCT analysis by using Real-Time PCR Systems, SDS 2.0.3 software programme. Statistical analysis of miRNAs between H.pylori positive and negative groups were compared with the Mann-Whitney U test. p < 0.05 was considered statistically significant.

The relationship between categorical variables were tested using Pearson’s chi-square test.

Table 1

<table>
<thead>
<tr>
<th>H. pylori positive N = 46</th>
<th>H. pylori negative N = 49</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Median Average Median</td>
<td>p value</td>
</tr>
<tr>
<td>hsa-miR_155 0.990199 2.069536 0.399900 0.749556 0.293534 0.48</td>
<td></td>
</tr>
<tr>
<td>hsa-miR_21 6.929772 19.222485 2.031475 7.640999 18.103347 2.188000 0.97</td>
<td></td>
</tr>
<tr>
<td>hsa-miR_146a 4.730933 8.348377 2.138397 9.337242 28.020320 1.447617 0.28</td>
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</tr>
<tr>
<td>hsa-miR_218 4.412535 5.516948 2.038766 4.669136 8.091922 1.858662 0.85</td>
<td></td>
</tr>
</tbody>
</table>

Results: H. pylori positive (n = 46) and negative (n = 49) were included. H. pylori was not able to effective the hsa-miR-155, hsa-miR-21, hsa-miR-146-a and hsa-mir-223 expressions in serum specimens and nuclear factor–KB (NF-KB) and Transforming growth factor, beta (TGF-beta) pathways. There was no statistically difference between H. pylori positive and negative individuals in the analysis of hsa-miR-155, hsa-miR-21, hsa-miR-146-a and hsa-mir-223 miRNA expressions levels (Table 1). In surveys, there is no statistically difference between in each groups, the level of education, intake of smoking-alcohol, hypertension, diabetes, cardiovascular disease, family history of gastroduodenal disease, type of gastroduodenal disease.

Conclusion: This study may contribute to the literature in terms of preventing pre-cancerous progression in the cases of cancer development from H. pylori infection before the onset of cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

eradication therapy of *H. pylori* increased remarkably from 48.4% in 2012 to 77.7%, while clarithromycin resistance 
using CT or BQT, based on knowledge of patient's previous antimicrobial exposure or allergy to amoxicillin, and patient's wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TPG) containing metronidazole 125 mg + tetracycline 125 mg + bismuth 140 mg). 
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Introduction: Clarithromycin (CLA)-containing quadruple therapy, i.e. concomitant therapy (CT), and bismuth-containing quadruple therapy (BQT) have been suggested as the regimens of choice for eradication of *H. pylori* infection. Both treatments are reported to have an eradication rate higher than 90%. International guidelines recommend that choosing one regimen vs the other should be based on knowledge of patient’s previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TPG) containing metronidazole 125 mg + tetracycline 125 mg + bismuth 140 mg. 

Methods: The primary endpoint of this study was to evaluate the eradication rate in *H. pylori*-infected subjects naïve to treatment in an area of high (*>5%) CLA resistance based on knowledge of patient’s previous antimicrobial exposure or allergy to amoxicillin, and patient’s wish. Secondary endpoint was to assess any difference between CT and BQT in terms of efficacy, safety and compliance. Because in Italy bismuth compounds are not available, BQT was by using the new third-in-one pill (TPG) containing metronidazole 125 mg + tetracycline 125 mg + bismuth 140 mg. 

Results: The number of first-line regimen of VPZ patients was 109, and the EF rate was 62.4% (95%CI 55.8–68.5); the ITT eradication rate was achieved in 97 patients (87%). RPZ patients were 68, and the success rate was 76.5% (95%CI 69.5–83.2). The success rate of *H. pylori* eradication in 2nd line treatment was 84.4% (35/224), and that in patients who received the vonoprazan regimen was 87.5% (21/24).

Conclusion: Vonoprazan is considered to be useful for *H. pylori* eradication instead of a PPI in first line treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1254 ERADICATION OF *H. PYLORI* INFECTION IN PATIENTS NAÏVE TO TREATMENT USING CONCOMITANT THERAPY OR BISMUTH QUADRUPLE THERAPY (THREE-IN-ONE PILL): A REAL-LIFE OBSERVATIONAL STUDY**

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Introduction: Potent acid inhibition with acid inhibitory drugs is crucial to the success of eradication for *Helicobacter pylori* infections. Concomitant therapy (CT) is more effectively inhibiting the binding of potassium ion to H+•K+•ATPase in gastric parietal cells and inhibits H+•K+•ATPase activity at 400-fold more potent than that of losaprazole, proton pump inhibitor (PPI). Therefore, the eradication regimen with vonoprazan has been increasing recently. However, no study has been compared with a PPI-based therapy. Although vonoprazan is mainly metabolized by CYP3A4/5, it is unclear whether its acid inhibitory effect and outcome of *H. pylori* eradication differ among CYP3A4/5 genotypes. Our aim was to clarify the influence of CYP3A4A5 genotypes on outcome of *H. pylori* eradication including vonoprazan in Japanese.

Aims & Methods: We investigated the influence of CYP3A4/5 and CYP2C19 genotypes and susceptibility of antimicrobial agents for outcome of vonoprazan-contained eradication regimen for 7 days in 105 Japanese: (1) with amoxicillin 750 mg and clarithromycin 20 mg twice daily (bid) as the first-line treatment (n = 76); (2) with amoxicillin 750 mg and metronidazole 250 mg bid as the second-line treatment (n = 29). Eradication status was assessed at eight weeks via 13C-urea breath test. CYP3A4*22, CYP3A5*3 and CYP2C19*2/3*5 were genotyped for all patients.

Results: Eradication rate on intention-to-treat analysis was 82.9% (95% confidence interval: 75.5-89.2) in the first-line treatment and 93.1% (90.0-96.1) in the second-line treatment. No significant differences were found as to the incidence of side effects among CYP3A4A5 genotypes.

Conclusion: Eradication rates of vonoprazan-based eradication therapy can be achieved high compared with PPI-based therapy. However, because CYP3A5*3 genotype may be one of determinate for outcome of eradication regimen including vonoprazan, genotype analysis of patients treated with vonoprazan will be required for patient stratification for improving clinical outcome before treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1255 COMPARISON OF HELICOBACTER PYLORI ERADICATION RATES: VONOPRAZAN VS. PROTON PUMP INHIBITOR**


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Introduction: The use of vonoprazan in combination with proton pump inhibitor (PPI) based therapy is one of most popular *H. pylori* eradication in the world. On the other hand, eradication rates have been decreasing because of resistance to the clarithromycin (CAM). It is known that most bacteria are not effective under strong acid secretion. So in order to improve the eradication rate, gastric acid must be reduced more rapidly and strongly. Vonoprazan(VPZ) is a new potassium competitive acid blocker and the usefulness is expected in Japan.

Aims & Methods: Our aim was to investigate the efficacy of the VPZ-based eradication therapy. The subjects were 999 patients who were diagnosed as *H. pylori* infection in our institution from June 2014 to December 2016. The patients were grouped into three: VPZ group and conventional PPI (Lansoprazole or Rabeprazole) group. We evaluated the first-, second-, third-line eradication rate and statistical analysis. Each regimen of VPZ group was first-line eradication (VPZ 20 mg bid + amoxicillin 750 mg bid + CAM 200 mg bid for 7 days), second-line eradication (VPZ 20 mg bid + amoxicillin (AMPC) 750 mg bid + Metronidazole 250 mg bid for 7 days). Each regimen of PPI group was first-line eradication (PPI bid + AMPC 750 mg bid + CAM 200 mg bid for 7 days), second-line eradication (PPI bid + amoxicillin 750 mg bid + Metronidazole 250 mg bid for 7 days). One of the following PPI was used: Lansoprazole (LPZ) 30mg, Rabeprazole (RPZ) 20mg. After several months, eradication status was examined by urea breath test, stool antigen testing and blood antibody test.

Results: The number of first-line regimen of VPZ patients was 109, and the eradication was achieved in 97 patients (87%). RPZ patients were 308, and the eradication was achieved in 116 patients (37.8%). The eradication rate of VPZ was 79.8% (95%CI 72.5-87.0), and the eradication rate of VPZ was statistically higher than RPZ and LPZ (P = 0.006, and = 0.019 respectively).

The number of second-line regimen of VPZ patients was 24, and the eradication was achieved in 19 patients (79%). RPZ patients were 68, and the eradication rate of VPZ was 68 (82.2%), and the eradication was achieved in 60 patients (88.2%) respectively. There were statically no significant differences in second-line regimens. Adverse events...
such as eruption and diarrhea were reported in 6.6% (9/136) of patients in VPZ, in 4.2% (9/214) in LPZ, and in 6.1% (28/456) in LPZ.

Conclusion: The first-line regimen with VPZ was superior to conventional PPI regimen, and was a result not to be inferior in the safety either.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1257 CAN TWO WEEK BISMUTH BASED QUADRUPLE THERAPY FOR RESISTANT H. PYLORI INFECTION STILL BE USED IN THE UK?

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Introduction: Eradication of H. pylori infection cures peptic ulcer disease (PUD); however first treatment strategies are not ideal and many patients require repeated courses of treatment. We, and others, have recently documented that currently, within the UK, less than 30% of patients with with proven PUD, are subsequently documented to have been cured by H. pylori eradication 1,2.

Methods of analysis and inclusion criteria were based on UK guidelines and meta-analyses. Pooled-data analysis aimed to clarify whether probiotics alone may eradicate the side effects and eradication rates. Herein, we performed a systematic review with national and international guidelines as well as meta-analyses suggest that only H. pylori eradication (1).

Results: A total of 41 studies (both randomized clinical trials and open label pilot studies) were selected. In one study patients with peptic ulcers were selected, while in the remaining 9 only dyspeptic patients were recruited. Probiotics eradicated H. pylori in 50 out of 391 cases. The mean eradication rate was 14%, with a 95% CI of 2-25% (p=0.02). Most of studies investigated a probiotic formulation based on a single lactobacilli strain. Lactobacilli eradicated the bacterium in 30 out of 235 patients, with a mean weighted rate of 16% (95% CI 1-31%). Multiclinic interventions were effective in 14 out of 105 patients, with a pooled eradication rate of 14% (95% CI -16-43%). In the comparison probiotics vs placebo, we found an OR = 9.65 in favor of probiotics, with a 95% CI of 1.97-47.36 (p = 0.005). Finally, probiotics induced a mean reduction in optimal values of 8.6% (95% 5.88-11.34, p < 0.00001). No study provided data about adverse events.

Conclusion: Probiotics alone show a minimal effect on the eradication of H. pylori, thus suggesting a presumable direct effect. However, they cannot be indicated as a therapeutic regimen for the low eradication rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
3. Aims & Methods: Methods of analysis and inclusion criteria were based on UEG recommendations. Relevant publications were identified by a research in PubMed, MEDLINE, Science Direct and EMBASE. The end-point was to estimate the mean eradication rate and variations of delta value at urea breath test across all studies and, overall, with a pooled data analysis. The data have been weighted ad proportions, percentages, and 95% confidence intervals (CI) were calculated. For continuous variables, we calculated the weighted mean difference. Odd ratios (OR) were calculated, where available, based on the Mantel-Haenszel method. Data were entered into the RevMan 5.3 software. Random effects studies (both random effects and open label pilot trials) were selected. In one study patients with peptic ulcers were selected, while in the remaining 9 only dyspeptic patients were recruited. Probiotics eradicated H. pylori in 50 out of 391 cases. The mean eradication rate was 14%, with a 95% CI of 2-25% (p=0.02). Most of studies investigated a probiotic formulation based on a single lactobacilli strain. Lactobacilli eradicated the bacterium in 30 out of 235 patients, with a mean weighted rate of 16% (95% CI 1-31%). Multiclinic interventions were effective in 14 out of 105 patients, with a pooled eradication rate of 14% (95% CI -16-43%). In the comparison probiotics vs placebo, we found an OR = 9.65 in favor of probiotics, with a 95% CI of 1.97-47.36 (p = 0.005). Finally, probiotics induced a mean reduction in optimal values of 8.6% (95% 5.88-11.34, p < 0.00001). No study provided data about adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Despite several evidences in literature have demonstrated a role for probiotics as adjunctive treatment for Helicobacter pylori (H. pylori) eradication, national and international guidelines as well as meta-analyses suggest that only co-administration of probiotics may have a beneficial effect on the prevention of side effects and eradication rates. Herein, we performed a systematic review with pooled-data analysis aimed to clarify whether probiotics alone may eradicate the bacterium.
**P1260** COMPARISON OF CLARITHROMYCIN- AND LEVOFLOXACIN-CONTAINING TRIPLE THERAPIES FOR FIRST-LINE *HELCOBACTER PYLORI* ERADICATION IN IRAN

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**Introduction:** Among the Maastricht IV consensus report, Clarithromycin-containing triple therapy can be considered as a suitable option for first-line *Helicobacter pylori* (H. pylori) eradication in areas with less than 20% resistance rates to Clarithromycin. On the other hand, resistance to Clarithromycin is increasing in Iran, influencing the efficacy of standard triple therapy in this country. Therefore, regimens containing other antibiotics have to be considered in Iran.

**Aims & Methods:** One hundred and forty patients with peptic ulcer disease and non-erosive gastritis were randomly divided into two groups to receive either 10-day standard triple therapy (Pantoprazole 40 mg, Amoxicillin 1 gr and Clarithromycin 500 mg, all given twice daily) or 10-day Levofloxacin-containing triple therapy (Pantoprazole 40 mg BD, Amoxicillin 1000 mg BD and Levofloxacin 500 mg daily). Eight weeks after the treatment, *H. pylori* eradication was assessed by αC- urea breath test.

**Results:** One hundred and thirty-three patients completed the study. According to intention to treat analysis, *H. pylori* eradication rates were 75.7% (95% confidence interval (CI): 65.7%-85.7%) and 58.5% (95% CI = 47.1%-70%) in standard and Levofloxacin-containing therapies, respectively. Also, per-protocol eradication rates were 83% (95% CI: 74%-92%) and 61% (95% CI = 49% -73%), respectively. The rates of severe adverse effects of therapy were 7.1% and 2.9% in the mentioned groups, respectively.

**Conclusion:** Both Clarithromycin-containing triple therapy and Levofloxacin-containing triple regimen do not seem to be suitable options for first-line *H. pylori* eradication in Iran. We suggest using Clarithromycin in quadruple regimens such as hybrid or concomitant therapies and reserve Levofloxacin to be used in second-line eradication regimens, as it is recommended by Maastricht V Consensus Report.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**TUESDAY, OCTOBER 31, 2017:09:00:17:00**

**SMALL INTESTINAL II - HALL 7_**

**P1261** EFFICACY AND TOLERABILITY OF REBAMIPIDE IN TRIPLE THERAPY FOR ERADICATION OF *HELCOBACTER PYLORI*: A RANDOMIZED CLINICAL TRIAL

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**Introduction:** Rebamipide is an orally prostaglandin E2 and I2 synthesis inhibitor. A latest clinical trial showed that the adhesion of *H. pylori* to stomach wall was reduced by rebamipide. This could improve eradication rates by increasing the adhesion of *H. pylori* to antimicrobial agents.

**Aims & Methods:** We aimed to determine eradication rate, the effectiveness and advantage of rebamipide in triple eradication therapy of *H. pylori* infection. Subjects comprised patients undergoing eradication therapy for *H. pylori* infection in our clinics. Patients with a history of eradication therapy, gastrectomy, or allergy to medications in triple therapy were excluded. Written informed consent was obtained for each patient. This trial was performed as a randomised open-label study. The permission of ethical institutional review board was obtained. All patients were tested on *H. pylori* infection. The number of cases was 160 (80 cases in each group). Each patient was randomly enrolled for rebamipide therapy group (RBD) (esomeprazol 40 mg, amoxicillin 1000 mg, clarithromycin 300 mg, rebamipide 80 mg a day for 14 days) or standard triple therapy group (STD) (esomeprazol 40 mg, amoxicillin 1000 mg, clarithromycin 500 mg, twice a day for 14 days). Before starting therapy, we checked the background characteristics of each patient (age; gender; weight; height; drinking habit; smoking habit; use of probiotics, bismuth; PPI; and endoscopic findings). After the therapy, we asked physicians and patients about medication compliance and side effects. The primary endpoint was the eradication rate. The secondary endpoints were the rates of side effects.

**Results:** For RBD therapy group and STD therapy group, the eradication rates were 94.0% (95% confidence interval, 85%-100%) and 82% (95% confidence interval, 74%-95%) respectively, and the rates of side effects were 8.5% (95% confidence interval, 7.0%-26.5%) and 29% (95% confidence interval, 17.5%-41.0%), respectively. In each group, statistical analysis revealed significant differences in eradication rate was seen. The RBD group revealed trends of high eradication rates and low rates of side effects.

**Conclusion:** The findings suggest that rebamipide is effective in eradication of *H. pylori* infection, significantly improving eradication rate in triple therapy. The advantage of rebamipide has efficacy and good tolerability.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**Introduction:** Intestinal graft-versus-host disease (GVHD) represents one of the most serious complications of allogeneic stem cell transplantation (allo-SCT). Almost 10%-40% of patients who undergo allo-SCT develop significant clinical acute graft-versus-host disease (GVHD) [1]. Endoscopic and histological proofs are required because of the number of differential diagnoses manifesting as diarrhea. Previous studies reported that endoscopic features, such as atrophied terminal ileum, were reliable. However, these previous studies did not address details of the random sequence, and were performed in a single centre.

**Aims & Methods:** The present study investigated the incidence of the characteristic features, particularly microvilli atrophy of the terminal ileum, of colonscopy, and inter-observer agreement of the finding among experienced endoscopists in multiple centres. Concurrent patients who underwent allo-SCT between May 2008 and September 2015. Fifty-four patients underwent colonoscopy after allo-SCT as intestinal acute GVHD was suspected. We recorded the colonscopic imaging. Subsequently, they were checked by three observers, from different institutions, to determine whether microvilli atrophy in the terminal ileum is present. Demographic information, disease, symptoms, and histological finding were obtained from the patients’ medical records retrospectively. All study participants provided informed consent. The local ethics review committee granted ethical approval (approval 1004/613), and was registered in the University Hospital Medical Network Clinical Trials Registry (UMIN-CTR) as number UMIN 000025390.

**Results:** Definitive pathological and non-pathological GVHD were found in 22 patients, and 32 patients, respectively. In the analysis of all 54 lesions, for three observer (A, B, and C), sensitivity of the microvilli atrophy in the terminal ileum was 86.4%, 77.3%, and 79.2%, whereas specificity of the appearance were 62.5%, 62.5%, and 86.2%. In addition, the positive predictive value of the appearance was 61.3%, 58.6%, and 82.6%, and negative predictive value (NPV) was 87.2%, 87.2%, and 83.9%, respectively. The kappa coefficient of the inter-rater reliability was 0.85, 0.63, and 0.63 in observers AB, AC, and BC.

**Conclusion:** Microvilli atrophy in the terminal ileum is an effective colonoscopic finding for real-time predictive histological diagnosis of acute post-transplant *Helicobacter pylori*-induced GVHD. We achieved substantial inter-observer agreement for the analysis of microvilli atrophy in the terminal ileum and excellent agreement for predictive histological diagnosis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
E. Yasutomi
P1263 INCREASED SUSCEPTIBILITY TO ENTEROPATHOGENIC MUCOSITIS. Aims & Methods: In this study, we aimed to prove the protective effect of EGCG in murine chemotherapy-induced mucositis model. Twenty-four 8-wk-old male C57BL/6 mice were randomized to 4 groups: control, EGCG, 5-Fluorouracil (5-FU), EGCG plus 5-FU. Mucositis was induced by intraperitoneal injection of 5-FU (400 mg/kg). EGCG (50 mg/kg) was administered orally for 5 days from the day before administration of 5-FU. After 6 days of 5-FU injection, the mice were sacrificed, and intestinal tissue was obtained. KBC count was performed with whole blood from Inferior vena cava of mice. The end points were villus height, villus/crypt ratio, histologic characteristics, and mRNA expression of tumor necrosis factor (TNF-α), and interleukin (IL)-6.
Results: In 5-FU group, neutropenia was confirmed by laboratory test (5-FU, 0.650 K/L; Control, 5.317 K/L), indicated significant 5-FU effect. Histologic findings showed that crypt dilatation, villus stunting, and villus atrophy were reduced in EGCG plus 5-FU group than in 5-FU group (Figure 1). Quantitative analysis of TNF-α and IL-6 expression in ileum, and villus/crypt ratio (EGCG plus 5-FU, 3.28; 5-FU, 2.31) in EGCG plus 5-FU group, compared with 5-FU treated group, were significantly higher. mRNA expression of TNF-α was significantly lower in EGCG plus 5-FU group compared with 5-FU group (P < 0.05)(Figure 2). Figure 1. Effects of EGCG administration on intestinal inflammation caused by an antitumor agent. Conclusion: EGCG reduced the severity of 5-FU induced intestinal mucositis, suggesting a possibility for novel treatment of chemotherapy-induced bacterial infection. All authors have declared no conflicts of interest.

P1264 EPICALLOCTECHIN-3-GALLATE FROM GREEN TEA AMELIORATE 5-FLUOROURACIL-INDUCED GASTROINTESTINAL MUCOSAL INJURIES. Aims & Methods: To investigate whether LAZ can influence the steady-state intestinal environment, C57BL/6J mice were divided into two groups, and 8 mg/kg-day of lansoprazole (LAZ group) or saline (control group) were administrated intraperitoneally for two weeks. The ileal contents and feces were collected before and after LAZ administration. Genomic DNA of the gut microflora was analyzed by 16s ribosomal RNA (16s rRNA) gene sequencing, and the metabolites were analyzed by a CE-TOFMS platform. To examine the changes of immune cell distribution by LAZ, hematopoietic cells in the lamina propria were analyzed by flow cytometry. The changes of gene expressions of the ileum were monitored by comprehensive analysis of microarray. Finally, mice were orally inoculated with C. rodentium after LAZ administration, and the establishment of enteritis was evaluated by body weight loss, histology and inflammatory cytokine expressions examined by real-time PCR. Results: At steady-state, no prominent change of metabolites and gut microflora were observed in the feces of LAZ group. On the other hand, the concentrations of short chain fatty acids, such as butyrate and propionate, were decreased in the ileum of LAZ group. The result of 16s rRNA analysis also showed that the composition of ileal microflora were different between LAZ and control group. However, it did not show the change of immune cell distribution in the intestine. The gene expression levels in the ileum were not altered either. Interestingly, the ileal microflora of LAZ group became similar to that of the feces. As mice have a habit of coprophagia, it was assumed that perorally invaded bacteria could survive and pass through the stomach due to suppression of gastric acid by LAZ. Accordingly, in the LAZ group, infectious inflammation was established by less numbers of C. rodentium inoculation, indicating that PPIs could raise the susceptibility to peroral enteropathogenic bacterial infection. Conclusion: Our data showed that administration of PPIs could alter the intestinal environment such as microflora and luminal metabolites. However, neither the gene expressions nor distribution of immune cells in the intestinal tissue were affected. It was assumed that the increased risk of peroral enteropathogenic bacterial infection was not because of the immunomodulatory modification by PPIs, but it was mainly because of the increased number of pathogenic bacteria passing through the stomach. All authors have declared no conflicts of interest.

P1265 EXPRESSION OF AMINO ACID TRANSPORTERS IN AN ANTITUMOR AGENT-INDUCED GASTROINTESTINAL MUCOSAL INJURIES. Aims & Methods: We aimed to clarify the pathophysiological role of an amino acid transporter in gastrointestinal tract inflammation caused by an antitumor agent in this study. The antitumor agent fluorouracil (5-FU) was orally administered to mice. The severity of mucositis was assessed based on the length, villus height, mucus production, cell infiltration, and immune response of the intestinal tract. We measured the mRNA expressions of LATs in the tissues of the small intestines. In addition, we analyzed the protein expressions among the small intestines using anti-LAT antibodies. Results: After the administration of 5-FU, the body weight, food intake, water consumption, and fecal volume decreased; thus, a systemic influence was observed. The length and villus height of the intestinal tract decreased because of the administration of 5-FU, and mucosal damage with histological change was observed. The number of PAS-positive cells decreased in the small intestinal mucosa, and it was assumed that the defensive function of the epithelial cells had decreased. In addition, an increase in the mRNA expression of IL-1β, IL-6, and TNF-α in the Peyer’s patch along with an increase in the cell infiltration after the administration of 5-FU significantly enhanced the immune response associated with the inflammatory cytokine production. Furthermore, on investigating the mRNA and protein expressions of LAT1 and LAT2 in the tissues of the small intestines, we observed that LAT1 expression significantly increased and LAT2 expression decreased after the administration of 5-FU. Conclusion: It was considered that the uptake capacity of amino acids, such as Gly, Ala, Ser, Thr, Cys, Asn, and Gin, that transported through LAT may be decreased in case of small intestinal mucosal injuries. On the other hand, LAT1 expression associated with the production of inflammatory cytokines suggested that LAT1 is a gastrointestinal inflammatory marker. All authors have declared no conflicts of interest.
P1266 A MUCOUS DEPENDENT MECHANISM OF ACETYL SALICYLIC ACID-INDUCED SMALL INTESTINAL MUCOSAL INJURY IN RATS

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Introduction: Acetyl salicylic acid (ASA) has been used for the secondary prevention of cardiovascular diseases. Especially, the enteric coated ASA is widely used to prevent ASA-induced gastric mucosal injury. Recent technology such as video capsule endoscopy and balloon endoscopy enabled us to look inside the small intestine in more detail. Consequently, not a few cases of ASA-induced small intestinal mucosal injuries have been reported. However, the effective prophylaxis and treatment is not clear yet. Previously, we reported direct detrimental effect of ASA on small intestinal epithelial cells using an in vitro model [1]. However, there are thick mucus layer between intestinal lumen and epithelial cells. The mucus has been reported to prevent foreign objects such as bacteria, medicine and food from epithelial cells.

Aims & Methods: This study was conducted to clarify the role of mucus on ASA-induced small intestinal mucosal injury using a rat model. Male Sprague-Dawley rats, 9 weeks old was used. These rats were divided into four groups; group 1: sham (carboxy methyl cellulose: CMC alone), group 2: polyorbate-80 (P80) alone, group 3: ASA alone, and group 4: P80 plus ASA. CMC and/or P80 or 200 mg/kg ASA was injected into the proximal duodenum of rats. P80, an emulsifier, which has been reported to reduce mucous thickness [2], was administered via drinking water for 2 weeks before ASA treatment. Indeed, P80 also reduced the thickness of mucous layer in our analyses. One hour after ASA treatment, 1% Evans blue was injected into a vein of rats to visualize small intestinal lesions. Ninety minutes after ASA treatment, the entire small intestine was removed for histological examination. To further investigate the importance of mucus, rebamipide (Reb, 300 mg/kg) or saline were orally administered for 1 week prior to ASA treatment. Reb is a gastric muco-protective drug widely used for the treatment of gastric ulcer, and increases mucous secretion by stimulating mucus secreting cells.

Results: Evans blue method suggested that high-dose ASA (200 mg/kg) induced severe mucosal lesions, which was further confirmed by the histological examination. Although lower doses of ASA (50 and 100 mg/kg) did not cause mucosal damage, P80 significantly reduced Evans blue exudate and severe mucosal lesions in jejenum at these concentrations, suggesting the pivotal role of mucus in these lesions. Moreover, the sodium butyrate administered Reb significantly suppressed reducing small intestinal mucus and the exacerbation of ASA-induced mucosal lesions by P80, indicating that mucus is inevitable in the protection of ASA-induced small intestinal mucosal injury.

Conclusion: Prevention increasing therapy might be a useful for the prevention of ASA-induced small intestinal mucosal injury.

Y. Itoh: Encouragement and research support from Otsuka Pharmaceutical Co. All other authors have declared no conflicts of interest.

References
P1269 THE RELATION OF CHEMOKINE RECEPTOR CXCR3 AND GUT-HOMING MARKERS ON SMALL INTESTINAL LAMINA PROPRIA T-LYMPHOCYTES IN CROHN'S DISEASE PATIENTS
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Introduction: Crohn's disease has been thought to be caused by abnormal immune responses affecting many parts of digestive tract in which Th1 cells and Th2 cells play a role. The recruitment of Th1 cells is regulated by interaction of their expression of chemokine receptor CXCR3 and its ligands. There have been many IBD murine models showing the increase of CXCR3 expression and its roles on the disease promotion. However, there are limited evidences in the roles of CXCR3 in human IBD. In fact, a small study in large bowel in a cohort of 10 Crohn's disease patients showed lower expression of CXCR3 on T lymphocytes, compared to colon cancer patients. In terms of inhibition of T-lymphocyte migration into intestine in IBD patients, anti a4b7 (Vedolizumab) therapy is currently shown to be effective.

Aims & Methods: Our study aimed to assess expression of CXCR3 by different subsets of small intestinal lamina propria T-cells and its association with a4 and b7 in the CD patients. Total of 56 duodenal biopsies were obtained from CD (n = 15), functional dyspepsia (FD)/irritable bowel syndrome (IBS) (n = 24) or iron deficiency patients (n = 17) with ethical approval. Lamina propria (LP) cells were isolated from biopsies using EDTA, collagenase and gradient density centrifugation with Ficoll. Expression of CXCR3, a4, and b7 on isolated T-lymphocytes was examined by flow cytometry. Statistical significance was assessed using T-test or Spearman correlation.

Results: The expression of CXCR3 on CD4 lymphocytes was significantly lower (45.8%) compared to 61.6% in control group (p<0.05). The expression of CXCR3 on CD8 lymphocytes was higher than CD4 lymphocytes, it was not different between CD and other group (75.8% in CD patients vs 82.2% in controls). Similar observation was obtained on the double positive CD4 and CD8 lymphocytes. Interestingly, only expression of CXCR3 on CD4 lymphocytes positively correlated with expression of the gut-homing integrins, a4 and b7.

Conclusion: These observations showed significant expression of CXCR3 across different CD patients, with consistently higher expression seen in CD8 lymphocytes compared to CD4 lymphocytes. An unexpected reduction of CXCR3 expression was seen in small intestinal of CD patients, which associated with gut-homing integrins. This result showed CXCR3 expression may play a role in migration of CD4 lymphocytes but not CD8 lymphocytes into duodenum in relation with integrins, a4 and b7. However, CXCR3 expression on CD4 lymphocytes in CD patients' small intestine may have protective role. This propose further study to clarify.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1270 METHODOLOGICAL QUALITY OF CLINICAL PRACTICE GUIDELINES ON PROBIOTICS IN ACUTE GASTROENTERITIS IN CHILDREN: A SYSTEMATIC APPRAISAL OF GUIDELINES FOR RESEARCH & EVALUATION II INSTRUMENT (AGREEII)
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Introduction: Acute Gastroenteritis (AGE) is one of the diseases that most frequently affects paediatric population. Successful treatment in AGE has been made possible by the use of probiotics in the prevention and treatment of its complications; every day, we find more publications on the use of adjuvants to decrease its duration. Probiotics have gained greater importance because some of them report benefits. We look for Clinical Practice Guidelines (CPG) that recommend their use in AGE in children. The AGREE II instrument was developed to address the issue of variability in guideline quality, so it is a tool that assesses the methodological rigour and transparency in which a guideline is developed.

Aims & Methods: To assess the methodological quality of clinical practice guidelines (CPG) on the use of probiotics in infant diarrhoea. The search was conducted in December 2016, of CPG based on the evidence, the last 10 years and as contaminants in drinking water, has become a public health problem. For this we used an in vitro system: the SHIME® (Simulator of the Human Microbial

References
Intestinal Ecosystem). The SHIME® consists of series of fermenters, mimicking the human gastrointestinal tract from the stomach to the colon. The SHIME® was exposed to a daily dose of 3.5 mg of CPF, combined with 10 g of inulin for 30 days. The samples were collected at day 0 (baseline, without CPF or inulin), D15 and D30 to determine the profile and microbial metabolism.

Results: Contrary to the previous results with CPF alone showing dysbiosis, prebiotic supplementation seems to reestablish CPF-induced imbalance, particularly in the potentially pathogenic microflora (Staphylococcus), which an increase in short term (D15: p < 0.001), and a recovery at D30. (difference vs D0: p = 0.0002). Inulin also beneficially influences the fermentation profile, with higher production of volatile fatty acids (VFA), especially propionic acid and butyric acid. Prebiotic inulin at D15 and D30 improved the metabolic defects of prolonged Exposure to chlorpyrifos from Gestation to Young Adult Stage in Offspring Rats.

**P1274** IS THERE AN ASSOCIATION BETWEEN ENTERIC METHANE (CH4) PRODUCTION AND SYMPTOMS IN PATIENTS WITH UNEXPLAINED GI SYMPTOMS?

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Introduction: Alterations to the gut microbiota and bacterial translocation have been implicated as relevant factors for the progression of chronic liver disease (CLD). While the sequence of events leading to translocation remains unclear, deficiencies in local host immune defences, increased permeability of the intestinal mucosal barrier and dysbiosis of the gut microbiota are suggested to play a role. Small intestinal bacterial overgrowth (SIBO), in which excessive and/or abnormal type of bacteria is present in the small bowel has been implicated as a potential factor in translocation. However, systematic assessments of the extent of SIBO in CLD remain limited. We therefore aimed to compare the prevalence of small intestinal bacterial overgrowth (SIBO) in patients with chronic liver disease (CLD) and controls.

Aims & Methods: Using the search terms ‘small intestinal bacterial overgrowth (SIBO)’ and ‘chronic liver disease (CLD)’ or ‘small intestinal bacterial overgrowth (SIBO)’ and ‘cirsrhosis’, 19 case-control studies that met inclusion criteria were identified. Data were extracted to calculate prevalence rates and 95% confidence intervals (CI).

Results: The final dataset included 1,000 adult patients with CLD and 488 controls. Nine studies employed glucose breath tests (GBT), four lactulose breath tests (LBT) and one xylose breath test. Five studies utilised culture methods and one quantitative PCR. Across all testing methods, the prevalence of SIBO in patients with CLD was 38.9% (95% CI 36.9–40.9) compared to 9.8% (95% CI 7.5–12.8) in controls. Eighty-four percent of SIBO in CLD was increased as compared to controls (RR = 7.15, 95% CI 4.9–10.4). In patients with cirrhosis the prevalence of SIBO was 40.1% (95% CI 36.6–43.8) compared to 7.3% (95% CI 4.9–10.8) in controls. Nine case-control researchers used a method of detection was limited to breath tests. The prevalence of SIBO in CLD was 35.8% (95% CI 32.6–39.1) compared to 8.0% (95 CI 5.7–11.0) in controls. In contrast, based on culture techniques, the prevalence of SIBO in CLD was 68.3% (95% CI 59.6–76.0) vs 7.94% (95% CI 3.44–12.73) in controls.

Conclusion: Regardless of the diagnostic modality, prevalence of SIBO is significantly increased in patients with CLD when compared to controls. It is notable that culture-based detection leads to a higher prevalence in CLD, suggesting breath tests as a small intestinal bacterial overgrowth (SIBO) in CLD detected, further studies need to explore the role of intestinal dysbiosis for the progression of CLD.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: In humans, enteric methane (CH₄) production is highly variable and related to the gastrointestinal microbiome and diet. Previous work suggests that CH₄ production is more common in patients with ‘constipating’ conditions such as encopresis and diverticulosis. We aimed to explore the link between gastrointestinal symptoms breath CH₄ exhalation in patients with unexplained GI symptoms.

Aims & Methods: Consecutive patients (n = 100) with unexplained GI symptoms underwent a combined H₂/CH₄ breath test after ingestion of 75 g of glucose. H₂ and CH₄ were measured by Breathreacher microlyzer (Quintron, USA). Gastrointestinal symptoms were assessed utilising the Structured Assessment of Gastrointestinal Symptoms Instrument (SAGIS). The association between methane exhalation and symptoms during the 2 weeks prior the test were the evaluated using non parametric test.

Results: 100 consecutive patients (55%), aged 52.±15.7 yrs (mean±SD) were included. Of these, 14 with positive GBT and 19 without SAGIS data were excluded, resulting in 67 data-sets available for analysis. Methane peak and methane baseline values were highly correlated (r=0.96, p < 0.001). Methane peak (and baseline) were inversely correlated with the SAGIS diarrhoea score (−0.35, p < 0.01, Figure 1). Contrary to current opinion, CH₄ exhalation was not associated with constipation (r = 0.1, P > 0.4). In addition, excessive belching and acid eructation were significantly associated with the baseline and peak CH₄ exhalation (r all ≥0.3, p all <0.04).

Conclusion: There is an inverse association between CH₄ exhalation and diarrhoea symptoms. At the same time, CH₄ is associated with bloating and acid eructation. These data suggest that CH₄ or metabolic products from CH₄ producing microbes modulate human gut function.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1275 CELIAC DISEASE AND POSITIVE IGA TISSUE TRANSGLUTAMINASE IN PATIENTS WITH DISTAL RADIUS AND ANKLE FRACTURE: A CASE-CONTROL STUDY

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Introduction: The prevalence of osteoporosis is higher among patients suffering a distal radius fracture than in healthy controls [1]. Celiac disease (CD) is associated with low bone mineral density [2], and overall findings indicate an increased risk of fracture in CD patients [3, 4]. This study is to our knowledge the first case control study investigating whether there is a higher prevalence of CD in adult patients suffering a peripheral fracture (distal radius or ankle) than in healthy age- and sex matched controls.

Aims & Methods: Main objective was to investigate if patients with a recent fracture of the distal radius or ankle have a higher risk of having CD than healthy controls. 400 consecutive patients over the age of 40 with acute distal radius fracture (n=293) or ankle fracture (n=107) were included in a case control study by referral from the orthopedic department at Forde General Hospital, Bergen/Norway. The controls were 197 age- and sex- matched subjects from Sogn and Fjordane County (representative for the National Population Registry), with no previous fracture history. BMD of the hips and spine was measured and history of previous fracture, comorbidities, medication, lifestyle factors, body mass index (BMI) and nutritional factors were registered. Serum analysis to detect serological evidence of gluten intolerance in genetically susceptible patients. Clinical outcome includes serum and intestinal manifestations, including neurologic complications in about 10% of patients. Previous studies confirmed the subclinical changes of abnormalities in regulatory brain system (ANS) activity resulting to impaired gastric myoelectric activity. In CD and disturbances of parasympathetic-sympathetic balance of the ANS activity with sympathetic dominance is observed. Dysfunction of the autonomic nervous system (ANS) is a potential contributor to CD pathogenesis.

Results: Biochemical parameters. Patients with CeD presented with lower average level of oculin (CD) than healthy subjects. Patients with CeD had significantly lower level of oculin (1.41(0–2.9) ng/mL) than healthy subjects (1.68(0.39–4.8) ng/mL) (P = 0.07, the Mann-Whitney test). No significant impact of CeD on the average results of IL-1 beta concentrations was observed (P = 0.44, the Mann-Whitney test). The rest results were not significant. In celiac group the serum concentration of claudin and ocludin was lower (P = 0.018) as well as positive correlation between IL-1beta and LF/HF was demonstrated (r = 0.51, P = 0.032). Statistically significant, positive and strong correlation of IL-1 beta concentration and DP (Dominant Power of EGG) (r = 0.58, P = 0.038) was shown.

Conclusion: ANS activity measured by EGG and HRV seems to be correlated to presence of IL-1beta. In celiac group the serum concentration of claudin and ocludin concentration in serum is negatively associated with the presence of IL-1beta. In patients without neurological symptoms were tested for occludin, claudin, IL-1beta concentrations in serum in neurologically asymptomatic patients with CD and it’s correlation with selected parameters of ANS activity markers (heart rate variability, electrogastrography HRV) and gastric myoelectric activity (EGG).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1277 WIDE HETEROGENEITY AND HIGH MORTALITY IN UNDEFINED AND NON-COELIAC REFRACTORY SPRUE: A RETROSPECTIVE EVALUATION OF 7 CASES

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Introduction: Small bowel villous atrophy (VA) is mainly related to coeliac disease (CD), but that develops in HLA-DQ2/DQ8 positive patients and improves on a gluten-free diet. Other forms of VA unrelated to CD are common variable immune-deficiency, autoimmune enteropathy, small bowel malignancies, medication-related enteropathies, HIV, tropical sprue, and giardiasis [1–3]. However, there are also forms of VA in which CD can be neither confirmed nor excluded and there are forms of VA in which, although CD is excluded, a definitive diagnosis cannot be made. Some years ago, we coined the terms undefined sprue (US) and non-coeliac refractory sprue (NCRS) to define these two
P1279 SYSTEMATIC REVIEW OF THE ECONOMIC BURDEN OF COELIAC DISEASE

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Introduction: The prevalence of diagnosed coeliac disease (CD) has rapidly increased, and developed countries have seen increases in the last 30 years. The economic burden of diagnosing, managing, and monitoring CD can be substantial but is poorly understood. To assess the economic burden of CD, we systematically reviewed current evidence quantifying economic costs and health resource utilization (HRU) for CD in North America and Europe.

Aims & Methods: Searches of Medline, Embase, EconLit, the Cochrane Library, and conference abstracts systematically identified literature published in English during the last 10 years assessing direct and indirect costs, cost-effectiveness and cost-utility. We conducted an economic evaluation using a Cochrane Review.

Results: Of 33 studies meeting criteria for inclusion, most (20) were from Europe, and most (18) reported or modeled costs associated with screening and diagnosis. Cost per positive CD diagnosis of screening patients already undergoing upper gastrointestinal biopsy for other indications, such as anaemia or irritable bowel syndrome, ranged from approximately $1,300 in Canada to more than $44,000 in the Netherlands (costing year not reported). In these populations, screening was judged to be cost-effective with various strategies combining diagnostic modalities, including serology then biopsy, compared to no screening. Strategies using either endoscopy/biopsy or serology alone were not considered cost-effective. Direct annual excess costs to a US payer per diagnosed CD patient were estimated at $US 203 (SUS 2007) to the US $827 (SUS 2013) per year for US$2007 inflation year. There was no difference in specific medications; case 6 (M, 69) is still alive but could be affected by a form of enteropathy due to celiac disease. He is in good clinical condition and has been refusing follow-up. The last patient, case 7 (M, 29) is DQ7-7. Positive He is still alive 11 years after the diagnosis of VA, although complains of diarrhea.

Conclusion: We described 7 patients with VA unrelated to CD or other known enteropathies. Although overall mortality among them is very high (57%) and mainly due to lymphoproliferative disorders, of the 4 DQ2/DQ8 negative patients are alive many years after the diagnosis of VA with no evidence of malignancy. This suggests that these 7 patients are not affected by the same condition. We speculate that DQ2 positive patients who died of lymphoma could be affected by a form of CD which escaped diagnosis get complicated. However, we feel that the DQ2/8 negative patients with long survival are affected by a still unidentified form of VA.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
the severe grade of HS was more frequently observed in GG carriers. It was postulated that this may indicate PNPLA3 G and GG carriers with CD have higher susceptibility to hepatic steatosis, but not to metabolic syndrome. Moreover, patients with GG alleles display a more relevant disease in terms of severity of HS based on US evaluation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1285 PATIENTS WITH SHORT BOWEL SYNDROME STRATIFIED BY BASELINE PARENTERAL SUPPORT: POST-MORTEM ANALYSIS OF THE CLINICAL EFFECT OF TEGUGLUTIDE


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Introduction: Parenteral support (PS) volume needs vary depending on disease severity in patients with intestinal failure associated with short bowel syndrome (SBS-IHF). Patient classification has focused on the diarrhoea that led to resection and the remnant bowel anatomy.

Aims: Methods: Recent, the idea that grading severity of SBS-IHF is based on magnitude of PS volume needs led to this clinical trial data post hoc analysis of patients with SBS-IHF based on their baseline PS volume. STEPS (NCT00798967; EudraCT2008-006193-15) was a 24-week, placebo-controlled study of teduglutide (TED) in patients with intestinal failure associated with short bowel syndrome (SBS-IHF). STEPS (NCT00798967; EudraCT2008-006193-15) was a 24-week, placebo-controlled study of teduglutide (TED) in patients with intestinal failure associated with short bowel syndrome (SBS-IHF).

Results: The predominant diagnosis leading to SBS-IHF in group I (12/28; 43%) and group II (15/41; 37%) was vascular gut complications; in group III (8/16; 50%), Crohn’s disease. Baseline PS volume and TED-induced volume reduction (% change) at Week 24 was highest in Group III (Table). Evaluation of individual patient response showed a close, linear, and significant correlation between absolute PS volume reduction at Week 24 in relation to TED treatment and daily PS volume at baseline (y = -0.387x + 90.03, R² = 0.61; P < 0.0001); no significant correlation was observed in the placebo group (y = 0.06x+220.15, R² = 0.02;

P = 0.36). Adverse events were reported by 93% (Group I), 80% (Group II), and 71% (Group III) of TED patients.

Table: Baseline PS Volume and Percent Change at Week 24

<table>
<thead>
<tr>
<th>PS Volume</th>
<th>TED</th>
<th>PBO</th>
<th>TED</th>
<th>TED</th>
<th>PBO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change at Week 24</td>
<td>n</td>
<td>Mean (SD)</td>
<td>TED</td>
<td>n</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Baseline, mL/day</td>
<td>n</td>
<td>20</td>
<td>916</td>
<td>34 (40)</td>
<td>35 (30)</td>
</tr>
<tr>
<td>%</td>
<td>n</td>
<td>20</td>
<td>-40 (14)</td>
<td>0.50</td>
<td>-0.80</td>
</tr>
<tr>
<td>Citrulline µM</td>
<td>n</td>
<td>20</td>
<td>30.1 (18.9)</td>
<td>2.2 (6.9)</td>
<td>11.8 (0.9)</td>
</tr>
</tbody>
</table>

Conclusion: Higher baseline PS volume in patients with SBS-IHF correlates with greater absolute reduction in PS volume with TED treatment. This research was funded by Shire International GmbH, Zug, Switzerland.

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S.M. Gabe: I have served as a consultant for Shire.

D.L. Seidner: I have served as a consultant for Shire.

H. Lee: I am an employee for Shire.

C. Olivier: I am an employee for Shire.
volume reductions with TED. Plasma citrulline changes with TED may reflect increased enterocyte mass. This research was funded by Shire International GmbH, Zug, Switzerland.

Disclosure of Interest: P.B. Jeppesen: I have served as a consultant and on the speaker bureau for Shire. S.M. Gabe: I have served as a consultant for Shire. D.L. Seidner: I have served as a consultant for Shire. H. Lee: I am an employee for Shire. C. Olivier: I am an employee for Shire.

P1287 LACTULOSE, LACTOSE AND FRUCTOSE INGESTION INDUCES SPECIFIC PATTERNS OF GASTROINTESTINAL SYMPTOMS IN CHINESE SUBJECTS WITH FUNCTIONAL DYSPEPSIA AND IRRITABLE BOWEL SYMPTOMS

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Introduction: Prevalence rates of Functional Dyspepsia (FD) in East Asia are three times higher than Irritable Bowel Syndrome (IBS) rates. Many researchers have suggested that IBS subjects in the region experience their pain and discomfort in the upper abdomen, leading to misdiagnosis as FD.

Aims & Methods: We aimed to compare patterns of gastrointestinal (GI) symptoms in the Chinese population with FD or IBS during provocative hydrogen breath testing (HBT) with lactulose, lactose and fructose. Subjects fulfilling the ROME III classification of FD and IBS, and control subjects with no known gastrointestinal symptoms were recruited. All subjects underwent HBT +/- methane absorption testing (10 ml), lactulose (25 g) and fructose (25 g). Subsequent breath tests were performed after a washout period of at least one week. Breath tests were performed after an overnight fast, with the patient sedentary. Breath samples taken every 15 minutes for 3 h. GI symptoms were recorded during these 3 h and used for telephone follow-up 24 hours later.

Results: A total of 353 subjects completed at least one breath test examination and 313 subjects completed all three breath tests. 16%, 55% and 29% were control, FD and IBS subjects, respectively. All subjects were ethnic Chinese, the mean age was 53 (Range; 18-76) years, and 27% (95% CI; 23–32%) were male. 85% (95% CI; 82–89%) of subjects were hydrogen-producers and 100% methane-producers. Symptoms were induced in a relatively low proportion of healthy controls. Both FD and IBS subjects experienced similar proportions of epigastric pain on consumption of lactulose, lactose and fructose. See Table 1. Subjects with FD experience more belching than subjects with IBS when lactulose (58 vs. 42%, p = 0.011) and lactose (62 vs. 46%, p = 0.014) were ingested, respectively. Subjects with IBS experience significantly more “lower GI” symptoms of abdominal pain and development of loose stools when lactulose was ingested when compared with subjects with FD. In general, subjects with IBS experienced both epigastric pain and abdominal pain when any of the three carbohydrate solutions were ingested. Healthy controls experienced minimal symptoms.

Conclusion: Chinese subjects commonly co-produced hydrogen and methane. Ingestion of poorly absorbed sugars induces symptom patterns in patients with FD in similar proportions. Chinese IBS subjects commonly experienced epigastric and abdominal pain. Reducing poorly absorbed short-chain carbohydrates (FODMAPs) might be efficacious in FD as it is in IBS.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1288 PATIENTS WITH SHORT BOWEL SYNDROME STRATIFIED BY DIAGNOSIS: POST HOC ANALYSIS OF TEDUGLUTIDE ON FLUID COMPOSITE EFFECT

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Introduction: Inflammatory bowel disease (IBD) and mesenteric vascular (Vasc) disease are underlying conditions for intestinal failure associated with short bowel syndrome (SBS-IF). Fluid balance, urine production, and parenteral support (PS) volume are variable among patients with SBS-IF.

Aims & Methods: This is a post hoc analysis of the impact of teduglutide (TED) on fluid composite effect (FCE = sum of urine volume output increase, oral fluid intake reduction, and PS volume reduction) in patients stratified by diagnosis. STEPS (NCT00798967; EudraCT2008-006193-15) was a 24-week, placebo-controlled study of TED 0.05 mg/kg/day in patients with SBS-IF. Three groups were evaluated: SBS-IBD, SBS-Vasc, and Other.

Results: The SBS-IBD group included more patients with stoma (95%; SBS-Vasc, 19%; Other, 41%) and fewer with colon-in-continuity (11%; SBS-Vasc, 78%; Other, 62%). At Week 24 (Table), PS volume reductions were significantly higher in SBS-IBD patients treated with TED vs placebo (P < 0.02) and vs TED patients in the SBS-Vasc (P < 0.04) and Other (P < 0.02) groups. Change in FCE was greater in SBS-IBD patients treated with TED vs placebo (P < 0.02) and vs TED patients in the SBS-Vasc (P < 0.01) and Other (P < 0.05) groups.

Table: Components of Fluid Composite Effect at Baseline and Week 24 and Fluid Composite Effect at Week 24 by Diagnosis

<table>
<thead>
<tr>
<th></th>
<th>SBS-IBD</th>
<th>SBS-Vasc</th>
<th>Other</th>
<th>Change at Week 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral fluid</td>
<td>2268 (1480)</td>
<td>3088 (1156)</td>
<td>1827 (982)</td>
<td>1338 (731)</td>
</tr>
<tr>
<td>Oral fluid intake</td>
<td>2456 (1176)</td>
<td>1521 (512)</td>
<td>1780 (614)</td>
<td>1634 (536)</td>
</tr>
<tr>
<td>Oral fluid output</td>
<td>1160 (160)</td>
<td>1502 (243)</td>
<td>1385 (252)</td>
<td>1389 (327)</td>
</tr>
<tr>
<td>Change at Week 24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TED</td>
<td>302 (640)*</td>
<td>–357 (453)</td>
<td>–513 (539)</td>
<td>–277 (428)</td>
</tr>
<tr>
<td>Placebo</td>
<td>–450 (280)*</td>
<td>–363 (345)</td>
<td>–520 (359)</td>
<td>–240 (52)</td>
</tr>
<tr>
<td>Other</td>
<td>–71 (611)*</td>
<td>–260 (409)</td>
<td>–180 (313)</td>
<td>–254 (470)</td>
</tr>
<tr>
<td>Other PS volume</td>
<td>191 (180)</td>
<td>–138 (239)</td>
<td>52 (286)</td>
<td>31 (243)</td>
</tr>
<tr>
<td>TED</td>
<td>222 (341)*</td>
<td>–128 (466)</td>
<td>–88 (95)</td>
<td>–147 (579)</td>
</tr>
<tr>
<td>Placebo</td>
<td>–593 (444)#</td>
<td>–363 (345)</td>
<td>–588 (95)</td>
<td>–539 (444)</td>
</tr>
<tr>
<td>Other</td>
<td>–147 (579)</td>
<td>–237 (588)</td>
<td>–520 (359)</td>
<td>–254 (470)</td>
</tr>
<tr>
<td>TED</td>
<td>–1780 (761)</td>
<td>–1692 (708)</td>
<td>–1600 (573)</td>
<td>–1692 (708)</td>
</tr>
<tr>
<td>Placebo</td>
<td>–1521 (532)</td>
<td>–1780 (761)</td>
<td>–1634 (536)</td>
<td>–1692 (708)</td>
</tr>
<tr>
<td>Other</td>
<td>–1692 (708)</td>
<td>–1692 (708)</td>
<td>–1600 (573)</td>
<td>–1692 (708)</td>
</tr>
</tbody>
</table>

PS volume reductions were significantly higher in SBS-IBD patients treated with TED vs placebo (P < 0.02) and vs TED patients in the SBS-Vasc (P < 0.01) and Other (P < 0.05) groups.

Conclusion: TED had the largest absolute effect on FCE in the SBS-IBD group, TED effect on FCE was not as major in SBS-Vasc or Other patients at Week 24. This research was funded by Shire International GmbH, Zug, Switzerland.

Disclosure of Interest: P.B. Jeppesen: I have served as a consultant and on the speaker bureau for Shire. S.M. Gabe: I have served as a consultant for Shire. K. Iyer: I have served as a consultant for Shire. U. Pape: I have received grant/research support from and served as a consultant for Shire. D.L. Seidner: I have served as a consultant for Shire. H. Lee: I am an employee for Shire. C. Olivier: I am an employee for Shire.
were evaluated: Group 1 (no colon/stoma present/no colon-in-continuity), Group 2 (≥50% colon/stoma to colon-in-continuity), and Group 3 (other bowel anatomies). Clinical response was defined as ≥20% reduction from baseline in weekly parenteral support (PS) volume at Weeks 20–24. Data presented as mean (SD).

Results: The predominant diagnosis in Group 1 was Crohn’s disease, whereas the predominant diagnosis in Group 2 was vascular complications (Table 1). Group 1 patients required the highest baseline PS volumes compared with Group 2 or Group 3. TED-induced PS volume reduction (change in L/week) took longer to be realised in Group 2 (Week 12, –3.9 [1.2]; Week 24, –2.5 [2.1]) compared with Group 1 (Week 12, –5.5 [3.8]; Week 24, –6.4 [4.5] or Group 3 (Week 12, –2.7 [1.2]; Week 24, –5.1 [3.7]). Response rates were higher with TED versus placebo in all groups, but the difference was significant only in Group 1 (76% vs 19%, P = 0.001; Group 2, 56% vs 40%, P = 0.36; Group 3, 57% vs 29%, P = 0.033). Adverse events were reported by 94%, 72%, and 86% of Group 1, Group 2, and Group 3 patients receiving TED, respectively.

Table: Baseline Patient Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Baseline Patient Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1: No Colon, Stoma Present, No Colon-in-Continuity</td>
<td>Group 2: ≥50% Colon, No Stoma, Colon-in-Continuity</td>
</tr>
<tr>
<td>Mean (SD) BMI, kg/m²</td>
<td>28.7 (13.9)</td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td>17 (18)</td>
</tr>
<tr>
<td>Age, year</td>
<td>55.9 (14.4)</td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td>105 (11)</td>
</tr>
<tr>
<td>Men</td>
<td>7.1 (6.7)</td>
</tr>
<tr>
<td>Female</td>
<td>8.0 (7.2)</td>
</tr>
<tr>
<td>Total complications</td>
<td>16.5 (13.2)</td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>15.3 (12.4)</td>
</tr>
<tr>
<td>Injury</td>
<td>5.5 (3.7)</td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>14.5 (11.7)</td>
</tr>
<tr>
<td>Other</td>
<td>1.0 (1.0)</td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>1.0 (1.0)</td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>1.0 (1.0)</td>
</tr>
<tr>
<td>Colon-in-continuity, n (%)</td>
<td>1.0 (1.0)</td>
</tr>
</tbody>
</table>

Conclusion: Superficial SNADETs demonstrate gene expression characteristics with a strong resemblance to colorectal adenomas. Gene expression pattern of these lesions has also demonstrated the significant role of APC down-regulation in the pathogenesis of SNADETs, suggesting that an adenoma-carcinoma sequence similar to colorectal adenomas may be seen in SNADETs. Further analysis is needed to identify markers which may play a key role in the carcinogenesis of these neoplasms is required.

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: We established a new imaging technique, 3D computed tomographic enteroclysis (CT enteroclysis), to explore the small bowel (1). In our hospital, this examination is performed routinely to detect gross lesions in the small intestine. In our study, we analysed the clinical performance of 3D CT enteroclysis to evaluate its safety, feasibility, and usefulness for small intestinal neoplasms.

Aims & Methods: Data on 3D CT enteroclysis performed in our hospital from January 2010 to March 2017 were reviewed. In 3D CT enteroclysis, the small bowel was inflated with air using a nasoduodenal tube, CT images were taken, and then 3D overviews, virtual endoscopy views, and virtual dissection views were generated using a virtual colonoscopy system. Total volume of injected air, intraintestinal pressure, and length of the depicted small bowel were recorded. The images of small intestinal neoplasms were collected and compared with the whole small bowel.

Results: One-hundred thirty 3D CT enteroclysis were performed for 93 males and 46 females. The mean age was 49.2 ± 17.8 years. Examinations were performed for definite/suspected Crohn’s disease in 55, intestinal obstruction in 34, and other gastrointestinal neoplasms in 25. The mean total volume of injected air was 1872 ± 526 mL, the mean maximum intraintestinal pressure was 2.7 ± 0.8 kPa, the mean length of the depicted small bowel was 307 ± 102 cm, and whole small bowel tracing was achieved in 71.4% of these 77 examinations. Twenty small intestinal neoplasms were depicted in 4 cases of submucosal tumours, 3 cases of gastrointestinal stromal tumours (GISTs), 3 cases of neuroendocrine tumours, 2 cases of cancers, 2 cases of lipomas, 2 cases of malignant lymphomas, 3 cases of metastatic cancer, 1 case of Peutz-Jeghers syndrome, 1 case of Peutz-Jeghers type polyposis, and 1 case of pyogenic liver abscess. Surgery was performed for 12 cases. The total length of the small intestine and estimated location of the lesion by 3D CT enteroclysis were comparable to intraoperative findings in 9 cases (no measurement in 3 cases). In a case of multiple GISTs, some of the lesions of 6–8 mm in size were missed and no lesion smaller than 4 mm was depicted.

Conclusion: 3D CT enteroclysis can be performed safely, and the whole small bowel could be examined in most cases. 3D CT enteroclysis can depict stenosis and lesions bigger than 1 cm, measure the length of the small intestine, measure the mechanism behind the pathogenesis and carcinogenesis of these neoplasms is still poorly understood. However, with the overall increase of small bowel cancer in recent years, there is an increasing need to clarify the morphology of SNADETs. This study was conducted with the objective of identifying genetic markers and pathways specific to superficial SNADETs through gene-expression profiling.
the size and locate the position of the lesions, and present objective information for planning of small intestinal surgery. Therefore, 3D CT enterolysis is a powerful new tool for diagnosis, pre-surgical evaluation, and follow-up for small intestinal neoplasms.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: These results suggest that a daily supplementation of vitamin D3 is able to improve insulin sensitivity, and to prevent diabetes. Vitamin D3, also reduced hepatic steatosis and prevent cardiac alterations such as the increase of systolic blood pressure and left ventricular hypertrophy in WD rats.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1292 CHANGE OF VITAMIN D AND BONE MINERAL DENSITY AFTER BARIATRIC SURGERY IN CHINESE POPULATION
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Introduction: Bariatric surgery is an effective treatment for morbid obesity. In Taiwan, the numbers of patients who received bariatric surgery increased gradually. However, for long-term follow-up, nutritional deficiency may develop in post-bariatric (metabolic) surgery patients, especially in patients who received mal-absorptive or combination procedure. Deficiency of nutrition may cause anemia, peripheral neuropathy, secondary parathyroidism and osteopenosis. Follow-up of the nutritional status for patients after bariatric surgery is an important issue.

Aims & Methods: The aim of our study is to evaluate the change of Vitamin D and bone Mineral Density after bariatric surgery in Chinese population. This prospective cohort study included 50 patients (ranged from 20 to 65 years old) who received bariatric surgery at one teaching hospital in Taoyuan, Taiwan. Patient with osteoporosis before surgery were excluded in this study. Baseline (2012-2014) and one year after bariatric surgery (2013-2015), venous blood was collected from each patients for assessment of the Calcium, Vitamin D and parathyroid hormone (PTH) levels. BMD (g/cm²) was also measured at lumbar spine (L2-L4) by dual energy x-ray absorptiometry (DEXA).

Results: Among 50 patients, 15 patients received laparoscopic sleeve gastrectomy, 24 patients received laparoscopic mini-gastric bypass (MGB), 5 patients received laparoscopic Roux-en-Y gastric bypass (RYGB) and 6 patients received laparoscopic duodenoo-jejuno bypass with sleeve gastrectomy (DJB-SG). The characteristic of the study population was shown as table 1. The differences of mean for calcium, vitamin D, PTH and BMD after bariatric surgery were –0.16 mg/dl (P = 0.03), 4.2 ng/ml (P < 0.01), 8.6 pg/ml (P = 0.06) and –0.04 g/cm² (P = 0.14) respectively.

Table 1: Characteristics of study population one year after bariatric surgery

<table>
<thead>
<tr>
<th></th>
<th>LSG</th>
<th>MGB</th>
<th>RYGB</th>
<th>DJBSG</th>
<th>OVER ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>15</td>
<td>24</td>
<td>5</td>
<td>6</td>
<td>50</td>
</tr>
<tr>
<td>Age, years</td>
<td>34.7(7.4)</td>
<td>37.4(11.7)</td>
<td>41.4(14.1)</td>
<td>44(10)</td>
<td>37.8(10.5)</td>
</tr>
<tr>
<td>Sex(M:F)</td>
<td>7:8</td>
<td>5:19</td>
<td>2:3</td>
<td>3:4</td>
<td>17:33</td>
</tr>
<tr>
<td>BMI(kg/m²)</td>
<td>29.8(4.7)</td>
<td>27.6(4.4)</td>
<td>27.9(2.9)</td>
<td>24(2.4)</td>
<td></td>
</tr>
<tr>
<td>Ca(mg/dl)</td>
<td>9.6(0.3)</td>
<td>9.1(0.3)</td>
<td>9.2(0.4)</td>
<td>9.3(0.4)</td>
<td>9.5(0.4)</td>
</tr>
<tr>
<td>PTH(pg/ml)</td>
<td>63.8(21.3)</td>
<td>70(24.9)</td>
<td>73.1(42)</td>
<td>50(14)</td>
<td>62(29.4)</td>
</tr>
<tr>
<td>VIT.D (ng/ml)</td>
<td>19.4(7.7)</td>
<td>14(6.9)</td>
<td>12.8(8.6)</td>
<td>16.9(5.3)</td>
<td>15.6(7.5)</td>
</tr>
<tr>
<td>VIT.D insufficiency (6.7%)</td>
<td>8(33.3%)</td>
<td>3(60%)</td>
<td>0</td>
<td>12(23.5)</td>
<td></td>
</tr>
<tr>
<td>VIT.D deficiency (&lt;5.3 ng/ml)</td>
<td>0</td>
<td>0</td>
<td>1(20%)</td>
<td>0</td>
<td>1(2%)</td>
</tr>
<tr>
<td>BMD(g/cm²)</td>
<td>1.11(0.25)</td>
<td>1.15(0.23)</td>
<td>1.18(0.26)</td>
<td>1.11(0.19)</td>
<td>1.15(0.17)</td>
</tr>
</tbody>
</table>

Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: One year after bariatric surgery, the prevalence of osteoporosis and osteopenia was low. The serum Vitamin D level increased significantly but no significant change of BMD was noted. Further longitudinal studies are warranted to clarify the long-term effect of bariatric surgery on BMD in Chinese population.
Introduction: The intragastric balloon has been used for more than 20 years in Brazil. As an endoscopic device for assisted weight loss, and some intercurrent events were observed during more than 10,000 procedures performed. With the assistance of a multidisciplinary team the results have been satisfactory.

Aims & Methods: To assess the efficacy and complications of the weight loss with IGB in patients seen at the 07 private centers. A total of 10,255 patients with IGB implanted from 1997 to 2017 were analyzed from a prospective fed database. A liquid filled IGB with a volume in-between 620 to 700 ml was used. Initial BMI started at 27 kg/m² (as approved by Brazilian health authorities) and were followed up by a multidisciplinary team during implant. IGB maximum periton implant was 09 months. Statistical analysis was performed according to sex and degree of excess weight (overweight and grade I, II and III). Data were assessed using Student t-test, and a Tukey post-test. The level of significance was set at p < 0.05.

Results: 492 patients (4.8%) were excluded from the final analysis associated with weight loss: 226 (2.2%) due to early removal. These were analyzed in relation to the psychoendocrine consultation with psychologist and 94% of them did not make a psychological evaluation before the procedure, 158 (1.54%) due fail on weight loss or weight gain–These were analyzed in relation to follow-up with nutritionist and 58% did not undergo nutritional monitoring during the use of IGB, 108 (1.06%) due lack of data (n/a). A total of 750 patients (7.30%) followed up for complete data. There were also spontaneous hyperinflation on 0.99% (n = 101) and balloon spontaneous deflation or leakage in 0.82% (n = 84).

Incidence of complications not leading to removal were 6.65% (n = 101) and balloon spontaneous deflation or leakage in 0.82% (n = 84). The mean age was 31.13 years. The patients showed a significant weight loss, with a significant weight loss (average weight loss 14.82 kg) between the first and last APC follow-up 11.79 mm (±3.89). The average weight loss between the first and last APC was 13.37 kg (±7.82) and the average decrease of BMI was 4.59 kg/m² (±2.78). 122 patients (22.02%) did not achieve the target BMI and 05 patient (0.90%) did not lose weight even with the desired BMI. From the 146 patients (24.66%) followed up for 12 months. The weight loss was less than half of the weight loss. Of the 554 patients, 51 (9.2%) required dilatation balloon due to significant stenosis at least once. No further complications were reported.

Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastro entéric anastomosis in patients undergoing bariatric surgery who have regained weight with dilatation of the anastomosis. The reintroduction of the patient to the multidisciplinary team is not exclusive, and in cases of weight regain and loss toוב נבשה. A psychological and/or psychiatric evaluation is mandatory, as well as nutritional therapy and encouragement of physical activity. The monitoring of food intake and body weight, closer follow-up of the operated patients, appropriate choice of technique according to the patient and the experience of the surgeon, and a good learning curve are all factors that can reduce the failure rate of bariatric surgery. The reintroduction of the patient to the multidisciplinary team is mandatory if better results and sustainable weight loss and comorbidity control are to be obtained.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1301 WEIGHT REGAIN AFTER BARIATURE SURGERY - ARGON PLASMA COAGULATION FOR GASTROJEJUNAL ANASTOMOSIS DECREASE

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Introduction: The weight regained has been a described growing problem in patients after bariatric surgery. This weight regain is multifactorial and is associated with dilatation of Gastrojejunostomy (GJ). For the patients with significant weight regain some revisional procedures had been attempted and more recently endoscopic revisional procedures had been described.

Aims & Methods: To evaluate the safety and effectiveness of argon plasma coagulation (APC) decreasing the diameter of the gastroenteric anastomosis in patients who have undergone RYGB for morbid obesity and regained weight associated to dilatation of the GJ. From Jan-2014 to April-2017 554 RYGB subjects with weight regain a dilated anastomosis (>18 mm) and at least 2 endoscopic procedures were submitted APC application. In relation to the anastomotic diameter, the majority of studies use a diameter of more than 20 mm to define anastomosis dilatation, although some studies use smaller diameters such as 12mm similar to that created manually in the gastrojejunal anastomosis using a 36 Fr Fouchet bougie. In the patients in the present study, the minimum cross-section diameter was 18 mm and the maximum measured in the first session 40 mm. This anastomotic diameter was measured using a 33 mm long bougie entered between an endoscopic channel and a bougie with a maximum of 03 applications. APC set was at 2-3Lm with 65-85W. GJ diameter target was 8-12 mm estimated with pre-measured grasper. At first APC session, pre-op weight and BMI, post-op weight nadir, actual weight and BMI and estimated diameter of GJ were the variables collected. Complications during treatment were also collected. In the present study, psychological and nutritional evaluations were performed before APC and during treatment and physical activity was strongly recommended. Data were analyzed with descriptive statistics, student’s t test and Spearman correlation.

Results: Of the 554 patients, 79.06% were women and 20.94% were men. Average time between bariatric surgery and the first APC was 96.35 months (±31.27). Initial and average weight prior to this interval was 22.08 kg (±11.05). The mean diameter of the anastomosis was 24.78 mm (±6.04) and the average number of APC sessions was 1.78 times (±0.61). The average reduction of anastomotic diameter was 14.86 mm (±7.24) and the final average diameter was 10.84 mm (±3.98). Weight regain and weight loss between the first and last APC was 13.37 kg (±7.82) and the average decrease of BMI was 4.59 kg/m² (±2.78). 122 patients (22.02%) did not achieve the target GJ diameter and 05 patient (0.90%) did not lose weight even with the desired GJ diameter. From the 146 patients (24.66%) followed up for 12 months. The weight loss was less than half of the weight loss. Of the 554 patients APC, 51 (9.2%) required dilatation balloon due to significant stenosis at least once. No further complications were reported.

Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastro entéric anastomosis in patients undergoing bariatric surgery who have regained weight with dilatation of the anastomosis. The reintroduction of the patient to the multidisciplinary team is mandatory if better results and sustainable weight loss and comorbidity control are to be obtained.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1302 EXCESS WEIGHT IN THE ELDERLY: A BRAZILIAN EXPERIENCE WITH THE INTRAGASTRIC BALLOON TREATMENT

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Introduction: With the aging of the population, the incidence of obesity has also increased among the elderly. However, there is a higher incidence of severe comorbidities in this population comparing to adults, which often makes bariatric surgery unfeasible. In this segment, treatment with the intragastric balloon (IGB) may be an interesting option.

Aims & Methods: We aimed to assess the efficacy and complications of obesity treatment in the elderly using a non adjustable IGB. A total of 77 patients were analyzed. The minimal initial body mass index (BMI) was 28 kg/m². The level of significance was set at p < 0.05.

Results: 58 patients were women (73.3%). Mean age was 64.26 (60–80) years. Ten patients had no comorbidities, 52 had hypertension, 45 had dyslipidemia, 32 had insulin resistance, 12 had type II diabetes, and 10 had ischemic heart disease. There was no major complications. Results are shown on table 1. The treatment success rates according to the following criteria: ≥10% total body weight loss (TBWL) and ≥25% excess weight loss (EWL) were 96.11% (74 patients) and 96.11% (74 patients)
98.7% (76 patients) respectively. 30 patients reached a normal body mass index (BMI) (23–25kg/m²) according to the Pan American Health Organization (PAHO). Elderly shows a higher BMI reduction (p=0.0002) and %TBWL (p=0.0003) than adults.

Table 1

<table>
<thead>
<tr>
<th>Body weight(kg)</th>
<th>n = 77</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>103.37 ± 17.14</td>
</tr>
<tr>
<td>Final</td>
<td>81.66 ± 15.71</td>
</tr>
<tr>
<td>Reduction</td>
<td>21.71 ± 7.78</td>
</tr>
<tr>
<td>%TBWL</td>
<td>21.07 ± 6.07</td>
</tr>
<tr>
<td>BMI(kg/m2)</td>
<td>37.89 ± 5.41</td>
</tr>
<tr>
<td>Baseline</td>
<td>29.86 ± 4.76</td>
</tr>
<tr>
<td>Final</td>
<td>8.03 ± 2.88</td>
</tr>
<tr>
<td>Excess weight(kg)</td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>35.53 ± 16.98</td>
</tr>
<tr>
<td>Final</td>
<td>13.82 ± 15.49</td>
</tr>
<tr>
<td>%EWL</td>
<td>60.27 ± 30.01</td>
</tr>
</tbody>
</table>

*p < 0.0001 for all comparisons between values at baseline and at the end of the study. IGB(intragastric balloon); TBWL(total body weight loss); EWL(excess weight loss)

Conclusion: Endoscopic treatment of obesity with an IGB shows to be an excellent therapeutic option for the elderly.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI306 THE EFFECT OF A CONTROLLED GLUTEN CHALLENGE IN PATIENTS WITH SUSPECTED NON-COELIAC GLUTEN SENSITIVITY: A RANDOMIZED, DOUBLE-BLIND PLACEBO-CONTROLLED CHALLENGE

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Introduction: Non-coeliac gluten sensitivity (NCGS) is a new entity with unknown prevalence and mechanisms, and there is a need for a standardized procedure to confirm the diagnosis. The objective of this study was to characterize the response to a gluten challenge, when performed according to the updated Salerno criteria.

Aims & Methods: Twenty patients (14F/6M, age range: 21–62 y) with suspected NCGS, without coeliac disease and wheat allergy, were included while on a gluten-free diet. All patients went through four periods of double-blind provoked with gluten and placebo containing muffins. They were instructed to eat two muffins a day (11 g gluten) for four days, followed by a three days' wash-out. Gastrointestinal symptoms were recorded with questionnaires at baseline and after each provocation, while fatigue and quality of life were registered at baseline and end of the trial.

Results: Four out of twenty patients (20%) correctly identified the two periods when they received muffins containing gluten, hence were diagnosed with NCGS. The diagnosed group tended to show higher symptom scores than the not-diagnosed group both at baseline, after gluten exposure and after placebo, but no clear difference was seen in symptom change after provocation with gluten and placebo. The not-diagnosed group showed more severe symptoms with placebo than with gluten (p=0.002). Symptom severity at baseline was significantly correlated with fatigue (r=0.63, p=0.003) and reduced quality of life (r=-0.76, p=0.0001).

Conclusion: This randomized, double-blind placebo-controlled challenge with gluten diagnosed four patients with NCGS according to the Salerno criteria. However, according to the symptom registrations there are no clear difference between the diagnosed and the not-diagnosed group, or between symptoms after gluten provocation and placebo, indicating no specific effect of gluten in a group of patients with suspected NCGS.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI308 LOW FODMAP DIET: REINTRODUCTION PHASE DOES NOT MODIFY EFFICACY, BUT BEWARE OF REAL TRIGGER FOODS!

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Introduction: The low-FODMAP diet (LFD) is used to treat patients with irritable bowel syndrome (IBS) even if some nutritional concerns have been raised. It starts with an elimination phase and is followed by a reintroduction phase to clearly detect the “symptom trigger” foods in order to suggest a definitive and less restrictive diet tailored to the patient.

Aims & Methods: The aims of this study were to evaluate: 1) the effects of FODMAP reintroduction on a) body composition and nutritional status, using Bioelectrical Impedance Vector Analyses (BIVA), b) abdominal symptoms, c) quality of life, d) anxiety/depression, e) sleep quality. 2) if the patients’ perception of the “trigger” foods was accurate.

Results: 66 IBS patients (54F, 12 M; 44.8 ± 13.0 yrs.) started (T0) a LFD for 8 weeks (T1) and followed a 9-14 week reintroduction period (T2). They underwent blood tests at T0 and T1. BIVA, anthropometric data, BIVA-Symptom Severity Score, Bristol Stool Chart (BSC), SF36, Hospital Anxiety and Depression Scale and Pittsburgh Sleep Quality Index were performed at T0, T1 and T2. The patients were monitored by a nutritionist to verify their compliance.

Results: Neither change of blood tests at T1 nor variations of anthropometric data and BIVA were reported at T1 and T2 in comparison with T0. A significant improvement in abdominal symptoms (IBS-SSS), anxiety and quality of life, was recorded at T1, this remaining unchanged also at T2 (p < 0.0001). Depression improved at T2 (p < 0.01 vs. T0). Sleep quality improved at T1 (p < 0.05 vs. T0) and at T2 (p < 0.001 vs.T0). Normal BSC facets were reported by 38 patients at T0 to 60 patients both at T1 and T2. The degree of symptom relief with the diet was 1.5 ± 0.6 at T1 and 1.6 ± 0.7 at T2 and the degree of satisfaction was high
both at T1 (8.4 ± 1.6) and T2 (8.2 ± 1.7). When starting, LFD patients considered as having overt FODMAPs (67%), fructans (27%), fructose (17%), galacto-oligosaccharides (GOS) (17%) and polyols (3%); the reintroduction phase (T2) enabled us to detect lactose in 70%, fructans in 30%, fructose in 37%, GOS in 33% and polyols in 27%, as real triggers. The agreement (Cohen’s kappa) was moderate for lactose (κ = 0.50), fair for fructans (κ = 0.39) and fructose (κ = 0.32) and poor for polyols (κ = 0.16) and GOS (κ = 0.01).

Conclusion: Not only did reintroduction not affect the improvements achieved during the elimination phase, but it also precisely identified the foods responsible for FM symptoms. This enabled us to suggest a personalized diet for the patients. The real role played by FODMAPs in generating symptoms was abundantly underestimated and misunderstood by our patients. This underlines the fact that LFD has to be administered and carried out under the guidance of an expert nutritionist.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1306 EXPRESSION OF THE FRUCTOSE TRANSPORTER GLUT5 IN PATIENTS WITH FRUCTOSE MALABSORPTION
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Introduction: Fructose malabsorption (FM) is a frequent finding in patients with alimentary and high levels of FM in Western diets. The role of monosaccharide transporter dysfunction in the small intestine is incompletely understood. The aim of this study was to investigate the histoanatomical distribution of the main fructose transporter GLUT5

Aims & Methods: The study included 257 patients with FM diagnosed by hydrogen breath test and grouped according to the response to a fructose-free diet. 42 healthy individuals and 31 patients with coeliac disease (CD) served as controls. The fructose breath test was done with 50 g fructose. Fructose malabsorption was defined as an increase of 20 ppm of endogenous hydrogen. Formalin-fixed and paraffin-embedded duodenal biopsy specimens were obtained in all cases. Histology was assessed using hematoxylin and eosin stained tissue sections. Expression of GLUT5 was studied by immunohistochemistry. Expression pattern of GLUT5 was correlated with clinical and pathological patient characteristics.

Results: The expression of GLUT5 did not differ significantly between patients with FM complete diet responders (n = 183) and healthy controls (n = 42). Also patients with FM responding to a fructose free diet did not differ in GLUT5 expression or in max. H2 increase and AUC measured in fructose breath testing from patients not responding to the diet (n = 40). However, in patients with CD (n = 29) significant differences in GLUT5 expression were found compared to patients with FM and healthy controls (p = 0.009). The severity of CD assessed by the Marsh score significantly correlated with the GLUT5 expression (r = 0.563, p = 0.001)

Conclusion: Changes in GLUT5 expression may not cause symptoms in adult patients with FM. The symptoms induced by FM could be associated with mechanisms known to the pathogenesis of the fructose bowel syndrome. However, in secondary malabsorption decreased GLUT5 expression was detected. Further investigation is needed to understand the essential factors in FM and the influence on functional gastrointestinal disorders.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1307 BETTER RESPONSE TO LOW FODMAP DIET IN JH NEGATIVE PATIENTS WITH DISORDERS OF GUT-BRAIN INTERACTION
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Introduction: Previous studies have shown a reduction of gastrointestinal symptoms in patients with disorders of gut-brain interaction (FGID) when following a diet low in FODMAPs. Symptom relief due to a low FODMAP diet has especially been investigated in patients suffering from irritable bowel syndrome (IBS) and has proven to reduce gastrointestinal symptoms in up to 86% of patients with IBS. In addition, there is evidence for an association between gastrointestinal symptoms and joint hypermobility (JH). However, there is no clear data regarding response rates to a diet low in FODMAPs in patients suffering from JH. In this study we aimed to assess and compare the response to a diet low in FODMAPs in JH positive and JH negative patients with FGIDs.

Aims & Methods: Data of patients presenting with FGID at the tertiary ambulatory functional bowel clinic between January 2015 and July 2016 were analyzed. FGIDs were diagnosed according to Rome III criteria. JH was assessed by physicians using Brighton score and rated positive for scores ≥ 4/9 points. Patients received professional nutritional counseling on a diet low in FODMAPs. A global symptom response was assessed by a professional nutritionist after 4 to 6 weeks following a low FODMAP diet.

Results: Of all 84 patients screened for JH, 62 (73.8%) were female and 22 (26.2%) were male. Median age was 35 (range 18-77) years. Females were more likely to exhibit JH compared to males (38.62 [61.3%] vs. 6.22 [27.3%]; p = 0.006). Global symptom response rate to a diet low in FODMAPs was 64/84 (76.2%). Our data showed significantly better response to a low FODMAP diet in JH negative patients than in JH positive patients (36/40 [90.0%] vs. 28/44 [63.6%, p = 0.005, ITT). Response of 7 patients was unknown because of early therapy discontinuation before nutritional re-counseling. When excluding 7 patients with therapy discontinuation from our calculations, the difference in diet response between JH negative and JH positive patients remained significant (36.39 [92.3%] vs. 28/38 [73.7%]; p = 0.036).

Conclusion: Our data indicate an association between global symptom response to a diet low in FODMAPs and joint hypermobility status in FGID patients. An underlying structural pathology or different pathophysiological factors (small intestinal permeability) causing gastrointestinal symptoms in JH positive patients and limiting response to low FODMAP diet should be considered. Our findings represent a further step towards pathophysiological features in FGIDs and might help to select patients for individually appropriate therapies.

Disclosure of Interest: M. Fried: Allergen, MSD, Astra, Vicor, Abbvie, UCB
D. Pohl: Allergen, Vicor, Astra, Permed
All other authors have declared no conflicts of interest.

P1308 CHANGES IN GASTROINTESTINAL SYMPTOMS, SMALL INTESTINAL BACTERIA, AND DUODENAL PHYSIOLOGY FOLLOWING A LOW-FIBER, HIGH-SUGAR DIET
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Introduction: Gut dysbiosis and gut-brain axis dysregulation are often associated with dietary intolerances and are common in the developed world consuming a western diet low in fiber. Aims & Methods: To determine the effect of a high-sugar, low-fiber diet on GI bacterial composition and duodenal physiology, we conducted a single-center study. Healthy adults with baseline fiber intake ≥14 g/1000 calories/day, < 10% daily calories from added sugar; ≥ 5 servings of fruits and vegetables/day; and ≥13% daily calories from saturated fat were recruited. Exclusion criteria included known GI disease or symptoms, antibiotic/probiotic use within 4 weeks of the study, pregnancy, and vulnerable adults. At baseline visit, participants completed a symptom and demographic questionnaire and underwent esophagogastroduodenoscopy (EGDY) with duodenal biopsies and aspirates. Symptoms associated with constipation, straining, incomplete evacuation, hard stools, abdominal pain associated with bowel movements, diarrhea, bloating, nausea/vomiting, heartburn, fatigue, and appetite. All participants consumed a 7-day standardized diet with typical United States fiber intake (14 g/1000 calories/day; 15% carbohydrate; 35% fat; 5% protein). The diet was low in fiber (< 10 g/1000 calories/day) and high in simple sugar (≥50% daily carbohydrates). After dietary intervention, participants filled out four symptom questionnaires and underwent repeat EGDY with duodenal biopsies and aspirates. Before and after the diet, quantitative aerobic and anaerobic cultures were performed on duodenal aspirates. Duodenal biopsies were mounted in an using chamber. Intestinal permeability was evaluated using transepithelial electrical resistance (TEER) and FITC flux (4KDa; a measure of paracellular transport). Secretory responses were quantified in voltage clamp mode by measuring baseline short circuit current (Isc) and change in Isc (AS) in response to increasing concentrations (0.003-300 μM) of serotonin (5-HT) on the submucosal side. These measurements were repeated after the dietary intervention. Data are presented as mean ±SEM. Data were analyzed using paired-t test unless specified and p < 0.05 was considered significant.

Results: A total of 10 participants (5 female; median age 26; 70% Caucasian) were recruited. Average BMI was 23.1 kg/m2. At baseline, all participants were asymptomatic. After dietary intervention, all patients endorsed at least one new symptom and 9/10 participants endorsed multiple (≥2) new symptoms. At baseline 4/10 participants had positive duodenal cultures (> 100,000 CFU/mL, anaerobic) despite having no symptoms. Of the 6 who had no growth initially, I developed bacterial overgrowth following intervention. There was no significant difference in TEER (26.45 ± 1.98 vs 26.18 ± 2.45 Ohms/cm2), FITC flux (217 ± 34.72 vs 217.6 ± 42.57 ng/ml) or baseline Isc (48.27 ± 63.9 vs 51.58 ± 82.27 Ωcm2) before and after dietary intervention. Interestingly there was a significantly lower AS response to increasing concentrations of 5-HT after dietary intervention (P < 0.05, two-way ANOVA).

Conclusion: A low-fiber, high simple sugar diet led to gastrointestinal symptoms in 10/10 participants who normally had an ileum feeding model. This resulted in a significant decrease in 5-HT evoked secretory response in the duodenum, suggesting a potential role for dietary modulation of host serotoninergic pathway. There was no correlation with quantitative bacterial cultures and there was no overall significant change in intestinal permeability. Diet may mediate these
P1309 STRESS AND STRESS-RELATED PEPTIDE AMPLIFY THE ANOREXIC ACTIONS OF CHOLECYSTOKININ
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Introduction: Recently roles of gut hormones on appetite control have been known. Among them, CCK is well known to suppress appetite and gastric motility. On the other hand, patients of functional dyspepsia (FD) have hyper sensitivity to CCK. And releas of CCK inbrad was shown to be high in FD patients. In FD patients, stress have important roles of pathogenesis of the disease.

Aims & Methods: We undertook to clarify whether stress influences the actions of cholecystokinin (CCK) on appetite and gastric emptying. As stress, we gave restraint stress, corticosterone-releasing factor (CRF) or urocortin (UCN1) injection intraperitoneally (IP). We also examined the effects of CCK and restraint stress on c-Fos expression in the neurons of appetite center of the brain. In the gastric emptying study, SD rats were fasted overnight. The amounts of the mixture (food and glass beads) left in the stomach were measured at 2 hours after the perorally injected mixed food, and gastric emptying rate was calculated. In the study on appetite, CCK was IP injected and the amounts of food was measured at 1 and 2 hours after the injection. In some experiments, CRF or UCN1 was IP injected and the interaction with CCK on food intake was examined. In another study, restraint stress was given to rats and the interaction with CCK was evaluated. To study the involvement of brain in the interaction between CCK and stress, c-Fos expression in the neurons was examined and evaluated.

Results: CCK dose-dependently inhibited gastric emptying. CCK dose-dependently inhibited food intake during 1 hr and 2 hr. CRF (100g/kg rat) significantly inhibited food intake. However, there was no interactive action between CCK and CRF on food intake. UCN1 (3 nmol/kg rat) inhibited food intake at 1 and 2 hours. There was an synergistic action between CCK and UCN1 on food intake. Restraint stress amplified suppressive effect of CCK on gastric emptying and food intake. C-Fos expression of the neurons in the nucleus of solitary tract (NTS) and paraventricular nucleus of hypothalamus (PVN) by CCK was amplified by the addition of restraint stress.

Conclusion: The result suggests that stress might amplify anorexic effects of CCK through the activation of satiety center of the brain that might be the possible pathogenesis for postprandial distress syndromes of FD.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1310 PEPTIDE TYROSINE-TYROSINE (PYY) ENHANCES EFFECTS OF CHOLECYSTOKININ (CCK) ON GASTRIC MOTILITY AND FOOD INTAKE IN RATS
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Introduction: Cholecystokinin (CCK) and peptide tyrosine-tyrosine (PYY) have been known to suppress appetite and gastric motility. Both peptides raise in serum in response to food intake and their levels increase following dietary restraint stress, inducing satiation to finish food intake.

Aims & Methods: We undertook to clarify whether stress influences the actions of cholecystokinin (CCK) on appetite and gastric emptying. As stress, we gave restraint stress, corticosterone-releasing factor (CRF) or urocortin (UCN1) injection intraperitoneally (IP). We also examined the effects of CCK and restraint stress on c-Fos expression in the neurons of appetite center of the brain. In the gastric emptying study, SD rats were fasted overnight. The amounts of the mixture (food and glass beads) left in the stomach were measured at 2 hours after the perorally injected mixed food, and gastric emptying rate was calculated. In the study on appetite, CCK was IP injected and the amounts of food was measured at 1 and 2 hours after the injection. In some experiments, CRF or UCN1 was IP injected and the interaction with CCK on food intake was examined. In another study, restraint stress was given to rats and the interaction with CCK was evaluated. To study the involvement of brain in the interaction between CCK and stress, c-Fos expression in the neurons was examined and evaluated.

Results: CCK dose-dependently inhibited gastric emptying. CCK dose-dependently inhibited food intake during 1 hr and 2 hr. CRF (100g/kg rat) significantly inhibited food intake. However, there was no interactive action between CCK and CRF on food intake. UCN1 (3 nmol/kg rat) inhibited food intake at 1 and 2 hours. There was an synergistic action between CCK and UCN1 on food intake. Restraint stress amplified suppressive effect of CCK on gastric emptying and food intake. C-Fos expression of the neurons in the nucleus of solitary tract (NTS) and paraventricular nucleus of hypothalamus (PVN) by CCK was amplified by the addition of restraint stress.

Conclusion: The result suggests that stress might amplify anorexic effects of CCK through the activation of satiety center of the brain that might be the possible pathogenesis for postprandial distress syndromes of FD.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1313 HOW TO IMPROVE THE RELIABILITY OF LIVER FIBROSIS EVALUATION USING 2D-SWE.GE

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Introduction: Liver stiffness (LS) evaluation as a marker of fibrosis is usually considered reliable when it fulfills some quality criteria. Classic criteria used for Transient Elastography (TE) are: ≥10 valid measurements, ≥60% success rate, and interquartile range/median ratio (IQR/M) <0.30 [1]. However, new quality criteria were proposed using the IQR/M ratio, therefore the LS measurements can be classified into three categories: very reliable (IQR/M <0.10), reliable (0.10 < IQR/M <0.30), poorly reliable (IQR/M >0.30) [2].

Aims & Methods: The aim of this study was to assess the impact of using quality criteria (LS) evaluation by means of 2D Shear Wave Elastography from General Electronics (2D-SWE.GE), while using Transient Elastography (TE) as the reference. We included 226 subjects in our study, with or without chronic liver disease, in whom LS was assessed using 2D-SWE.GE (LOGIQ E9, GE Healthcare) and TE (FibroScan, EchoSens). Reliable LS measurements were defined for TE as the median value of 10 measurements with a success rate of ≥60% and an interquartile range (IQR) <30% of the median LS values. For 2D-SWE.GE LS 10 measurements were acquired in a homogenous area and the IQR and the IQR/M were calculated in each case. We divided our subjects into 3 groups according to the 2D-SWE.GE IQR/M: IQR/M < 0.10: 41 (18.1%) cases; 0.10 < IQR/M < 0.30: 155 (68.6%) cases; IQR/M > 0.30: 30 (13.3%) cases. We calculated the correlation coefficient between TE and 2D-SWE.GE in each group.

Results: All 226 (100%) subjects included had 10 valid measurements by means of 2D-SWE.GE and reliable results by TE. A strong positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the IQR/M <0.10 group (r=0.84, p<0.0001). A weak positive correlation was found between LS values obtained by means of 2D-SWE.GE and TE in the IQR/M <0.30 group and IQR/M ≥0.30 group (r=0.70; p<0.0001). The correlations were significantly stronger in the IQR/M <0.10 and 0.10 < IQR/M < 0.30 groups as compared to the IQR/M > 0.30 group (both p=0.0013). No statistical differences were found between the correlations in the IQR/M <0.10 and 0.10 < IQR/M ≤0.30 groups (r=0.47).

Conclusion: Using the IQR/M <0.30 as quality criteria significantly increase the reliability of LS measurements by means of 2D-SWE.GE. Using IQR/M < 0.10 criteria does not significantly improve the reliability of 2D-SWE.GE LS measurements as compared to 0.10 < IQR/M ≤0.30 criteria.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (teaching travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb.

S.A. Popescu: I hereby confirm that I have received financial support (teaching travel grants, speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva.

All other authors have declared no conflicts of interest.

References
2. Boursier J, Zarski JP, de Ledinghen V, et al; Multicentric Group from Zentiva Grant or speaker fee) from Philips, Abbvie, Zentiva

Disclosure of Interest: None. All authors have declared no conflicts of interest.

P1315 IDENTIFICATION OF P73 AS A NOVEL TRANSCONTACTOR OF IGFBP4 GENE EXPRESSION IN HEPATOCELLULAR CARCINOMA (HCC)

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Introduction: Members of the p53-family, including p53, p63 and p73, are known for their involvement in the regulation of cell cycle, cell senescence and apoptosis. In their role as transcription factors and depending on their splice variants—with transcription activation domain (TA) or dominant negative (DN) - p53 and its siblings are capable of activating or inhibiting the transcription of specific target genes. We previously identified the gene for Insulin-like Growth Factor Protein 4 (IGFBP4) as a potential p53-family target gene with prognostic relevance in hepatocellular carcinoma (HCC). In contrast to p53, the IGF system takes part in tissue growth and cell survival. IGFBP4 acts as inhibitor limiting IGF effects suggesting a possible interaction with p53 affairs.

Aims & Methods: The aim of this study was to characterize the regulatory influence of p53 family members on the IGFBP4 gene. Hep3B cells were transfected with rAd-p53, -TAp63, -TAp73, -DNp63, and –DNp73. Transcriptional regulation of IGFBP4 was determined by real time qPCR. Intra- and extracellular IGFBP4 protein levels were examined by Western Blotting and ELISA. TRANSFAC database analysis was performed to identify potential p53-family binding sites in the IGFBP4 locus. Identified sequences were cloned, deleted, and analyzed by luciferase reporter assays to evaluate binding of p53-family members.

Results: IGFBP4 expression was increased by more than 30-fold in TAp73-transfected Hep3B cells, by more than 15-fold in DNp63- and by 3-fold in p73-transfected cells. Induction of intracellular IGFBP4 protein was detected in all transfected Hep3B cells, whereas extracellular IGFBP4 levels were only measurable after TAp73 and DNp63 transfection. Database analysis identified 2 putative binding sites within intron 1 of the IGFBP4 gene. Intron 1-dependent luciferase activity was increased by up to 20-fold in TAp73-transfected cells. This induction was reduced by up to 70% when one of the putative binding sites was deleted.

Conclusion: These results identify the IGF inhibitor IGFBP4 as novel target gene for TAp73 expression in HCC. By demonstrating it as the first time the interaction of TAp73 and IGFBP4 we enhance our knowledge in so far unknown association of p53-family network and IGF signaling. Since in an independent study we identified IGFBP2 as a novel p53-family target gene, these results highlight the link between p53-family-mediated tumor-inhibiting mechanisms and IGF-family, thereby modulating cell proliferation. We therefore suppose that the particular balance of these pathways decides on growth, cancerogenesis and treatment response.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1314 MONITORING OF LIVER FUNCTION IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE IN COMBINATION WITH METABOLIC SYNDROME

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Introduction: U3C-methacetin breath test (13C-MBT) is used to specify the detoxification function of the liver by determination its metabolic capacity and degree of hepatocytes recovery.

Aims & Methods: The study involved 113 patients with MS aged from 37 to 82 years. The age of the male group was 55±8.5; the female group was 75±18.5 years old. There were 75 men and 88 women. The criteria, which has been examined for the functional state of the liver was 13C-MBT. The control group included 55 patients with a BMI of 25-30 kg/m2 without any severe concomitant diseases. Indicators of 13C-MBT were metabolic rate, cumulative dose of 13C-methacetin on 40 and 120 minutes. Also evaluation was carried by mathematical deduction which measured the liver dysfunction stage.

Results: The data showed normal detoxification liver function in patients without MS (20.11±0.55). The results were below normal in patients with BMI higher than 25 (32.54±0.52), which indicated that there were changes in the functional state of liver. In patients with steatosis - cumulative dose on 120 minute was 15.12±0.49, which corresponded to a moderate reduction of detoxification function with the mass of function hepatocytes 50-100%. The data of 13C-MBT in patients with steatohepatitis showed pronounced changes of the liver detoxification function (8.88±0.64%). All indicators at steatosis group have indicated the moderate decline detoxification function with the level of function hepatocytes 50-100% (Mvmax40=0.66, Cum.Dose 40=0.7, Cum.Dose 120=0.54). The data of patients with steatohepatitis indicated the detoxification function with declining of the mass of function hepatocytes to 20-50% (Mvmax40=0.46, Cum. Dose 40=0.5, Cum. Dose 120=0.32). The results of the control group showed its compliance with norm, but one of the indicators (Cum.Dose 120) was related to the moderate decline detoxification function. Despite it, most of the criteria have been accorded to the norm. However, the results of data suggest the opportunity of early violation of detoxification liver function in patients with BMI higher than 25 kg/m2.

Conclusion: In assessing to the data of 13C-MBT, main attention is paid to mathematical calculation of CO2 labeled methacetin. It allows to identify the early stages of the liver detoxification function violation.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1316 NONALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH 2 TYPE DIABETES MELLITUS AND CORONARY HEART DISEASE AGAINST THE BACKGROUND OF METABOLIC SYNDROME. HOW TO DIAGNOSE?
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Introduction: It is known that to determine nonalcoholic fatty liver disease (NAFLD), which develops in progress of body mass index (BMI) from 19% to 35%, using instrumental and laboratory methods, which include an ultrasound, the determination of the transaminase levels, steatostest, 13C-methacetone test. However, these research methods do not allow to clearly differentiate steatosis from the steatohepatitis, that reduces their credibility.

Aims & Methods: 163 patients (75 men, 88 women) with 2 type diabetes mellitus and coronary heart disease with metabolic syndrome, were examined. The average age of patients was 57.5 ± 20.1 years. All patients were diagnosed as steatosis, 66 - steatohepatitis group. In 25 patients liver pathology was not found, which identified as a control group. For verification of steatosis and steatohepatitis diagnosis the level of ALT, diameter of the portal vein negatively correlated with 120 minute was 20.25

Results: For verification of steatosis and steatohepatitis diagnosis the level of ALT, diameter of the portal vein negatively correlated with a new index that is different from BMI was proposed. 362 individuals were found that in ALT and the diameter of the portal vein negatively correlated with cumulative dose of 

Conclusion: The differentiation between steatosis and steatohepatitis should be moderate with the speed of a metabolism, a cumulative dose of methacetone on CAP (0.689;p <0.001) and venous MPT and venous diameter measurement. The sensitivity of the method is based on the definition of the three proposed indicators - ALT level, total concentration of 13C-methacetone on 120 minute and the portal vein size, which is 75% for steatosis, and 76% for steatohepatitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1317 BMP1-3 IN LIVER FIBROSIS
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Introduction: Liver fibrosis (LF) is a progressive pathological process resulting in accumulation of excess extracellular matrix proteins. A metalloproteinase BMP1 cleaves various matrix proteins and pro-collagen type I. We have recently discovered that BMP1-3 isoforms circulate in the plasma and its neutralization decreases the progression of chronic kidney disease. The role of BMP1 in liver diseases associated with fibrosis has not been investigated. Bone Morphogenetic Protein (BMP1) and mammalian tolloid (mTLD) are alternatively spliced products of the BMP1 gene that are essential for tissue patterning and ECM assembly by biosynthetic processing of a wide range of ECM precursors specifically pro-collagen type I undergoing enzymatic cleavage by BMP1 at the C-terminal end of the pro-collagen finally leading to liver cirrhosis, portal hypertension and liver failure.

Aims & Methods: We used the model of CCl4-induced LF in rats. Animals were treated with BMP1-3 antibody at two different concentrations (20 and 50 µg/kg) for 6 and 8 weeks. LF was assessed histologically, morphological analyses, shear wave elastography and hydroxyproline (HP) content measurement. Gene expression analyses were performed by qRT-PCR, and protein localization by immunohistochemistry. BMP1 protein (150 µg/kg) was used as a comparative therapy.

Results: In our experiments the presence of BMP1-3 was immunohistochemically demonstrated in both healthy and cirrhotic liver suggesting that at least a part of circulating BMP1-3 is produced in the liver. Administration of BMP1-3 Ab resulted in inhibition of the fibrosis progression. Administration of BMP1-3 Ab at a dose 20 µg/kg and 50 µg/kg exerted antifibrotic activity comparable to that of mTLD. Apart from blocking the BMP1-3 activity, it is important for collagen maturation, administration of BMP1-3 Ab was accompanied by the inhibition of expression of MMP-1, MMP-13, α-smooth muscle actin and type I collagen, whereas expression of Decorin mRNA was enhanced. Decorin has evident anti-fibrotic activity in the liver after injury with CCl4 and silencing caused an increased activation of HSCs both in vitro and in vivo. Rats treated with both BMP1-3 antibody concentration had significantly lower amount of collagen type I when compared to the CCl4-treated group. Direct proportionality was found between the degree of fibrosis and liver stiffness. We showed for the first time a distinct correlation between the HP level in liver, morphometric analysis and elastography of the liver.

Conclusion: Our results suggest that neutralization of BMP1-3 is a promising therapeutic approach in preventing the liver fibrosis progression.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1318 LIVER TRANSIENT ELASTOGRAPHY IN NON-ALCOHOLIC FATTY LIVER DISEASE: IS THERE ANY PREDICTIVE ROLE IN THE DEVELOPMENT OF COLORECTAL POLYPS?
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Introduction: Recent studies have demonstrated an association between decreased glucose tolerance, dyslipidemia and metabolic syndrome; and increased risk of colorectal polyps. Patients with non-alcoholic fatty liver disease (NAFLD) often have these risk factors. The association between NAFLD and colorectal polyps has been poorly studied.

Aims & Methods: We aimed to evaluate the prevalence and risk factors of colorectal polyps in patients with NAFLD. This was a retrospective observational study of 163 patients with NAFLD submitted to transient elastography by Fibroscan, between 2015 - 01/02-2017. Exclusion criteria: age<18 years, absence of total colonoscopy with good preparation <3 years, inflammatory bowel disease, hereditary polyposis syndromes and personal/family history of colorectal polyps/neoplasia. Compared patients with colorectal polyp(s) (cases) and without colorectal polyp(s) (controls). Demographic variables, cardiovascular/metabolic risk factors, comorbidities, laboratory parameters and Fibroscan (scores of steatosis(CAP > 300 dB/m) and fibrosis(F4: > 10KPa)) were analyzed.

Results: Of the 237 patients who performed Fibroscan®, 103 underwent total colonoscopy. The prevalence of colorectal polyps was 28.2% (n=29): 19.4% (20.0% vs 17.0%) adenoma and 4.8% (5.1%) advanced adenoma/adenocarcinoma. The mean age was 58.32 ± 5.51 years (vs70.9 ± 10.53; p = 0.009, with men predominant (51.7% vs 63.5%; p = 0.272), mostly located in the left colon (55.2% vs 44.8%; p = 0.314) and number and mean size of 1.46 ± 0.88 and 6.98 ± 6.56 mm, respectively. After multivariate analysis, colorectal polyps were associated with F4 liver fibrosis (34.5% vs 14.9%; p = 0.026; OR = 3.01) and obesity (BMI > 30 kg/m²; 55.2% vs 29.7%; p = 0.016; OR = 2.91); hyperplastic polyps were associated with liver fibrosis for a cut-off value of 6.9KPa (AUROC 0.689; p = 0.008; S = 85.7%; 10.0% vs 16.0%; p = 0.042; OR = 3.08) and obesity (BMI > 30 kg/m²: 55.2% vs 29.7%; p = 0.043; OR = 2.91). Inflammatory disease (9.5% vs 12.2%; p = 0.024; OR = 3.51) and diabetes (9.5% vs 3.24% vs 8.5%; p = 0.02; OR = 3.51) and obesity (58.5% vs 32.6%; p = 0.024; OR = 2.96) was associated with liver steatosis (88.2% vs 83.7%; p = 0.024; OR = 3.50). F4 liver fibrosis (41.2% vs 18.2%; p = 0.004; OR = 2.96) was associated with liver steatosis (88.2% vs 83.7%; p = 0.024; OR = 3.50). F4 liver fibrosis (41.2% vs 18.2%; p = 0.004; OR = 2.96) was associated with liver steatosis (88.2% vs 83.7%; p = 0.024; OR = 3.50). F4 liver fibrosis (41.2% vs 18.2%; p = 0.004; OR = 2.96) was associated with liver steatosis (88.2% vs 83.7%; p = 0.024; OR = 3.50).

Conclusion: More than 1/4 of the patients with NAFLD have colorectal polyps, being 16.5% adenoma and 4.8% advanced adenoma/adenocarcinoma. Obesity and liver steatosis are independent risk factors for colorectal adenoma. Liver fibrosis, especially F4 is an independent risk factor for all types of colorectal polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1319 "SUBTRACTED ADULTHOOD MASS INDEX" (SAMI) - A NEW INDEX TO PREDICT NAFLD RISK IN NON-OBESE INDIVIDUALS
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Introduction: Non-alcoholic fatty liver disease (NAFLD) is a common clinico-pathological bicon of the liver. It's often associated with metabolic syndrome and obesity. NAFLD may progress to cirrhosis and hepatocellular carcinoma (HCC). Obesity is accepted as the main risk factor for NAFLD, non-obese individuals are often diagnosed with NAFLD suggesting that high BMI may not be a sine qua non for the presence of NAFLD. Recent studies suggested that there might be a correlation between weight gain and metabolic diseases.

Aims & Methods: In our research; the relationship between NAFLD in non-obese individuals and the amount of weight gain during adulthood was investigated and a new index that is different from BMI was proposed. 362 individuals were included in the survey. The subjects were selected among patients who had abdominal ultrasonography(USG) in our clinic, during the last 6 months. A 5% increase in echogenicity detected in the USG was defined as the diagnostic
limit for hepatosteatosis. The beginning of adulthood was taken as 20 years old. Patients reported they had gained significant amount of weight during their adulthood. This information led us to create a new index named “Subtracted Adulthood Mass Index” (SAMI) to estimate the risk of NAFLD development in non-obese individuals. SAMI is calculated by dividing the difference between the subject’s current weight and his/her weight at the age of 20 years to his/her height squared (kg/m2). SAMI values for non-obese attendants were calculated. When the cut-off value was set as SAMI 4 kg/m2, sensitivity was 76.3%, specificity was 79.1, positive predictive value (PPV) was 84.3% and negative predictive value (NPV) was 69.4%. At a cut-off of SAMI 3 kg/m2 sensitivity was 85.2%, specificity was 66.9%, PPV was 79.1%, NPV was 75.4%. Inclusion: In this pilot study, we found that weight gain in adulthood is an important predictor of NAFLD development in non-obese individuals. The new index named SAMI can correctly identify non-obese people under the risk of developing NAFLD. Cut-off value of SAMI has been set as 3.5 kg/m2. We also observed that NAFLD prevalence increases as SAMI value goes up. We propose that SAMI is appropriate for clinical use to estimate the risk of NAFLD in obese individuals.Disclosure of Interest: All authors have declared no conflicts of interest.

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P1320 CHARACTERIZATION OF CISPLATIN RESISTANCE IN HEPATOMA CELL LINES
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Introduction: Cisplatin-treated cancer patients often face therapy failure caused by cisplatin resistance. Development of resistance was previously associated with modulation of transporters mediating cellular copper metabolism. Overexpression of the Wilson disease protein ATP7B, a TGN copper transporter, was proposed to increase cellular cp efflux.

Aims & Methods: The human hepatoma cell line HepG2 was compared with a HepG2-variant lacking functional ATP7B expression (KO) in regard to cp sensitivity. Hepatoma cell lines were generated that displayed cp resistance by stepwise increasing cp concentrations. Cells were examined via growth, cell viability assay (MTT) and analysed for apoptosis (Annexin V staining). Inductively coupled plasma mass spectrometry was used to determine intracellular cp level. Gene expression analysis (RT-qPCR) was carried out to determine the impact of various transporters. Overexpression of individual transporter genes and siRNA treatment were used for confirmation of the data.

Results: Treatment of HepG2 and KO cells with various cp concentrations revealed no significant differences in cell viability and intracellular cp accumulation. To examine how KO cells that lack ATP7B can adapt to high cp levels, a cp resistant subline (CPR) was generated. Cp resistance was confirmed by viability assay and intracellular cp load. Gene expression analysis of more than 16 transporters demonstrated an upregulation of metallothionein 1 (MTT: 8.91 ± 4.4) and a downregulation of organic cation transporter 3 (OCT3: –5.17 ± 2) compared to control cell lines. Weaning and regrowth of the CpR cell line in the presence of cp revealed a stable phenotype of resistance in the cells. Downregulation of OCT3 was identified to be permanent while MT1 upregulation was transient and rapidly induced by cp. Overexpression of OCT3 in CpR cells resulted in loss of cp resistance to a level of untreated cells indicating that downregulation of OCT3 is responsible for acquired cp resistance.

Conclusion: We suggest that ATP7B does not seem to be involved in cp resistance, at least in hepatic cells. OCT3 represents a novel marker of cp resistance. OCT3 expression could be a valuable tool for improved prognosis of cisplatin therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Introduction: Recent studies have shown that the single nucleotide polymorphism (SNP) rs738409 in the PNPLA3 gene is strongly associated with severity of nonalcoholic fatty liver disease (NAFLD). However, the traditional direct sequencing (DS) method is time-consuming and labor-intensive. The i-densy (ARKRAY, Inc.), which is based on the quenching probe (QP) method, automatically detects target genes in blood samples by fluorescence quenching within 90 min.

Aims & Methods: The current study compared the QP and DS methods for detecting SNPs in the PNPLA3 gene, and established the impact of the genotype on prognosis of NAFLD. We enrolled 107 patients with fatty liver irrespective of etiology. We used the i-densy fully automated genotyping system with QP. The requisite number of tips, reaction tubes, reagent packs and blood samples were set in their designated places. The forward and reverse polymerase chain reaction (PCR) primers and guanine QP were 5’-cttctcctctgttccgtaa-g-3’, 5’-gtgtgagca-tgcctcctttacag-3’, 5’-ggtagaaggagatacacatc-3’, respectively. PCR consisted of initial denaturation for 1 min at 95°C, and 60 cycles of denaturation at 95°C for 1 s and annealing at 61°C for 30 s. After completion of the PCR, we analyzed melting temperatures. The SNP genotypes were determined by monitoring the change in fluorescence intensity with increasing temperature. The results obtained with the QP method were compared with those obtained with the conventional DS method. Then, we analysed 73 patients with NAFLD according to PNPLA3 genotype in terms of alanine aminotransferase (ALT), aspartate aminotransferase to platelet ratio index (APRI), Fibroscan value, and cumulative hepatocellular carcinoma (HCC) development rate.

Results: The genotypes obtained with the QP method were identical to those obtained with the conventional DS method. In 73 patients with NAFLD, the frequency of the PNPLA3 genotypes CC, CG and GG was 21 (28.8%), 24 (32.9%) and 28 (38.4%), respectively. Serum ALT, APRI and Fibroscan value according to PNPLA3 genotypes CC, CG and GG were 26 (14–59), 33 (11–113) and 46 (17–175) U/L, 0.3 (0.1–1.0), 0.5 (0.2–6.8) and 0.7 (0.2–3.1), respectively.

Conclusion: The i-densy using the QP method can automatically, quickly and easily identify PNPLA3 genotypes in real-world clinical settings. These findings indicate the feasibility of personalized medicine for NAFLD.

Disclosure of Interest: All authors have declared no conflicts of interest.
**Introduction:** Orlistat is an effective pharmacologic weight loss treatment by inhibiting intestinal lipase to reduce dietary fat absorption. Previous studies have suggested that it lowers liver fat by ultrasound or semi quantitative histological scoring in nonalcoholic fatty liver disease (NAFLD).

**Methods:** We aimed to examine the efficacy of orlistat versus placebo in reducing liver fat content by the magnetic resonance imaging (MRI) based on chemical shift imaging. A total of 51 NAFLD patients diagnosed by MRI were randomly assigned to receive trice-daily 120mg oral Orlistat or placebo for 6 months, among them 30 (14 in the Orlistat group and 16 in the placebo group) were included in the interim analysis. Both groups received clinical parameters, laboratory tests and imaging tests at baseline and 6 months including body mass index (BMI), waist hip ratio (WHR), liver enzymes, haemoglobin A1c, total cholesterol (CHOL), serum triglycerides (TG), fasting plasma insulin (FINS), homeostasis model assessment IR (HOMA-IR). The primary outcome was a change in liver fat quantified by MRI which was however transient and dependent on Cu exposure.

Two genes involved in Cu homeostasis displayed an altered expression pattern was noticed. Once Cu resistance was established, the termination of Cu exposure was associated to gain resistance (CuR). Characterization of CuR cells revealed increased survival by FACS and Western Blot. Additional measurements of CTR1 expression was performed by qPCR was performed to quantify the expression of genes related to Cu homeostasis genes. Functional analysis of candidate genes was assessed via siRNA transfection. Notably, cell viability and expression (2.5 and 4.4) which was however transient and dependent on Cu exposure.

**Results:** FLI significantly predicts the presence of liver fibrosis with a sensitivity and 96.43% specificity with AUROC of 0.74. Liver fat fraction and the proportion of hypertension, hyperlipidemia, diabetes mellitus type 2, and obesity were similar. Compared to baseline, end-of-treatment liver fat content was significantly lower in the Orlistat arm (19.38% ± 9.52% to 11.56% ± 7.49%, change was 7.72 ± 6.39%, P < 0.001) but not in the placebo (16.05% ± 8.7% to 14.17% ± 5.98%, change was 1.43 ± 9.54%, P = 0.640) arm. Change of BMI was the only independent factors correlated with reduction of liver fat content (β = 0.522, p = 0.006).

**Conclusions:** Orlistat did significantly decreased liver fat in NAFLD patients via its effect of lowering weight.

**Discussion of Interest:** All authors have declared no conflicts of interest.

**Reference:**

Conclusion: We conclude that FibroScan® represents an eligible tool to diagnose liver diseases in Austrian bank employees. Compared to the previous work of Bedogni et al FLI predicts fatty liver at a lower cut-off level, at least for the examined population. This difference might be due to the fact that FibroScan®CAP is more sensitive than ultrasound.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1326 METABOLOMICS IDENTIFIES PROGRESSIVE NAFLD
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Introduction: Nonalcoholic fatty liver disease (NAFLD) is an affection with increasingly prevalence worldwide, having an important impact on morbidity and mortality, especially when it associated severe fibrosis.

Aims & Methods: We aimed to assess the metabolites that are associated with fibrosis stages in NAFLD, using metabolic method. A total of 40 patients were included in the study, 30 diagnosed with nonalcoholic fatty liver disease (NAFLD) and 10 controls. Steatosis and fibrosis were assessed using Fibromax elaborated by Biopredictive (R) (Paris, France). New metabolomic techniques (high performance liquid chromatography coupled with mass spectrometry (HPLC-MS) and principal component analysis (PCA)) were used to identify final products of various metabolic pathways correlated with liver fibrosis.

Results: Of the 30 patients with NAFLD included in the study, 6 patients (20%) had severe fibrosis. The metabolic profile identified four metabolites that are associated with severe fibrosis: 1.25(OH)2Vitamin D, (p = 0.03), isosropoadhatidyl-

 lipidolamine LPE 0:22:6 (p = 0.05), Lyso phosphatidylcholine LPC 18.2 (p = 0.003), and high levels of butenyl carnitine (p = 0.044). Of these, LPE was the strongest predictor of severe fibrosis (AUROC=0.795, Sensitivity (Se)= 88.33%, specificity (Sp) = 78.79%).

Conclusion: This metabolomics, we can identify patients with fatty liver and severe fibrosis who are significantly exposed to a progressive disease and a higher mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1327 CHRONIC RENAL FAILURE IS ASSOCIATED WITH THE DEVELOPMENT OF NAFLD/NASH
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Introduction: Chronic renal failure (CRF) is frequently associated bone metabo-

lism and osteoporosis with lowered levels of Vitamin D and/or hyperparathyry-

eodism particular in case of hemodialysis. Younger studies suggest an association of low vitamin D levels with non-alcoholic fatty liver disease (NAFLD) and non-

alcoholic steatohepatitis (NASH), as well as metabolic syndrome, and diabetes mellitus. Unfortunately, a causality could not yet be proven.

Aims & Methods: Our aim was to identify patients on higher risk to develop NAFLD/NASH in a selected patient cohort being admitted for renal disorders.

176 patients, admitted to the department of nephrology of the University Hospital Marburg for renal disorders whose plasma vitamin D concentration, phosphate and parathormone levels and liver enzyme levels had been quantified beforehand, were enrolled and a retrospective investigation of laboratory param-

eters (including electrolytes, hormones, and vitamins) and pre-existing medical conditions (including high blood pressure, diabetes, hyperlipoproteinaemia, and more) followed. Appropriate statistical test were used to characterise the cohort (ANOVA; MANN-Whitney-U; FISHER-EXACT) using SPSS TM. Other hepato-

pathies were excluded. Steatosis was assessed by ultrasonography.

Results: Patients were divided into 4 groups according to plasma vitamin D levels (normal >25 ng/ml; low <25 ng/ml) and transaminase levels (AST/ALT>=GT >30 U/l; normal: AST/ALT>=GT <30 U/l). Low 1,25-hydroxivitamin D levels correlated significantly with high creatinine, urea, and LDL levels, while low 25-hydroxivitamin D levels correlated with high cholesterol and triglyceride levels, suggesting a relationship between low vitamin D levels and fat metabolism disorders. Interestingly end stage renal failure (chronic hemodialysis) was signifi-

cantly correlated with the development of NAFLD/NASH with significantly higher levels of AST/ALT and gGT, hyperparathyreodism and hyperphosphate-

mia Transaminases were significantly lower if Vitamin D was supplemented

Conclusion: Vitamin D deficiency is often present in patients with kidney diseases such as chronic renal failure. Vitamin D levels are correlated to age and sex of the patient. Patients suffering from renal failure are on high risk developing NAFLD/NASH if diminished vitamin D levels are present. Supplement of Vitamin D saves from NAFLD/NASH. The correlation of hyperparathyreodism and NAFLD/NASH has to be further investigated in larger patient groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1328 NONINVASIVE DIAGNOSICS OF NONALCOHOLIC FATTY LIVER IN PATIENTS WITH TYPE 2 DIABETES MELLITUS
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Introduction: Usually for the determination of nonalcoholic fatty liver disease (NAFLD) there are instrumental and laboratory techniques, including ultra-

sound diagnosis, determination of aminotransferases, steatotest, 13C-methacetin breath test (13C-MBT). These methods in the diagnosis of NAFLD clinical forms is not specific and do not allow make difference between steatosis and steatohepatitis. The determination of NAFLD clinical forms is a priority in the prediction of further disease and choice of treatment. Steatohepatitis is the active form of NAFLD and progresses to fibrosis oftenly with subsequent liver par-

enchyma degeneration into cirrhosis. Simultaneously, steatosis could be possibly treated in the early stages of disease.

Aims & Methods: The study involved 65 patients with type 2 diabetes and cor-

onary heart disease with metabolic syndrome, aged 37 to 82 years (mean age 53.82 ± 3.46), 29 men, 36 women. According to the ultrasound, the stage of fatty infiltration were differentiated by such criteria for steatosis as diffuse liver par-

enchyma echogenicity intensification against the background of a slight increase in its size (liver echogenicity was significantly higher than normal kidney or lumbar muscle echogenicity); for steatohepatitis - hyperechogenicity of liver par-

enchyma and expansion of portal vein (13 mm or more in diameter).

Results: For steatosis and steatohepatitis determination the ALT monitoring was used, where the level exceeding 0.68 mmol/l signed to steatohepatitis, and below 0.68 mmol/l to steatosis. Portal vein diameter size above 13 mm subscribed to steatohepatitis, and below 13 - steatosis. The study found that indicators of ALT and portal vein diameter negatively correlated with cumulative dose 13C2O2 for 120 minute in case of steatohepatitis. Thus, reduction cumulative dose 13C2O2 on 120 minute from 15% to 10% was accompanied by ALT level increasing (more than 0.68 mmol/l) and portal vein diameter enlargement (over 13 mm).

Conclusion: Differentiation between steatosis and steatohepatitis should be per-

formed by the cumulative dose 13C2O2 on 120 minute evaluation and ALT levels and portal vein diameter assessment.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Non-alcoholic fatty liver disease (NAFLD) is usually considered as the hepatic counterpart of the metabolic syndrome in close relation to obesity and encompasses a disease spectrum spanning simple steatosis through nonalcoholic steatohepatitis (NASH) with or without cirrhosis, and hepatic neoplasms [1]. Clearly, not all obese subjects develop NAFLD and NAFLD can also be found in non-obese patients. Globally, the reported prevalence of non-obese NAFLD varies widely, ranging from 3% to 30% [2]. Today remains unclear how patients without obesity develop NAFLD, therefore it is important to understand the clinical and pathological conditions of non-obese NAFLD.

Aims & Methods: In this study, we investigated the liver stiffness and liver fat content in addition to other clinical and metabolic parameters in type 2 diabetes patient with non-obese and obese NAFLD detected on ultrasonography (US). In this cross-sectional study, 245 T2D patients with age of 40–80 years from the Kyiv City Clinical Endocrinology Center were selected. Inclusion criteria were: age over 18 years, presence of T2D in association with fatty liver disease. The diagnosis of fatty liver was based on the results of abdominal ultrasonography, which was done by trained technicians with Ultima PA (Radmir Co., Kharkiv, Ukraine). Of 4 known criteria (hepatorenal echo contrast, liver brightness, deep intestinal endoscopy within 12 months, with a diagnosis of compensated chronic liver disease). We choose this specific liver stiffness cut-off value in order to reasonably rule-in all patients with advanced fibrosis and cirrhosis, based on the recently proposed Baveno VI criteria which recommends a liver stiffness value measured by ElastPQ and/or laboratory parameters that could help identify those patients who can safely avoid screening endoscopy, similarly to the early diagnosis and management of precancerous colorectal polyps. Our other hand, patient with obese NAFLD are characterized with more pronounced liver fat content and elevation of markers of chronic systemic inflammatory state.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims: The purpose of our study was to identify a liver stiffness cut-off value measured by ElastPQ and/or laboratory parameters that could help identify patients who can safely avoid screening endoscopy, similarly to the recently proposed Baveno VI criteria which recommends a liver stiffness value <20kPa measured by transient elastography in combination to a platelet count >150,000/µl. Data were collected on 1385 patients who underwent ElastPQ measurement from January 2013 to January 2016 in our Department. Inclusion criteria were a liver stiffness value of ≥7 kPa and an upper gastrointestinal endoscopy within 12 months, with a diagnosis of compensated chronic liver disease. We choose this specific liver stiffness cut-off value in order to reasonably rule-in all patients with advanced fibrosis and/or cirrhosis, based on the limited literature available on this specific elastographic technique. Exclusion criteria were history of decompensated liver disease, evidence of porto-spleno-mesenteric vein thrombosis and non-cirrhotic portal hypertension. Varices were graded as low risk (grade <2) or high risk (grade ≥2).

Results: The study included 184 patients (114 [62%] hepatitis C, and 160 [87%] Child-Pugh A). Varices were present in 36% cases, with 10% prevalence of high-risk varices. According to ROC curve analysis liver stiffness measurement and

Odd Odds Ratio (OR) 95% Confidence Interval (CI) P-Value
BMI 1.27 1.106–1.459 0.001
Waist circumference 1.078 1.047–1.112 <0.001
ALT 1.018 1.004–1.033 0.015
Cholesterol 1.008 1.003–1.013 0.003
FPG 1.010 1.003–1.017 0.004

Conclusion: Lean NAFLD was prevalent in our study population and was associated with metabolic risk factors. BMI and waist circumference can be used for preterm risk stratification. NAFLD is a common condition with significant impact on patients’ quality of life. Given the rapid increase in the prevalence of NAFLD, it is essential to better understand the disease, identify risk factors, and improve the diagnostic and therapeutic strategies.
platelet count were evaluated as predictors of high-risk varices. Overall 74/184 (40%) met the new “BAVElastPQ” criteria (that is, liver stiffness <12 kPa and platelet count >150,000/µl). Within this group 11/63 (17%) had any grade of varices and only 1/73 (1%) had high-risk varices. The BAVElastPQ criteria gave sensitivity of 0.95, specificity of 0.44, a positive predictive value of 0.216, and a negative predictive value of 0.98. The AUROC for liver stiffness and platelet count was 0.81 and 0.76, respectively.

Conclusion: The BAVElastPQ criteria correctly identified 99% of patients with high-risk varices. By applying such criteria we could have potentially avoided 40% surveillance endoscopies in our cohort. To our knowledge this is the first study that evaluated the potential role of a new p-SWE technique such as ElasPQ in the non-invasive assessment of clinically significant portal hypertension, similarly proposed Baveno VI criteria though using ElasPQ as an alternative to transient elastography.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1332 PROTON PUMP INHIBITORS INTAKE NOT ASSOCIATED WITH HEPATIC ENCEPHALOPATHY IN CIRRHOTIC PATIENTS

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Introduction: Inhibitors (PPIs) are commonly prescribed and predispose to small bowel bacterial overgrowth. Hepatic encephalopathy is a frequent complication of cirrhosis and is associated with intestinal dysbiosis.

Aims & Methods: This study aimed to identify a possible association between PPI intake and hepatic encephalopathy development in cirrhotic patients. Retrospective analysis of consecutive cirrhotic patients hospitalized in two Gastroenterology Departments over 3.5 years. Collection of clinical data, PPI intake and hepatic encephalopathy development in cirrhotic patients.

Results: 386 patients, 321 males (83.2%), mean age 60.3 ± 12.1 years. Main etiologies of cirrhosis were alcohol (67.4%), alcohol plus hepatitis C (16.3%) and hepatitis B virus (5.2%). Hepatic encephalopathy was present in 222 (57.5%) of the patients and 26.9% had PPI intake. In univariate analysis hepatic encephalopathy was associated with infection (p < 0.001), gastrointestinal bleeding (p < 0.001) and Model for End-Stage Liver Disease (MELD) (p < 0.001). There was no association between hepatic encephalopathy and PPI intake (p = 0.057), gender (p = 0.228) or age (p = 0.352). In multivariate analysis, hepatic encephalopathy maintained association with infection (p < 0.001), gastrointestinal bleeding (p < 0.001) and MELD score (p = 0.001).

Conclusion: In our series, PPI intake was not associated with hepatic encephalopathy development in cirrhotic patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1333 CLINICAL IMPACT OF MULTIDRUG-RESISTANT BACTERIAL INFECTIONS IN LIVER CIRRHOSIS

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Introduction: The incidence of bacterial infections in cirrhotic patients is significantly higher than that observed in general population, being one of the most important causes of decompensation. In theory, the final result of an infectious disease depends of three major factors: the antibiotic resistance of the bacteria or MDR bacteria regarding the 30 (p = 0.001) and 90-day mortality ratio. In the multivariate analysis, elevated BUN and bilirubin, presence of bacterial infection and lower albumin, sodium and SpO2 were independently associated with 30 and 90-day mortality. Higher INR and age were independently associated with 90-day mortality.

Conclusion: The presence of bacterial infection, independently of the antibiotic profile, was associated with a worse prognosis in cirrhosis. In patients with documented infections, no difference was noticed between non-MDI, non-MDR bacteria or MDR bacteria regarding the 30 (p = 0.801) and the 90-day (p = 0.525) mortality rate. In the multivariate analysis, elevated BUN and bilirubin, presence of bacterial infection and lower albumin, sodium and SpO2 were independently associated with 30 and 90-day mortality. Higher INR and age were independently associated with 90-day mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1335 IN HOW MANY PATIENTS WE WILL MISDIAGNOSE ESOFAGEAL VARICES BY USING THE BAVENO VI CRITERIA?
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Introduction: The place of non-invasive techniques for the prediction of presence of portal hypertension in patients with liver cirrhosis is one of the current research aims.

Aims & Methods: The aim of this study was to evaluate the applicability of the Baveno VI criteria in a cohort of known compensated HCV liver cirrhosis patients, to see how often we misclassify the presence of esophageal varices (EV).

Material and method: We did a prospective multicentre study, from September 2015 to October 2016, which included all patients with perfectly compensated HCV liver cirrhosis, diagnosed by means of elastography, ultrasound, endoscopic and biological criteria prior to interferon-free treatment. All patients were evaluated by upper gastrointestinal endoscopy, transient elastography, and laboratory tests. By using this method we classified the patients in: probably without EV (lower stiffness: LS <20kPa and thrombocytes >150.000/mm3), probably with EV (LS>25kPa) and the “gray zone” in between these criteria.

Results: Out of 403 patients, 127 (30.7%) had LS <20kPa, 89 (22%) had LS between 20–25kPa, 190 (47.3%) had LS >25kPa, 120 (29.7%) had thrombocytes >150.000/mm3, while 283 (70.3%) had thrombocytes <150.000/mm3. For the subgroup probably with EV, the Baveno VI criteria had PPV = 84.6% (Se = 40.7%, Sp = 74.6%, NPV = 26.8%) for predicting the presence of esophageal varices, while for the subgroup probably without EV had PPV = 80.3% (Se = 50.2%, Sp = 58.6%, NPV = 75.6%). The subgroup that had LS <20kPa and thrombocytes >150.000/mm3, was compound of 60 patients. Using these criteria we classified the patients in: probably without EV (lower stiffness: LS <20kPa and thrombocytes >150.000/mm3), probably with EV (LS>25kPa) and the “gray zone” in between these criteria.

Conclusion: By using the Baveno VI criteria in patients with liver cirrhosis for the prediction of presence of esophageal varices, we can misclassify only 20% of patients.

Disclosure of Interest: S.A. Popescu: I hereby confirm that I have received financial support (cognitive impairment from any other cause, colour-blindness or dyslexia. Baseline demographics, level of education and medical history were obtained, and a Child-Pugh score was calculated where relevant. Each patient performed the PHES test and the Stroop test. Outcomes included the time taken to perform each PHES test as well as the total PHES, the Stroop on-off time and time taken to complete 5 correct runs on the Stroop App. Results were analysed using exact Pearson’s chi-squared test, or Fisher’s exact test for predicting cut-off of 187 s. All tests were performed with a significance level of 0.05.

P1336 COMBINED RADIOLOGIC-BLOOD PARAMETERS AND BLOOD DERIVED NON-INVASIVE FIBROSIS SCORES IN PREDICTING OUTCOMES IN CHRONIC HEPATITIS C
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Introduction: Non-invasive fibrosis scores (NIFS) are increasingly replacing liver biopsy (LB) for estimation of liver fibrosis. Only limited studies have evaluated the utility of combined use of radiological and blood derived NIFS in predicting cirrhosis and liver decompensation in cirrhotic patients. Similarly there are limited studies evaluating combination of radiologic and blood parameters in predicting fibrosis and outcomes of cirrhosis.

Aims & Methods: We aimed to compare combined radiologic-blood parameters (CRBP) and blood derived non-invasive fibrosis scores (NIF) for predicting pre treatment cirrhosis, development of esophageal varices (EV) and liver decompensation post antiviral treatment (AVT). 1605 patients (Jan 2002 to June 2013) with CHC underwent liver biopsy (LB) and received AVT with pegylated interferon and ribavirin. Three CRBPs (platelet count-bisphenolic diameter index [PSI], platelet count-bisphenidopemidentorial port vein index [PSVIP]), platelet count-bisphenidomnitrogenal port vein index [PSML]) and nineteen blood derived NIFS were calculated from routine blood tests and abdominal ultrasound done prior to starting AVT. AUROCs were calculated for each of these parameters predicting cirrhosis, development of LB and development of EV and decompensation on follow-up after AVT.

Results: Mean age was 41.9 ± 9.7 years (85% males), predominantly genotypes 4 (65%) and 1 (11%). Pretreatment LB (Scheuer criteria) showed stage-0 fibrosis in 190 (12%), stage-1 in 32.9%, stage-2 in 39.9%, stage-3 in 6.8% and stage-4 (cirrhosis) in 6.6% of the patients. After AVT, there were 1,089 (67.8%) responders, 482 (30%) nonresponders and 42 (2.1%) relapers. After median follow-up of 6580.5 patient-years post AVT, 39 (2.4%) developed EV (2 patients had both esophageal and gastric varices and one had only gastric varices) and 52 (3.2%) had decompensation (bleed-9, ascites-39, jaundice-22, hepatic encephalopathy-7, hepatorenal syndrome). CRBPs had higher accuracy for prediction of cirrhosis and EV, while NIFs had higher accuracy for predicting decompensation (Table 1). The highest AUROCs were seen for predicting cirrhosis (AUROC = 0.908) and EV (AUROC = 0.885) and with FIB-4 score for decompensation (AUROC = 0.854). At a cut of 1200 PSI had sensitivity of 87.2% and specificity of 73% for predicting cirrhosis and at a cut of 1100 PSI had sensitivity of 89% and specificity of 85% for predicting EV. A cut-off of 2.5, FIB-4 had a sensitivity of 82.5% and specificity of 80.1% in predicting decompensation.

Conclusion: CRBPs predict cirrhosis and development of esophageal varices with high accuracy. Some of the blood derived NIFS have high accuracy in predicting decompensation post antiviral treatment. Application of these simple scores may help in non-invasive screening of patients at high risk for development of esophageal varices and decompensation after antiviral treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1337 A SMART APPROACH TO THE DIAGNOSIS OF MINIMAL HEPATIC ENCEPHALOPATHY
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Introduction: Minimal Hepatic Encephalopathy (MHE) is present in more than 30% of patients with chronic liver disease (CLD), and is associated with a poorer prognosis including a higher incidence of falls, RTAs and overall mortality. Detection of MHE is often difficult due to time constraints associated with the current gold standard, the psychometric hepatic encephalopathy score (PHES), which is labor intensive. A smartphone application (EncephalApp Stroop Test) has been suggested as a viable alternative.

Aims & Methods: We aimed to validate the use of the EncephalApp Stroop Test as a screening tool for MHE in an Irish population. CLD patients and healthy controls were recruited from outpatients. CLD patients were identified based on clinical and radiological evidence. Written consent was obtained. Exclusion criteria: cognitive impairment from any other cause, colour-blindness or dyslexia. Baseline demographics, level of education and medical history were obtained, and a Child-Pugh score was calculated where relevant. Each participant performed the PHES test and the Stroop test. Outcomes included the time taken to perform each PHES test as well as the total PHES, the Stroop on-off time and time taken to complete 5 correct runs on the Stroop App. Results were analysed using exact Pearson’s chi-squared test, or Fisher’s exact test for predicting cut-off of 187 s. Both tests were compared and correlation coefficients calculated. Results were compared amongst patient groups using a student t-test, where p < 0.05 was considered significant. ROC analysis was used to establish a standard local cut-off for a positive Stroop Test.

Results: A total of 96 patients (51 males) were recruited. Overall, the mean age was 51.7 ± 16.6 years; mean years spent in education 13.8 ± 4.2. In all there were 35 CLD and 61 healthy controls. While there was no difference in age or years spent in education, there were more men in the CLD group compared to the controls, 23/35 (66%) vs. 28/61 (46%), p = 0.06. Within the CLD cohort, 30 (86%) patients were Child-Pugh class A, 4 (11%) were class B and 1 (3%) was class C. As expected, more CLD patients had a positive PHES, 4/35 (11%) vs. 3/61 (7%). Overall, correlation between the two tests was poor, 7 (7%) participants had a positive PHES, while 47 (49%) had a positive Stroop test (z = 0.1516). Among controls, 27 (44%) had a positive Stroop test, while 3 (5%) had a positive PHES. ROC analysis was performed to establish cut-off of 187 s. AUROCs were 0.885) and with FIB-4 score for decompensation (AUROC = 0.854). At a cut of 1100 PSI had sensitivity of 89% and specificity of 85% for predicting EV. A cut-off of 2.5, FIB-4 had a sensitivity of 82.5% and specificity of 80.1% in predicting decompensation.

Conclusion: CRBPs predict cirrhosis and development of esophageal varices with high accuracy. Some of the blood derived NIFS have high accuracy in predicting decompensation post antiviral treatment. Application of these simple scores may help in non-invasive screening of patients at high risk for development of esophageal varices and decompensation after antiviral treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

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United European Gastroenterology Journal 5(5S)
P1338 MULTISPECIES PROBIOTIC ENRICHES THE MICROBIOME WITH LACTOBACILLUS AND LATROCOCCUS AND REDUCES ENTEROCOCCUS ABUNDANCE IN PATIENTS WITH LIVER CIRRHOSIS: RESULTS OF A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

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Introduction: Cirrhosis is accompanied by significant changes of the intestinal microbiome including the overgrowth of the intestine with potential pathogens that can translocate through a weakened gut barrier and cause severe infections. We hypothesized that probiotic bacteria repress intestinal pathogen growth and strengthen the gut barrier.

Aims & Methods: Therefore, we conducted a randomized, double-blind, placebo-controlled study to test the effects of the multispecies probiotic Ecologic Barrier (Winclove, Amsterdam, The Netherlands)/Omnibiotic Hetox (Allergosan, Graz, Austria) on microbiome composition, predicted metagenome functions, and tight junction function in cirrhosis patients. A once daily dose of the probiotic mixture (1.5×10^10 CFU) or placebo was administered to 58 patients with Child’s A cirrhosis. We analysed the stool microbiome prior, immediately after the intervention and six months following end of treatment. Hypervariable region 1–2 of the bacterial 16S rDNA was sequenced and predictive communities were identified using Ada Boost Classifier. Functional predictions were analysed by Phylogetnic Investigations of Communities by Reconstruction of unobserved States (PICRUSi). Zonulin and calprotectin were assessed in stool as markers for gut permeability and intestinal inflammation, respectively.

Conclusion: This is the first study investigating the efficacy of the Stroop test in Ireland. It was quicker and easier to perform compared to PHES test. Age and years in education had a greater impact on the Stroop test, which may affect its application and interpretation. While our ROC analysis suggests a similar cut off to previously published values, there is significant variability and local validation is likely to be required. Overall the comparison with the gold standard PHES was poor. However, there were no false negative Stroop tests suggesting it may be a convenient filter test for MHE.

Disclosure of Interest: All authors have declared no conflicts of interest.

Results: A community of 37 operational taxonomic units (OTUs) was sufficient to pinpoint characteristic features of the microbiome before and after the intervention. Within this predictive community, three OTUs were found to be differentially abundant: Lactobacillus brevis and Lactococcus lactis increased significantly and Enterococcus durans decreased significantly in the probiotic group. Zonulin normalized in 20% of patients in the probiotic group. Predicted metagenome functions (assessed by PICRUSi) and calprotectin did not show any differences during intervention.

Conclusion: In conclusion, a six months intervention with a multispecies probiotic enriched the microbiome of cirrhotic patients with probiotic bacteria. Additionally, the abundance of Enterococcus durans was reduced and the gut barrier was strengthened.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1339 THE IMPACT OF DIABETES MELLITUS ON SHORT-TERM AND LONG-TERM OUTCOMES AFTER LIVER TRANSPLANTATION

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Introduction: Diabetes mellitus (DM) is a growing disease worldwide. Some previous studies have reported negative impact of DM in patients with chronic liver disease. Aims & Methods: This study aimed to investigate the prevalence of DM in patients with liver cirrhosis and its impact on post-liver transplant short-term and long-term outcomes. In a cross-sectional study patients with liver cirrhosis on liver transplant waiting list who had undergone liver transplantation between March 2012 and March 2015 at Shiraz Transplant Center, Shiraz, Iran were included. Clinical and laboratory data of patients were recorded and patients were followed during post-liver transplant period. DM was diagnosed if the patient had fasting plasma glucose (FPG) ≥126 mg/dL or random plasma glucose ≥200 mg/dL in 2 different checkings or receiving anti-diabetic medications. The impact of DM on post-transplant outcomes was investigated using student t-test and chi-square test. Multivariate logistic regression was used for analysis of independent risk factors of mortality after liver transplantation. Kaplan-Meier method was used for analysis of survival.

Results: 1014 patients were included in the study. 259 patients (25.5%) found to have DM. Prevalence of DM was significantly higher among patients with cirrhosis on liver transplant waiting list who had undergone liver transplantation between March 2012 and March 2015 at Shiraz Transplant Center, Shiraz, Iran were included. Clinical and laboratory data of patients were recorded and patients were followed during post-liver transplant period. DM was diagnosed if the patient had fasting plasma glucose (FPG) ≥126 mg/dL or random plasma glucose ≥200 mg/dL in 2 different checkings or receiving anti-diabetic medications. The impact of DM on post-transplant outcomes was investigated using student t-test and chi-square test. Multivariate logistic regression was used for analysis of independent risk factors of mortality after liver transplantation. Kaplan-Meier method was used for analysis of survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

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<th>Stroop+</th>
<th>Stroop -</th>
<th>Kappa</th>
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Introduction: Cirrhotic patients very often need to be hospitalized and it is known that they have a higher mortality rate. The study was retrospective, and we included all hospitalized patients with a final diagnosis of liver cirrhosis a period of 7 years. We divided them in two cohorts, an initial group, which was analysed; and a control group, in which we validated the score. We performed univariate and multivariate analysis in order to determine a prediction model for mortality.

Results: A total of 1163 cirrhotic patients were included. In-hospital mortality rate was 10%. The initial cohort included 899 patients. Regarding cirrhosis etiology: 384/899 (42%) had hepatitis C, 158/899 (17.5%) had hepatitis B, 293/899 (32.5%) were alcoholic, 6/899 (0.6%) were autoimmune, 7/899 (0.7%) were cardiac, 13/899 (1.4%) were premalignant liver cirrhosis and in 5% of cases the etiology was unknown. In univariate analysis, hypotension (p < 0.0001), hyperpotassemia (p < 0.0001), hypopulbunimemia (p < 0.0001), high values of bilirubin (p < 0.0001), high values of creatinine (p < 0.0001) were strongly associated with in hospital mortality. In multivariate analysis, the model including albumin, sodium, potassium, creatinine and bilirubin (all p-values < 0.05) had an AUROC of 0.78, C (0.75–0.81), p < 0.0001. Using this factors as predictors, by multiple regression analysis we obtained in the initial group the following score: ABCPS score = 0.04 + 0.03*Albumin + 0.05 + 0.02*Creatinine + 0.04 + 0.04*Bilirubin + 0.05 + 0.28*Sodium. 

Conclusion: Prevention and prompt treatment of kidney injury, hypotension, hyperpotassemia, can improve survival. ABCPS score can be an useful score to rule out patients with high mortality rate.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb. S.A. Popescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Pfizer, Chiesi, Bristol Meyers Squibb. R. Sirli: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zentiva.

All other authors have declared no conflicts of interest.

References

P1340 VALIDATION OF THE BAVENO VI CRITERIA ON A COHORT OF CIRRHOTIC PATIENTS
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Introduction: The Baveno VI guidelines propose that cirrhotic patients with a liver stiffness measurement (LS) <20 kPa and a platelet count >150000/µL can avoid screening endoscopy as their combination is highly specific for excluding clinically significant varices.

Aims & Methods: The aim of the study was to validate the Baveno VI criteria. We did a retrospective study, from 2009–2014. We took all the patients with transtent elastography data. Inclusion criteria were a LS >12 kPa and an upper gastrointestinal endoscopy within 12 months, with a diagnosis of chronic liver disease. Varices were graded as low risk (grade <2) or high risk (grade ≥2).

Results: The study included 774 patients (hepatitis C virus 40.5%, hepatitis B virus 16.1%, 31.6% etiologies, 11.8% other etiology, and 47.5% were Child Pugh A). Varices were present in 561/774 (2.4%) patients. The diagnosis of ALI (acute liver injury) was mortality in the two cohorts and independent socio-demographic and medical risk factors for mortality in each cohort. Variables tested include age, gender, race, income, Charlson criteria, hospital factors and medical comorbidities including Malnutrition, HTN, Anemia, CKD, Diabetes, CHF, Coagulopathy, Alcoholism, HBV and HCV. Univariate and multivariate logistic regression analyses were performed to identify independent predictors.

Discussion: During the study period, a total of 437,390 patients were diagnosed with acute liver injury and were included in the study, of which 3,799 had previously undergone bariatric surgery. In the post-bariatric cohort, mean age was 58.7 years and 77% were women. The prevalence of acute liver injury in all inpatient admissions for that time period was higher in patients with history of bariatric surgery (0.88%) than in non-bariatric patients (0.75%), p < 0.01. Patients with history of bariatric surgery displayed odds ratio of 1.52 of developing ALI when compared to patients with no history of bariatric surgery (95%CI: 1.43–1.61, p < 0.01). The rate of overall inpatient mortality was higher in non-bariatric cohort (15.9% versus 9.3%). Post-bariatric patients admitted for ALI were more likely to be younger, female, Caucasian and residing in more affluent areas. Post-bariatric patients were also more likely to have higher rates of malnutrition, anemia, alcoholism, and significantly lower prevalence of hepatitis B and C; CHF, diabetes and kidney disease. In a multivariate regression model the presence of CHF and coagulopathy increased mortality risk, and diagnosis of alcoholism was associated with lower mortality risk from ALI in patients with prior history of bariatric surgery (Table).
P1344 LONGITUDINAL MONITORING OF LIVER STIFFNESS BY ACOUSTIC RADIATION FORCE IMPULSE IMAGING IN PATIENTS WITH CHRONIC HEPATITIS B RECEIVING ENTECAVIR

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Introduction: Acoustic radiation force impulse (ARFI) measures liver stiffness (LS), which significantly correlates with the stage of liver fibrosis in treatment-naïve patients with chronic hepatitis B (CHB). So far, the use of ARFI elastography to monitor change in liver fibrosis has not been properly evaluated during antiviral therapy in CHB patients.

Aims & Methods: We aimed to prospectively assess the clinical usefulness of ARFI during long-term antiviral therapy in CHB patients. Seventy-one CHB patients were consecutively recruited and received antiviral therapy with entecavir. Paired liver biopsies were performed in 27 patients at baseline and week 78 of entecavir therapy. LS was assessed by ARFI at multiple follow-up sessions.

Results: LS significantly decreased with treatment and continued to decrease after normalization of alanine aminotransaminase. Overall, 97.2% patients achieved improvement of LS, whereas 19.7% patients had more than 30% reduction in LS values between baseline and week 104. Multivariate linear regression analysis showed that the degree of LS reduction significantly correlated with the change in LS values between baseline and week 104. The presence of elevated triglycerides (239.9 ± 49.3 dB/m vs 284.1 ± 28.1 dB/m, p = 0.001) and obesity (240.4 ± 46.7 dB/m vs 290.7 ± 46.6 dB/m, p = 0.01) were associated with a higher degree of LS reduction.

Conclusion: Bariatric surgery increases the risk of subsequent acute liver injury. Post-bariatric surgery patients admitted for ALI are more likely to have anemia, malnutrition, and alcoholism, supporting the hypothesis that baseline nutritional status may predispose to drug-induced ALI. Addressing these potentially modifiable risk factors may decrease the significant morbidity and mortality of ALI.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1345 CHRONIC HEPATITIS B VIRUS INACTIVE CARRIERS—IMPACT OF METABOLIC DISORDERS IN STEATOSIS ASSESSED BY FIBROSCAN

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Introduction: In chronic Hepatitis B virus (HBV) hepatitic steatosis is mainly attributable to metabolic risk factors, rather than virologic factors. We aimed to assess the presence of hepatic steatosis in chronic HBV inactive carriers using non-invasive methods, namely controlled attenuation parameter (CAP) measurement with fibroscan. We also aimed to identify the impact of hepatic steatosis and their impact in the values of fibrosis determined with fibroscan.

Aims & Methods: Fibroscan was performed in chronic HBV inactive carriers. Assessment of hepatic transient elastography and CAP, with simultaneous assessment of anthropometric, clinical and analytical parameters.CAP values of 248.268 and 280 dB/m defined cut-offs of steatosis grade I, II and III, respectively.

Results: Included 49 patients with a mean transient elastography of 5.1 ± 1.5 Kpa and a mean CAP of 248.9 ± 93.2 dB/m. A significant association was found between the value of CAP and the presence of steatosis in the last ultrasound (237.3 ± 49.3 dB/m vs p < 0.01). In the presence of elevated triglycerides (239.9 ± 49.3 dB/m vs 284.1 ± 28.1 dB/m, p = 0.001) and obesity (240.4 ± 46.7 dB/m vs 290.7 ± 46.6 dB/m, p = 0.01), the presence of elevated triglycerides and obesity were associated with a higher degree of LS reduction.

Conclusion: Different components of MS seem to contribute both to fibrosis and steatosis in chronic HBV inactive carriers. In this subset of patients, the interplay between fibrosus and fibrosus fibrosis should be made with caution since it may be influenced by metabolic parameters.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
A total of 95 HBsAg-positive, HBeAg-negative patients (M/F: 73/22, median age 50 yrs, 34% cirrhotic) with stable viral suppression by NUCs, were treated with NUC antiviral therapy with stable viral suppression (HBV-DNA ≤10⁹ copies/mL) for >1 year before the seroconversion, and NUC therapy was successfully stopped, without reoccurrence of hepatitis B virus. There was no significant difference in age, gender, body mass index (BMI), HBsAg levels, alanine aminotransferase (ALT), or aspartate aminotransferase (AST) between the two groups at baseline. At week 24, HBsAg levels in peg-IFN-α-naa add-on therapy group were significantly lower than the baseline (2.96 ± 0.14 vs 2.90 ± 0.82 c/mL, p = 0.009), but there was no obvious change in NA monotherapy group (3.43 ± 0.46 vs 3.44 ± 0.44 c/mL, p = 0.843). The HBsAg loss in peg-IFN-α-naa add-on therapy group was significant higher than in NA monotherapy group at week 24 (0.87 ± 0.76 vs −0.01 ± 0.10 c/mL, p = 0.008). Among those patients who completed 96 weeks of follow-up, two patients in peg-IFN-α-naa add-on therapy group (22.2%) achieved HBsAg seroconversion, but none in NA monotherapy group (0%).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1347 QUANTIFICATION OF SERUM HBsAG IS A HELPFUL MARKER TO OPTIMIZE THE MANAGEMENT OF ANTIVIRAL NUC THERAPY IN CHRONIC HBeAG-NEGATIVE HEPATITIS B

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Introduction: Serum HBsAg loss is the recommended stopping rule in nucleos(t)-analogues (NUC) responders, even if this event occurs rarely.

Aims & Methods: We aimed to investigate in patients with chronic HBV+ hepatitis the relationship of HBsAg levels during the NUC therapy to evaluate the predictive parameters of HBsAg seroclearance. Patients with CHB, receiving NUC antiviral therapy with stable viral suppression (HBV-DNA <2000 UI/ml), were recruited at the Gastroenterology Unit of the University of Naples “Federico II”. Serum samples from these patients were tested for HBsAg quantification with the Elecsys HBsAg II Quant immunoassay (Roche Diagnostics, Indianapolis, USA). HBsAg levels were determined before starting NUC treatment and on-treatment every 12 months.

Results: A total of 95 HBsAg-positive, HBeAg-negative patients (M/F: 73/22, median age 50 yrs, 34% cirrhotic) with stable viral suppression by NUCs were enrolled. Precisely 56 patients underwent to Tenofovir, 22 Entecavir and 17 Lamivudine. The median treatment duration was 111 months, range 25–183 months. There was a significant decrease of the HBsAg levels during NUC therapy from 3471 UI/ml at the baseline to 1758 UI/ml at the last determination (p < 0.001). The statistically significant HBsAg decrease was also maintained when the patients were clustered according to antiviral therapy, severity of liver disease and previous interferon treatment. HBsAg seroclearance occurred in 18/95 patients (19%).

Conclusion: The results of this study suggest a role of on-treatment HBsAg quantification in the management of NUC-treated patients. HBsAg measurement would be a useful parameter to optimize antiviral treatment schedule.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1348 IMPROVEMENTS IN CHRONIC HEPATITIS B PATIENTS AND THE ALTERATION IN GUT MICROBIOTA AFTER FECAL MICROBIOTA TRANSPLANTATION

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Introduction: Chronic hepatitis B (CHB) is a common liver disease worldwide, and can be progressed to liver cirrhosis and hepatocellular carcinoma. Unfortunately, only a minority of CHB patients could achieve the clearance or seroconversion of hepatitis B virus e-antigen (HBsAg), the end point of treatment, even after multiple years of antiviral therapy. Therefore, it is urgent to develop new and effective strategy for treatment of CHB and examine the mechanisms.

Aims & Methods: In this study, we performed 60 times of fecal microbiota transplantation (FMT) by nasointestinal tube for 20 CHB patients who continued IFN-α-2a add-on therapy during previous antiviral treatment, and accordingly measured the HBsAg level four weeks after each FMT. Fecal samples of CHB patients before (Baseline) and after FMT as well as donors were collected for analyses of gut microbiota by sequencing 16S V3-V4 regions on Illumina MiSeq using PE 250 reagents.

Results: Results showed that HBsAg of 13 patients (65%) was cleared or reduced after one to seven times of FMT. Based on OTUs at cutoff of 3% dissimilarity, there were significant (PERMANOVA, P = 0.001) differences in overall gut bacterial communities among CHB-Baseline, CHB-FMT, and donors forming three major clusters in PCA ordination. Whereas, no significant differences (ANOSIM, P > 0.05) were detected in α-diversity indexes among the three groups, including observed OTU numbers, Shannon index, Simpson index, and Pielou evenness. This implies that it is the taxonomic relative abundance, not taxon number, that contributed to the bacterial community differences. Overall, gut bacteria were mainly composed of Fimbicutes (Lachnospiraceae, Ruminococcaceae, Veillonellaceae), Bacteroidetes (S24-7, bacteroidaceae, Proteobacterales, and Proteobacteria (Alcaligenaceae, Enterobacteriaceae). More specifically, Actinomyces was significantly higher in CHB patients (CHB-Baseline) than FMT-treated patients (CHB-FMT) and donors, and was identified as the biomarker of CHB using LEfSe analysis. Conversely, Prevotella and Eubacterium were significantly decreased in CHB-Baseline after FMT to almost equal to the abundances in donors, and were also identified as biomarkers.

Conclusion: In summary, along with the clearance or remission of HBsAg, the gut bacterial communities of chronic hepatitis B patients were remarkably altered after fecal microbiota transplantation, with some taxa abundances changed accordingly, which suggested their potential application as targets for clinical diagnosis and treatments in future.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1350 HEPATITIS C IN LEBANON: BURDEN OF THE DISEASE AND VALUE OF COMPREHENSIVE SCREENING AND TREATMENT
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Introduction: As few reliable data on the burden of hepatitis C virus (HCV) are available from the Middle East, we analyzed HCV burden in the Lebanese population and the value of comprehensive screening and treatment at different age groups and fibrosis stages.

Aims & Methods: A multi-cohort, health-state-transition model was developed to project the number of HCV patients achieving a sustained virologic response (SVR12) or progressing to compensated cirrhosis (CC), decompensated cirrhosis (DCC), hepatocellular carcinoma (HCC), and liver-related death (LrD) from 2016 to 2036. Epidemiology and mortality data were extracted from the Ministry of Health bulletin while costs were collected from insurance claims. The proportion of patients screened for HCV was projected to increase to 60%–85% (90% low/medium/high screening scenarios) in 2026, with a new cohort of patients being diagnosed each year. SVR12 rates were estimated from clinical trials. Separate models were used for 18–39 and 40–80 age groups to account for different prevalence and screening rates.

Results: Low, medium, and high HCV screening scenarios showed that 3838, 5865, and 7669 individuals would be diagnosed with HCV infection from 2016 to 2036, 40% aged 18–39 and 60% aged 40–80. In the absence of treatment, the projected number of patients with CC, DCC, HCC and LrD in 2036 was 899, 147, and 147 respectively for the 18–39 age groups. In the 40–80 age groups, these projections were substantially greater: 2828 CC, 736 DCC, 665 HCC and 958 LrD. The overall economic burden of these liver complications would reach 150 million € by 2036. Adopting direct-acting antivirals (DAAs) for F0-F4 patients would increase by 43% and 62% the proportion of remaining life-years (LYs) spent in SVR12, compared to DAAs given to F2-F4 or to F3-F4 only, respectively. Although DAAs for F0-F4 increase the cost of HCV treatment, they also provide the greatest population health benefit and lowest cost per LY gained in SVR12. Compared to no treatment and screening, adopting the high screening variant and DAAs access to F0-F4 would cost an additional 1.957 € for every LY gained in SVR12 for patients aged 18–39 and 168 € for the 40–80 age group.

Conclusion: An enhanced screening policy coupled with broader access to DAAs will diminish the future clinical and economic burden of HCV in the Lebanese population and provide the greatest health benefits per amount invested, among middle-aged and elderly adults with a big difference in additional costs between the 2 groups.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1351 HEPATITIS C TREATMENT IN HEMODIALYSIS PATIENTS: THE EFFICACY AND SAFETY OF DIRECT-ACTING ANTIVIRALS IN THE REAL LIFE
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Introduction: Hepatitis C virus (HCV) infection in renal transplant patients pre-disposes to graft failure and progression of renal disease, increasing mortality. Due to immunosuppression and oscillating glomerular filtration rate (eGFR) in the evolution of virological response and clinical outcomes (kidney function, anemia and other adverse effects), HCV-infected and renal transplanted patients treated with DAAs between April 2015 and February 2017 were analyzed.

Results: Including 19 patients, 10 males (53%) and 9 females (47%) with a mean age of 57 years (40–70 years). The majority of these patients (89%) were treatment-naïve. Genotype distribution was the following: genotype 1–74% (14/19), genotype 3–16% (3/19) and genotype 4–10% (2/19). Distribution according to liver stiffness was as follows: F 2–63% (12/19), F3–21% (4/19) and F4–16% (3/19). Twenty-five patients (85%) were treated with sofosbuvir/ledipasvir, 2 (10%) with sofosbuvir/dacabasvir and 1 (5%) with sofosbuvir. Concomitant ribavirin was given in 4 patients. The treatment duration was 12 weeks for 16 patients (84%) and 24 weeks for others (20%). One patient realized only 21 weeks of treatment, needing to suspend it due to severe anemia. Regarding treatment response rates, 74% (14/19) of patients had Rapid Virological Response (RVR) and 100% (19/19) of patients had End of Treatment Response (ETR). The global sustained virologic response (SVR) rate was 100%.

Conclusion: In our sample of HCV-infected with kidney transplant, DAA are effective and well tolerated, even in the more advanced stages of fibrosis, maintaining the integrity and viability of the graft, without interfering with the efficacy of immunosuppressant.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1353 WHAT HAPPENED WITH LIVER STIFFNESS VALUES ASSESSED BY MEANS OF TRANSLANT ELASTOGRAPHY IN PATIENTS WITH HCV LIVER CIRRHOSIS AFTER DAA TREATMENT
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Introduction: Liver stiffness (LS) measurements by Transient Elastography (TE) has been widely accepted as a tool for fibrosis assessment. Aims & Methods: The aim of this study was to assess LS dynamics in a group of patients with HCV liver cirrhosis after DAA treatment. This birentic clinical
trial included 276 patients with compensated HCV cirrhosis (all genotype 1b), with a mean age of 57 years. All patients were evaluated by means of TE at the beginning and at the end of treatment (EOT), and one subgroup (180 patients) also 12 weeks after EOT, all of them with sustained viral response (SVR 12), and another subgroup (55 patients) also at 24 weeks after EOT (SVR 24). Liver stiffness measurements (LSM) values were defined as median value of 10 valid LSM, with IQR < 30% and SR ≥ 60%. Both M and XL probes were used. For diagnosing cirrhosis we used a cut-off value of 12 kPa as proposed by the Tschatschis meta-analysis. We considered a decrease or increase of more than 10% in LSM as being significant.

**Results:** Out of 276 subjects, reliable measurements were obtained in 92.7%, so that the final analysis included 256 patients. The mean LS values decreased significantly after DAA: 25.1±11.7 kPa vs. 22.5±12 kPa (p<0.009). Most patients (57.7% (152/256)) presented more than 10% decrease in LSM values. 23% (59/256) had stable LSM values, while in 17.3% (45/256) the LS values increased. In the subgroup of 180 patients where LSM were also performed 12 weeks after EOT (SVR 12), the mean LS values were significantly lower at EOT as compared to baseline: 20.3±10.8 kPa vs. 25.5±11.4 kPa (p<0.001) and also compared to EOT: 20.3±10.8 kPa vs. 22.8±12.2 kPa, (p<0.04). In the subgroup of 55 patients where LSM were also performed 24 weeks after EOT (SVR 24), the mean LS values were significantly lower at SVR 12 and SVR 24 as compared to EOT (18.7±8.2 kPa vs. 21.6±7.7 kPa and 18.5±6.6 kPa vs. 21.6±7.7 kPa, p<0.01).

**Conclusion:** In our group mean liver stiffness values evaluated by TE significantly decreased after antiviral treatment at SVR 12 and SVR 24, as compared to EOT. Overall, in our study almost 60% of patients had EOT liver stiffness values lower than at baseline, at SVR 12 almost 75% of patients had liver stiffness values lower than at baseline and at SVR 24 almost 77% of patients had liver stiffness values lower than at baseline.

**Disclosure of Interest:** I. Sporea: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zenitiva, Bristol Meyers Squibb.

All other authors have declared no conflicts of interest.

**References**


P1354 ACHIEVING SVR AFTER DAA THERAPY FOR HCV DECREASES THE ACCURACY OF THE BAVENO VI CRITERIA CLASSIFICATION OF HIGH-RISK VARIANTS IN CIRRHOTIC PATIENTS


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**Introduction:** Baveno VI criteria suggest that cirrhotic patients with platelet count (PLT) <150,000/μl and liver stiffness measure values (LSM) <20 kPa bare a low risk for the development of esophageal varices (EV). Liver fibrosis was scored mild (F1), significant (F2) and advanced fibrosis (F3) in 2 cases and classmates (METAVIR). Compensated liver cirrhosis (F4) was diagnosed in 3 patients with liver biopsy or endoscopic screening for esophageal varices. Liver biopsy was done in 19 and histology showed fatty liver in 8 patients. Fatty liver was present in 17 of all patients on antiviral treatment, surgery laboratory panel included complete blood count, liver tests, HOMA-IR and serum lipid levels. Seventeen patients received treatment (standard of care peg-interferon alpha, ribavirin and/or direct-acting antivirals). Sustained virologic response (SVR) was attained by 12 and non-virologic response (NVR) by 5 patients. Serum probes were obtained before treatment and after response evaluation. Statistical analysis included Spearman’s ρ, Mann-Whitney U test, Wilcoxon’s test and Student’s paired t-test.

**Results:** M-C patients with BMI (r=0.522, p=0.015). M-C correlation between overweight and obese patients were higher than in those with normal weight (p=0.020). Patients with F3-F4 had higher BMI (p=0.010) and HOMA-IR (p=0.042). An increase in serum M-C was found in patients after SVR (p=0.018), while no significant variation from baseline values was found in NVR patients. The result remained significant in subgroup analysis of SVR patients with F1-F2 (p=0.028) and in those with fatty liver (p=0.017). M-C in serum did not show any association with assessment of liver fibrosis, fatty liver, insulin resistance and serum lipid levels.

**Aims & Methods:** The aim of the study was to explore the associations between serum M-C, liver fibrosis, fatty liver and metabolic factors in CHC patients before, and after antiviral treatment. We included 21 patients in the study (11 men, 10 women, age 42±7.9) with chronic hepatitis C virus (HCV) infection–17 with genotype 1 and 4 with genotype 3. Liver biopsy was done in 19 and histology showed fatty liver in 8 patients. Fatty liver was present in 17 of all patients on antiviral treatment, surgery laboratory panel included complete blood count, liver tests, HOMA-IR and serum lipid levels. Seventeen patients received treatment (standard of care peg-interferon alpha, ribavirin and/or direct-acting antivirals). Sustained virologic response (SVR) was attained by 12 and non-virologic response (NVR) by 5 patients. Serum probes were obtained before treatment and after response evaluation. Statistical analysis included Spearman’s ρ, Mann-Whitney U test, Wilcoxon’s test and Student’s paired t-test.

**Results:** M-C in serum correlated with BMI (r=0.522, p=0.015). M-C correlation between overweight and obese patients were higher than in those with normal weight (p=0.020). Patients with F3-F4 had higher BMI (p=0.010) and HOMA-IR (p=0.042). An increase in serum M-C was found in patients after SVR (p=0.018), while no significant variation from baseline values was found in NVR patients. The result remained significant in subgroup analysis of SVR patients with F1-F2 (p=0.028) and in those with fatty liver (p=0.017). M-C in serum did not show any association with assessment of liver fibrosis, fatty liver, insulin resistance and serum lipid levels.
Conclusion: MCP-1 concentrations in serum depend on overweight in patients with CHC. Overweight and insulin resistance are associated with progression of CHC. Serum levels of MCP-1 increase after HCV clearance. Fluctuation of the MCP-1 concentration in serum could reflect an antiinflammatory activation of MPS and a gradient dependent dynamic replacement of the profibrotic cell subsets in the liver with resolution ones after SVR. Fatty liver plays a role for inflammatory responses in CHC patients after SVR.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1356 HLA–A02, HLA–A03 AND HLA–B15: A NEW RISK FOR HEPATIC STEATOSIS IN EGYPTIAN CHRONIC HEPATITIS C PATIENTS
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Introduction: HCV interferes with the host lipid metabolism leading to insulin resistance and hepatic steatosis. Although it is usually mild in genotype 4, metabolic syndrome in patients with CHC; the potential to progress to fibrosis, cirrhosis and subsequent hepatocellular carcinoma. Many heritable host factors with observed inter-ethnic variation in the prevalence of steatosis are documented, and in many cases hepatic steatosis may be detected in absence of all these risk factors; so a role for host genetic factors in development of hepatic steatosis in chronic HCV patients may be suggested.

Aims & Methods: In this study, we aim to evaluate the association of HLA class A-B alleles and presence of steatosis in chronic HCV genotype 4 infected patients.

Study: A total of 200 Egyptian patients with non-diabetic chronic HCV patients with normal lipid profile, 98 of them had biopsy proven steatosis. Serological testing of HLA class I antigens (HLA-A, and HLA-B alleles) were performed with a standard complement-dependent micro-lymphocytotoxicity assay.

Results: The frequency of A02, A03, B15 and B17 alleles were significantly higher in chronic HCV patients with steatosis (OR = 1.77, 2.64, 4.44, 5.68) and 95% CI = 0.96–3.27, 1.02–7.04, 0.84–31.17, 1.12–36.65 with P = 0.034, 0.022, 0.044, 0.015 respectively. On the other hand, the frequency of A01 and B12 alleles were significantly higher in patients without steatosis (OR = 0.56, 0.41) and 95% CI were 0.30–1.05, 0.20–0.83 and P = 0.015 and 0.005. On logistic regression analysis, patients who carry HLA-A02, A03 and HLA-B15 alleles may have 2.2, 3.9 and 11.18 fold risk to have hepatic steatosis (B coefficient: 0.78, 1.37; 2.41) with 95% CI = 1.09–4.42, 1.04–11.05, 2.15–58.13; P = 0.027, 0.009, 0.004) while carrying HLA-A01 alleles may be protected from having HCV associated hepatic steatosis; (OR = 0.34,95% CI = 0.16–0.72; P = 0.005) with constant 94.7 and overall accuracy of 69%.

Conclusion: In chronic HCV genotype 4 patients, carrying HLA-A02, HLA-A03 and HLA-B15 alleles may have a risk of presence for hepatic steatosis while presence of HLA-A01 alleles may have a protective role.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1358 THE VALUE OF 2D-SWE.GE FOR THE EVALUATION OF LIVER FIBROSIS IN PATIENTS WITH HCV COMPENSATED CHRONIC HEPATITIS PATHWAYS
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Introduction: Chronic liver diseases are quite frequently encountered in daily practice and are due mostly to chronic viral infections (B or C viruses) and to other conditions such as alcoholic steatohepatitis - (ASH) and to non-alcoholic fatty liver disease (NAFLD). While liver biopsy remains the gold standard method for fibrosis assessment, stage classification and also for necro-inflammation grading, in the last years, non-invasive assessment methods (biological tests and elastographic methods) were developed and they are being used more and more, to the detriment of liver biopsy.

Aims & Methods: The aim of this study was to evaluate the performance of the 2D shear wave elastography technique from General Electrics (2D-SWE.GE), for the evaluation of liver fibrosis in patients with HCV compensated chronic hepatopathies, using Transient Elastography (TE) as the reference method. The study included 145 consecutive subjects with HCV compensated chronic hepatopathies, in whom liver stiffness was evaluated in the same session by means of 2 elastographic measurements: TE (FibroScan, EchoSens) and 2D-SWE.GE (LOGIQ E9, GE Healthcare). Reliable LS measurements were defined as follows: for TE—the median value of 10 measurements with a success rate of >60% and an interquartile range< 30% and for 2D-SWE.GE - the median value of 10 measurements acquired in a homogeneous area and an interquartile range (IQR) < 30%. To discriminate between various stages of fibrosis by TE we used the following cut-offs: F0 = 2.7 kPa, F3 ≥ 9.5 kPa, and F4 = 12.5 kPa [1].

Results: Reliable LS measurements were obtained in 138/145 (95.1%) subjects by 2D-SWE.GE and in 139/145 (95.4%) subjects by TE. Final analysis was performed on 134 subjects with valid measurements by both methods. We found a good positive correlation between the LS values obtained by the 2 methods: r= 0.79, p = 0.0001. Based on TE cut-off values [1] we divided our cohort into 4 groups: F0-F1: 36/134 (26.6%), F2: 23/134 (17.2%), F3: 23/134 (17.2%) and F4: 52/134 (38.8%). The areas under the receiver operating characteristic curve (AUROC) were 0.909 for significant fibrosis (F2 ≥), 0.954 for severe fibrosis (F3 ≥) and 0.942 for cirrhosis (F4 ≥). The best cut-off values for F2 ≥ was 7 kPa (Sensitivity 85.7, Specificity 80.5), for F3 ≥ it was 9.2 kPa (Sensitivity 85.3, Specificity 91.5) and for F4 it was 10.7 kPa (Sensitivity 84.6, Specificity 91.4).

Conclusion: 2D-SWE.GE seems a reliable method for liver fibrosis staging in patients with HCV compensated chronic hepatopathies. The best 2D-SWE.GE cut-off values for F2 ≥, F3 ≥ and F4 ≥ in HCV chronic hepatopathies were 7, 9.2 and 10.7 kPa.

Disclosure of Interest: I Sporea I hereby confirm that I have received financial support (contract travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb, S. A. Popescu I hereby confirm that I have received financial support (contract travel grant or speaker fee) from: Philips, General Electric, Abbvie, AstraZeneca, Zentiva R. Sirl: I hereby confirm that I have received financial support (contract travel grant or speaker fee) from Philips, Abbvie, Zentiva

All other authors have declared no conflicts of interest.

Reference

P1358 DE NOVO HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CIRRHOSIS AFTER TREATMENT WITH DIRECT ANTIVIRAL AGENTS
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Introduction: The risk of developing de novo hepatocellular carcinoma (HCC) persists after reaching sustained virological response (SVR) in patients infected with hepatitis virus C. It has been suggested that risk is increased in patients treated with the new direct antiviral agents (DAA). In this prospective study we present our results of incidence and prevalence of novo HCC in cirrhotic patients treated with DAA and SVR, and also, the risk factors involved in its development.

Aims & Methods: We included all cirrhotic patients due to HCV infection without previous HCC who reached SVR after DAA treatment in our hospital from February 2014 until December 2016 (n = 197, median of follow-up of 17 months). We evaluated with chi square test the following qualitative variables: age, Child-Pugh stage, alcohol consumption pre-treatment, tobacco consumption pre-treatment, diabetes mellitus (DM) pre-treatment, genotype, radiological and endoscopic portal hypertension features pre-treatment. The quantitative variables were evaluated with student t test; age, no. of platelets pre-treatment, fibrosis stage pre-treatment.

Results: During follow-up 11 patients were diagnosed of HCC (5.6% prevalence, 3.9% annual incidence). Among all variables evaluated being in a Child- Pugh B stage vs. an A stage (p = 0.007), pre-treatment DM (p = 0.002) and presence of radiation portal hypertension (p = 0.001) were associated with developing novo HCC. Among the quantitative variables, we evidenced statistically significant differences in the mean value of platelets (p = 0.015).

Conclusion: In our group of patients, a worse hepatic function evaluated with the Child-Pugh classification and indirect markers of portal hypertension (platelets and radiological features) and also DM are associated statistically significant with the development of novo HCC. The incidence (≥1.5%) of novo HCC justifies the screening of HCC.

Disclosure of Interest: All authors have declared no conflicts of interest.
more patients above Clavien IIa were in the observation group, there was no statistically significant difference in the peroperative mortality between the two groups. Besides, preoperative TACE could effectively reduce complications caused by immune reaction ($P = 0.048$). In terms of postoperative index of liver function, TBIL, ALT, AST all had a transient rise during the first 3 days after liver transplantation, but recovered gradually over time. There’s no remarkable difference in the liver function recovery level between two groups ($P = 0.495$; $P = 0.141$; $P = 0.101$).

Conclusion: Preoperative TACE won’t affect liver function recovery and perioperative safety after liver transplantation. For some patients, it could also reduce complications caused by immune reaction.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
**P1362 A NATIONAL STUDY OF CANCER DIAGNOSES IN IRISH LIVER TRANSPLANT RECIPIENTS WITH PRIMARY SCLEROSING CHOLANGITIS**

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**Introduction:** Primary sclerosing cholangitis (PSC) is associated with an increased risk of cholangiocarcinoma, colorectal cancer (CRC) and gallbladder cancer. Orthotopic liver transplantation (OLT) patients are at increased risk of developing de novo malignancies, however limited and conflicting data exists regarding cancer risk post OLT for PSC.

**Aims & Methods:** To examine all recorded malignancies over 2 decades in OLT PSC pts and compare to our non-transplanted PSC cohort. To analyse factors associated with development of malignancies post OLT. We retrospectively studied PSC patients attending the Irish National Liver Unit (INLU) and the Centre for Colorectal Disease (CCD) at St. Vincent's University Hospital from 1/1/1994 to 30/9/16. We integrated this database with the National Cancer Registry in Ireland. This enabled accurate determination of the no. of malignancies recorded in the PSC cohort. Analysed data included age of recipient at OLT, gender, primary OLT indication, immunosuppressive regime, de novo malignancy post OLT, time from OLT to diagnosis of malignancy or death. Statistical analysis was primarily descriptive. Cox Proportional Hazard Model was used to analyse factors associated with mortality in the PSC OLT cohort.

**Results:** 107 of 173 patients had undergone transplant for PSC. 27/107 pts were transplanted for cholangiocarcinoma. 12 post-transplant de novo cancers and 12 HCC/SCC carcinomas were found in 107 patients during 737.8 person years of follow-up. Median time to cancer diagnosis post OLT was 5 years (IQR 2.8–5.9). Recurrence of PSC was observed in 21 patients (19.6%). Post-transplant lymphoproliferative disease (PTLD) remains a major complication after OLT. Previous studies have reported rates of 1–3% in adult OLT pts. 5 pts were diagnosed with lymphoma post OLT representing 4.7% of cohort. Median time to diagnosis was 5.3 yrs [IQR 2.8–10.2]. Regarding CRC, 2 patients developed CRC post OLT. 4 patients who developed colon dysplasia: 3/4 underwent colectomy. All those who developed colonic dysplasia/CRC post OLT had co-existing IBD. All 5 coloectomy specimens for dysplasia/CRC showed significant co-existing inflammation. One patient post OLT underwent a completion proctectomy for rectal cancer. As expected, cholangiocarcinoma as indication for OLT (p = 0.005, RR 2.573, 95%(CI 1.3–4.95) and an older age at transplant (p = 0.05, RR 1.027, 95% CI 1.0–1.054) were associated with higher mortality.

<table>
<thead>
<tr>
<th>Cancer</th>
<th>SIR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any cancer</td>
<td>3.239</td>
<td>1.885–5.186</td>
</tr>
<tr>
<td>Excluding skin cancer</td>
<td>1.97</td>
<td>0.848–3.882</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>36.574</td>
<td>14.65–75.36</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>1.779</td>
<td>0.023–9.898</td>
</tr>
</tbody>
</table>

**Conclusion:** These findings represent national cancer figures in our PSC OLT cohort. The rate of cancer is more than three times higher in this population than the general population. The rates of PTLD are >30 times higher than those in the normal population, and slightly higher than previously reported in unselected liver transplant groups. We could not find any association between the development of PTLD and aggressive immunosuppressive regimes for co-existing IBD post OLT. The study highlights that IBD/PSC patients remain at significant risk of colonic neoplasia after OLT and require intensive surveillance.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1363 OUTCOME OF LIVER TRANSPLANTATION FOR PRIMARY SCLEROSING CHOLANGITIS IN CONTEXT OF HLA-DR MISMATCH: SINGLE CENTRE EXPERIENCE**

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**Introduction:** Primary sclerosing cholangitis (PSC) is a chronic liver disorder of unknown etiology, characterized by inflammation, fibrosis and stenoses of both extra- and intrahepatic bile ducts. For those who develop end-stage liver disease, orthotopic liver transplantation (OLT) remains the only effective treatment currently available. PSC is accompanied with concomitant ulcerative colitis (UC) in a significant proportion of patients. Benefits of routine HLA typing in donor and recipient prior to OLT were proved in the past.

**Aims & Methods:** The aim of this study was to assess the impact of HLA-DR mismatch on acute cellular rejection (ACR), PSC recurrence (rPSC) and course of UC after OLT. time from OLT to diagnosis of malignancy or death. Statistical analysis was primarily descriptive. Cox Proportional Hazard Model was used to analyse factors associated with mortality in the PSC OLT cohort.

**Results:** Of 57 patients, 27 (47.4%) had single mismatch (“M1” group) and 30 (52.6%) had double mismatches (“M2” group) in HLA-DR. No patient had full mismatch. 33/57 (57.9%) patients had ACR: 15/27 (55.6%) of M1 and 18/30 (60%) of M2 (p = 0.94). 4/27 (14.8%) of M1 and 2/30 (6.3%) of M2 had corticosteroid ACR (p = 0.57). Multiple–episodes of ACR occurred in 11/57 (19.3%) patients: 6/27 (22.2%) of M1 and 5/25 (20%) of M2 (p = 0.74). 12/27 (21.1%) had de-novo UC after OLT: 7/27 (25.9%) of M1 and 5/30 (16.7%) of M2 (p = 0.60). In 37 (68.5%) patients, UC was diagnosed prior to OLT. 9/16 (56.3%) patients with M1 and 6/21 (28.6%) patients with M2 had more severe course of UC as compared to course prior to OLT (p = 0.17). 38 patients were evaluated for rPSC, which was diagnosed in 17 (44.7%) individuals. 6/19 patients with M1 and 11/19 with M2 had rPSC (p = 0.19).

**Conclusion:** Patients with single mismatch in HLA-DR have slight tendency towards development of rPSC and worsening of UC after OLT as compared to patients with double mismatch. Analysis of combined mismatch in HLA-DR and HLA-DQ could demonstrate more substantial linkages in respective clinical variables. Therefore, these data have to be considered as preliminary as typing for HLA-DQ from frozen blood samples is currently underway. Supported by Ministry of Health of the Czech Republic, grant nr. 15-28064A. All rights reserved.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1364 GRAFT DYSFUNCTION IN POST-LIVER TRANSPLANTATION: UTILITY OF TRANSIENT ELASTOGRAPHY BY FIBROSCAN®**

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**Introduction:** Liver biopsy remains the gold standard in the diagnosis of graft dysfunction in post-liver transplantation (GDPLT). Liver transient elastography is a valid non-invasive method for liver fibrosis evaluation, with a good correlation in chronic liver diseases. The progression of fibrosis represents a major problem in the post-liver transplantation.

**Aims & Methods:** We aimed to evaluate the predictive role of liver transient elastography in the evaluation of GDPLT and to determine the predictive factors of liver transplantation fibrosis. This was a retrospective analysis of the cohort study of total of 49 patients with post-liver transplantation status who underwent liver transient elastography by Fibroscan®. Selected patients who underwent percutaneous/transjugular liver biopsy. In case of more than one liver biopsy, it was selected the biopsy closer to Fibroscan®. The fibrosis and steatosis evaluated by Fibroscan® were compared with those obtained by liver biopsy. Significant fibrosis was considered if ≥2F. Demographic, analytical and associated variables were evaluated for their impact on liver fibrosis.

**Results:** A total of 32 patients underwent Fibroscan® and liver biopsy. Mean age of 48.53 ± 11.20 years and male gender in 68.8% (n = 22). The mean time between Fibroscan® and liver biopsy was 29.77 ± 36.90 months. The mean elastastography score was 13.45 ± 8.31KPa with IQR/median of 17.11 ± 8.66%. Mean CAP score was 207.12 ± 57.35 dB/m. Regarding liver biopsy, 34.4% (n = 11) had significant fibrosis and 25.0% (n = 8) presented steatosis. Comparing two methods, there was no concordance for steatosis (kappa = 0.273; p = 0.117) or inflammation (Kappa = 0.063; p = 0.710). On the contrary, a moderate agreement for significant fibrosis (kappa = 0.431; p = 0.003) was verified. The mean elastastography score showed an accuracy of 79.7% in predicting histological fibrosis (AUROC = 0.797; p = 0.0007) to a cut-off value of 11.6 KPa (S = 81.8%; Sp = 76.2%). In relation to analytical parameters, only serum albumin was predictive of histological fibrosis (OR = 2.79; p = 0.043).

**Conclusion:** Liver transient elastography represents a non-invasive and valid alternative procedure to liver biopsy in the evaluation of post-liver transplantation fibrosis but not steatosis or inflammation. Liver transient elastography scoring ≥11.6KPa and low values of serum albumin are predictors of post-liver transplantation fibrosis.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1365 NEW-ONSET DIABETES AFTER TRANSPLANT (NODAT): INCIDENCE, RISK ANALYSIS AND IMPACT ON SURVIVAL

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Introduction: Orthotopic liver transplant has become the standard of care for end-stage liver disease and hepatocellular cancer. Better immunosuppressant paved way for improved survival rates post-transplant. But with this longevity comes a higher prevalence of chronic diseases such as New Onset Diabetes After Transplant (NODAT), Hypertension, metabolic syndrome etc. which have a negative impact on function and patient survival.

Aims & Methods: Primary: To determine the incidence of New Onset Diabetes After Transplant (NODAT), Impaired Fasting Glaucemia (IFG) and post-transplant hyperglycemia in living-donor liver transplant recipients. Secondary: To determine the risk factors associated with NODAT and IFG. To determine impact of NODAT on survival and mortality. It was a retrospective cohort study of 283 living donor liver transplant recipients from 29/4/2011 till 26/4/2016. Data was collected from records. Simple means and standard deviation was calculated for continuous variables while frequency statistics were calculated for categorical ones. Risk factors were assessed using binary logistic regression analysis.

Results: A total of 130 post liver transplant patients were analyzed after exclusion. NODAT was present in 41/130 (31.5%) patients, while 19/130 (14.6%) patients had impaired fasting glycemia. Acute cellular rejection, Post-transplant Hyperglycemia and Pre-transplant prediabetes showed increased odds of acquiring NODAT post-transplant. NODAT had significant association with mortality and decreased survival (p = 0.05).

Conclusion: This cohort showed that NODAT is an important post-transplant entity with significant impact on mortality and survival. Early identification of at-risk patients is suggested.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1367 OUTCOMES OF LIVER TRANSPLANTATION IN PATIENTS WITH HEPATOCELLULAR CARCINOMA

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Introduction: Hepatocellular carcinoma (HCC) is the second leading cause of cancer-related mortality worldwide. Patients with viral hepatitis and those with non-alcoholic fatty liver disease (NAFLD), the prevalence of HCC is estimated to be increased in next years. Liver transplantation is now considered as a modality of treatment for patients with HCC.

Aims & Methods: This study aimed to investigate outcomes of liver transplantation in patients with HCC compared to other causes of liver transplantation. In a cross-sectional study patients who had undergone liver transplantation between March 2012 and March 2015 at Shiraz Transplant Center, Shiraz, Iran were included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included. Patients' characteristics including age, gender, model for end stage liver disease (MELD) score, rejection episodes, laboratory data and information included.

Results: Totally 1014 liver transplant patients were included. 94 patients with HCC underwent liver transplantation. There was no statistically significant difference between those with and without HCC in terms of gender, portal vein thrombosis (PVT), diabetes mellitus (DM), hepatic encephalopathy and hospitalization before liver transplantation (P > 0.05). HCC was significantly more prevalent in cirrhosis due to viral hepatitis (P < 0.001). Acute rejection episodes were not different in patients with and without HCC in early post-transplant period (OR = 0.563; 95% CI: 0.27-1.14, P = 0.098). In regression analysis, presence of post-transplant DM (OR = 3.89; 95% CI: 1.36-11.11, P = 0.011) and acute kidney injury within 30 days after liver transplant (OR =4.38; 95% CI: 1.44-1327, P =0.009) were independent predictors of post-transplant mortality. Mean post-liver transplant survival in HCC patients within Milan criteria was 40.48±3.69 months compared to 36.80±6.28 months in those beyond Milan criteria (P =0.82). Mean post-transplant survival in patients with HCC + DM was 32.79±4.7 months compared to 48.51±2.6 months in HCC patients without DM (P =0.009).

Conclusion: Liver transplantation can be used for patients with HCC, however, post-transplant survival seems to be lower. Diabetes mellitus and acute kidney injury were predictors of mortality among our patients with HCC after liver transplantation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1368 THE ASSESSMENT OF THE ADC PREDICTIVE VALUE IN SURVIVAL OUTCOMES OF PATIENTS UNDERGOING RADIONUCLIDE ABLATION FOR METASTATIC COLORECTAL CANCER LIVER TUMORS

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Introduction: Liver is one of the most common metastatic sites of colorectal cancer, nearly 50% patients develop hepatic metastases during the course of their disease. Metastatic spread influences survival rate of those patients. The diffusion weighted imaging (DWI) is MRI sequence designed to detect random movement of water protons in extracellular compartment. Biophysical parameter expressed ADC (apparent diffusion coefficient) is for their system. ADC values for b parameter lower than 300 s/mm² are influenced by perfusion whereas ADC values for b greater than 300 s/mm² depend mainly on diffusion. Aggressive malignant process often develops necrotic areas within neoplastic lesion. Necrotic changes are characterized by high ADC values. We suppose that low ADC values correlate with presence of necrosis in highly malignant lesions effecting in lower survival rate.

Aims & Methods: This is a post hoc analysis of prospective study to assess the predictive value of the ADC in survival outcomes of patients undergoing radiofrequency ablation due to metastatic colorectal cancer lesions in the liver. We analyzed the MRI studies of 52 patients (18 F, 34 M, aged 43±8) performed on 1.5 T scanner one day before the percutaneous RFA treatment. The total number of analyzed lesions was 110 (15 per patient), 83 of them were completely ablated 27 incompletely, what was assessed in follow-up CT studies. The standard protocol of the liver MRI was applied including DWI sequence in b values of 0, 15 and 300 s/mm². ADC maps were calculated for b values of 0.15 and 0.500 s/mm². The mean ADC value was obtained by threefold marking ROI covering the whole metastatic lesion. In cases of multiple foci only the lesion with the highest ADC value was included into analysis. On basis of ROC analysis the cut-off values of ADC were established: 2.49 mm²/s for b value of 0.15 s/mm² and 1.43 mm²/s for b value of 0.500 s/mm². The survival outcomes were assessed by mean of Kaplan-Meier estimator. The p value lower than 0.05 was considered significant.

Results: The statistical analysis included Kaplan-Meier estimator for 52 patients with 39 censored cases (77%). In ADC maps for b value of 0.500 s/mm², the ADC value ≥1.43 mm²/s correlated with longer survival time, whereas ADC value <1.43 mm²/s correlated with shorter survival time. Statistically significant differences were identified by log rank test = 2.6986, p = 0.007. Such a correlation was not observed for ADC values in ADC maps for b value of 0.15 s/mm² (p = 0.058).

Conclusion: The study showed significant differences in survival rate depending on diffusion influenced ADC values of metastatic lesions.

Disclosure of Interest: All authors declared no conflicts of interest.

References

P1369 HOW OFTEN DO WE FIND STEATOSIS AND SEVERE FIBROSIS IN TYPE 2 DIABETES MELLITIUS PATIENTS

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Introduction: Type II diabetes and nonalcoholic fatty liver disease (NAFLD) are frequently associated. NAFLD being considered the hepatic expression of the metabolic syndrome.

Aims & Methods: The aim of the present study was to assess the severity of liver fibrosis and steatosis in a cohort of type 2 diabetic patients, using non-invasive methods: Transient Elastography (TE) and Controlled Attenuation Parameter (CAP). The study included 354 type 2 diabetic patients, who were prospectively randomized (every first 6 patients who were referred to the Metabolic Disease Outpatient Clinic on a consultation day), evaluated in the same session by means of TE and CAP (FibroScan EchoSens) to assess both liver fibrosis and steatosis. Each patient was evaluated for the presence of viral hepatitis (B, C) and an AUDIT-C score was performed to exclude alcohol abuse. Reliabiler liver stiffness measurements (LSM) were defined as the median value of 10 LSM with an IQR/median <30%. For TE and CAP, M and XL probes were used. A cut-off value of 8.2kPa [1] was used to define severe fibrosis (F≥3). For differentiation between stages of steatosis we used the following cut-off values [2]: S2(moderate) > 235 db/m, S3(severe) > 290 db/m.

Results: Out of 354 diabetic patients, we included those with associated viral hepatitis, those with an AUDIT-C score ≥8 and those with unrelatable LSM. The final analysis included 239 subjects (59.4% women, 40.6% men, mean age 64.9±9.3; BMI = 31.8±6.1 kg/m²) with reliable LSM. Accordingly to BMI, 10.8% had normal weight, 26.4% were overweight and 62.8% were obese (35.6% obesity grade I, 17.2% obesity grade II and 10% obesity grade III). Moderate and severe steatosis by means of CAP was found in 18.4% and 69.5% cases respectively. Severe fibrosis was defined by means of TE (LSM ≥ 8.2 kPa) in 29.3% (70/239) of subjects.

Conclusion: In our group, 87.9% of diabetic patients had moderate or severe steatosis by CAP and 29.3% of them had severe fibrosis (TE ≥ 8.2 kPa), suggesting that low ADC values correlate with presence of necrosis in highly malignant lesions effecting in lower survival rate.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb and R. Maret: I hereby confirm that I have received financial support (congress travel grant) from Philips.

R. Siri: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Abbvie, Zentiva, S.A. Popescu: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva

All other authors have declared no conflicts of interest.

References

P1370 LEARNING CURVE EVALUATION USING ELASTIPQ

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Introduction: Nowadays liver fibrosis can be assessed using non-invasive elastographic techniques. ElastIPQ is a quite novel point share wave elastography integration in an ultrasound system.

Aims & Methods: The aim of our study was to evaluate the learning curve of obtaining reliable liver stiffness measurements (LSM), using ElastIPQ. LSM of a trainee were compared to LSM of an expert (with an experience of more than 900 examinations). Our study group included 50 subjects (mean age: 52.7 years, 66.6% men, mean BMI = 25.6 kg/m²). Both the trainee and the expert obtained LSM for each subject, using ElastIPQ (EPIQ 7, Philips Healthcare, Bothell, WA, USA). Reliable LSM were defined as the median value of the measurements of the LSM in a homogeneous area avoiding major blood vessels and with an IQR/median <30%. The learning curve was evaluated using the Receiver Operating Curve analysis using the expert’s results as reference.

Results: The trainee’s performance in obtaining reliable LSM was good (AUC: 0.735, 95% CI (0.557–0.913), p = 0.01). The trainee started to have similar results with the expert after the 30th subject. When looking at the IQRs, they became significantly lower after the 30th subject (2.6 ± 2.1 kPa vs 6.5 ± 2.1 kPa, p = 0.03).

Conclusion: Obtaining reliable LSM using ElastIPQ can be easily achieved after 30 LS examinations.

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I. Sporea: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb

S.A. Popescu: I hereby confirm that I have received financial support (congress travel grant or speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva
PI371 ENHANCEMENT PATTERN OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHRONIC LIVER DISEASE

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Introduction: In patients with liver cirrhosis, hepatocellular carcinoma (HCC) can be diagnosed by noninvasive imaging methods (contrast-enhanced ultrasound CEUS, contrast CT/MRI).

Aims & Methods: The aim of this study was to evaluate which is the most common enhancement pattern of HCC on CEUS in all three phases (arterial, portal and late phase). We performed a retrospective study that included patients with a final diagnosis of HCC established by an imaging method (contrast-enhanced CT or MRI) or biopsy. A total of 249 patients with HCC were examined (180 men, 69 women, mean age 64 ± 10 years); 181 patients had liver cirrhosis and 68 patients chronic hepatopathy with severe fibrosis. All 249 HCCs were evaluated by CEUS using low mechanical index ultrasound, following an intravenous bolus of 2.4 ml SonoVue. CEUS was considered conclusive for HCC if a typical pattern was present following contrast examination (hyperenhancement in the arterial phase accompanied by portal and/or late phases washout). The nodules were classified according to their size in ≤3 cm and >3 cm. We re-evaluated all 249 HCCs CEUS studies using the ACR CEUS LI-RADSv 2016 algorithm.

Results: After CEUS examination a conclusive diagnosis of HCC was obtained in 190/249 cases (76.3%). Arterial phase hyperenhancement pattern was present in 249/249 cases, arterial washout in the arterial phase was observed in 17/249 cases (6.8%) and hypoenhancement in 5/249 cases (2%). In the portal phase washout was observed in 111/249 cases (44.6%); in 121/249 (48.6%) patients the nodules were isoenhancing and in 17/249 (6.8%) the arterial hyperenhancement pattern was maintained. In the late phase washout was observed in 197/249 (79.1%) cases. The nodules ≤3 cm were diagnostic conclusive on CEUS in 63.7% (72/113), while nodules >3 cm had a conclusive result in 86% of cases (117/136), P < 0.001. CEUS examination was conclusive for HCC in 76.3% of the cases (190/249), while using the ACR CEUS LI-RADSv 2016 algorithm in 72.2% of all HCCs (180/249), P = 0.35.

Conclusion: In our study, CEUS arterial hyperenhancement is the most common pattern observed in HCC(91.2% of cases), followed by washout in the late phase (79.1% of cases). The size of the nodule modifies CEUS sensitivity for the diagnosis of HCC: P < 0.001.

Disclosure of Interest: I. Sporea: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, Abbvie, Zentiva. R. Sirli: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, General Electric, Abbvie, AstraZeneca, Zentiva.

All other authors have declared no conflicts of interest.

PI372 DIAGNOSTIC ACCURACY OF CONTRAST-ENHANCED ULTRASOUND ALGORITHM (ACR CEUS LI-RADSv 2016) FOR THE DIAGNOSIS OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHRONIC LIVER DISEASE

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Introduction: Contrast-Enhanced Ultrasound (CEUS) is an imaging method that can be used to discriminate between hepatocellular carcinoma (HCC) and other focal liver lesions (FLLs).

Aims & Methods: This study aimed to test the latest approved version of a contrast-enhanced ultrasound algorithm (ACR CEUS LI-RADSv 2016) for detecting hepatocellular carcinoma (HCC), in a real-life cohort of high-risk patients. In the CEUS study, we evaluated 249 liver lesions in patients at high-risk for HCC (liver cirrhosis of any etiology, chronic hepatitis B or C, with severe fibrosis, current or prior HCC) using the ACR CEUS LI-RADSv 2016 algorithm. CEUS LI-RADS categories used for the diagnosis of HCC were: CEUS LR-S (definitely HCC), CEUS LR-S-V (HCC with macrovascular invasion), CEUS LR-Tr (treated HCC). Contrast-enhanced CT, contrast-enhanced MRI or histology were used as reference methods to evaluate the CEUS LI-RADS classification of the 298 lesions.

Results: According to reference method, the 298 lesions were classified as follows: 216 HCC, 60 non-HCC-nodular lesions (fatty infiltration, hemangiomata, simple cysts, regenerative nodules) and 27 non-HCC malignant lesions (liver metastases, cholangiocarcinoma, indeterminate). The diagnostic accuracy of ACR CEUS LI-RADSv 2016 for the diagnosis of hepatocellular carcinoma was 74.4%, specificity, positive predictive value (PPV) and negative predictive value (NPV) were 65.4%, 96.5%, 97.8% and 53.5%, respectively. When we used CEUS alone, a conclusive diagnosis of HCC was obtained in 69.6% of the cases (147/211), while using the algorithm in 65.4% of all HCCs (138/211), P = 0.35.

Conclusion: In our study 65.4% of all HCCs (138/211) were correctly diagnosed using ACR CEUS LI-RADSv 2016 algorithm, showing good sensitivity, excellent specificity and PPV for the diagnosis of HCC.

Disclosure of Interest: R. Sirli: I hereby confirm that I have received financial support (congress travel grants or speaker fee) from Philips, Abbvie, Zentiva.

S.A. Popescu: I hereby confirm that I have received financial support (congress travel grants, speaker fee) from Philips, Siemens, General Electric, Abbvie, Zentiva, Bristol Meyers Squibb.

All other authors have declared no conflicts of interest.

PI373 DICKKOPF-1 AS A SERUM BIOMARKER FOR PREDICTION OF HEPATOCELLULAR CARCINOMA TREATMENT RESPONSE

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Introduction: Hepatocellular carcinoma (HCC) is the 5th most common cancer worldwide and the 3rd leading cause of cancer-related mortality. In Egypt, HCC is the 2nd most common cancer in men and the 6th most common cancer in women. Egypt has the highest prevalence of HCC worldwide and has rising rate of HCC. HCC is a disease with fast infiltrating growth and poor prognosis. This bad prognosis is due to the lack of an effective method for early diagnosis. So, it is necessary to find a specific & sensitive marker for early diagnosis of HCC and for monitoring of treatment response.

Aims & Methods: The aim of this work is to assess prognostic value of serum DKK1 in predicting treatment response, complication and survival in HCC patients. This study included 60 Patients divided into two groups. Group A: consisted of 30 patients with liver cirrhosis. Group B: consisted of 30 patients with HCC. Group B patients underwent either radiofrequency ablation or ethanol injection. Clinical assessment, routine laboratory evaluation, CT studies and measurement of serum alpha-fetoprotein (AFP) and DKK1 were performed to all patients and repeated to group B patients 1 and 3 months after treatment.

Results: DKK1 significantly can be used for HCC diagnosis even in HCC with inconclusive AFP. The optimum cut off value of DKK1 for diagnosis of HCC was 4.3 ng/ml (AUC 0.89, sensitivity 66.7% and specificity 96.6%) (P < 0.001). Serum DKK1 level significantly decreased after HCC treatment with either radiofrequency ablation or ethanol injection (P < 0.001).

Conclusion: DKK1 has a promising prognostic value and can be used for follow-up of HCC patients before and after treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI374 EFFECT OF FIBROBLAST GROWTH FACTOR-2 AND ITS RECEPTOR GENE POLYMORPHISMS ON SURVIVAL IN PATIENTS WITH HEPATITIS B VIRUS-ASSOCIATED HEPATOCELLULAR CARCINOMA

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Introduction: Fibroblast growth factor (FGF), vascular endothelial growth factor, and hepatocyte growth factor play a critical role in the pathogenesis of hepatocellular carcinoma (HCC). We determined the association of single nucleotide polymorphisms (SNPs) in growth factor signaling–related genes in 245 HCC patients and 483 chronic HBV carriers. The FGF2 rs308447 A allele was significantly associated with small tumor size, early tumor stage, and less vascular invasion. The Flt-1 (FGFR1)-2, Flt-1, and c-MET genes in 245 HCC patients and 483 chronic HBV carriers without HCC.

Results: None of the SNPs was associated with the risk of HCC development in chronic HBV carriers. The FGF2 rs308379 A allele was significantly associated with small tumor size, early tumor stage, and less vascular invasion. The Flt-1 rs4772129 C allele was associated with low alpha-fetoprotein levels. Kaplan-Meier analysis showed that the patients with the FGF2 rs308447 TT genotype had lower survival rates than the patients with the CC or CT genotype (P = 0.016) and that the FGF2 rs308379 A allele carriers had shorter survival rates than those of patients with the TT genotype (P = 0.020). The FGF2 rs1219648 CC genotype was significantly associated with increased survival rates (P = 0.047). Multivariate Cox proportional analysis revealed that the FGF2 rs308379 A allele (hazard ratio = 1.663, P = 0.004) and advanced stage (hazard ratio = 3.430, P < 0.001) were independent prognostic factors for overall survival rates in patients with HCC.
Conclusion: These observations suggest that the SNPs of the FGFR2 and FGF18 genes can be potential prognostic indicators in patients with HBV-associated HCC.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1375 EXTRAHEPATIC HEPATOCELLULAR CARCINOMA METASTASIS: IMPORTANCE OF AN EARLY DIAGNOSIS AND TARGETED THERAPY
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Introduction: Extrahepatic HCC metastasis are associated with a poor prognosis. Nevertheless there are some effective therapies available.

Aims & Methods: The aim of this study was to assess the main sites of extrahepatic metastasis in hepatocellular carcinoma (HCC) patients and to evaluate the clinical evolution and treatment. This was a retrospective single-center study in which patients with HCC confirmed extrahepatic metastasis between January 2010 and December 2016 were evaluated.

Results: We evaluated 51 consecutive patients, 80% male, with a mean age of 64 ± 11 years at the time of metastasis. In 41% of the patients the metastases were present at the time of HCC diagnosis. In patients with subsequent metastases, the median time until its development was 9 months (IQR 5–16). The diagnosis of metastasis was incidental in 51% of the patients. Computed tomography (CT) was the main diagnostic method (86%) and in 18% of the cases histological confirmation was obtained. Nineteen patients underwent thoracic CT and five performed bone scintigraphy prior to metastasis. A total of 70 metastatic sites were identified, the more frequent were lung (33%) and bone (14%).

Conclusion: A systematic HCC staging, with thoracic CT and bone scintigraphic studies, may provide an earlier metastasis detection and enable a targeted treatment with increased survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1376 MANAGEMENT OF INTERMEDIATE STAGE HEPATOCELLULAR CARCINOMA
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Introduction: According to the Barcelona Clinic Liver Cancer (BCLC) staging system, intermediate stage contains very heterogeneous hepatocellular carcinoma (HCC) patients. Recently, subclassification of intermediate stage on the basis of Milan criteria and up to 7 criteria is proposed. In this study, the effectiveness of delivering bead-transarterial chemoembolization (DEB-TACE) in intermediate stage was investigated.

Aims & Methods: 120 patients (M: F = 90:30; median age = 76; Child A: B: C = 72:4:4; BCLC stage A: B: C: D = 6:85:23:6) with unresectable HCC who received DEB TACE in our hospital were studied. The objective radiological response was classified according to the modified Response Evaluation Criteria in Solid Tumors (mRECIST) v.1.1 by using dynamic CT at one or two months after therapy. Adverse events were evaluated using NCI CTCAE v.4.03.

According to Bolondi’s subclassification, the patients of BCLC B stage were divided into four groups (B1: 31, B2: 19, B3: 19, B4: 10). The response rate and tumor factor associated response in these patients group were examined.

Results: The overall response rate and disease control rate in intermediate stage were 36% and 89%, respectively. Considering the subclassification, the response rate in B1 group (61%) was significantly higher than that of B2 + B3 group (29%). Although B2 + B3 group was constituted by the patients who did not satisfy the up to 7 criteria, only in the patients with less than 7 tumors, the response rate (60%) was similar to that of B1 group. Tumor factors associated response and found to be significant on univariate analysis were simple gross classification (classification based on tumor number) and number of tumor. Tumor diameter was not associated with the response.

Conclusion: For the treatment of intermediate stage of HCC, although DEB-TACE is considered to be most effective in B1 group, it is suggested that DEB-TACE is also effective in the patients with less than 7 tumors in B2 + B3 group. In cases with more than 7 tumors, as the response rate is considered to be extremely low, sorafenib and arterial infusion therapy are recommended in B2 + B3 group.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1377 HEPATOCELLULAR CARCINOMA RECURRENCE RATE IN INFECTED PATIENTS TREATED WITH DIRECT ANTIVIRAL AGENTS. A SINGLE-CENTER EXPERIENCE
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Introduction: In the last few years many HCV patients with previous diagnosis of hepatocellular carcinoma (HCC) have been treated with direct antiviral agents (DAAs) for HCV infection. However there are conflicting data on HCC recurrence rate after DAAs therapy.

Aims & Methods: Aim of this study was to prospectively evaluate the rate of HCC recurrence following sustained virological response (SVR) by DAAs. From April 2015 to September 2016 we consecutively enrolled HCV infected patients previously treated for HCC at Liver Unit of Cardarelli Hospital. All patients had a free-disease survival from HCC of at least 6 months before starting antiviral therapy. The efficacy of HCC therapy was evaluated according to mRECIST criteria at CT or MRI. Radiological evaluation was carried out within 30 days from the start of therapy. All patients underwent DAAs therapy, selected on an individual basis according to the recommendation issued by the Italian association of the study of the liver.

Results: A total of 71 patients were enrolled. Among them, 42 patients had available data on SVR status and were considered for the analysis. There were 21 males (58.3%) and 15 females. The median age of the patients was 73 years (range 48–83). The median time of treatment was 12 months after the beginning of therapy (range: 6–18 months). Genotype distribution was as follows: 36 patients infected with genotype 1 (85.7%), 5 with genotype 2 and 1 patients with genotype 3, SVR was achieved in 38/42 patients (90.5%). HCC recurrence was observed in 11/38 patients with SVR (28.9%). The median time for recurrence was 9 months from the start of therapy with a range of 1–13 months; with 2 patients who showed recurrence during therapy. Among the patients who did not achieve SVR, 1/4 showed HCC recurrence after 10 months from end of treatment.

Conclusion: Treatment with DAAs are highly effective with a SVR of about 90% even in patients with advanced liver disease. Nonetheless, in patients with previous history of HCC, the eradication of HCV did not reduce the risk of short and medium-term recurrence.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Primary Liver Cancer: A SEER-BASED STUDY
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Introduction: Primary liver cancer is the sixth most common cancer in the world, after cancers of the lung, breast, colorectal, prostate and gastroesophageal. However, the extremely poor prognosis for primary liver cancer makes it the second leading cause of cancer-related death globally (745,000 deaths, 9.1% of the total death)[2]. Histologically, the majority of primary liver cancer is either
hepatoceleular carcinoma (HCC) or intrahepatic cholangiocarcinoma (ICC), which combined hepatoceleular carcinoma and cholangiocarcinoma is less common[3]. Though these treatments have shown modest improvement in overall survival in early stage disease, the 5-year relative survival for distant metastasis patients is still low (3.1%). As we all know, primary liver cancer preferentially metastasis to the portal vein and extrahepatic metastasis with or without extrahepatic spread, and AFP > 200 as post-treatment factors and DC as post-treatment variable were associated with survival. Multivariable cox regression revealed that the only independent predictors of mortality were AFP > 200 (HR 2.2, 95%CI 1.27–3.8, p = 0.004) and DC (HR < 0.50; p < 0.05). However, the influence of these factors was not homogeneous during time. Indeed, in the early and intermediate period AFP > 200 was an independent predictor of worse outcome (at 6 mo: HR 16.602, 95%CI 1.97–139.5, p = 0.009; at 1 yr: HR 3.069, 95%CI 1.07–8.76, p = 0.036). As illustrated in the multivariable post-treatment prognostic model DC was associated with a better mid- and long-term survival (at 1 yr: HR 0.245, 95%CI 0.06–0.87, p = 0.030; at 2 yrs: HR 0.356, 95%CI 0.12–1.03; p = 0.05; at 3 yrs: HR 0.904, 95%CI 0.62–0.29; p = 0.00001).

Conclusion: In patients with BCLC-C HCC, AFP > 200 mg/mL is a strong prognostic factor in the early and intermediate period, while DC is associated with long-term patients’ survival.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods:

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Introduction: Portal vein thrombosis (PVT) is defined as a partial or complete occlusion of portal vein and/or its tributaries by a thrombus. It exposes to portal hypertension (PHT) by infrarenal occlusion and consequently to upper digestive hemorrhage, usually due to rupture of gastro esophageal varices.

Disclosure of Interest: All authors have declared no conflicts of interest.

P3183 THE EVOLUTION OF ESOPHAGEAL VARICES IN NON CIRRHOTIC PORTAL HYPERTENSION CAUSED BY PORTAL VEIN THROMBOSIS

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Introduction: Portal vein thrombosis (PVT) is defined as a partial or complete occlusion of portal vein and/or its tributaries by a thrombus. It exposes to portal hypertension (PHT) by infrarenal occlusion and consequently to upper digestive hemorrhage, usually due to rupture of gastro esophageal varices.

Aims & Methods: The aim of this study is to specify the evolution of esophageal varices and thus risk of rebleeding in patients with PHT by PVT unrelated to cirrhosis. It is a retrospective study from January 2010 to February 2017, including 101 patients followed for PHT by PVT without liver disease in the department of hepatogastroenterology (medicine C) at Ibn Sina University hospital of Morocco. PVT was diagnosed by abdominal doppler ultrasonography in all patients.

Results: The mean age of patients was 36 ± 15 years with extremes ranging from 11 years to 70 years. The sex ratio M/F was 0.42. Five percent of patients had a splenectomy for undocumented reasons before the diagnosis of PHT. Concerning the etiology, 10.9% (n = 11) were hospitalized for melena, 60.4% (n = 61) for hematemeisis and melana and 28.7% (n = 29) for non-specific abdominal pain. Clinical examination was normal in 10.9% (n = 11), showed an asities in 11.9% (n = 12), and signs of PHT such as splenomegaly and collatellar abdication in 30.7% (n = 32). Endo-scopic examination revealed in 95.1% (n = 100) a complete blood count showed that 16.8% (n = 17) had thrombocyteopenia, 12.9% (n = 13) had bictryopenia, and 42.6% (n = 43) had pancytopenia. In all patients, upper GI endoscopy was performed. Hypertensive gastropathy was found in 50.7% (n = 31), grade I esophagogastric varices (EGV) in 5.9% (n = 6), grade II in 30.7% (n = 32), grade III in 48.5% (n = 49) and gastric varices were found in 13.9% (n = 14). These varices were with red spots in 18.8% (n = 19). All patients had abdominal doppler ultrasoundography showing a PVT in 60.3% (n = 61), was partial in 33.6% (n = 34), complete in 13.9% (n = 14). This was attributed to the splenic vein in 19.9% (n = 15). Portal vein thrombus was found in 39.6% (n = 40). All patients performed an etiologic assessment of thrombosis, myeloproliferative syndrome was found in 8.9% (n = 9), deficiency in inhibitors of coagulation in 31.7% (n = 32), celiac disease in 4.9% (n = 5), neoplastic lesions in 2.9% (n = 3), no etiology was found in 51.4% (n = 52). Endoscopic variceal Ligation (EVL) was performed in 70.3% (n = 71), the mean number of ligation sessions was 3 and eradication of oesophageal varices was noted in 69.3% (n = 70). All patients received anticoagulant therapy except those having portal cavernoma with no obvious cause and 23% of patients (n = 43) received beta-blockers for secondary prophylaxis. During follow up, 5.9% (n = 6) of patients have not been seen at consultation and no rebleeding was noted in 89.1% (n = 90). Concerning portal thrombus, it dissolved in 49.5% (n = 50) and stabilized in 10.8% (n = 11).

Conclusion: The evolution of esophageal varices in non-cirrhotic portal hypertension due to PVT seems to be better than in cirrhotic portal hypertension. Indeed 89.3% of patients in this study didn’t rebleed after eradication of esophageal varices.

Disclosure of Interest: All authors have declared no conflicts of interest.

P3185 LONG-TERM OUTCOMES OF PATIENTS WITH ACUTE CALCULOUS CHOLECYSTITIS AFTER SUCCESSFUL REMOVAL OF GALLBLADDER STONES WITH PERCUTANEOUS TRANSPANIC THEPATIC CHOLANGIOSCOPY: A DECADE EXPERIENCE AT A SINGLE TERTIARY CENTER

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Introduction: Percutaneous cholecystostomy (PCT) has been an alternative treatment for acute calculous cholecystitis (ACC) for the patients unsuitable for early cholecystectomy. Lithotomy with percutaneous transhepatic cholangioscopy (PTCS) after PCT track maturation is particularly considered for those patients with gallbladder (GB) stones who are poor surgical candidate. We examined the long-term outcomes of 171 patients with ACC treated by PTCS.

Aims & Methods: This study was a retrospective observational study of 171 consecutive patients who treated with PTCS for ACC in the period from 1 Jan 2005 to 31 Dec 2015. Outcome measures included the success rates, adverse events, recurrence rate and mortality. All data were collected from patients’ medical records.

Results: PTCS achieved complete clearance of GB stones in 157 patients (91.8%). The complication rate of PTCS was 3.5% (6/171). The adverse events included GB perforation (n = 3; 1.8%), hemorrhage (n = 2; 1.2%), disruption of the percutaneous transhepatic biliary drainage fistula (n = 1, 0.6%), and all of which resolved with conservative treatment. The overall recurrence rate of gallstone diseases was 11.5% during the follow up period. The incidence of recurrent gallstone diseases was significantly higher in those with completely removing GB stones than in those without complete clearance (10.2%, 16/157 vs 21.4%, 3/14; p<0.05). The frequency of recurrence of gallstone disease in patients with contrast passage to the duodenum on cholangiography after PTCS was lower than that in patients without contrast passage.

Conclusion: Gallbladder stone removal with PTCS would be recommended as an effective and safe treatment modality for the patients with acute cholecystitis who are unsuitable for surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

P3196 SINGLE DEVICE TECHNIQUE FOR ENDOSCOPIC TREATMENT OF BILE DUCT STONES

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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) with sphincterotomy is a well-established standard method for treating bile duct stones (BDS). After cannulation of the common bile duct (CBD), a guidewire is placed into the CBD and a sphincterotomy is performed. Subsequently, stone extraction using a balloon or basket catheter is performed. Because of this multistep process, endoscopic treatment for BDS always comes with a risk of losing CBD cannulation. A combination catheter that combines a sphincterotomy and a retrieval balloon in a single instrument can eliminate one step in the procedure.

Aims & Methods: We aimed to evaluate the feasibility and safety of POC to confirm CBD complete clearance after endoscopic treatment of difficult bile duct stones. From 1st June 2016 to 30 March 2017 all consecutive patients treated with Dilated assisted stone extraction (DASE) for difficult bile duct stones at our institution, underwent POC to verify CBD stones complete clearance. Ultrasonic (5.9 mm diameter) or Slim (8.5 mm diameter) endoscopes (Fujifilm EG 530NW or EG 530FP) or standard gastroscope (9.9 mm diameter) ( Olympus GIF-HQ190), under CO2 insufflation, were used by the peroral route for intubating all accessible bile ducts. Technical success rate, procedural time, outcome and side-effects of POC were assessed. All adverse events were recorded.

Results: POC was performed in 26 patients (17F/9M mean age 74.6 years ± 11.9) under propofol sedation (25 patients) or deep sedation (3 patients). Mean CBD size was 15 mm ± 3.65; mean stone diameter (13.5 mm ± 1.70); mean balloon dilation (13.5 mm ± 2.12). Intubation of the papilla and distal biliary duct was successful in 26 (100%) cases (guide-wire assistance in 17 cases, 65.4%). Hepatic hilm was reached in 13/26 (50%) patients with a complete CBD evaluation. Mean investigation time was 6.3 ± 1.5 min (range of 5–9 minutes). POC showed partial or persistent large amount of stones in 91.5% (sludge in 2.7% cases), complete success in the endoscope, and stones in 4 (15.4%) cases with subsequent endoscopic stones removal. In the remaining patients, POC confirmed complete duct clearance. No adverse events occurred.

Conclusion: POC for CBD complete clearance confirmation using POC is a feasible, quick and safe procedure that can help on clinical decision making (for example obviating the need for possible plastic stent or naso-biliary drainage placement) without substantial increase of time or costs. Our experience, however, is preliminary and should be followed up to evaluate the feasibility of the procedure, which could represent the first step for the development of a possible new indication in the setting of difficult biliary stone management.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: The aim of this study was to investigate whether application of fibrin glue around Laparoscopic choledochotomy as a method of extracting common

Introduction:

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All authors have declared no conflicts of interest.

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American Society for Gastrointestinal Endoscopy (ASGE) emitted, in 2010, guidelines for the clinical orientation of patients with suspected choledocholithiasis (CL), suggesting the direct referral to endoscopic retrograde cholangiography (ERC) in certain groups. However, the ERC is an invasive exam and some studies demonstrated that a significant amount of patients classified with very strong risk of CL did not have alterations in ERC.

Aims & Methods: The aim of this work was to assess the accuracy of the ASGE guidelines in portuguese population. This is a retrospective study included that 212 patients (52.8% female sex; 47.2% male sex; mean age 73.9 (+14.6 years) admitted to the hospital from 2014 to 2016.

Results: Of the 212 patients, 28 (13.2%) had intermediate risk of CL and 184 (86.8%) had high risk, according to the ASGE criteria. These patients were submitted to the following exams/interventions: ERC (154 patients); magnetic resonance cholangiography (50 patients) and endoscopic ultrasound (8 patients). In patients initially classified with high risk of CL, this was confirmed in 119 (64.7%). The same was seen in 10 (35.7%) of the patients with intermediate risk. The ASGE criteria, when applied to this population, demonstrated an accuracy of 64.3% (21.7% sensitivity; 92.3% specificity) in the high-risk group, and an accuracy of 35.5% (78.3% sensitivity; 7.8% specificity) in the intermediate-risk group. Of the patients with intermediate probability, 12 (42.8%) underwent ERC and CL was found only in 4 of these patients. The presence of cholangitis, a common bile duct > 6 mm, a common bile duct stone visualized on transabdominal US and a total bilirubin >4 mg/dL were strong predictors of CL. The overall ERC complication rate was 13% (20 patients), of whom 8 had no complication. The ASGE guidelines showed a limited diagnostic accuracy in the identification of patients who actually require ERC, conditioning a significant number of unnecessary procedures with subsequent complications associated with it. If the orientation of these patients, with greater use of less invasive diagnostic techniques such as magnetic resonance cholangiography and endoscopic ultrasonography.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

The role of endoscopy in the evaluation of suspected choledocholithiasis by the American Society for Gastrointestinal Endoscopy, volume 71, No1. 2010 Gastrointestinal Endoscopy

P1388 DOES FIBRIN GLUE APPLIED ON THE CHOLANGIOTOMY IN LAPAROSCOPY IN COMMON BILE DUCT EXPLORATION REDUCE THE RISK OF BILE LEAKAGE? A RANDOMIZED STUDY

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Introduction: Laparoscopic choledochotomy as a method of extracting common bile duct stones is a technique with many advantages. One problem, however, is bile leakage around the T-tube. To some extent, the leakage may be reduced if the incision is sutured around the T-tube, but this technique has some disadvantages. The aim of this study was to investigate whether application of fibrin glue around the tube results in less leakage than suturing.

Aims & Methods: Between 2012 and 2016 a total of 1347 cholecystectomies were performed in Enköping Hospital. From this group, 42 patients were included in the study and randomized to suturing or fibrin glue for closing the cholangiotomy around the T-tube. Postoperative cholangiography was performed after 7–10 days after surgery. The amount of flow in the abdominal drain and the level of bilirubin was measured daily. In case the flow ceased, the abdominal drain was extracted three days after surgery.

Results: No significant difference between the groups was seen regarding the flow of the abdominal drain or the T-drain for the first three days or operation time

Conclusion: Discussion Fibin glue may be an option to seal cholangiotomy around the T-tube, but studies with greater statistical power are needed to confirm this.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1389 THE IMPACT OF BARIATRIC SURGERY ON ACUTE CHOLANGITIS MORTALITY AND OTHER OUTCOMES: A NATIONWIDE ANALYSIS

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Introduction: Rapid weight loss after bariatric surgery (BS) has been associated with the formation of gallstones, and subsequent acute cholecystitis and cholangitis (AC). However, the complex post-surgical anatomy limits the possibility of performing an ERC as part of AC treatment. Therefore, the aim of this study was to assess the impact of bariatric surgery on mortality and resource utilization among patients with AC using a national database.

Aims & Methods: This was a case-control study using the National Inpatient Sample 2013, the largest publically available inpatient database in the United States. All patients with an ICD-9 CM code for a principal diagnosis of AC were included. There were no exclusion criteria. Patients with a past history of BS were identified using the appropriate ICD-9-SCM codes. The primary outcome was all cause mortality. The secondary outcome was resource utilization: use of ERC, cholecystectomy, length of hospital stay (LOS), total hospitalization charges and costs. Multivariate regression analyses were used to adjust for the following confounders: Age, sex, race, income in patients’ zip code, Charlson Comorbidity Index, hospital region, location, size and teaching status.

Results: A total of 274,775 patients with AC were included in the study, of which 4,240 (1.7%) had undergone BS. The mean patient age was 51 years and 48% were female. After adjusting for confounders, patients with and without history of bariatric surgery had similar adjusted odds of mortality (adjusted Odds Ratio (aOR): 1.37, 95% CI: 0.51–3.65, p = 0.52). As far as resource utilization, patients with bariatric surgery had lower adjusted odds of ERC (aOR: 0.28, 95% CI: 0.09–0.83, p = 0.02), but higher odds of cholecystectomy (aOR: 3.18, 95% CI: 1.00–10.05, p = 0.04). Both patient groups had similar adjusted length of stay (adjusted mean difference: 1.19 days, 95% CI: 0.09–0.83, p = 0.16) total hospitalization charges (adjusted mean difference: $2237, 95% CI: $2308 – $6782, p = 0.49), and total hospitalization charges (adjusted mean difference: $7477, 95% CI: -$8955–$24549, p = 0.39).

Conclusion: Bariatric surgery has no impact on inpatient all-cause mortality among patients who develop acute cholangitis, despite its association gallstone acute pancreatitis and limited ERC performance. In addition, bariatric surgery does not affect resource utilization in this patient population as measured by length of stay and total hospitalization costs.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1391 PATHOLOGICAL, CLINICAL AND RADIOLOGICAL CHARACTERISTICS OF NEOPLASTIC AND NONNEOPLASTIC GALLBLADDER POLYPS

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Introduction: Prevalence of gallbladder polyps in the Netherlands is 943 per 100,000 cholecystectomies. Histopathologically these gallbladder polyps can be divided into neoplastic and non-neoplastic polyps (without malignant potential). Although cholecystectomy is only indicated for neoplastic polyps, 47% of polyps after cholecystectomy are nonneoplastic polyps. Data of the Dutch Pathology Registry was used. In this search 2081 histopathologically proven gallbladder polyps (or focal) wall thickening > 5mm were identified in patients of >18 years undergoing primary cholecystectomy between 2003 and 2013. Of these
polyps 56.3% was neoplastic (adenoma, dysplasia, carcinoma or other malignancies) and 43.7% was nonneoplastic (all abdominal symptoms of polyp). Age and sex of the patient, number of polyps, size of the polyp, coincidence with gallstones and presentation as protruding polyp or wall thickening were extracted from the excerpts. Additional clinical and radiological information was collected from patients’ medical records at three hospital in the Netherlands (n = 178). The following clinical and radiological predictors were considered: age, gender, ethnicity, BMI, medical history (PSC, Hepatitis, metabolic syndrome, gallbladder disease, Salmonella typhi or Helicobacter pylori infection), family history of gallbladder disease, and presence or absence of abdominal symptoms and radiological features (size, number, shape, surface and echogenicity of the polyp). Associations between possible predictors and gallbladder polyps were assessed using univariate and multivariate logistic regression analysis.

Results: Patients with nonneoplastic polyps were found to be significantly older than patients with nonneoplastic polyps (mean age 65.0 vs 54.2 years, p < 0.001). Neoplastic polyps were significantly larger (mean size 18.1 mm (SD 17.9) vs 7.5 mm (SD 5.9), p < 0.001), more frequently presented as wall thickening (29.2% vs 15.6%, p < 0.001) or as a single polyp (88.3% vs 68.0%, p < 0.001). Gallstones were more frequently found in gallbladders with neoplastic polyps (50.1% vs 40.4%, p 0.001). No preoperative clinical features were predictive for neoplastic or nonneoplastic polyps. Presence of a single polyp on ultrasound was a predictor for neoplastic polyps (OR 6.00 (95%CI 1.32-27.31)). Size and type of polyp were often not mentioned in ultrasound report, or different from histopathological confirmation.

Conclusion: Except for age, no clinical characteristics for neoplastic polyps were identified in this cohort. Although pathological characteristics of neoplastic and nonneoplastic polyps are confirmed, identification of these characteristics on preoperative radiological investigations is poor.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1392 METFORMIN INDUCES APOPTOSIS AND MODULATES PROLIFERATION IN THE BILE DUCT CANCER CELLS


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Introduction: Metformin has evidence of antineoplastic activity in some cancer cells.

Aims & Methods: This study was performed to demonstrate in the bile duct cancer cells whether metformin inhibits the proliferation of cancer cells by inducing apoptosis and affects the expression of gene-related proteins involved in cancer growth, and to identify how metformin affect molecular mechanisms involved in the inhibition of cancer cell growth. Human extrahepatic bile duct cancer cells were cultured. 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assays were performed to determine the effect of metformin on cell proliferation. Apoptosis was measured by a cell death enzyme detection kit linked immunosorbent assay and caspase-3 activity assay. Various protein expressions with or without specific siRNA transfection were measured by Western blot, and migratory activity of the cancer cells was evaluated by wound healing assay.

Results: 1) Metformin suppressed cell proliferation in bile duct cancer cells by inducing apoptosis. 2) Metformin inhibited mammalian target of rapamycin (mTOR) by activation of pAMPKThr172 - tuberous sclerosis complex 2 (TSC2) pathway, and hyperglycemia impaired metformin-induced AMPKThr172 activation and enhanced phosphorylation of AMPKser485. 3) Metformin inhibited expression of key genes of the BER short and long patch pathway. The data also suggests a noticeable enhancement of both short and long patch pathway, was down-regulated in majority of the GBC, CL and CS cases compared to controls; and in GBC compared to CL and CS cases. The mRNA expression of hOGG1 and XRCC1 gene, which harbors the highest number of cases globally, and to ethnically distinct NEI population; Whole blood and surgically resected tissue samples were collected from clinically and histopathologically confirmed cases of GBC (adenocarcinomas, N = 49) along with non-neoplastic control sections, histopathology (CL, N = 78) and cholecystitis (CS, N = 56); along with blood from voluntary controls (N = 122) with informed consent. The pathway genes polymorphisms were screened by PCR-RFLP using DNA samples from the enrolled cases and controls. Differential mRNA expression profile of SHR short and patch pathway genes was studied by RT-PCR. Difference in protein expression was studied by immunofluorescence microscopy. Estimation of oxidative stress in DNA was done using 8-OH-dG EIA kit. The difference in percentage promoter methylation of BER pathway genes was analyzed using RT-PCR.

Results: The genetic alterations in hOGG1 and XRCC1 gene were highly prevalent in both controls and gall bladder disease cases in NEI population, and was associated with susceptibility and severity of gall bladder anomalies compared to controls.XRCC1 was significantly highest in GBC cases DNA compared to controls [OR = 1.986, p = 0.047]. Differential mRNA expression profile clearly showed a sharp down-regulation in hOGG1, APE1, p38, and PARP1 expression in GBC, CL and CS cases compared to controls; and in GBC compared to CL and CS cases. The mRNA expression of XRCC1 in percentage promoter methylation of both short and long patch pathway, was down-regulated in majority of the GBC, CL and CS cases compared to controls; and in GBC cases compared to CS cases. The protein also showed down-regulation of hOGG1 and XRCC1 in both short and long patch pathway. The oxidative stress marker 8-OH-dG estimation showed significantly increased levels in CL, CS and GBC cases DNA compared to controls, the highest being in GBC cases. The higher 8-OH-dG levels in GBC correlated significantly with the variant hOGG1 genotype (p < 0.001). The percent methylation of both XRCC1 and hOGG1 in cases and controls was between 0-30%. Hyper-methylation of XRCC1 and hOGG1 promoter was noticeable in GBC cases compared to controls.

Conclusion: The data indicates an important role of oxidative stress in the pathogenesis of gall bladder diseases and progression to GBC in NEI population, which is due to genetic, expression and epigenetic deregulations in the key genes of the BER short and long patch pathway. The data also suggests the prognostic significance of BER pathway parameters, as well as potential therapeutic targets for the disease, and hence holds clinical relevance. The genetic alterations in hOGG1 and XRCC1 gene were highly prevalent in both controls and gall bladder disease cases in NEI population, and was associated with susceptibility and severity of gall bladder anomalies compared to controls. XRCC1 was significantly highest in GBC cases DNA compared to controls [OR = 1.986, p = 0.047]. Differential mRNA expression profile clearly showed a sharp down-regulation in hOGG1, APE1, p38, and PARP1 expression in GBC, CL and CS cases compared to controls; and in GBC compared to CL and CS cases.

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2. Chaiteerakij R, Yang JD, Harmsen WS, Slettedahl SW, Mettler TA, Fredericksen ZS, Kim WR, Gores GJ, Roberts RO, Olson JE, Thenneau TM. Comparison of early gallbladder cancer risk between patients with early GBCa and patients with early GBCa who has not showed any symptoms and the tissue cannot be obtained easily with anatomical reason.

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Introduction: Gallbladder cancer (GBCa) is often diagnosed at advanced stage because of the absence of any symptoms and the tissue cannot be obtained easily with anatomical reason.

Disclosure of Interest: Thirty patients with GBCa were enrolled in this study. Bile juice obtained from 24 of 30 patients was analyzed for mutations of 50 oncogenes (Cancer panel; Haloplex, Agilent Technology) by next generation sequencing (NGS; Illumina, San Diego, CA, USA). Tumor tissues from 20 of 30 patients were analyzed as well as bile juice. Each sample was obtained prior to the
1. Zacharoulis D, Lazoura O, Sioka E, et al. Habib EndoHPB: a novel endoablation depth was superficial. Further studies are needed to validate the optimal ablation injury was found in even short ablation time in which microscopic divided into three groups according to RFA time variation (60, 90 and 120 catheter (ELRAb)).

2. Intraductal radiofrequency ablation (RFA) is a new endoscopic approach to the treatment of bile duct lesions. It is particularly useful in the treatment of hilar cholangiocarcinoma and bile duct stenosis. RFA is a minimally invasive procedure that uses radiofrequency energy to heat and destroy tissue. The procedure is typically performed under fluoroscopic guidance and may be used as a standalone treatment or in combination with other procedures such as stenting and palliative chemotherapy.

3. The aim of this study was to evaluate the efficacy and safety of intraductal RFA using a novel RFA catheter in the treatment of unresectable bile duct lesions.

4. Results: A total of 26 patients were enrolled in the study, with 13 patients in each arm. The median depth of microscopic ablation was significantly different between the three groups (60, 90, and 120 seconds). In addition, focal ablation injuries of bile duct lesions were not detected in any group. A histological analysis of the bile duct lesions showed no microscopic ablation injuries in any group.

5. Conclusion: Intraductal RFA using a novel RFA catheter successfully ablated bile duct lesions in the majority of cases. The procedure was associated with minimal morbidity and was well tolerated by the patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
CHOLANGIOPANCREATOSCOPY IN THE DIAGNOSIS AND TREATMENT OF PERNICIOUS CHOLANGIOCARCINOMA: A PERSISTENT DILEMMA

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Introduction

In perihilar cholangiocarcinoma (ICC) multi-organ inflammatory disease of unknown cause, IAC may present with jaundice, abdominal pain and weight loss; immunosuppression is the preferred treatment. Since the disease presentation may closely mimic that of malignancies of the pancreatobiliary tract and accurate diagnostic tests have only recently been developed, misdiagnosis and unnecessary surgery are common. In many cases, ICC has been misdiagnosed as intrahepatic cholangitis, which has severe consequences. Before the introduction of digital cholangioscopy, the diagnosis of ICC was challenging. The presence of bile duct strictures in patients with high levels of serum levels of IgG4 may be suggestive of IgG4-related disease. The aim of this study was to evaluate the diagnostic yield of new-generation d-SOC in diagnosis and treatment of perihilar cholangiocarcinoma.

Aims & Methods: Our aim is to assess the incidence of Immunoglobulin G4-associated cholangitis in ICC patients, and to evaluate the diagnostic yield of a new single-operator digital cholangioscope (d-SOC) in diagnosis and treatment of perihilar cholangiocarcinoma.

Results: Between 1984 and 2015, 321 patients underwent liver and bile duct resections at our institution. Of these 166 patients were included who had received immunosuppression. Patients’ age ranged from 25 to 89 years old. Of these 166 patients, 115 patients had received immunosuppression for at least 3 months. Out of these 115 patients, 36 patients had received renal transplantation. The disease remission was achieved in 22 patients (20%). The median duration of the disease remission was 24 months (range 7–120 months).

Conclusion: The incidence of IAC in patients with ICC is high, and the disease remission rate is low. New-generation d-SOC shows that it provides high diagnostic yield in diagnosis (1) diagnostic yield of d-SOC visual diagnosis and biopsies in patients with undetermined biliary strictures; (2) the efficacy of d-SOC directed treatment of difficult lithiasis and (3) to analyze adverse events.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
water are also contaminated with heavy metals, which can in turn accumulate in humans and animals that feed on these contaminated foods. The serum cadmium levels of residents of Dakahlia Province are almost 10-fold higher than those of residents from cadmium-polluted areas in Cairo and 32 times higher than reference levels for healthy populations in the United States. Aims & Methods: We aimed to assess serum levels of heavy metals namely Zink (Zn), lead (Pb), Cobalt (Co), Cadmium (Cd), Chromium (Cr) and Iron (Fe) as a markers of exposure in cholangiocarcinoma patients and healthy control subjects from the same region in Egypt and its correlation with differentiation of cholangiocarcinoma and tumour marker CA 19-9. This study included 45 patients with cholangiocarcinoma (diagnosed after radiological &histopathological examination) and 20 healthy control subject attending Mansoura Surgical Gastroenterology centre. All patients and control were permanent residents of North Delta region and they were recruited before receiving chemotherapeutic or radiotherapy. There were no restrictions based on age, sex, or tumor stage. The serum samples were analyzed for concentrations of zinc, lead, cobalt, cadmium, iron and chromium by the acid digestion method followed by using atomic absorption spectrometry and ICP-MS. “Bud Scientific Accuas 214 atomic absorption spectrophotometer”. The results are reported in mg/L. in addition to CA 19-9 was assayed by IMMULITE® 2000 Xi immunoassay system supplied by Siemens Healthcare (GmbH Henkestr. Erlangen Germany) using its commercial kits.

Results: The serum levels of Zn, Pb, Co, Cd and Fe were significantly higher in patients having cholangiocarcinoma more than control subjects (P < 0.001). Preussive increase in the median values of serum levels of lead (Pb) was found in well differentiated to moderately differentiated to undifferentiated tumours. (P < 0.05). When correlation was made between the heavy metals and CA-19-9 and the survival of the patients, it was found that Cd only has a positive correlation with CA 19-9 and negative correlation with the survival of the patients (P < 0.5, P < 0.01) respectively.

Conclusion: The results from this study suggest that cholangiocarcinoma in the Nile Delta region is significantly associated with high serum levels of heavy metals especially Cadmium and lead.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1403 SELF-EXPANDABLE METAL STENT ARE SUPERIOR TO PLASTIC STENT FOR PREOPERATIVE BILIARY DRAINAGE IN RESECTABLE MALIGNANT DISTAL BILIARY STRUCTURE: A SYSTEMATIC REVIEW AND META-ANALYSIS
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Introduction: Early surgery is the standard treatment in patients with resectable periampullary or pancreatic head cancer with jaundice. However, early surgery is not always feasible and it could be a necessary for patient with jaundice at diagnosis or for those undergoing neoadjuvant treatment. Most studies considered plastic stents for PBD, although SEMS are currently considered superior. A recent RCTS showed that fully covered SEMS are associated with better outcomes compared to plastic stents.

Aims & Methods: Aim compare the rate of endoscopic reintervention (Stent failure of PBD) before surgery and post operative outcome of metal vs plastic. We conducted a bibliographic search using PUBMED, EMBASE including randomized and non randomized trials. OR using the Mantl-Haenszel method was used for dichotomous variables. Weighted mean differences (WMD) were used as the summary statistic for quantitative analysis of continuous variables, Quantitative synthesis was performed using Review Manager version 5.0.
Primary outcome was the rate of endoscopic reintervention before surgery. Secondary outcomes were postoperative complications, hospital readmission, overall pancreatic fistula, overall biliary anastomotic leak, overall postoperative mortality. Clinical heterogeneity was assessed by I² value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity.

Results: Three RCTs and five non RCTs were selected including 909 patients. Of these, 303 patients (33%) were treated with SEMS and 606 (67%) with plastic stents. The rate of endoscopic reinterventions after PBD was significantly lower in the metal stent group in the plastic stent group (p < 0.001). The rate of post operative pancreatic fistula was significantly lower in the plastic stent group (I² = 0.44; 95% CI 0.20–0.96) (p < 0.001). The rate of overall postoperative surgical complications, hospital readmission, overall biliary anastomotic fistula and postoperative mortality did not differ between the two groups.

Conclusion: Metal stents are more effective than plastic and should be preferred for PBD in patients with resectable periampullary or pancreatic head tumor without early postoperative mortality. Clinical heterogeneity was assessed by I² value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1404 THE EFFICACY AND SAFETY OF PREOPERATIVE BILIARY DRAINAGE IN PATIENTS WITH OBSTRUCTIVE JAUNDICE: A SYSTEMATIC REVIEW AND META-ANALYSIS
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Introduction: There is considerable controversy as to whether temporary relief of biliary obstruction prior to major definitive surgery (preoperative biliary drainage) is of any benefit to the patient. A Cochrane meta-analysis revealed a major morbidity with no difference in mortality in the group subjected to PBD. However, the clinical status of patients was heterogeneous between studies.

Aims & Methods: We aimed to investigate the benefits and harms of pre-operative biliary drainage versus no pre-operative biliary drainage (direct surgery) in patients with obstructive jaundice. A computerized medical literature search was performed by using MEDLINE, EMBASE, Cochrane Library, from 1980 to June 2016 aimed at identifying RCTs comparing PBD versus direct surgery. Data from RCTs related to safety and effectiveness of PBD versus no PBD were extracted. A dependent review of risk ratio or mean difference were calculated with 95% confidence intervals. Clinical heterogeneity was assessed by I² value, where a value exceeding 50% was indicative of heterogeneity. A random effect model was used in case of heterogeneity.

Results: Nine trials including 734 patients with malignant or benign obstructive jaundice comparing PBD (375 patients) with no PBD (359) were included in this review. There was no significant difference in mortality (risk ratio 0.89; 95% CI 0.67 to 1.18; P = 0.42) between the two groups. Complications were higher in the PBD group (RR 1.41; 95% CI 1.09–1.81 = p < 0.008). Overall serious morbidity was higher in the PBD group than in the direct surgery group (RR 1.66 95% CI 1.28–2.16 = p < 0.0002). There was no significant difference in length of hospital stay between the two groups: mean difference 4.55 (95% CI: 1.31–10.61) days (P = 0.014).

Conclusion: There is currently not sufficient evidence to support or refute the routine use of biliary drainage for patients with obstructive jaundice. PBD in patients undergoing surgery for obstructive jaundice is associated with similar mortality but increased serious morbidity compared with no PBD. Therefore, PBD should not be used routinely. Further RCTs are needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1405 INCREASED MORTALITY AMONG PATIENTS WITH ACUTE PANCREATITIS FROM THE MEDITERRANEAN REGION COMPARED WITH THE REST OF SPAIN
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Introduction: Dietary fat consumption affects the human body fat composition. It has been described that unsaturated fatty acids, enriched in human pancreatic exocrine secretions, worsen clinical outcomes and pancreatic head tumors when early surgery without PBD is not feasible. However, more RCTs are needed before a firm conclusion could be made.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:
Results: DM induction resulted in increased 1-deoxySL levels but also atrophy and fibrosis in pancreas. Reduction of 1-deoxySL by oral L-serine supplementationameliorated the damage of the exocrine pancreatic tissue, without restoring insulin production in beta cells. This suggests that elevated 1-deoxySLs rather than insulin deficiency contribute to the exocrine damage in DM. In vitro studies showed that treatment with 1-deoxyxypamine, one of the early products of 1-deoxySLs synthesis at low concentration reduced replication and promoted cytotoxicity in pancreatic acinar cells. In addition, this 1-deoxySL-mediated cytotoxicity was associated with mitochondrial dysfunction and increased endoplasmic reticulum stress.

Conclusion: Our work revealed that 1-deoxySLs are cytotoxic for exocrine pancreatic cells, suggesting a role for these lipids in the exocrine dysfunctions following DM. Oral L-serine supplementation could be a therapeutic treatment for ameliorating diabetic exocrine pancreatic diseases in diabetic patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1408 ROLE OF THROMBOPHILIA IN SPLANCHNIC VENOUS THROMBOSIS IN ACUTE Pancreatitis

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Introduction: Splanchnic venous thrombosis (SVT) is a common vascular complication of acute pancreatitis (AP). There is paucity of data on its frequency, risk factors, outcome and natural history. Coagulation abnormality has been implicated but not proven as a cause of SVT in AP.

Aims & Methods: We aimed to prospectively study the frequency, risk factors and extent of SVT in patients with AP as well as role of thrombophilia in causation of SVT. Patients with AP presenting to our centre between January 2015 and June 2016 were prospectively evaluated with contrast enhanced computerized tomography (CECT) abdomen for presence of SVT. These patients were subjected to Doppler study done in 7 patients with SVT. On follow-up, Doppler study done in 7 patients with SVT, spontaneous resolution of SVT occurred in 5 (71.4%) within 1 year. None of the patients had varices on follow-up.

Conclusion: SVT is more common in patient with necrotizing pancreatitis and higher CT and MCTSI indices suggesting that local inflammation plays a major role in its causation. Thrombophilia in some form is seen in one third of the patients with AP but does not increase the risk of AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1409 EARLY ACHIEVABLE SEVERITY (EASY) INDEX FOR SIMPLE AND ACCURATE EXPEDITE RISK STRATIFICATION IN ACUTE Pancreatitis

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Introduction: Infected pancreatic necrosis (IPN) is associated to significant morbidity and mortality. Current management of IPN is based on a step-up approach, based on minimally invasive procedures. Our group has recently published a protocol of local infusion of antibiotics for the treatment of IPN (Pancreatology. 2016;16:719–25).

Aims & Methods: We aim at analysing the efficacy of this step-up approach for the treatment of IPN in clinical practice. This was a retrospective single-centre study of patients admitted with acute pancreatitis (AP) between January 2015 and December 2016. The cases with the diagnosis of pancreatic necrosis (NP) and IPN (defined by positive culture of necrosis and clinical, analytical, and/or radiological data of infection) were identified and evaluated. IPN was treated following a step-up approach defined by 1. intravenous antibiotic therapy, 2. Endoscopic ultrasound guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.

Results: 694 cases of AP were included (mean age 79.5 ± 18.3, 555 male). CT scan was performed only if clinically indicated. 67 patients (9.0%) had acute necrotizing pancreatitis (ANP) and 21 of them IPN (31% of ANP). IPN patients were treated with intravenous antibiotics (imipenem [n = 15] and meropenem [n = 6], with good response in 8 (38% of IPN). The remaining 13 cases underwent a EUS guided transmural drainage plus local antibiotic therapy, 3. endoscopic necrosectomy. Number of patients responding to each therapeutic step was assessed.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1410 EVALUATION OF A PROTOCOL OF AN ENDOSCOPIC ULTRASONOGRAPHIC TRANSGASTRIC DRAINAGE WITH LUMEN-APPOISING METAL STENTS OR PLASTIC DOUBLE PIGTAIL STENTS: A MULTIFACTORIAL ANALYSIS

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Introduction: We aimed to compare the efficiency of plastic and metal stents for symptomatic pancreatic fluid collection drainage and analyze other main associated factors that affect the outcome of drainage therapy.

Aims & Methods: Rates of technical and clinical success, procedure-related side effects (hemorrhage, stent migration, and cyst rupture), re-interventions, and duration of hospital stay.

Results: There were 52 patients, 40 who underwent plastic stent placement and 12 who underwent lumen-approsing metal stent placement. The total rate of technical success was 100%. The total rate of clinical success was 100%. The total rate of adverse events was 7.7% (4/52). On multiple logistic regression analysis, the use of plastic stents (P < 0.05, Exp B = 12.168) and presence of a large cyst (P < 0.05, Exp B = 1.036) were shown to significantly increase the risk of re-intervention. On multivariate linear regression analysis, etiology of pseudocyst (P < 0.05, B = 8.427; -9.785; -5.514) was associated with prolonged hospital stent, while stent type was not shown to be a factor (P > 0.05).

Conclusion: Both plastic and lumen-approsing metal stents are proven to be highly efficient in pancreatic fluid collection drainage. The lumen-approsing metal stent is superior in preventing complications such as migration and cyst leakage and reducing the rate of re-intervention. Large cyst size is associated with an increased risk of re-intervention and prolonged hospital stay.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: The aim was to evaluate the efficacy of local instillation of antibiotics into walled-off pancreatic necrosis. Between 2012 and 2016 we evaluated all patients treated with endoscopic transmural drainage and necroscopy (EDTN) and concomitant local instillation of antibiotics. We added antibiotics (either gentamicin, vancomycin, or amphotericin B) to the irrigation fluid according to the microbiological findings. The antimicrobial efficacies of local and systemic antibiotics were evaluated using uni- and multivariate logistic regression analyses and Kruskal-Wallis test by stratification of the isolates in sensitive versus not sensitive/antibiotics not given.

Results: Ninety-one patients were included. At the first drainage 81 (86%) patients had infected and 10 sterile WON. A total of 139 isolates were found at the first drainage. Most patients were infected with enterococci (44%) or other gram-positive cocci. More than a quarter of the infected patients had fungal species cultured. The infected patients often had polymicrobial infections (56%). At the second culture 152 isolates were found. Neither local nor systemic antibiotics were associated with the eradication of microbes between first and second culture. Between second and third culture, the use of local antibiotics was associated with the eradication of microbes (OR = 2.54, P = 0.01), but not systemic antibiotics (P = 0.33) (Table). Between first and second culture 12 patients with fungal infections were treated with local amphotericin B. In all 12 patients the fungus was eradicated. After second culture 20 patients were treated local amphotericine B and in 17 (85%) patients the fungus was eliminated at the third culture.

Conclusion: Our data suggest a better efficacy of local antibiotics in the treatment of infected WON compared to systemic antibiotics. The local instillation of antibiotics may be a promising alternative or supplement to systemic administration. Particularly the use of local instillation of amphotericin B appears to be promising in the treatment of local cutaneous fungal infections.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1412 CORONARY DISEASE AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE ARE NOT ASSOCIATED WITH WORSE OUTCOME IN ACUTE PANCREATITIS
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Introduction: Pancreatitis is a disease of protein manifestations. In its more severe form, involvement of any organ is possible. Cardiovascular and respiratory failure are possible and feared complications.

Aims & Methods: The aim of this study was to evaluate the effect of chronic ischemic heart disease and chronic obstructive pulmonary disease (COPD) in the outcome of acute pancreatitis (AP), in our population. Retrospective cohort study that included all patients admitted with AP from January 2003 to December 2016, in a tertiary referral center. Demographic and clinical variables were analyzed by logistic regression (SPSS v23). Clinical outcomes included organ failure (OF), persistent OF (>48 h), intensive care unit (ICU) admission and mortality.

Results: A total of 553 patients with AP were included, 58.4% male, median age 60 (18–98) years. Most common etiologies included gallstones (38.9%) and alcohol (27.3%). Twenty-three percent (n = 129) developed OF (in 43% persistent) and 26.8% (n = 148) were admitted to ICU. Mortality rate was 5.6% (n = 31). Fifty-six patients (10.1%) had previous history of coronary disease and 5.1% (n = 28) had been diagnosed with COPD. The presence of coronary disease and COPD were not associated with higher Rasmon’s score (≥3), p = 0.076 and p = 0.959, respectively. No association was found between previous history of coronary disease and the development of OF (p = 0.525), persistent OF (p = 0.287), need for ICU admission (p = 0.115) and mortality (p = 0.262). There was no association between the development of OF and the development of OF (p = 0.803), persistent OF (p = 0.588), need for ICU admission (p = 0.514) and mortality (p = 0.720). At multivariate analysis (correcting for age and gender) coronary disease and COPD were not independent predictors of worse outcome.

Conclusion: In our population, previous history of coronary disease and COPD were not predictors of worse outcome in AP.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1415 WORSE OUTCOMES IN ACUTE PANCREATITIS IN PATIENTS WITH TYPE-2 DIABETES MELLITUS
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Introduction: Predicting severe pancreatitis is important for early aggressive management of patients with acute pancreatitis (AP). Despite the established role of type-2 diabetes mellitus (DM) in the risk of AP, the impact of DM on the clinical outcome in AP has not been fully elucidated.

Aims & Methods: Retrospective study including hospital admissions between January 2003 and December 2016 in a single tertiary referral center. Clinical outcomes included organ failure (OF), persistent OF (>48 h) admission to intensive care unit (ICU) and mortality. Variables were analysed by logistical regression (SPSS v23.0). The objective of this study was to assess the risk of mortality and severity in AP among patients with type-2 DM.

Results: A total of 555 patients (58.4% male) with AP were included, median age 80 (18-98) years. Most common etiologies included gallstones (38.9%) and alcohol (27.3%). Twenty three percent developed OF (in 43% persistent) and 5.6% (n = 31) died. There were 127 AP patients (23.0%) with type-2 DM. Type-2 DM were not associated with higher Ranson's score. There was an association between DM and development of OF (OR 3.17, CI95% 1.88-5.37, p < 0.001), persistence (OR 45.1, CI95% 18.7-108.9, p < 0.001), ICU admission (OR 12.3, CI95% 2.8-54.9, p < 0.001) and mortality (17.1, CI95% 6.8-42.8,4, p < 0.001). At multivariate analysis DM was an independent predictor of OF development and ICU admission.

Conclusion: In our population, Type-2 DM was associated with severity and increased mortality in patients with AP. Our findings provide evidence of the potential role of DM in the management of severe AP.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1414 ACUTE PANCREATITIS IN LIVER TRANSPLANT RECIPIENTS: INCIDENCE AND OUTCOME
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Introduction: Acute pancreatitis (AP) is an uncommon but potentially devastating condition that may occur in patients with organ transplantation. Reported incidence ranges from 1.5 to 8% in patients undergoing liver transplantation with significant mortality.

Aims & Methods: The aim of our study was to assess the incidence, potential risk factors and outcome of AP following liver transplantation in our center. We performed a retrospective analysis of medical records of all adult patients who underwent liver transplantation in our center between September 1996 and November 2014. The diagnosis of AP was defined by combination of clinical manifestation, finding on imaging methods (CT, USG) and elevation of serum amylase and lipase.

Results: Nine hundred and sixty-seven orthotopic liver transplantations were performed in 578 males and 389 females (mean age 51 years, range 18-74). AP occurred in 18 patients (1.9%, 16 males, 2 females) and resulted in death in 5 patients (28%). According to timing of AP we recognized two clinical presentation—early AP (<1 month after liver transplantation) and late (>1 month). Four patients (22%) developed early AP, which was severe necrotizing with MODS in all cases and resulted in death in 3 of them (75%). Two of them were transplanted for fulminant hepatic failure, one for end-stage liver disease due to alcoholic hepatitis B infection and one for polycystic liver disease. Two patients were treated by surgical necrectomy and died, the third deceased patient was treated conservatively. In the only surviving patient, a successful EUS-guided drainage of walled of pancreatic necrosis and repeated endoscopic retroperitoneal drainage were performed, and patient was able to identify. The fourth patient was responsible for development of AP. Late AP occurred in 14 patients (78%) with a median delay of 31 months after liver transplant (range 2-176). In 12 patients AP was mild with no mortality and the following etiologies were represented: 4 post-ERCP, 2 alcoholic, 1 biliary (CBD stones), 1 drug-induced (necrotizing, 1 obstructive (pancreatic cancer); in 3 patients the etiology was unknown. One patient developed a pseudocyst. Two patients with late acute pancreatitis had a severe necrotizing form and both died. One patient with cirsrhosis of the liver grade 4 and chronic rejection following ERCP pancreatitis which was complicated by retroperitoneal hemorrhage and graft failure. The other patient with necrotizing pancreatitis of unknown etiology developed MODS and eventually died. Male patients (p=0.01) and patients transplanted for end stage liver disease resulting from chronic hepatitis B are more likely to develop post-liver transplantation pancreatitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1415 THE IMPACT OF BILIARY SLUDGE TO DEVELOPMENT OF PAIN AND EFFICACY OF HYMECROMONE IN CHRONIC BILARY PANCREATITIS
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Introduction: Biliary sludge (BS) may be one of the factors, related to development of chronic pancreatitis (CP) via sphincter of Oddi dysfunction. As it was demonstrated by Okazaki K et al. in 1988, patients with biliary sludge have higher sphincter of Oddi (SO) pressure and contraction frequency vs. controls.

Aims & Methods: To assess the frequency of CP signs in patients with BS and to investigate the state of major duodenal papilla (MDP) in patients with idiopathic CP with BS by endoscopic ultrasound (EUS), to evaluate whether antispasmodics can be effective in pain relief at CP, that developed on the background of biliary sludge. Protocols of computer tomography, endoscopic and transabdominal ultrasound studies of over 6000 patients of gastroenterological tertiary clinic were examined. Those who had signs of BS were selected to evaluate the presence of CP and, at least "mild CP" was sufficient to start BS removal. Modified Cambridge classification. Exclusion criteria were: established etiology of CP and signs of pancreatic neoplasm. Patients, who received ursodeoxycholic acid and drugs that affect smooth muscle contractility for less then 3 month prior to the study were excluded. Thirty consecutive patients (15m, 15 f, mean age ± SD: 52.8 ± 15.3), who had both BS and CP were summoned for physical examination, quality of life assessment, US-cholecystography and endoscopic pancreaticbiliary ultrasound — elastography calculation of Max SMDP (=max x SMDP)2.12.7 and state of MDP before and after 3 weeks of hymecromone monotherapy 400 mg tid.

Results: Signs of CP were revealed in 6.3% of BS cases. CP was most common in those who had ointment-like bile (33.3%) vs patients with heterogeneous bile with clots – 7.7% and hypocholic particles –1.7% (chi-square 38.21, p < 0.0001). Mean SMDP was 14.9 ± 5.2 mm2 (95%CI 10.9 –18.9), SMDP was below the normal range (20-25 mm2) in 78% of patients. SMDP had positive correlation to the volume of evacuated bile according to US-cholecystography (p = 0.042) and gallbladder contractility coefficient (r = 0.817, p = 0.007). All patients with higher density of MDP at US-cholecystography had SMDP lower than the normal range and were attributed to “fibrosis” group. Only 38% of patients with CP and BS had normal MDP at EUS. Periapillary diverticula were found in 13% of the cases, papillary edema — in 38%, fibrosis in 13%. MDP changes were associated with higher AP level and larger MDP diameter. Hymecromone monotherapy resulted in significant improvement in abdominal pain (rp = 7.92, p = 0.000) and "bodily pain" score of SF-36 questionnaire (rp = 7.579, p = 0.001). Dynamics of “bodily pain” index per SF36—demonstrated significant negative correlation to the post-treatment level of abdominal pain (rp = -0.395, p = 0.037) Post-treatment pain level had significant negative correlation to the SMDP size (rp = -0.067, p = 0.002), though no correlation of pre-treatment pain level to MDP features was found, i.e. patients with less MDP size (most of them had decreased elasticity of papilla of Vater, that was considered as indirect marker of fibrosis) had lower hymecromone efficacy.

Conclusion: BS may cause MDP changes, resulting in development of obstructive CP. Intensity of pain in biliary CP may be related to sphincter of Oddi dysfunction. Efficacy of antispasmodic therapy in these patients could be predicted by the features of MDP at pancreaticbiliary EUS.
Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1416 RETROSPECTIVE ANALYSIS OF EXOCRINE PANCREATIC FUNCTIONALITY IN PATIENTS WITH CHRONIC PANCREATITIS

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Introduction: Pancreatic exocrine insufficiency is a late complication of chronic pancreatitis; its clinical onset is characterized by steatorrhea and weight loss, borborygmi, flatulence, abdominal pain and malnutrition. Exocrine and endocrine pancreatic function decreases differently in various diseases (autoimmune, paroduodenal, genetic, idiopathic). It has been observed that there has been a recovery of exocrine pancreatic function in autoimmune pancreatitis. In the literature there are no studies analysing the exocrine pancreatic function over time.

The fecal elastase test is a good test procedure to evaluate the exocrine pancreatic function

Aims & Methods: The objective of the retrospective study was to re-evaluate a series of patients with chronic pancreatitis with the aim to evaluate the pancreatic exocrine function over time, in particular, by comparing the exocrine pancreatic function in subgroups of patients with different types chronic pancreatitis. Pancreatic exocrine function was estimated through fecal elastase in 143 patients with at least 2 values each (classified into normal, mild and severe exocrine pancreatic insufficiency), the first one taken at the diagnosis of chronic pancreatitis. Patients undergoing surgical pancreatic resection before the second value of fecal elastase were excluded. Etiology was classified in: biliary pancreatitis/sequela of necrotizing pancreatitis (15), autoimmune (69), paroduodenal (15), genetic (17) and idiopathic (27).

Results: The results show a high frequency of severe exocrine pancreatic insufficiency in the moment of diagnosis of chronic pancreatitis (38%) and it appears stable over the first five years. Autoimmune and paroduodenal chronic pancreatitis are correlated with severe exocrine pancreatic insufficiency at diagnosis in a high percentage of cases (51% and 40%), biliary/outcomes of necrotizing pancreatitis and idiopathic pancreatitis in an intermediate (33% and 26%), while genetic in a low percentage (12%).

Conclusion: The exocrine pancreatic function in patients with autoimmune pancreatitis improved in the first five years of the disease, probably due to the efficacy of steroid/immunosuppressive therapy. Pancreatic exocrine function was less compromised at diagnosis, but showed a progressive deterioration in the first five years. Endocrine and exocrine insufficiency were strictly correlated.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1417 "PAINLESS" CHRONIC PANCREATITIS: EPIDEMIOLOGICAL, CLINICAL AND RADIOLOGICAL CHARACTERIZATION

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Introduction: The term “painless” chronic pancreatitis (CP) represents a specific subset of CP characterized by the lack of pancreatic pain. So far, scarcity of data has been reported in the literature about this matter and what differentiates this group of patients from those with chronic pancreatitis associated with pancreatic pain.

Aims & Methods: The aim of the present study is to characterize “painless” CP from the epidemiological, clinical, radiological, functional, and follow-up standpoint, through a comparison with other forms of chronic pancreatitis presenting with pancreatic pain. The Institutional Database of the Gastroenterology Unit of the Verona University was queried, and all chronic pancreatitis cases were retrieved. Patients were clustered based on the presence of “pancreatic-specific pain” into “painless” and “pain-associated” CP. A retrospective case-control analysis was carried out.

Results: Of 678 patients included from March 2006 to March 2016, 436 were considered eligible for the present study. Of these, 368 (84%) were affected by pain-associated CP, while 68 (16%) had “painless” CP. “Painless” patients were older (median age of 58.5±10.8 y/o vs. 42.5±15.3 y/o; p < 0.001), less frequently presenting with a history of alcohol consumption (35% vs. 55%; p < 0.001), more frequently diabetics (18% vs. 1%; p < 0.001), presenting with steatorrhea (16% vs. 2%; p < 0.001), and asymptomatic (63% vs. 2%; p < 0.001) compared to pain-associated controls. From the radiological standpoint, less cases were revealed presenting with mediastinal adenopathies than controls (90% vs. 68%; p < 0.001). Moreover, in most of painless cases, the CP cause remained unknown (56%). After a median follow-up of 2.6±2.3 years, the incidence of diabetes was higher in the painless cases than in controls (48% vs. 30%; p = 0.006).

Conclusion: The present study represents the first definition of "painless" CP so far reported in the literature. The "painless" CP is a distinct entity from the epidemiologic, clinical, and radiological standpoint when compared to other forms of CP characterized by chronic pain.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1418 LONG-TERM OUTCOMES OF A FULLY COVERED SELF-EXPANDING METAL STENT WITH ANTIMIGRATION PROPERTIES FOR EUS-GUIDED PANCREATIC DUCT DRAINAGE

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Introduction: Recently, EUS-guided pancreatic duct drainage with transmural stent (EUS-PD) has been used for patients with painful obstructive pancreatitis in whom endoscopic retrograde pancreatography (ERP) has failed. Although the feasibility and safety of EUS-PD with a fully covered self-expandable metal stent (FCSEMS) has been assessed, little is known about the long-term outcomes of EUS-PD with a fully covered self-expandable metal stent (FCSEMS). Removability of an FCSEMS in long-term use and higher cost are the main concerns of EUS-PD with an FCSEMS compared with EUS-PD with a plastic stent.

Aims & Methods: The aim of this study is to evaluate the procedural and long-term outcomes of EUS-PD with an FCSEMS for patients with painful obstructive pancreatitis who failed ERP. Forty-one consecutive patients with painful obstructive pancreatitis underwent EUS-PD with an FCSEMS after failed ERP. Seventy-eight interventions without scheduled stent exchange were considered in malignant MPD strictures or complete MPD obstruction in benign pancreatic stricture. Technical and clinical success, adverse events, and stent patency were assessed. An endoscopic examination and CT scan was performed every 6 months to assess stent patency in benign structure.

Results: 15 patients had malignant MPD obstruction and 26 patients had benign stricture. EUS-PD was successful in all 41 patients (technical success rate, 100%), and symptoms improved in all patients (clinical success rate, 100%). EUS-guided pancreaticogastrostomy (n = 39) and pancreatogastrojejunostomy (n = 2) were performed. Pain scores improved significantly after FCSEMS placement (P < .01). Early mild-grade adverse events occurred in 5 patients (12.2%) with self-limited abdominal pain, which resolved with conservative treatment. Late adverse events developed in eight patients (22.2%), including distal stent fracture (n = 6), stent occlusion (n = 2). These patients were successfully treated endoscopically. No other adverse events related to FCSEMS, including stent migration, pancreatic sepsis, and stent-induced ductal stricture were observed during follow-up periods.
Overall mean stable mean parity duration was 412 days (range 14–1081) during mean follow-up of 1.4 years). Median stent duration for malignant patients was 95 days (range 14–297). Mean stent duration in benign strictures was 525 days (range 14–1081). No patients with malignant strictures required FCSEMS revision or exchange during follow-up periods. FCSEMS removal and exchange could be successful in patients with benign strictures until 3-year placement of an FCSEMS. Prospective randomized trial comparing EUS-PD with FCSEMSs and plastic stents may be warranted for painful obstructive pancreatic fistulae after failed ERP.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1419 MONITORING AND OPTIMIZATION OF PANCREATIC ENZYME REPLACEMENT THERAPY IN PATIENTS WITH PANCREATIC EXOCRINE INSUFFICIENCY

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Introduction: Fundamental aspects in the treatment of pancreatic exocrine insufficiency (PEI) include pancreatic enzyme replacement therapy (PERT). Monitoring the symptoms of malabsorption as well as the nutritional markers is essential.

Aims & Methods: To follow-up patients with PEI receiving PERT and to provide normal nutritional status by optimizing the suboptimal PERT if necessary. Study enrolled 142 patients (88 males, mean age 52 years): 82 patients had chronic pancreatitis, 26 patients had oncological disease, and 34 patients were newly diagnosed. Study succeeded in 78 patients. In 32 patients we observed suboptimal PERT with nutritional deficiencies despite an essential.

Conclusion: Proper follow-up and correction of suboptimal PERT as well as optimization of the risk of severe malnutrition complications and associated morbidity and mortality by ensuring optimal therapeutic results and better quality of life.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1420 HU RID MEDICATED POST-TRANSCRIPTIONAL REGULATION OF HO-1 AND INHIBITORS OF APOPTOSIS PROTEINS IS ASSOCIATED WITH THE POOR CLINICAL OUTCOMES AMONG PATIENTS WITH Pancreatic ADenocarcinoma

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Introduction: The mRNA binding protein HuR is involved in the post-transcriptional regulation of cytoprotective molecules, such as COX-2, HO-1 and inhibitors of apoptosis proteins (IAP, IAP2, XIAP, SURVIVIN), and might be related to poor prognosis in numerous cancer types. However, the association of HuR, COX-2, HO-1 and IAPs family, and their impact on chemotherapy and carcinogenesis in PDAC still remain unclear.

Aims & Methods: The aim of our study was to assess the relevance and correlation of the IAP regulation by mRNA stabilizing protein HuR and COX-2 and/or COX-2 signaling pathway, and to determine the association with clinicopathological parameters and prognosis of PDAC. Data of 32 patients after pancreateodudodenectomy (PD) between 2011–2016 were analyzed. Patient’s mRNA expression levels of HuR, COX-2, HO-1, IAP1, IAP2, Survivin and XIAP, as well as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Results: HO-1, COX-2, HuR, IAP1, IAP2 mRNA expression were accordingly 3-fold, 8.8-fold, 1.5-fold, 4.8-fold and 5-fold higher, while XIAP and Survivin mRNA expression were 3.8-fold and 3.4-fold lower when compared to normal pancreatic tissue. Expression of HuR was positively associated with COX-2, HO-1, IAP1, IAP2, XIAP, Survivin and XIAP, as well as their respective correlations with clinicopathological parameters were analyzed. The Kaplan-Meier method and log-rank tests were used for univariate analysis. Cox proportional hazard model was applied to identify prognostic factors that were independently associated with survival.

Conclusion: Our results suggested that upregulation of HuR in PDAC patients were significantly related with poor outcome. Even though, significant correlation with IAP proteins in PDAC was noticed, more data is needed to analyze the mechanism underlying HuR and IAP interaction.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1421 HYPOXIA INDUCED HIF1A-MEDIATED DIFFERENTIAL O- GLYCOSYLATION REGULATES SIGNALING PATHWAYS IN PANCREATIC CANCER

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Introduction: Hypoxia-induced reprogramming of cell energy metabolism and changes in glycosylation are hallmarks of cancer promoting the induction of an invasive and treatment-resistant phenotype, triggering metastases at an early stage of tumor development.1 We examined the impact of hypoxia on O-GalNAc glycosylation in human HEK293, PDAC cell lines and clinical specimens from cancer patients.

Aims & Methods: We profiled the expression of 88 glycosylation related genes by qPCR in HEK293 cells subjected to hypoxia either induced by 1% O2 or 200mM CoCl2 identifying key O-GalNAc glycosyltransferases downregulated. Functional assays and glycoprotein analysis displayed a pronounced rate of O-GalNAc modified cysteolic proteins derived from hypoxia-treated cells and PDAC specimens. Glycosidase assays could validate specificity of detection method used. aberrant glycolyte could be induced by HIF pathway activator
ML 228 and inhibited using Echinomycin. PTK and STK analysis of cell lysates displayed correlation between phosphorylation and O-glycosylation in hypoxic samples.

**Results:** Mechanistically we could show, that hypoxia-induced decreased levels of C1GALT1C1 results in reduced T-Synthase activity as evidenced by engineered COSMC-deficient cells, displaying O-GalNAc moieties in addition to O-GlcNAc in cytosolic protein fractions. Further, we could show PI3K/AKT/ MAPK signalling is depending on the state of cellular O-glycosylation providing a new rationale for the correlation of PDAC Tn antigen glyctype and cancer cell properties.  

**Conclusion:** Our findings point to a novel crosstalk of O-GalNAc and O-GlcNAc under hypoxia extending the knowledge base of differential O-GlcNAc expression in pancreatic cancer.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**
P1425 EFFECT OF ACOUSTIC CAVITATION ON A THREE-DIMENSIONAL CULTURE MODEL OF PANCREATIC ADENOCARCINOMA
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Introduction: The dismal prognosis of pancreatic ductal adenocarcinoma (PDAC) is mainly due to chemoresistance linked to the tumor microenvironment. Recent data supported ultrasonic (US) targeting to nephron US signal-regulated US-induced cavitation could help overcome chemoresistance by breaking microenvironmental barriers and increase cytotoxic drug availability. Three-dimensional (3D) culture in the form of spheroids is a useful model for reproducing multicellular resistance and analyzing the effects of cavitation.

Aims & Methods: The objective of this work was to study the effects of acoustic cavitation on a model of PDAC spheroids and to investigate possible potentiality of chemotherapy by US. CAPAN-2 PDAC cell line-derived spheroids were cultured as previously described by Iwasa et al. Four conditions, i.e., control, 400 nM-gemcitabine-based chemotherapy (CT) alone, US alone, CT-US combination (n = 12 spheroids per condition), were studied. Experiments were carried out to optimize US settings, in order to observe the occurrence of controlled acoustic cavitation. Comparisons between groups were based on proliferation and growth. Proliferation was evaluated 24 hours after treatment(s) by Uptiblue. Growth was assessed by diameter measurement on light microscopy at day 7 and day 10.

Results: Correlated to the control group, cell proliferation was decreased in spheroids treated with CT (p < 0.0001), but not with US alone. Proliferation was also further impaired in spheroids treated with CT-US combination compared to those treated with CT alone (p < 0.0001), but this synergistic effect of US and CT did not improve spheroid growth, meaning that spheroid diameter did not decrease after US-CT compared to CT alone.

Conclusion: This study shows the feasibility of applying an ultrasonic treatment (acoustic cavitation) in a three-dimensional culture model of PDAC. The combination of CT and ultrasonic cavitation synergistically reduced cell proliferation. Further analysis of the cytotoxic effects of acoustic cavitation on PDAC spheroids is in progress.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1426 PATHOLOGICAL EVALUATION AND REPORTING OF INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS OF THE PANCREAS: CORRELATION AND ANALYSIS OF THE HISPATHTOLOGIC PATTERNS
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Introduction: Because of the progression of systemic chemotherapies (CT) for locally-advanced pancreas cancer (LA-PC), chemoradiotherapy(CRT) was selected for limited cases. However, very long survival cases were reported in CRT and detection of prognostic factors were warranted. In this analysis, we analyzed the LA-PC cases received CRT compared with CT.

Aims & Methods: Gemcitabine (GEM) and S-1 combination chemoradiotherapy was performed according to our previous Phase 1 trial (Journal of Japan Pancreas Society 2010). Till March 2016, 30 LA-PC cases received GS-CRT, and the selection criteria were LA-PC with 1) pathological diagnosis, 2) large vessels (CA, SMA, CHA, PV, SMV) invasion, 3) allochronic and concurrent, 4) unexecuted antitumor therapy. The chemotherapy in CRT administration of GEM (200mg/m2) once a week for 6 weeks, administration of S-1 (80 mg/m2) for 2 weeks a week withdrawal was done twice. Radiation was performed 18 Gy in power of 10 MeV in a week 5-day period for 5.5 weeks, and total dose was 50.4 Gy (Total 28 times). As after treatment, GEM 1000mg/m2 was continued until PD. The patients of CT group were also recruited by the same criteria. One of the regimens among GEM alone, S-1 alone and GEM + S-1 was selected for the primary treatment, and total 26 cases were implemented in more than 2 courses.

Results: Baseline characteristics in CRT and CT group were median age (62, 72.5: p = 0.004), male (20, 12: ns) and tumor location Ph/Pb (17/13, 16/10; ns), respectively. There were significant differences in progression free survival (PFS) (8 months, 6 months: p = 0.002) and overall survival (OS) (13M, 9M: p = 0.0165), respectively. The cases who survived for 18 months and longer were significantly (p = 0.0495) more in CRT (43.3%) than CT group (19.2%). Grade 3/4 adverse events in CRT group were 13 cases of neutropenia (G4-3 cases) and one case of gastrointestinal symptom, and those in CT group, neutropenia was 11 cases (G4-4 case), interstitial pneumonia (IP) aggravation was one case.

Conclusion: For LA-PC, GS-CRT showed better local tumor control and longer survival, and was considered as good candidate of neo-adjuvant therapy. More analysis will be other basis. The LA-PC voice should think about good selection criteria of CRT and improve the survival of LA-PC.

Disclosure of Interest: All authors have declared no conflicts of interest.
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PDAC as defined by the new upcoming TNM 8th edition and to establish the alone and in combination, in establishing the T stage of surgically resected system to evaluate the preoperative staging defined by CT and EUS.

geneous results and often dated machines, and no study adopted the new TNM could be preferred in tumors being efficaciously compared to previous editions. In this context, an efficient employed in the neoadjuvant setting, the correct evaluation of the T stage of Chemoradiotherapy in the Management of Locally Advanced Pancreatic Carcinoma: A Qualitative Systematic Review. Florence Huguet, Nicolas Girard, Clotilde Sélain-El Guerche et al.


disease was 62.3 age was 62.3

HIFU device used is FEP-BY02 (Yuande Bio-Medical Engineering Co.LTD., China). The subjects were 140 PC patients, i.e. 69 cases in stage III, 71 cases in stage IV. Performance status (PS) was PS0; 79, PS1; 38, and PS2; 3 cases. Mean age was 67.8 years. The details of the T stage (overlap) was chemo-radiotherapy in 4, arterial infusion chemotherapy in 8, operation in 17, and BSC in 7 cases. Results: All tumors were visualized by HI U monitor system. Tumor location was head in 38, uncus in 19, body in 59, body + tail in 6, tail in 2, and others (recurrence) in 16 cases. Treatment data was followed; mean tumor size before and after therapy was 33.5 ± 10.7 and 33.7 ± 11.5 mm, mean treatment sessions: 2.3 ± 0.7 times, mean total treatment time: 105 ± 65.6 min, mean total number of HI U shots: 967.8 ± 1106 shots. The effects of HI U therapy were as follows: the rate of complete tumor ablation was 87.9%, the rate of symptom relief effect was 64.9%, the effectiveness of primary lesion was CR,0, PR,21, SD,35, PD,34 cases, primary disease control rate (DCR) more than SD was 75.7%. The therapy and HI U treatment was operation in 8, chemotherapy in 116, chemotherapies in 4, and best supportive care (BSC) in 14 cases. MST after diagnosis in HI U with chemotherapy and chemotherapy alone (38 patients in our hospital) was 1028.3 ± 366.6 days, respectively (p = 0.001). MST after HI U therapy was 669.4 ± 156.6 days, the therapeutic index of HI U therapy with chemotherapy was better result than common chemotherapy alone.

Conclusion: This study suggested that HI U has the potential of new combination therapy for PC.

Disclose of Interest: All authors have declared no conflicts of interest.
P1431 PREVALENCE STRATIFICATION OF MALIGNANCY IN RESECTED INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS INVOLVING MAIN DUCT: IS THE 10 MM WURSING DIAMETER AN ADEQUATE CUTOFF?

T. Cúrdia 

Introduction: According to the 2012 International guidelines on the management of intraductal papillary mucinous neoplasms (IPMN), main-duct IPMN patients with a maximum diameter of the main pancreatic duct (MPD) diameter of ≥10mm should have surgical resection, whereas surgery is not always mandatory in those with MPD diameter between 5 and 9mm.

Aims & Methods: The aim of the study was to analyze the prevalence of malignancy (high-grade dysplasia or invasive carcinoma) in resected IPMN with MPD diameter between 5 and 9mm and to identify predictive factors of malignancy.

Retrospective analysis of patients with surgically resected IPMN between 2001 and 2016. Demographics, clinical presentation, imaging and histological features were compared between patients with preoperative evidence of MPD diameter between 5–9mm (Group A) and >10mm (Group B). Malignancy was defined as high-grade dysplasia or invasive carcinoma.

Results: From 122 patients with IPMN submitted to surgery, 66 with MD- or Main Duct IPMN entered the final analysis. Mean age was 66 ± 12 years and 48 (72.7%) patients were men. Group A comprised 47 patients and Group B 19. Abdominal pain was present in 23 (34.3%) patients, jaundice in 19 (28.8%), diabetes in 18 (27.3%), pancreatitis in 15 (22.7%) and weight loss in 12 (18%). There were no statistical differences between study groups. The most common location of the MPD-IPMN was the head of pancreas (60.6%), and it was multifocal in 34.8% of the patients. The prevalence of no dysplasia, low-grade dysplasia, mixed-IPMN was 18.2%, 42.6% and 38.3% in Group A and 10.5%, 21.1% and 57.9% in Group B. No significant difference was found between the two groups. The median survival time of the patients who were receiving chemotherapies was 197.0 days in group A and 291.0 days in group B. No significant differences were also found between the two groups. The median survival time of the patients who underwent chemotherapy in group A (332.0 days) was significantly longer than that of patients who underwent BSC (71.0 days).

Conclusion: Chemotherapy could be safe and effective for patients older than 75 years who have unresectable pancreatic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1432 CLINICAL SIGNIFICANCE OF CHEMOTHERAPY FOR ELDERLY UNRESECTABLE Pancreatic CANCER PATIENTS

S. Kaino 

Introduction: Pancreatic cancer has poor prognosis despite of improvements in multimodal treatments. As aging of the population advances, it is expected that elderly pancreatic cancer patients increase.

Aims & Methods: The aim of this study was to investigate the clinical significance of chemotherapy for patients with unresectable pancreatic cancer. At our hospital, 96 patients were diagnosed as having unresectable pancreatic cancer between January 2010 and December 2016. In this study, we defined elderly patients as those older than 75 years. We retrospectively examined the safety and efficacy of chemotherapy in patients with unresectable pancreatic cancer. We analyzed and compared the survival outcomes of chemotherapy and aged patients.

Results: Twenty-seven patients were older than 75 years (group A), and 59 were younger than 74 years (group B). We treated 6/10/0/2/5/4 patients in group A with GEM/S-1/modified FOLFIRINOX (mFOLFIRINOX)/GEM + nabPTX/ first-line supportive, respectively. On the other hand, we treated 12/14/11/5/13 patients in group B with GEM/S-1/mFOLFIRINOX/ GEM + nabPTX/BSC/other/chemotherapies, respectively. Severe adverse events (more severe than grade 3 according to CTCAE v4.0) occurred in 18.2% of the patients in group A and in 33.3% of the patients in group B. No significant difference was found between the two groups. The median survival time of the patients who were receiving chemotherapies was 197.0 days in group A and 291.0 days in group B. No significant differences were also found between the two groups. The median survival time of the patients who underwent chemotherapy in group A (332.0 days) was significantly longer than that of patients who underwent BSC (71.0 days).

Conclusion: Chemotherapy could be safe and effective for patients older than 75 years who have unresectable pancreatic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.
In the surgery group, methylation of the GNAS complex locus was found in 1/2 ADC, 1/3 IPMNs (the malignant IPMN has GNAS mutation and no methylation of the GNAS complex), 1/3 MCNs, 0/2 SCA and 0/1 retention cyst.

Conclusion: Sanger sequencing of KRAS and GNAS genes is highly specific for the diagnosis of mucinous neoplastic cysts of the pancreas and may be useful in selected patients. The specificity of Sanger sequencing of KRAS and GNAS genes for the diagnosis of malignant cystic lesions decreases but is higher than CEA/cytology analysis. Methylation in GNAS complex locus was found in malignant cystic lesions and may need further evaluation. More fluid markers are needed to improve pancreatic cyst classification. All other authors have declared no conflicts of interest.

Disclose of Interest: S. Faias: This Work was Financed by a Research Grant of Clube Portugues Do Pancreas.

References


P1434  A 5 - YEAR TERTIARY CENTRE EXPERIENCE OF ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION FOR DIAGNOSIS OF SOLID PANCREATIC MASS LESIONS

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Introduction: EUS FNA is accepted as the primary modality for tissue diagnosis of solid pancreatic lesions. The presence of on-site cytopathology for immediate evaluation is mandatory and need on-site guided fine needle aspiration (EUS-FNA) has previously been shown to improve performance characteristics. Due to service pressures EUS FNA is also undertaken in the absence of in-room cytopathology assistance. This is a review of current practice.

Aims & Methods: We retrospectively assessed 700 consecutive EUS-FNA procedures from January 2011 to January 2016. 459 (65.5%) solid pancreatic lesions were included in the final analysis after excluding 230 for biliary strictures, hepatic lesions, lymph nodes, gastric, oesophageal lesions, pancreatic cysts and 11 for insufficient information.

Results: In 399 (86.9%) cases on-site cytopathology support was available, while the remaining was unsupported. There were 228 males (57.1%) in the supported and 29 (48.5%) in the unsupported group. Mean age was 64.6 (SD: 11.4) and 64.1 (SD: 11.9) respectively. The mean number of passes in the two groups were 2.8 (SD: 1.12) and 1.9 (SD: 1.0) (P <0.001). A conclusive diagnosis (malignant, benign, NET, GIST) was made in 384 (48.6%), 104 (21.8%), 23 (5%) of the supported group and in 38% (23%, 10%, 3%, 2%) of the unsupported (P <0.001). The mean survival of patients diagnosed with malignancy was 10.9 months (SD: 8.7). Overall performance characteristics of EUS FNA were Sensitivity: 90.8% Specificity: 69.6% PPV: 91.8% NPV: 85.4%

Conclusion: This review confirms high performance characteristics of EUS FNA. The presence of on-site cytopathologist significantly increases the diagnostic yield.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1435  CLINICAL IMPACT OF GNAS AND KRAS MOLECULAR ALTERATIONS ADDED TO CEA AND CYTOLOGY IN Pancreatic CYSTIC FLUID OBTAINED BY EUS-FNA

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Introduction: Pancreatic cystic lesions are a common finding in clinical practice. Classification of cysts as mucinous or non-mucinous cysts, using EUS-FNA with cyst fluid analysis for cytology and CEA became widely used in clinical work-up of patients with suspicious pancreatic cysts. Molecular analysis (KRAS and GNAS) is not yet recommended in clinical practice.

Aims & Methods: We aimed to determine if mutation in GNAS and KRAS in addition to CEA level and cystic fluid cytology of cyst fluid obtained by EUS-FNA can help in pancreatic cyst classification and decision making. Evaluation of methylation of the GNAS complex locus was performed for cyst classification.

Between 2008–14, 266 EUS were performed for pancreatic cyst evaluation in a patient who died because of alcoholic delirium and the last one was indicated for surgical drainage. This is a review of current practice.

Results: Among 147 patients with pancreatic masses, 118x were diagnosed as cancer, 26x chronic pancreatitis, 3x neuroendocrine tumor. In total 147 native aspirates, 118 cytological smears and 94 plasma samples were examined. The test sensitivity of KRAS mutation was 100% (92/92 samples), but only 34% (31/92 samples) of patients with malignant cystic lesions were confirmed in the course of the disease as a cancer, one patient died because of alcoholic delirium and the last one was indicated for surgery recently.

Conclusion: Examination of KRAS mutations can be performed in all patients undergoing EUS-FNA, with the cytology being the most reliable type of sample for genetic tests. KRAS examination would be reasonable to introduce into routine clinical practice in a group of patients with unclear differential diagnosis of chronic pancreatitis, especially in those with suspicion of cancer in inflammatory terrain. Financial support by The Ministry of Defence and Armed Forces of the Czech Republic MO 1012.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1437 DO BILARY STENTS REDUCE THE DIAGNOSTIC PERFORMANCE OF EUS BIPSY IN PATIENTS WITH A MASS IN THE HEAD OF THE Pancreas?


Introduction: Self-expanding metal stents (SEMS) are increasingly preferred to plastic stents (PS) for postoperative drainage and palliation of biliary obstruction secondary to a stricture in the head of pancreas (HOP). Their use has increased over the last 5-6 years. Endoscopic ultrasound (EUS) with fine needle aspiration or biopsy (FNA or FNB) is commonly utilised to make a tissue diagnosis and to aid in staging in those with borderline resectable tumours. Stents may reduce diagnostic performance of FNA/FNB by reducing the visible mass to puncture. There have been 2 studies that assessed the impact of stenting on EUS-FNA/FNB performance, one found no difference in yield and sensitivity among patients with or without stents and between SEMS and plastic. Whilst a more recent study found accuracy was significantly reduced by the presence of a stent.

Aims & Methods: The aim was to assess whether stents (SEMS or PS) impair diagnostic performance of EUS tissue acquisition, in a retrospective study of all patients with HOP mass undergoing EUS biopsy between January 2010 and June 2016. Stenting information was obtained from the EUS report and images. Biopsies reported as malignant were considered as such, all other reports were considered benign. A definitive diagnosis of cancer was based on positive pathology, stable imaging and symptoms for a year or more. Patients with cystic lesions were excluded.

Results: A total of 1861 patients had EUS FNA/FNB of which 731 were for HOP lesions. Mean age of patients was 37±15y, 53% were females. Distribution was mostly HP mass (21/36, 59%), but also corporeal in 25% (9/36), caudal in 25% (9/36), inhom in 11% (4/36) and in uncus in 5% (2/36). Mean tumor size measured on EUS was 40±22 mm. Needle used was a 25G in 3% (1/37), 2G in 76% (28/37), 2G in 8% (3/37) and 19G in 13.5% (5/37). The diagnostic accuracy of EUS-FNA/FNB was performed in 56% (24/43) and trans-gastric in 44% (19/43). Mean number of needle passes was 2.2±0.7. EUS-FNA allowed certain preoperative diagnosis of SPN in 74% of cases (35/47), probable diagnosis in 6% (3/47), negative in 4% (2/47) and wrong in 6% (3/47). No acute complication of EUS-FNA was reported. With a mean follow-up of 36±3 months, only one local recurrence was noted. In this 74 years old man case, a 19G needle was used (2 trans-gastric passes), and recurrence occurred after 84 months.

Conclusion: In this large multicenter retrospective series, a systematic preoperative EUS-FNA did not seem to modify the SPN recurrence rate. Therefore this study allows to validate this attitude as a possible alternative. The data for the series are incomplete at the date of submission of the abstract. The final data will be completed on the day of presentation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:


P1439 DIAGNOSIS OF PANCREATIC NEUROENDOCRINE TUMOURS USING SUREPATH CYTOLOGY AND IMMUNOHISTOCHEMISTRY WITHOUT NEED FOR EXCISION BIOPSY

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Introduction: Pancreatic neuroendocrine tumours (PNETs) are relatively rare, i.e., 1, per 100,000 individuals per annum, and account for only 1–2% of all pancreatic tumours. They are separated into 2 major categories: 1) well-differentiated (WD-NETs) which have round to oval nuclei, coarse stippled chromatin and finely granular cytoplasm and 2) poorly-differentiated (PD-NETs) which have a diffuse architecture with an irregular nucleus and less cytoplasmic granularity. WD-NETs tend to have an indolent course, but ~50% have metastasised at the time of diagnosis. PD-NETs are high-grade cancers with an aggressive course resembling NETs arising in lung. WD-NETs contain neurosecretory granules which stain for synaptophysin and/or chromogranin. Endoscopic ultrasonography guided fine-needle aspiration biopsy (EUS-FNA) can provide a non-operative cytological diagnosis of PNETs when the pathologist is provided with a good specimen such as the pellet of cells obtained through SurePath (SP).

Aims & Methods: EUS-FNA samples of pancreatic tumours were collected into a SurePath vial and slides prepared from the cellular pellet. The slides were stained for synaptophysin and KIt67 by immunohistochemistry (IHC) and examined by 2 independent senior cytologists.

Results: Sixteen (16) patients with a mean age 65 years (male) were identified by EUS with a suspected PNET. The mean tumour size was 16.2 mm+/−4.2 mm. All had the morphology of a PNET and stained positive for synaptophysin. Immunohistochemical staining of the tumor of our large multicenter study was to assess the short- and long-term safety of preoperative EUS-FNA in SP.

Aims & Methods: This study is a multicenter retrospective register of all SPN diagnosed in the last decade in 14 European expert centers (GROPE task force). Inclusion criterion was realization of preoperative EUS-FNA followed by surgical resection. Patient and tumor characteristics were collected, as the EUS-FNA technique (number of passes, needle size, trans-gastric or trans-duodenal access). Immediate or late complications of EUS-FNA and recurrence of SPN were then recorded.

Results: During the period study, 49 patients (41 women/8 men) with preoperative EUS-FNA for SPN were recorded. Mean age of patients was 37±15y, 53% were females. Distribution was mostly HP mass (21/36, 59%), but also corporeal in 25% (9/36), caudal in 25% (9/36), inhom in 11% (4/36) and in uncus in 5% (2/36). Mean tumor size measured on EUS was 40±22 mm. Needle used was a 25G in 3% (1/37), 2G in 76% (28/37), 2G in 8% (3/37) and 19G in 13.5% (5/37). The diagnostic accuracy of EUS-FNA was performed in 56% (24/43) and trans-gastric in 44% (19/43). Mean number of needle passes was 2.2±0.7. EUS-FNA allowed certain preoperative diagnosis of SPN in 74% of cases (35/47), probable diagnosis in 6% (3/47), negative in 4% (2/47) and wrong in 6% (3/47). No acute complication of EUS-FNA was reported. With a mean follow-up of 36±3 months, only one local recurrence was noted. In this 74 years old man case, a 19G needle was used (2 trans-gastric passes), and recurrence occurred after 84 months.

Conclusion: In this large multicenter retrospective series, a systematic preoperative EUS-FNA did not seem to modify the SPN recurrence rate. Therefore this study allows to validate this attitude as a possible alternative. The data for the series are incomplete at the date of submission of the abstract. The final data will be completed on the day of presentation.

Disclosure of Interest: All authors have declared no conflicts of interest.
mitotic index derived from Ki67 staining helps identify WD-NETs which can be monitored and PD-NETs which need aggressive treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1440  EFFECTS OF IGF2BPS ON GROWTH AND PROLIFERATION OF PANCREATIC TUMOR CELLS. L. Niefeld1, F. Sperling1, K. Theuerkorn1, H. Griessmann1, S. Krug1, S. Hättelmaier2, P. Michl1
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Introduction: Pancreatic neuroendocrine neoplasms (PNE) are highly angiogenic tumors which despite of various targeted options including mTOR and VEGF inhibition frequently develop secondary drug resistance. IGF2BPs (IGF2 mRNA-binding proteins) represent a family of canonical RNA-binding proteins (RBP) comprised of three members (IGF2BP-1–3) which have been described to promote stem and/or progenitor cell maintenance with reported expression and oncogenic roles in aggressive cancers. IGF2BPs show a differential expression pattern in various solid tumors including pancreatic neuroendocrine tumors.

Aims & Methods: We aimed to characterize the role of IGF2BPs in progression and resistance of pancreatic neuroendocrine neoplasms. We used three different siRNA-pools (IGF2BPs) to inhibit the different IGF2BP isoforms in pancreatic neuroendocrine BON1 tumor cells. Cellular effects where investigated by Western blot analyses, flow cytometry, clonogenic survival, cell viability and migration assays.

Results: In the pancreatic neuroendocrine tumor cell line BON1, knock-down of IGF2BP1 resulted in a significant reduction of cell viability. Cell cycle analysis by FACS showed a decreased S phase progression parallelled by a reduction in the proliferation marker PCNA and a markedly reduced MEK/ERK activation. In contrast, Akt signaling was unaffected. Moreover, knock-down of IGF2BP1 significantly reduced clonogenic growth as assessed by colony formation assays and led to decreased cell migration as determined by scratch assays. Interestingly, knock-down of IGF2BP1 was insufficient to induce apoptosis, as assessed by PARP cleavage and the 3′-end of DNA as assessed by annexin-V and PI staining. Rather, si-IGF2BP1 increased the expression of both the anti-apoptotic and pro-survival factor BCL-2 and the cell cycle inhibitor CDK1, in contrast to IGF2BP1 knock-down of IGF2BP3 rather induced cell viability, whereas IGF2BP2 modulation had no impact on cell viability and cell cycle progression indicating opposing effects of the three IGF2BPs on PNE progression. These in vitro findings were paralleled by distinct expression patterns of IGF2BPs in human and murine PNE tumors. Elicudation of IGF2BP-modulated RNAs in PNE cells is ongoing.

Conclusion: In summary, our data suggest that IGF2BP1 promotes tumor progression by enhancing cell cycle progression and clonogenic growth, whereas IGF2BP2 and -3 exert no tumor-promoting role in PNE.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1442  EFFECTS OF LOW-DOSES ASPIRIN ON CLINICAL OUTCOME AND DISEASE PROGRESSION IN PATIENTS WITH GASTRO-ENTERO-PANCREATIC NEUROENDOCRINE TUMORS: RESULTS OF A MULTICENTRIC RETROSPECTIVE STUDY. S. Massironi1, S. Puscedda2, F. Cavalcoli3, A. Zilli1, G. Tamagno1, D. Femia3, N. Prinz1, C. Ciuffardi1, D. Conte1
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Introduction: The chemopreventive effect of aspirin (ASA) and other NSAIDs have been observed in the setting of colorectal cancer, showing a reduction in the incidence and mortality. However, the impact of aspirin use on clinical outcome of patients with gastro-entero- pancreatic neuroendocrine tumors (GEP NEN) has not yet been evaluated.

Aims & Methods: Aim of the study was to retrospectively evaluate the clinical outcome of GEP NEN patients treated with ASA at three different European referral Centres for NENs. All the GEP NEN patients followed up in three European Centres (Fondazione IRCCS Ca Granda Ospedale Policlinico Milano, Italy; Fondazione IRCCS Istituto Tumori Milano, Italy; Mater Misericordiae University Hospital, Dublin, Ireland), from January 2005 and September 2016, were retrospectively enrolled. The possible association between ASA and disease grading, staging, primary site, overall OS and PFS were evaluated. At the time of enrolment, clinical data and biochemical parameters were collected for every patient. Chromogranin A (CgA) and specific circulating peptides were evaluated. Morphological and functional imaging (computed tomography, magnetic resonance and Gallium 68PET) were performed to follow up the patients at each Centre.

Results: In the 253 patients included (121 M, median age 64 yrs), the primary neuroendocrine tumor was located at the stomach (n=35), pancreas (n=82), small bowel (n=80), appendix (n=37), colon (n=9) or unknown (n=7). Grading was G1 in 154 patients, G2 in 64, G3 in 5 and not available in 28. TNM staging was I in 99 patients, II in 16, III in 32 and IV in 86. No clear impact on OS or PFS was observed in patients taking ASA compared to those not taking it. Interestingly, in pNEN an inverse relation was observed between Ki67 and ASA assumption (r = -0.35, p = 0.008). In small bowel NEN an inverse relation was observed between positive lymphnodes at surgery and ASA assumptions (r = -0.3, p = 0.02). As expected, the intake of ASA was related with the older age of the patients.

Conclusion: According to present data, ASA therapy seems not to have a direct clinical impact on disease progression or survival of NENs, even if it is associated with lower Ki67 values and less node involvement. Further studies are needed to confirm this observation.

Disclosure of Interest: All authors have declared no conflicts of interest.
References

P1443 PANCREATIC LESIONS IN VON HIPPEL-LINDAU SYNDROME: CLINICAL AND EPIDEMIOLOGICAL DATA FROM A SINGLE CENTER
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Introduction: Von Hippel-Lindau disease (VHL) is a rare heritable genetic syndrome that may affect different systems and organs: pancreatic manifestations of the disease are frequent during lifetime of the patients. The key feature is the presence of simple cysts, but serous cystadenomas (SCAs) or neuroendocrine tumors (NETs) can be frequently found as well. The aim of this study is to describe pancreatic manifestations in patients with VHL, considering the peculiarity and rarity of this disease.

Aims & Methods: All patients who referred to the established multi-disciplinary team in our center (Molinette Hospital - Turin) for management and follow-up of VHL were included in the study. We considered the ones with pancreatic involvement (simple cysts, SCAs or pNETs). We collected data about the patients (demographics and medical history), about the lesions (imaging features, pathologic and cytopathological analysis) and about the management.

Results: In total 24 patients, 18 of which (75%) had a pancreatic involvement. Multiple simple pancreatic cysts were found in 13 patients, SCAs were found in 2 patients and NETs in 7 patients. The mean age of the patients with pancreatic lesions was 42 (min 25 - max 75), 11 were males and 7 females (1.6:1 M:F). Simple cysts were found in 15 patients, 11 were multiple (ranging from 12 to 80 mm) mostly in the head. 3 patients underwent surgery for symptomatic disease. All pNETs were well differentiated (G1, Ki67 <2%), 7 were located in the head and 2 in the tail (2 patients had multiple tumors). 5 out of the 7 pNET patients underwent surgery. The two SCAs were multiple (max 65 mm), mostly affecting the head and the tail in the other. No surgery was performed.

Conclusion: 75% of our VHL patients showed pancreatic involvement, mostly in males compared to females. 72% of patients with pancreatic lesions suffered from multiple cysts, 39% from NETs and 11% from SCAs. To note that all NETs were G1 and behaved in a benign fashion. Surgery was performed only in patients with NETs in the pancreatic head and in patients with symptomatic cystic disease. The mean age of incidence of VHL-related pancreatic lesions was lower than in previous studies, thus confirming literature data. Although all lesions in our patients were benign or stable, constant monitoring is needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1444 IMPACT OF TUMOUR SIZE ON THE PROBABILITY OF METASTASIS AND SURVIVAL IN PATIENTS WITH PANCREATIC NEUROENDOCRINE TUMOURS (PNETs): A POPULATION-BASED STUDY
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Introduction: Neuroendocrine tumours (NETs) consist of a diverse group of neoplasms that derive from diffuse neuroendocrine cells throughout the body. Commonly found in gastrointestinal (GI) duct and lung, they (GI) also arise in the pancreas. The relationship between tumour size and metastasis rate is poorly recognized in patients with pancreatic neuroendocrine tumours (PNETs). The impact of tumour size on prognosis was controversial in previous investigations.

Aims & Methods: The aim of this study is to evaluate the prognostic impact of tumour size on survival outcomes and its correlation with risk of metastasis in a large PNETs cohort, including all stages. Methods: PNETs cases diagnosed from 1988 to 2013 were retrieved from the Surveillance, Epidemiology, and End Results (SEER) database. Clinicopathologic features were retrospectively analyzed. Survival was calculated by the Kaplan-Meier method. Multivariable Cox regression models with hazard ratios (HRs) were constructed to analyze survival outcomes and risk factors. Cubic spline analysis was used to assess relationship between tumour size and probability of metastasis.

Results: A total of 5,424 patients were identified. There were 1,226 patients (22.6%) with tumour size of 2 cm or less. The probability of metastasis increased in a non-linear fashion with increasing tumours size. Univariate analysis showed that tumour size was significantly correlated with survival (P<0.001), no matter surgery was performed or not. However, subgroup analysis suggested this association to be linear for patients with localized and regional tumours (P<0.001), but stochastic in patients with distant stages (P=0.703). On multivariate analysis, tumour size was an indicator for metastasis (HR = 1.010, 95% CI: 1.008–1.012, P=0.001 and size <2 cm vs >2 cm: HR=0.703). No surgery was an independent prognostic factor for good survival (HR = 1.211, 95% CI: 1.048–1.399, P=0.009 for size <21 mm; HR = 1.282, 95% CI: 1.161-1.474, P<0.001 for size >20 mm). For tumours ≤20 mm, surgical treatment was associated with significantly improved survival compared with those patients who did not undergo operation (P<0.001).

Conclusion: Tumour size affects the probability of metastasis. Its prognostic impact on survival is restricted to patients with localized and regional disease. For tumours with tumour size ≥20 mm, surgical treatment should be considered preferably.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1445 THE LARGEST FAMILY IN TURKEY WITH MULTIPLE ENDOCRINE NEOPLASIA-TYPE 1 AND A NOVEL MUTATION
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Introduction: Multiple Endocrine Neoplasia type-1 (MEN-1) occurs usually sporadically but because it is an autosomal dominant disorder it may affect other family members too. The combination of parathyroid tumors, pancreatic islet cell tumors, and anterior pituitary tumors is characteristic of MEN-1 although it may be accompanied by a substantial number of non-endocrine tumors. The mutations in MEN-1 result in the inactivation of one of the MEN1 gene product, a serine/threonine protein kinase encoded by this gene and is responsible for tumor-suppression under normal circumstances. Herein we present the largest MEN-1 family in Turkey to the best of our knowledge and a newly discovered mutation in MEN-1 that affects this family.

Aims & Methods: The family inherited the specific MEN-1 mutation is originally 5' einkaharihas, Giresun and most of the members have moved to Istanbul and Yalova. Consanguineous marriages have been practiced within the family. From a young age, eleven patients underwent biochemical, radiologic and if necessary endoscopic evaluation along with the genetic testing. Additionally, we learnt that 2 members of the family had died of pancreatic malignancy. Diagnostic criteria for familial MEN-1 include 1- the presence of at least one MEN-1 associated tumor that are from parathyroid, pituitary, or GEP tract origins, 2- at least one first-degree relative with one or more of these endocrine tumors and/or 3- positive genetic testing for abnormal MEN-1 mutation. For our index case, DNA sequencing of the MEN1 gene performed using Sanger sequencing technique at ABI 3500 sytem. For the other family members only the targeted mutation analysis is performed.

Results: Among the family members we had peripheral blood DNA from 9 and we found presence of tumour tissue DNA from 1 patient. MEND1 gene was analyzed by Sanger sequencing. Our index case was ZK who had hypophysis adenoma, parathyroidectomy and pancreatic neuroendocrine tumor and had whipple operation. A three nucleotide deletion p. ser560delg*3c.1680_1683 del TGA (MEN-1) mutation was detected. Seven out of ten who were analyzed and tested positive for the mutation. Genetic counseling and information about pre-implantation genetic diagnosis (PGD) was given to all patients who are tested positive for the mutation. All 7 patients had p. ser560delg*3c.1680_1683 del TGA) three nucleotide deletion same with that of index case. Out of 15 patients, MEN-1 diagnosis was confirmed in 11. Tumours detected at patients with MEN-1 diagnosis were: nonfunctional pancreatic neuroendocrine tumour at three, parathyroid adenoma/hyperplasia at 6 patients and hypophysis adenoma
P1446 PROGNOSTIC VALUE OF THE DIFFERENT PRE-TREATMENT BIOMARKERS FOR PATIENTS WITH NEUROENDOCRINE TUMORS

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Introduction: Several inflammatory response materials could be used for predic- tion of prognosis in cancer patients. The neutrophil lymphocyte ratio (NLR), platelet lymphocyte ratio (PLR), thrombocytosis (the platelets number >400*103/mm3) have been introduced for prognostic scoring system in various cancers.

Aims & Methods: The objective of this study was to determine whether the NLR, the PLR or thrombocytosis could predict the clinical outcomes in G1-G2 neuroendocrine tumors. We performed a retrospective review of 31 patients with neuroendocrine tumors with ki 67 below 20% diagnosed in Fundi Clinical Institute between 2011-2017. Data about site of the primary tumor, presence of metastasis, NLR, PLR, thrombocytosis (platelet count >400) and survival were collected and analysed.

Results: The patients characteristics were: primary tumor location was: 61.29% pancreas, 22.58% gastrointestinal tract, 16.13% unknown, 61.29% had hepatic metastasis, 6.45% had locally advanced tumor. The primary tumor was resected in 35.48% patients. The overall 2-year survival rate was 77.42%. The Ki 67 index (p < 0.04), PLR (cut off >300) p < 0.01 have statistical significant impact on survival. Univariate analysis and on multivariate analysis (P < 0.03). Other factors like ki 67 index, metastatic disease, thrombocytosis and NLR have an impact on survival statistical significant on multivariate analysis.

Conclusion: This study demonstrates the prognostic role of different variables like Ki 67 index, PLR and PLT value, thrombocytosis and metastasis. This factors may be integrated in different scoring systems for prognosis that could guide clinicians for a better management in patients with neuroendocrine tumors.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
4. § ENTURK, Mehmet et al. The role of the mean platelet volume and neutro-phil-to-lymphocyte ratio in periportal abscesses, Braz. J. otorhinolaryngol. [online]. 2016; vol.82, n.6

P1447 FUNCTIONAL RELEVANCE OF THE OVEREXPRESSION OF PLAC8 IN NEUROENDOCRINE PANCREATIC TUMORS

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Introduction: Neuroendocrine pancreatic tumors represent the second prevalent entity of malignant tumors of the pancreas and show an overall mortality of about 60%. At the moment surgical resection is the only option of potentially curative therapy, as with the currently available chemotherapies and radiotherapies. Approaches inhibit tumor growth but no regression of the tumor can be achieved. Therefore for about 80% of pNET patients no curative therapy can be offered. To obtain the identification of novel potential target genes for the development of new therapeutic strategies, primary tissues from pNET patients were analyzed. Amongst others Plac8 (Placenta-specific 8) was identified, which

is a small protein of unknown function, showing different forms of cellular localization depending on the cell type analyzed, indicating at its ability to fulfill a variety of physiological functions.

Aims & Methods: In the course of this study, the function of Plac8 in neuroendo- crine pancreatic tumors is to be unveiled to evaluate its value as a potential target for pNET therapy. Therefore primary tumor tissue of about 100 pNET patients were analyzed for Plac8 expression by quantitative real-time PCR and immunohistochemistry. Furthermore established pNET cell lines from human origin where transfected with siRNAs against Plac8 and there proliferative activity and differentiation where analyzed by proliferation- and MTT assay. Changes in these impor-
tant characteristics of tumor cells were further examined by westernblot analyzes of key regulators of apoptosis and cell growth.

Results: Plac8 is highly expressed in primary human pNET tissue on RNA- as well on protein level. Functional in vitro analyses show that the siRNA-mediated knockdown of Plac8 not only in human but also in rat cell lines leads to significantly reduced proliferative activity and reduced cell growth. These effects come along with indicative changes in the expression of central regulatory cell cycle pathways seen in the siRNA- treated cells.

Conclusion: Overexpression of Plac8 in neuroendocrine tumors of the pancreas promotes the proliferative phenotype of the tumor cells while the inhibition of Plac8 inhibits cell growth and metabolism. Therefore in the future Plac8 could represent a very interesting target molecule for the treatment of pNETs.

Disclosure of Interest: All authors have declared no conflicts of interest.

WEDNESDAY, NOVEMBER 01, 2017 09:00-14:00

ENDOSCOPY AND IMAGING III - HALL 7

P1448 CLINICAL OUTCOMES OF SUPERFICIAL LARYNGOPHARYNGEAL CANCER WITH LYMPH-VASCULAR INVASION AFTER ENDOSCOPIC LARYNGOPHARYNGEAL RESECTION

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Introduction: Since the majority of laryngopharyngeal carcinomas are detected at an advanced stage, most cases are treated with concurrent chemotherapy and radiation therapy. The key to improving the prognosis and quality of life is early detection of the primary cancer and treatment using minimal invasive surgery. We previously reported the good oncologic outcomes with ELPS (Endoscopic laryngopharyngeal surgery) for superficial laryngo-pharyngeal carcinoma. However there is no clinical evidence for an additional treatment nor prognosis about the cases conducted endoscopic resection which were diagnosed to be superficial carcinoma with lympho-vascular invasion histopathologically.

Aims & Methods: This study aimed to investigate the optimal additional treat-
ment and clinical course for the suralxing laryngo-pharyngeal carcinoma with lympho-vascular invasion. We analyzed clinicopathological data in 9 patients showed Lympho-vascular invasion receiving ELPS between 2007 and 2014.

Results: Positive lympho-vascular invasion was found in 9 cases. Detected the tumor depth was SEP in 7 lesions and MP in 2 lesions. Mean alcohol consumption is 9.9 abw units. Average smoking history is 38.9 pack years. 5 cases are low activity ALDH2 heterozygotes and have alcohol flushing reaction. 7 cases show positive ALDH2 enzymology findings with lympho-vascular invasion(ly0, v1), 2 cases with vascular invasion(ly0, v1), and 2 cases with lympho-vascular inva-
sion.(ly1, v1). Two patients underwent an additional chemoradiotherapy without recurrence. Four patients had a cervical lymph node or local recurrence, two of them were salvage ELPS cases after chemoradiotherapy. One other salvage cases also had distant metastasis and was given palliative treatment, and finally died. The other one underwent surgical salvage and remained alive. One case with lymphatic and vascular invasion had no adjuvant therapy and remained recurrence-free. And the other 2 cases had no recurrence but died of other cause.

Conclusion: Lympho-vascular invasion is a risk factor for cervical lymph node metastasis, which has a possibility to a very aggressive disease. In those cases, chemoradiotherapy as an additional treatment is recommended as far as possible. If patients already had prior radiotherapy, close follow-up is essential to detect recurrence early. In those cases, chemotherapy or additional surgical resection are also considerable if the general conditions are satisfactory.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1450 EFFICACY OF THE FORCED COAGULATION MODE WITH LOW-HYPERSONIC POWER SETTING DURING ENDOSCOPIC SUBMUCOSAL DISSECTION

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Introduction: Bleeding control is one of the most important factors to success in endoscopic submucosal dissection (ESD). We investigated the deference of hemostatic ability between S method and F1-10 method in clinical procedures and surgical trainees.

Aims & Methods: We investigated the deference of hemostatic ability between S method and F1-10 method in clinical study and ex vivo study. In clinical study we analyzed retrospectively their hemostatic ability by consecutive six gastric ESD cases in each groups excluded some cases, which have the risk of affecting data. The median frequency of hemostatic ability of the large vessel in case 2 mm was defined for the prevention of bleeding when relatively large vessels penetrating between muscle layers are dissected. However, we have thought that S method is insufficient especially for large vessels such as more than 2 mm, we have to use hemostatic forceps for preventing hemorrhage despite treated vessel more than 2 mm. We have found that F1-10 method with low-high frequency power setting (F1-10 method) can exhibit precoagulation function without bursting vessels. It is suggested that F1-10 method is useful for large vessel precoagulation.

Aims & Methods: We investigated the deference of hemostatic ability between S method and F1-10 method in clinical study and ex vivo study. In clinical study we analyzed retrospectively their hemostatic ability by consecutive six gastric ESD cases in each groups excluded some cases, which have the risk of affecting data. The median frequency of hemostatic ability of the large vessel in case 2 mm was defined for the prevention of bleeding when relatively large vessels penetrating between muscle layers are dissected. However, we have thought that S method is insufficient especially for large vessels such as more than 2 mm, we have to use hemostatic forceps for preventing hemorrhage despite treated vessel more than 2 mm. We have found that F1-10 method with low-high frequency power setting (F1-10 method) can exhibit precoagulation function without bursting vessels. It is suggested that F1-10 method is useful for large vessel precoagulation.

Methods: The bleeding rate after vessel processing was 18.4% (8/49) and 4.8% (3/63) in the S and F1-10 methods, respectively. The median frequency of the compressed vessel was twice in both methods. The bleeding frequency after vessel processing was 4.8% (3/63) and 4.8% (6/126) in the S and F1-10 methods, respectively. No significant difference was found between the two methods, at 100%, 97.4% respectively. In close surveillance periods, 12 patients were confirmed to local recurrence by follow-up biopsy, then delayed re-treatment was performed (7 patients in re-do ESD). 5 patients in surveillance were treated with re-ESD, and 17 patients were treated with additional surgery. Among these two groups, there were no significant difference in recurrence rates (8.3% vs. 0%) and five-year survival rates (both 100%).

Results: Table 1: Mean procedural counts at the point of UGI certification.

<table>
<thead>
<tr>
<th>UGI Total Therapy</th>
<th>DOPS Argon</th>
<th>Banding</th>
<th>Clipping</th>
<th>Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>346</td>
<td>10.7</td>
<td>2.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Non-medical</td>
<td>323</td>
<td>1.1</td>
<td>0.29</td>
<td>0.3</td>
</tr>
</tbody>
</table>

p-value 0.143 < 0.0001

Conclusion: Training on endotherapy prior to certification is limited. The current GI certification process does not guarantee competency in endotherapy for UGIB. In response, JAG QA team have recently released new DOPS forms specific to UGIB, and are consulting on introducing formal certification in endotherapy for UGIB.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. GMC National Training Survey Results 2016, Gastroenterology.
March and September of 2016. All patients underwent EC with iScan. The esophagus was inspected with a ECM capable endoscope (EG-2990-Zi) and deliberate biopsies were taken from tissue identified by ECM that suggested BE. All biopsies were confirmed by a GI pathologist. Primary endpoint was the correlation between visual inspection diagnosis of dysplastic BE by ECM versus pathologic diagnosis of BE as the gold standard.

Table 1: Patient characteristics and outcomes

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>47.7</td>
</tr>
<tr>
<td>Male</td>
<td>41/100</td>
</tr>
<tr>
<td>Endoscopic diagnosis: nonsyndypastic BE</td>
<td>96/100</td>
</tr>
<tr>
<td>Histologic diagnosis: BE with LGD</td>
<td>4/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: nonsyndypastic BE</td>
<td>94/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: BE with LGD</td>
<td>4/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: benign gastric mucosa</td>
<td>1/100</td>
</tr>
<tr>
<td>Pathologic diagnosis: esophageal ulcer</td>
<td>1/100</td>
</tr>
</tbody>
</table>

Results: In our cohort 41% were male, with mean age of 47.7 years. Endoscopic diagnoses by ECM were divided into nonsyndypastic BE (96/100) and suspected dysplastic BE (4/100). On pathology nonsyndypastic BE was found in 94/100 patients, BE with low-grade dysplasia was found in 4/100 patients. Benign gastric mucosa with no alterations (1/100), and ulcerated esophagitis (1/100). The overall accuracy of endoscopic diagnoses using ECM against pathology diagnosis was of 98%, with sensitivity of 100% [95% CI (96%–100%)], and positive predictive value of 98% [95% CI (93%–99.7%)].

Conclusion: Endoscopic diagnosis of BE by directed biopsies of esophageal tissue with use of ECM is highly accurate. Future prospective studies are needed to validate our preliminary findings and assess inter-observer variability.

Disclosure of Interest: M. Xu: Grants from BSC, Xlumena, Cook, Olympus, Merit Endotek, Concordia, MI Tech, Maunakea Tech, Ninepoint Medical, W.L. Gore, ASGE. M. Kahaleh: Grants from BSC, Xlumena, Cook, Olympus, Merit Endotek, Aspire Bariatrics, GI Dynamics, Apollo, Fuji, Pentax, Emcision, Concordia, MI Tech, Maunakea Tech, Ninepoint Medical, W.L. Gore, ASGE. All other authors have declared no conflicts of interest.

References

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Introduction: Endoscopic full-thickness resection (EFTR) for sub-epithelial lesions (SEFs) of GI tract is less frequently described; possibly due to technical challenges involved in dissection and need for resultant defect closure. Current study describes single-center experience of EFTR for treatment of SETs.

Aims & Methods: Prospective database of patients undergoing EFTR for SETs over 6-years (2011–2017) was abstracted. Patient selection for EFTR-endoscopy, endoscopic ultrasound (EUS) and CECT. Inclusion criteria: encapulated lesions, predominantly endophytic component and absence of features of invasive malignancy. Exclusion criteria: patients unfit for general anesthesia or major invasive procedure, unacceptable coagulopathy or high risk features for malignancy. All procedures performed under general anesthesia with endotracheal intubation. High-definition endoscope (GIF-HQ-190 or CF-HQ-190, Olympus Corp., Japan) with distal transparent hood and carbon dioxide insufflation used in all. Alter submucosal (SM) elevation by Gelofuscin, mucosal incision and SM dissection performed to expose SET. Encapsulated SET enucleated maintaining intact capsule. Adherent and attached muscularis propria (MP) layer fibers divided. IT or Dual-knife™️ used for dissection and coag-grasper for hemostasis. Resultant MP layer defect closed endoscopically.

Results: Total N = 18(M:F–11:7), mean age-53.6 (Range-28–78). Presentation—GI bleed (73%), abdominal pain (42%), non uker dyspepsia-1, rectal mass-1 and asymptomatic, incidentally diagnosed (63%). Layer of origin—MP layer in all. Location—stomach-15(72%), duodenum-2, rectum-2, proximal jejenum-1. Mean size of SET-3.3 cm (range 1–7). Mean procedure time-182 mins (60–345), and mean hospital stay was 4 days. Adverse events-two (11%)–esophageal laceration during specimen retrieval–1 (closed using endoclips), failure–1 (due to undetected large exophytic component–surgical resection). Histopathology with

Abstract: P1453

Final Diagnosis (FD)

<table>
<thead>
<tr>
<th>BO with DYS/OAC</th>
<th>BO with DYS/OAC but no visible lesions</th>
<th>BO with DYS/OAC and visible lesions</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

Admitting Diagnosis (AD) Group 1 BO without DYS/OAC (n = 82): BO patients with DYS/OAC but no visible lesions (Group 2, n = 33): BO patients with DYS/OAC and visible lesions (Group 3, n = 4). All patients underwent an endoscopy under deep sedation at IOV with HD magnification endoscopes + NBI + acetic acid chromoendoscopy. Target biopsies and/or EMR were obtained in case of endoscopically visible lesions; 4-quadratic biopsies 2-cm were obtained otherwise. All the specimens were diagnosed by two expert GI pathologists, who reached a final diagnosis (FD). In Group 2 patients where FD was BO without DYS/OAC, previous history was reviewed by two expert pathologist.

Results: Results are summarized in Table 1. Group 1 (n = 82): FD of DYS/OAC with visible lesion was reached in 2 out of 82 patients (2.4%), both treated by EMR + RFA. No one had a FD of DYS/OAC without visible lesions. Group 2 (n = 33): FD of DYS/OAC with visible lesions was revealed in 13 out of 33 patients (39.4%: 11 were treated by EMR + RFA, 1 by surgery and 1 chemotherapy.

Conclusion: When upper endoscopy is performed in a BO reference center where specific facilities and expertises are available (i.e. deep sedation, HD magnification endoscopes, chromoendoscopy, expert endoscopist and pathologist) “invisible” DYS is a very rare diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1455 PROPHYLAXIS OF VARICEAL BLEEDING IN CIRRHOTIC PATIENTS: EFFICACY AND SAFETY OF ENDOSCOPIC VARICEAL LIGATION - A TERTIARY CENTRE
E. Soares1, M. GravitoSoares1, A. Henrique1, N. Almeida1, L. Tomé1
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Introduction: In the natural history of chronic liver disease, variceal bleeding represents a life-threatening complication of portal hypertension, with high risk of recurrence and mortality.
Aims & Methods: We aimed to evaluate the efficacy of EVL therapy in both primary prophylaxis of variceal bleeding in cirrhosis and to establish the patient’s clinical outcome. This was a retrospective observational cohort study of a total of 444 EVL procedures performed in 250 cirrhotic patients, who were admitted in a gastroenterology department of a tertiary centre, between 2010 and 2016, as prophylaxis of gastrointestinal bleeding. All EVL procedures were repeated every two to three weeks in order to achieve variceal eradication. The clinical outcome included the recurrence of bleeding (primary endpoint), the eradication success rate of oesophageal varices, EVL-related complications and overall and bleeding-related mortality.
Results: The mean follow-up period for all 250 cirrhotic patients enrolled in the study was 73.2±40.0 months, with a mean age of 63.9±8.8 years and a predominance of male gender (80.4%;n=201). At initial endoscopy, 237 (52.1%) patients had oesophageal varices and severe in 168 (37.8%). EVL was performed as primary prophylaxis in 50.9%(n=226) and secondary prophylaxis in 49.1%(n=218). Varices were obliterated in 209 (83.6%) patients with mean number of EVL procedures necessary to eradicate varices of 1.8±0.95 and a maximum of procedures of 6. Recurrent bleeding occurred in 11.2%(n=28) of cases with a mean time to rebleeding occurrence of 8.1±14.2 months. Major and significant complications were verified in 8.1%(n=36) of patients. The main complications were bleeding related to post-banding ulceration (75.0%(n=27)) and infection (22.2%(n=8)), with mean time between EVL and complication occurrence of 11.1±11.9 days (minimum:0;maximum:43). Intra-procedure complications occurred in 11.2(5) patients with no death, despite of two cases of SengstakenBlakemore tube telescoping and one case of bleeding. The overall mortality was 3.4%(n=24), being 0.4%(n=2) related to varical bleeding.
Conclusion: EVL seems to be an efficient, safe and relatively simple therapeutic modality both in primary and secondary prophylaxis of variceal bleeding in cirrhotic patients. Since the main complications occurs over 1 week after EVL procedure, the majority of patients can be safely treated in an ambulatory setting.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1456 THE VALUE OF ENDOCOPIC FULL-THICKNESS ERECTION FOR GASTRIC AND DUODENAL SUBMUCOSAL TUMORS ORIGINATING FROM THE MUSCULIUS PROPRIA LAYER
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Introduction: Given diminishment of quality life caused by surgery in the stomach and duodenum, a minimally invasive treatment is desirable for gastric and duodenal submucosal tumors (SMTs).
Aims & Methods: We aimed to assess the value of endoscopic full-thickness resection (EFTR) technique for gastric and duodenal submucosal tumors (SMTs) originating from the muscular propria (MP) layer. A total of 276 patients with single gastric SMTs originating from the MP layer were performed EFTR between January, 2010 and February, 2014. The light adhesion of the tumor to gastric or duodenal serosal layer could be seen in every case from endoscopic ultrasound (EUS) before the procedure. The SMTs oriented endoscopically were performed EFTR using a standard ESD technique without laparoscopic assistance under direct endoscopic view. The defect of gastric and duodenal wall was closed after resection.
Results: A total of 276 patients included 94 males and 182 females. Their median age was 57.8 years (range, 30-81 years). Among all the 276 SMTs in our study, 165 located in gastric fundus, 96 located in gastric body, 8 located in the antrum, 1 located in pylorus, 7 located in duodenal bulb, 1 located in duodenal cap, 1 located in duodenum and 1 located in duodenal postbulbar. The size of lesions was 1.7 cm (range 0.7-6.0 cm). The success rate of EFTR was 98.9% (273/276). EFTR was failed in 3 cases: one case was out of control because of bleeding into enterocoelea, two cases required conversion into laparoscopic surgery because of torrent lobulations of the tumor outside the cavity. The median operation time was 65 min (range, 14-210 min). In bled resection rate was 98.1% (268/273), piecemeal resection rate was 1.9% (5/273). The median length of hospital stays was 4.4 days (range, 1-23 days). Pathological outcomes revealed that the primary tumors were 137 (49.2%) well-differentiated adenocarcinomas, 174 (31.7%) adenomas, 9 (2.5%) glomus tumors, 5 (1.8%) displaced pancreas, and 3 (1.1%) fibromatoses. The procedure-related complications were as follows. Different degrees of postgastric pain occurred in 168 (60.9%) cases, among which 24 (8.7%) cases required analgesics. Pneumoperitoneum occurred in all the patients and was treated successfully with peritoneocoelea decompression. Seroperitoneum occurred in 15 (5.4%) cases. localized peritonitis occurred in 3 (1.1%) cases, and digestive tract leakage occurred in 1 (0.4%) case. All the cases with above complications recovered spontaneously or after conservative treatments. No massive bleeding or abdominal abscess was found after EFTR. None of the 273 cases developed procedure-related death. No tumor residual or recurrence was found during the follow-up period ranging 3-55 months.
Conclusion: EFTR without laparoscopic assistance is minimally invasive, safe, and effective for treating gastric and duodenal SMTs, which originate from the MP layer and adhere tightly to the serosa. High end bleed resection rate could be achieved. However, a larger number of the cases and long-term outcome deserve further research.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1457 BLUE LIGHT IMAGING AND LINKED COLOR IMAGING FOR DETECTION AND CHARACTERISATION OF CHRONIC GASTRITIS
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Introduction: Current standard in the characterization of gastric mucosal changes is the use of virtual chromoendoscopy with magnification to visualize the pit pattern and vascular changes. The most recent development in light emitting technology is the so called Multi Light Illumination, that composes light output of 4 coloured LED. Blue Light Imaging (BLI) is composed of a continuous spectrum with peaks at 410 and 430 nm to enhance surface and vascular structures. Linked Color Imaging (LCI) uses BLI light together with post processing that realocates colour tones resulting in a high contrast of different red tones. Until now only few data exist about the use of BLI and LCI in chronic gastritis (CG).
Aims & Methods: We aimed to analyse the use of LCI and BLI in detecting and characterizing of chronic gastritis and premalignant conditions of the stomach. All authors have declared no conflicts. All patients were included.
Results: We investigated 24 patients (15 female, 9 male, age 65 yrs (25-87yrs)). H. pylori was detected by histology or urease test in 7 patients. 3 patients showed normal gastric mucosa, 13 patients presented IM or AG either in the antrum or the corpus. According to MAPS criteria 7 patients had extensive disease with premalignant condition in both, antrum and corpus. The concordance of endoscopic classification and histology was 79.1% (19/24) in the antrum and corpus each. Despite the inconcordance of histology and endoscopic diagnosis in 5 cases the intervals for surveillance according to MAPS guidelines would have been correctly respected with the use of endoscopic assessment in all cases.
Conclusion: LCI and BLI are accurate in detection and characterization of visible focal lesions. Endoscopy a prediction of histology was made by the endoscopist.
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Conclusion: LCI and BLI are accurate in detection and characterization of visible focal lesions. Endoscopy a prediction of histology was made by the endoscopist.
Disclosure of Interest: J. Weigt: Research and presenter for Fujifilm. All other authors have declared no conflicts of interest.
P1458  LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOSAL DISSECTION(ESD) FOR RELATIVE INDICATION GROUP OF EARLY ESOPHAGEAL SQUAMOUS CARCINOMA (EESCC) IN AGED PATIENTS
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Introduction: According to the Japanese Esophageal Society Guidelines, Early Esophageal Squamous Cell Carcinoma (EESCC) involving the muscularis mucosa or <200um invasion of the submucosa, and circumferential extent of >2/3 were relative indications (RI) for ESD. Additional treatment (AT, including esophagectomy or chemoradiotherapy) may be needed after ESD. But in aged RI patients, most will refuse AT due to higher rates of debilitating symptom in China.

Aims & Methods: The aim of this study was conducted to evaluate the long-term outcomes of aged RI patients without AT after ESD.

Between January 2008 and December 2013, a total of 158 aged EESCC patients were included in the present retrospective study. Prognosis outcomes were analyzed.

Results: 89 patients included in absolute indication (AI) group and 69 in RI group. The baseline characteristics were balanced between two groups. During the follow-up time (median 56 (1-108) months), short-term adverse events (4.3% vs 1.1%, p = 0.319) and postoperative stricture rate (31.8% vs 21.3%, p = 0.134) were higher in RI group than in AI group. 5-year recurrence-free survival rate (85.8% vs 67.2%, p = 0.561), metastasis-free survival rate (100% vs 96.6%, p = 0.437), overall survival rate (96.6% vs 90.0%, p = 0.613) and cause-specific survival rate (98.9% vs 98.5%, p = 0.264) for AI group and RI group were comparable.

Conclusion: Aged EESCC patients without AT(esophagectomy or chemoradiotherapy) showed comparable prognosis outcomes with AI group after ESD. So follow up may be recommended, substituted for AT in aged RI group.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1459  RETROSPECTIVE ANALYSIS ON SUSPICTION OF FOREIGN BODY INGESTION AND FOOD IMPACTION ON GASTROENTEROLOGY EMERGENCIES
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Introduction: Suspicion of foreign body (FB) and food impaction (FI) are one of the most common motives for endoscopic emergency. This retrospective study reviewed 288 cases of suspicion on FB/FI, by the frequency of endoscopic alterations.

Aims & Methods: Uni-centric retrospective cohort study of endoscopies performed during one year of gastroenterology emergency setting.

Results: In 2015, 286 endoscopies were performed on suspicion of FB/FI (22% of total endoscopies, n = 1,309, of them 69.1% (n= 199) were performed during the night. Patients’ median age was 58 years, and 52.8% were women. The presence of FB/FI was confirmed in 71.2% (n= 205); of them 61.5% (n= 126) were FB. The most frequently found foreign bodies were meat bones 18% (n= 37) and fish bones 14.6% (n= 30). Most FB/FI were found on the proximal esophagus (56.1%, n = 115). Endoscopic removal was performed on 129 cases (63.4%), endoscopic mobilization in 54 (26.3%), and in 22 endoscopic closure. In surgery group, complications occurred in 6 patients (1 leakage, 1 stricture, 1 hernia and bowel obstruction, 1 wound infection and 2 worsened fibrotic lesions, regardless of size and location, all took a very long time, more than 100 minutes.

Conclusion: It needs accumulate experience with the help of a professional expert up to 30 cases, and to the more advanced level, about 90 procedures are needed. And, the location of the lesion is the important factor in determining the difficulty of the procedure. Therefore, it is best to avoid the upper third lesion as far as possible until experience 90 cases or at least 30 procedures.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1460  LEARNING CURVE FOR ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTRIC NEOPLASMS; LOW-VOLUME SINGLE-CENTER EXPERIENCE
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Introduction: Endoscopic submucosal dissection (ESD) has become a standard therapy for early gastric neoplasia. There is no consensus yet about the number of experiences required for performing ESD alone.

Aims & Methods: We aimed to investigate the learning curve of ESD performed by a single beginner endoscopist focusing on developing the performance of dissection, shortening the procedure time, and preventing complications.

Methods: Records of 120 consecutive ESD procedures performed by a single beginner endoscopist with an ESD knife from March 2012 to February 2016 were collected. For analysis of the learning curve, total procedures were divided into four periods, each comprising 30 sequential ESD. The parameters assessed were the en-bloc resection rate, complete resection rate, procedure time, and related complications.

Results: In the procedure time according to the number of experiences, the procedure time decreased from 54 experience. However, there was no statistical difference from the first (45.4±24.0) to the second quarter (44.1±23.1, p = 0.19), to the third quarter (40.7±27.3, p = 0.08), and to the fourth quarter (40.8±23.1, p = 0.09). There was no procedure that exceeded 100 minutes from the third quarter. There were a total of seven perforations, four of which were in the first quarter, two in the second, and one in the third. In the procedure time according to the location of the lesions, upper third lesion (92.4±43.7) showed longer procedure time than middle (46.6±40.2, p < 0.01) and lower third (39.5±27.5, p < 0.01) with statistically significant difference. In addition, in the fibrotic lesions, regardless of size and location, all took a very long time, more than 100 minutes.

Conclusion: ESD can be one of good options for the resection of gastric submucosal gastric epithelial neoplasms. 2006;38:991-5.
P1462 CAP ASSISTED UPPER ENDOSCOPY VERSUS SIDE-VIEWING ENDOSCOPE FOR EXAMINATION OF THE MAJOR DUODENAL PAPILLA: A RANDOMIZED, BLINDED, CONTROLLED, NON-INFERIORITY CROSSOVER STUDY (CAPPAR-II STUDY)
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Introduction: Examination of major duodenal papilla (MDP) by standard forward-viewing is limited and the use of side-viewing endoscope (SVE) is mandatory. Cap assisted esophagogastroduodenoscopy (CA-EGD) utilizes a cap fitted to the tip of the endoscope that can depress the mucosal folds and thus might improve visualization of MDP. The aim of this study was to compare CA-EGD to SVE for complete examination of the MDP.
Aims & Methods: Prospective, randomized, blinded, controlled, non-inferiority crossover study. Subjects scheduled for elective EGD were randomized to undergo CA-EGD (group A) or SVE (group B) before undergoing second examination by the alternate method. Imaging of the MDP was evaluated, after image processing, by three blinded multicenter-experts. Our primary outcome measure was complete examination of the papilla. Secondary outcome measures were image quality of mucosal pattern, ability to obtain an overview of the papilla and overall satisfaction of the evaluators. For secondary outcomes, a score was given from 1 to 10 (1=poor, 10=excellent).
Results: A total of 62 patients were randomized and completed the study. Complete examination of MDP was achieved in 59 patients using CA-EGD compared to 60 patients using SVE (95 vs. 97%, p=0.10). CA-EGD had mean scores of 8.7±1.3, 7.1±0.86 and 7.9±1 regarding mucosal pattern, overview and overall satisfaction, respectively, versus 5.3±1.6 (p<0.001), 8.3±0.9 (p<0.001) and 7.6±0.6 with SVE (p=0.01).
Conclusion: CA-EGD is non-inferior to SVE for complete examination of MDP. CA-EGD had significantly higher scores than SVE regarding the image quality and overall satisfaction, while SVE had a better overview. CA-EGD is a safe and effective method for examination of MDP and can replace the SVE for diagnostic indications.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1463 INACCURACY OF CAMBRIDGE PROTOCOL FOR PATIENTS HARBOURING CDH1 MUTATION: A CONSECUTIVE SERIES
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Introduction: Hereditary diffuse gastric cancer (HDGC) accounts for 1 to 3% of all gastric cancer and can be caused by a mutation of the gene CDH1. Life time risk for gastric cancer is 80% with a mean age at diagnosis of 40 years. Affected individuals generally present multiple foci of signet ring cell carcinoma (SRCC) scattered throughout the gastric mucosa, difficulty detected by endoscopy.
Aims & Methods: The aim of this study was to access the validity of Cambridge protocol with a high resolution endoscope in patients with proven pathological germline mutation of the gene CDH1. A prospective cohort study was performed between September 2016 and March 2017 in 11 patients with CDH1 mutation. They perform a base line high-resolution endoscopy (Olympus-GIF-HQ190) with random biopsies according Cambridge protocol and additional targeted biopsies of different signs. The total number of biopsies and the total number and localization of SRCC foci was registered. For those patients submitted to prophylactic gastrectomy, data was compared with surgical specimen histology. To access the validity of Cambridge protocol with a high resolution endoscopy in patients with proven pathological germline mutation of the gene CDH1.
Results: During the 11 endoscopies a total of 353 biopsies (329 random biopsies and 24 targeted biopsies; mean of 32.1 biopsies per patient) were performed. Two patients presented 1 SRCC foci in random biopsies, being that one of them presented in the esophagus. The total number of biopsies and the total number and localization of SRCC foci was registered. For those patients submitted to prophylactic gastrectomy, data was compared with surgical specimen histology. To assess the accuracy of the Cambridge protocol with a high resolution endoscopy in patients with proven pathological germline mutation of the gene CDH1.
Conclusion: Despite the use of high-resolution endoscopes and the high number of random biopsies, endoscopic evaluation presents many limitations for the diagnosis of HDGC. According to literature, prophylactic total gastrectomy remains the gold-standard patients carrying CDH1 mutation.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1464 SINGLE-CENTER CLINICAL EXPERIENCE WITH A RECENTLY DEVELOPED FULL-THICKNESS ENDOSCOPIC CLIP
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Introduction: Endoscopic clips are used in a variety of clinical situations in GI endoscopy—for arrest of bleeding or for closure of bowel perforations or chronic fistulae. Conventional through-the-scope clips often cannot provide optimum results; and therefore full-thickness (FT) over-the-scope (OTS) clips have been devised.
Aims & Methods: Current study describes the clinical experience of use of a recently developed FT OTS clip (Padlock™, Aponos Medical, USA). Data from a prospectively maintained database of all patients undergoing the new fusion clip were abstracted, blind, and prospective. Primary outcome was to assess the success of previous endotherapy, endoscopic procedure, indications for FT OTS clip usage, technical and clinical success and early and delayed adverse events were recorded. The clip–clip is available in two different sizes for use in upper and lower endoscopy. It is supplied preloaded on a cartridge that fits on the distal end of the endoscope. The trip-wires travel alongside the endoscope, enabling additional instruments to be passed through the endoscope channel, and special double-channel endoscope is not required for its application. Technique of clip application—the clip was loaded on the distal end of the endoscope and endoscope advanced to site of interest. Bowel wall defect or bleeding point was positioned within the clip and strong suction was applied. Clip was fired by closing the handle on the delivery system. Suction was slowly released and site was inspected. Results: Total 21 clips used in 19 patients. M:F=12:7, mean age–57.9 years (range –24-94 years). Indications for FT OTS clip use—severe GI bleeding–7 (36.8%) (duodenal ulcer bleed–5, rectal ulcer–1, bleed during ESD for rectal lateral spreading tumor–1); for closure of bowel perforation during endoscopic resection–7 (36.8%) (gastric–3, duodenum–2, rectum–2); and closure of chronic bowel fistulae–5 (26.3%) (esophagus–3, duodenum–1, rectum–1). Previous h/o endotherapy–3/7 of bleeding patients, primary therapy using OTS clip in remaining 16. Technical success was 100%. Two patients needed two clips each due to large size of defect. Clinical success–bleeding arrested in 7/7 (100%); bowel perforation sealed–7/7 (100%); fistula closure successful–4/5 (80%). In one patient of chronic duodenal fistula, fistula reopened 12 weeks after initial sealing of fistula and required surgery. Follow up at 4 weeks revealed no delayed adverse events in any patient.
Conclusion: The new OTS Clip (Padlock™, Aponos) is safe and effective for treatment of severe bleeding and for closure of post ER full-thickness defects and chronic fistulae. Further studies with larger sample size are recommended.
Disclosure of Interest: A. Bapaye1, A. Varciu1, M. Elnegouly1, M. Dollhopf3, Taewoong medical, Olympus
All other authors have declared no conflicts of interest.

P1465 ENDOSCOPIC AMPULLECTOMY OUTCOMES IN A TERTIARY ENDOSCOPY DEPARTMENT
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Introduction: Endoscopic resection of ampullary adenomas has increased in the last decade due to the high morbidity with a high mortality in patients undergoing surgical procedures.3
Aims & Methods: This study aims to evaluate the outcome of endoscopic ampullectomy (EA) in a tertiary endoscopy department. We included in the study patients that underwent EA between January 2014 - April 2017 at the Regional Institute of Gastroenterology and Hepatology Cluj-Napoca, Romania. All patients had a benign pathological result prior to the EA. Post-procedural complications such as bleeding, perforation, cholangitis, pancreatitis and mortality were analyzed. Data about resection type, post EA histology and 1 year follow-up was also processed.
References
Results: 19 patients underwent EA, with a mean age of 63.5 ± 17.7 years and a successful resection of the tumor of 17.4 ± 7.8 mm. The male to female ratio is 0.7. "En bloc" resection was done in most cases 15/19 (78.9%). Bleeding occurred in 6 cases (31.6%) and two patients (10.5%) developed acute pancreatitis. One patient died due to severe bleeding. The average days of hospitalization after endoscopic ampullectomy were 5.7 with a range from 2 to 25 days. Adenocarcinoma was described in the final histopathological result in 4/19 cases (21.1%). One year follow-up noted a recurrence rate of 15.8% (3/19 cases).

Conclusion: In conclusion, endoscopic ampullectomy is a difficult procedure with an increased risk of complications but performed by experienced endoscopists is safe and surgical interventions can be avoided.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

Table 1 Continued

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<th>Patient Demographics</th>
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<td>Prior POEM (n) (%)</td>
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Conclusion: This is the largest UK case series of POEM for achalasia including the first successful UK POEM procedure for DES. At our institute, POEM was performed successfully in a potentially more challenging cohort where 52.9% had prior endoscopic/surgical treatment with intervention. Our results are line with international consortia and ASGE findings that POEM is a safe and efficacious procedure for the treatment of achalasia and oesophageal spastic disorders for both short term and sustained symptomatic benefit.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1467 NEW CHALLENGE FOR SAFER ENDOSCOPIC SUBMUCOUS DISSECTION USING CO2 LASER

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Introduction: Endoscopic submucosal dissection (ESD) is increasingly accepted as a minimally invasive treatment for the patients with early gastrointestinal cancers. However, ESD demands high maneuverability technique, and the success of the operation is dependent on each operator’s skill. We have developed a novel laser surgery system for ESD to overcome such difficulties of ESD, which is composed of a CO2 laser source and a disposable flexible hollow fiber probe. Compared to conventional ESD (C-ESD) using electric surgical knives, ESD using CO2 laser (L-ESD) method has an advantage of less risk of perforation and massive thermal damage, because the CO2 laser is strongly absorbed by water such as saline or sodium hyaluronate. Further more, the cutting point can be precisely recognized by another visible guide laser. Due to non-contact laser irradiation and adequate visualization of treatment area, the laser system facilitates more precise and safer treatment and provides high quality and stable dissection. We hypothesized that performing ESD using CO2 laser with a submucosal laser absorber could be a safer and simpler ESD technique.

Aims & Methods: The aim of this study was to evaluate the feasibility of L-ESD and the quality of the resected specimen obtained by L-ESD in living porcine compared with C-ESD. We performed ESD for a total of 14 hypothetical lesions in three porcine stomachs (L-ESD, 7 lesions; C-ESD 7 lesions) under general anesthesia. En-bloc resection rate, procedure time, adverse events, and the quality of the resected specimen were evaluated. To evaluate the smoothness of the cutting surface in the resected specimens, we compared the length of the resected side of the submucosa (LRS) with the length of the muscularis mucosa (LMM).

Results: The en-bloc resection rate was 100% in both groups. Although the mean L-ESD procedure time was 23.3 ± 10.8 minutes, and was significantly longer than that of the C-ESD group (9.4 ± 6.6 minutes; p < 0.05), there was no uncontrollable bleeding or perforation in either group. The mean ratio of LRS to LMM was 107.3 ± 3.3% in the L-ESD group, and was significantly lower than that of the C-ESD group (138 ± 28%); (P < 0.005).

Conclusion: ESD using CO2 laser might be a feasible and effective method for the treatment of early gastrointestinal cancers.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1468 LONG-TERM OUTCOME OF ACUTE CORROSIVE INGESTION: A PROSPECTIVE SINGLE-CENTER STUDY

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Introduction: Acute corrosive ingestion (ACI) is a common and serious medical problem accounting for a number of hospital admissions. ACI causes significant mortality and morbidity. These patients are at risk of developing luminal strictures of the upper gastrointestinal tract in the long term. This is more in patients with high-grade injury.

Aims & Methods: The present study aimed at assessing the long-term outcomes of high-grade (Zargar’s grade ≥ Grade 2A) corrosive-induced injury of upper gastrointestinal tract (1). This was a prospective study conducted in the Department of Gastroenterology at Christian Medical College, Vellore. The study period was between January 2008 to December 2014. All patients were managed by a standard protocol which included doing a gastroscopy within 24 hours of ACI. In this study we included patients ≥ 15 years with high-grade (Zargar’s grade ≥...
Grade 2A) corrosive-induced injury of upper gastrointestinal tract. Patients in whom not done or who did not return for another hospital were excluded from the study. The study was approved by the Institutional Ethics committee and was funded by a fluid research grant received from Institutional Review Board at Christian Medical College, Vellore, India. The data was analyzed using SPSS version 17. T-test was used to determine if the paired samples were different. Continuous variables were expressed as mean ± SD and the non parametric continuous variables were expressed as median. Comparison between groups was done using Fisher’s exact test.

Results: During the study period a total of 112 patients presented with ACI. In all 82 patients were included in the study. Amongst them, 53% of the patients were females and the mean age was 36.5 ± 15.5 years. The intent of corrosive ingestion was suicidal in 70% and accidental in 30%. In majority (50%) of patients the nature of corrosive ingested was not known. Nasojejunal tube placement was done in 50%, nasojugal tube placement was done in 32% and 8% no tube was placed. Surgery as needed in 19% (tracheostomy or feeding jejunostomy or a definitive surgery). Amongst the 82 patients who were included in the study, 11 were lost to follow up during the first 31 months (range 2 m-72 m) during which 12 (16.9%) patients expired (73% related to ACI). Amongst the 59 patients, that were alive 16(27%) were symptomatic, 12(20%) had dysphagia, 5(6%) had regurgitation, 4(5%) had chest pain, 67% had weight loss and 111(18%) patients required nil per os nutrition. In all, 43(73%) patients underwent barium study during follow up and strictures were noted in 21(36%). The site of stricture was esophageal in 11(53%), stomach in 8(38%) and connected esophagogastric and stomach in 20%). Esophageal stricture was seen in all patients with Grade III B esophageal stricture, 27% (6/22) with Grade III A injury and 19% (5/27) with Grade II B injury. None of the patients with Grade II A injury developed stricture. Stricture in stomach developed in 27% (22/80) with Grade III B injury and 13% (4/31) with Grade III A injury, 10%(1/10) with II B injury and 20% (1/5) with I A injury.

Conclusion: Acute corrosive ingestion is associated with significant morbidity and mortality. There needs to be stringent control on sale, use and storage of such chemicals.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1469 PROBE-BASED CONFOCAL LASER ENDOMICROSCOPY (pCLE) FOR IN VIVO DIAGNOSIS OF ESOPHAGEAL AND GASTRIC LESIONS - RESULTS OF A PROSPECTIVE, CONTROLLED, CROSS-OVER STUDY

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Introduction: Probe-based confocal laser endomicroscopy (pCLE) provides real-time microscopic visualization with 1000-fold magnification, allowing endoscopic access to the histological evaluation of gastrointestinal lesions. pCLE may thereby be helpful in guidance of endoscopic therapy. However, histopathological assessment still remains a gold standard for histological diagnosis so far, while pCLE-based diagnosis has not been generally accepted yet. Therefore, more studies assessing diagnostic accuracy of pCLE are warranted.

Aims & Methods: The aim of the study consisted in the analysis of the accuracy of three risk scoring systems used in non-variceal upper digestive bleeding for assessing patient’s prognosis, previously estimated to be predictive for re-bleeding/death after gastrointestinal bleeding. We assessed prospectively a batch of 1872 patients admitted in the Gastroenterology Department of Emergency County Hospital Timisoara in a 12-year period, in which we calculated 3 risk scoring systems, Rockall, Cedars-Sinai and Baylor, based on clinical and endoscopic data. We compared their accuracy for assessing patient’s prognosis, expressed as the need of blood transfusions, number of hospitalization days, re-bleeding, surgery and death. Discriminatory ability was assessed using the area under the receiver operating characteristic curve (AUROC).

Results: The batch included 1134 (60.6%) male and 738 (39.4%) female, mean age 62.7±8.4 years. Regarding the need of blood transfusions, the predictive ability of the scores is as follows: Rockall AUROC 0.59 (CI 0.55–0.62), sensitivity(Se)=81.7%, specificity(Sp)=35.5%, positive predictive value(PPV)=28.4%, negative predictive value(NPV)=86.1% (p<0.0001); Cedars-Sinai AUROC 0.59 (CI 0.55–0.63), Se=72.4%, Sp=41.3%, PPV=28.5%, NPV=82.3% (p<0.0001); Baylor AUROC 0.56 (CI 0.49–0.63), Se=41.9%, Sp=75.5%, PPV=40.6%, NPV=76.5%. Number of hospitalization days: Rockall AUROC 0.66 (CI 0.55–0.77), Se=61.5%, Sp=65.2%, PPV=90%, NPV=25% (p=0.003); Cedars-Sinai AUROC 0.63 (CI 0.50–0.75), Se=53.1%, Sp=73.9%, PPV=89.5%, NPV=27.4%; Baylor AUROC 0.52 (CI 0.51–0.73), Se=47.06%, Sp=66.6%, PPV=84.2%, NPV=25%. Re-bleeding: Rockall AUROC 0.67 (CI 0.66–0.73), Se=65.4%, Sp=76.5%, PPV=14.2%, NPV=92.8% (p<0.0001); Cedars-Sinai AUROC 0.73 (CI 0.69–0.77), Se=84.4%, Sp=49.02%, PPV=13.7%, NPV=97%; Baylor AUROC 0.54 (CI 0.45–0.65), Se=35.1%, Sp=81.2%, PPV=16.2%, NPV=94.2%. Surgery: Rockall AUROC 0.67 (CI 0.61–0.73), Se=71.7%, Sp=59%, PPV=16%, NPV=98.1%; Cedars-Sinai AUROC 0.72 (CI 0.66–0.78), Se=58%, Sp=77.4%, PPV=9.3%, NPV=97.9%; Baylor AUROC 0.55 (CI 0.41–0.66), Se=50%, Sp=66.2%, PPV=5.1%, NPV=94%. Death: Rockall AUROC 0.85 (CI 0.82–0.88), Se=84.2%, Sp=76.2%, PPV=18.2%, NPV=99.5% (p<0.0001); Cedars-Sinai AUROC 0.71 (CI 0.66–0.76), Se=83.1%, Sp=48.1%, PPV=10.2%, NPV=97.6%; Baylor AUROC 0.75 (CI 0.67–0.83), Se=76.89%, Sp=72.3%, PPV=19.2%, NPV=97.2%. There were no statistically significant differences encountered in predicting the need of blood transfusions and surgery between the scores (p>0.05). Baylor score was superior to Rockall in estimating the hospitalization period (p=0.04) and Rockall and Cedars-Sinai proved to be superior to Baylor score in predicting re-bleeding (p=0.002) and to Rockall score in predicting death (p=0.006).

Conclusion: On our cohort of patients, Cedars-Sinai score proved to be the best in predicting the re-bleeding and death in patients with NV-UBD in comparison to Rockall and Baylor scores.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1471 PERCUTANEOUS ENDOSCOPIC GASTROSTOMY: A SAFE PROCEDURE EVEN IN CANCER PATIENTS

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Introduction: Dysphagia and malnutrition is a common feature in up to 64% of patients with upper gastrointestinal cancer, and the need of radiotherapy or chemotherapy often worsens this symptoms. Percutaneous endoscopic gastrostomy (PEG) is the preferred route of feeding and nutritional support in these patients. Although generally considered to be a safe procedure, it has been reported that PEG tube placement complications in cancer patients may be superior when compared to non-cancer patients.

Aims & Methods: The aim of this study was to evaluate the complications rate after PEG tube placement in cancer patients. We did a single-centre prospective database including all patients with PEG tube insertion between March 2014 and June 2016, evaluating the complications during 6 months follow-up.

Results: A total of 265 patients (83% men, mean age 59 years) underwent PEG tube insertion. 224 patients (84.5%) had head and neck cancers and 33 patients supported by a grant from Ministry of Health of the Czech Republic, No. 16–

Disclosure of Interest: All authors have declared no conflicts of interest.
P1472 A PROSPECTIVE, SINGLE-CENTER, CROSS-OVER CONTROLLED TRIAL OF CONFOCAL LASER ENDOMICROSCOPY ASSESSMENT OF PERSISTENT OR RECURRENT INTESTINAL METAPLASIA AND RECURRENT OF NEOPLASIA AFTER ENDOSCOPIC TREATMENT OF BARRETT’S ESOPHAGUS-RELATED NEOPLASIA (BORN) 

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Introduction: Probe-based confocal laser endomicroscopy (pCLE) has been developed to overcome limitations of the current endoscopic sampling techniques. pCLE allows detailed examination of cellular structures and may examine areas that are not accessible for standard biopsies.

Aims & Methods: The aim of this prospective study was to evaluate the efficacy of pCLE (vs. standard biopsies) in detection of persistent/recurrent IM/neoplasia in patients after endoscopic treatment of BORN. A single-center, prospective, controlled and pathologist-blinded (still ongoing) study in patients undergoing surveillance following endoscopic treatment of BORN. pCLE images were obtained from the neo-Z-line (a few cases including macroscopically visible tongues), the cardia and the esophagus. Thereafter, standard biopsies were taken and sent for histopathological analysis (4 biopsies from macroscopically normal neo-Z-line, 2 biopsies from the cardia and the esophagus and targeted biopsies from visible abnormalities, if present).

Results: We examined 29 patients, from these 14 patients (48%) had the initial diagnosis of intestinal metaplasia or neoplasia (IM or neoplasia (N)).

Disclosure of Interest: All authors have declared no conflicts of interest.

Regression analysis showed that the presence of cases of persistent/recurrent IM after endoscopic treatment of BORN. Nevertheless, these results need to be confirmed in a larger cohort of patients. Supported by a grant from Ministry of Health of the Czech Republic. No. 16-2748/A.

References

P1473 FLEXIBLE ENDOSCOPIC SEPTUM DIVISION (FESD) OF ZENKER’S DIVERTICULAR OUTCOMES: A FLEXIBLE TERTIARY CENTER USING A NEW SYMPTOMS SCORE 

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Introduction: Symptomatic Zenker’s diverticulum (ZD) can be treated by flexible endoscopic septum division (FESD) as a minimally invasive alternative to surgery or to rigid endoscopic procedure. There is still a lack of standardization of the FESD as well as data on late outcome are scarcely reported. Moreover, a specific outcomes are currently rare reported in available literature and no specific scores have been yet validated.

Aims & Methods: We aim to report the outcome of all ZD treated by FESD in our institution by using a new symptoms score. We retrospectively reviewed consecutive patients with ZD treated by FESD in a single tertiary-care academic medical center between April 2014 and Feb 2017. All patients were included in a prospectively maintained database. A dedicated new score was created to obtain reliable and objective evaluation of outcome of our patients. This score (Milano-Zenker score, MZ-score) is based on the three main ZD symptoms: dysphagia, regurgitation and weight loss.

Results: 100 patients underwent FESD, with a mean age of 70.3 ±11.2 years (range 39-95) and prevalence of male gender (66%). Twenty-nine (29%) of treated ZD were re-intervention: 20 (69%) after previous FESD; 8 (27.6%) after previous surgery and MZ. Mean initial MZ score was 4.5 ± 1.8 (range 1-8). Intraprocedural bleeding was observed in 5 patients (5%), with all of successfully treated by clips. No postprocedural/late bleedings were recorded. One perforation was observed and treated conservatively.

Conclusion: FESD represents a safe and effective treatment for symptomatic patients with Zenker’s diverticulum. The score should be used in all patients after FESD in order to be able to compare results. The score could represent a useful tool to monitoring post-procedural symptoms and guide subsequent management.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1474 HOW ACCURATE ARE THE SYMPTOMS IN PATIENTS WITH FOOD IMPACTION AND FOREIGN BODIES INGESTION? 

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Introduction: Food impaction (FI) and foreign body ingestion (FBI) remain the most frequent indications for emergency esophagogastroduodenoscopy. The symptoms in these patients are often nonspecific and their location is not always related to the endoscopic findings.

Aims & Methods: The aim of this study was to characterize the symptomatology of the patients with suspected FI and FBI, to correlate the clinical symptoms with the endoscopic findings and to assess its management and complications. This was a retrospective uncenter cohort study including patients with suspected FI and FBI during three years (2013-2016). Statistic analysis were performed using IBM SPSS Statistics 22 with p < 0.05 deemed to be statistically significant.

Results: 198 patients were included (90 patients with FI, 70 patients with FBI, 38 patients without endoscopy finding of FI or FBI). 59.1% men, with a mean age of 60.10 ± 19 years. Patients with FI were predominantly men and were significantly older when compared with FBI patients (p < 0.05). Dysphagia was the most frequent symptom in FI patients, while foreign body perception and odynophagia were more common in FBI. The symptoms in FI group were localized more frequent in the esophagus (83.3%) and FI was identified by esophagogastroduodenoscopy in the distal esophagus in 58.9% of those patients. In comparison, the symptoms in patients with FBI were predominantly localized in oropharynx (65.5%) and FBI was identified in proximal esophagus in 55.7% of those patients. There was more correlation between the location of the symptoms and the endoscopic findings in patients with FI compared with the patients with FBI (FI 65.6% VS 47.1%; p < 0.05). In FI patients, the most frequent symptoms were odynophagia and foreign body sensation (96.8% and 96.6%). Although it seems to be a need for proposing a ZD score could represent a useful tool to monitoring post-procedural symptoms and guide subsequent management.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

(12.5%) had esophageal cancer; 207 patients (78.1%) had stage IV disease. At the time of treatment, 138 patients (52%) had grade 3 dysphagia and the mean body mass index (BMI) was 20.9 Kg/m2. All the patients underwent antibiotic prophylaxis previous to the procedure. There was an increase on BMI to 23.8 Kg/m2 at 6 months follow up. Eight patients (3.8%) had immediate complications after the procedure (bleeding from the PEG tract; 6; anesthetic complications - 2). The overall complication rate at the first month of follow up was 14.4%, at the third month 20.5% and at the sixth month 11.7%. The overall peri-PEG infection rate was 14%, and was the main complication at the first month of follow up. Development of hyper-granulation tissue was the most frequent complication at the third month of follow-up. Buried bumper syndrome occurred in 10 patients (3.7%). None of the patients had tumor seeding at the gastrostomy site. Overall mortality was 26.4%, none of the deaths attributable to PEG tube insertion.

Conclusion: PEG placement is a safe and effective technique in cancer patients. The rate of major complications and tube site infection were similar to the results found in literature for non-cancer patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1475 GASTROINTESTINAL ENDOSCOPY UNDER SEDATION IS ASSOCIATED WITH PNEUMONIA IN OLDER INPATIENTS—RESULTS OF A RETROSPECTIVE CASE-CONTROL STUDY
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Introduction: Apparent aspiration is a notable adverse event during gastrointestinal endoscopy under sedation (GIES) [1, 2], but little is known about the incidence and the role of inappropriate aspiration is scarce. Furthermore, patients undergoing endoscopies experience respiratory symptoms such as coughing, shortness of breathing, fever and other respiratory adverse events within 24 hours relatively often in more than 5% [3]. Since coughing during endoscopy has been attributed to an increased risk of aspiration-related postprocedural infection [4] respiratory infections might be underreported. Additionally, patients in advanced age are not only determined as a high-risk group for GI adverse events following colonoscopies [5], but are also more likely to develop hospital-acquired pneumonia [2]. Therefore, the aim of the study was to determine the risk of pneumonia, lower respiratory infection (LRI) and systemic inflammatory activation after GIES.
Methods: A total of 250 consecutive inpatients who had undergone GIES during a hospital stay of at least three days were included in a retrospective cohort study. Age-, gender- and length of hospital stay-matched controls (ratio 1:1) who had not undergone any invasive procedure or sedation served as controls. Living conditions of GIES- and controls patients had to be available before and three and/or seven days after endoscopy. Primary objective was the occurrence of pneumonia in general and older patients (≧65 years). Secondary objectives were the development of LRI, elevation of inflammatory markers (CRP and WBC), initiation of antibiotic treatment, pathogen detection and pulmonary infiltration. Statistics included $\chi^2$ test, paired t-test, ANOVA, multiple linear regression analysis.
Results: No significant differences for the occurrence of pneumonia (1.6%, GIES group vs. 0.4%, control group, $p = 0.178$, $\chi^2$ test) and LRI (4.8% vs. 2.0%, $p = 0.084$) in general, but in the older age group (2.6% vs. 0.0%, $p = 0.041$, and 7.8% vs. 2.5%, $p = 0.034$, respectively) were detected. Infectious parameters were significantly increased after GIES, particularly on day three. GIES patients received antibiotic treatment more frequent while pulmonary infiltration did not differ.
Conclusion: This data confirms a higher risk of pneumonia due to GIES in the advanced aged population. In general, patients are more likely to develop inflammation and to receive antibiotic treatment suggesting an increased risk of radiologically non-visible inflammation due to micro-aspiration.
Disclosure of Interest: All authors have declared no conflicts of interest.
References

P1476 SYMPTOMATIC RESPONSE OF PYLORIC PNEUMATIC DILATATION, BOTOKX INJECTION OR COMBINATION THERAPY IN PATIENTS WITH GASTROPARESIS OR DELAYED GASTRIC DILATION—ENDOSCOPIC POST-PROCEDURE TRANSIENT PERFORATION
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Introduction: Therapeutic options for gastroparesis or delayed emptying following oesophagectomy with gastric transposition are limited. Although commonly performed [1], partial or good response, both of which had combination therapy. Partial or good response was observed in 93% (13/14); treatment with Botox alone or as part of combination therapy led to a good or partial response in 86% (24/28) compared to 33% (1/3) who had PD alone (p=0.03). 14 procedures were performed in the post-surgical group with a mean post-procedure follow-up of 10 weeks. Overall, a partial or good response was observed in 93% (13/14); treatment with Botox alone or as part of combination therapy led to a good or partial response in 100% (10/10) compared to 75% (3/4) who had dilatation alone (p=0.1). 6 therapies were performed without a defined indication, 2 patients (33%) had a partial or good response, both of which had combination therapy.
Conclusion: Pyloric intervention with Botox, PD or combination therapy are safe and effective treatment options for patients with gastroparesis or delayed gastric emptying following gastric transposition. Subjective treatment without a clear indication shows little improvement.
Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: 33 patients (13 male; mean age 45, range 17–80) underwent a total of 60 endoscopic procedures over 2 years. Treatments were either 100 IU units of Botox injected into 4 quadrants of the pylorus or pneumatic dilatation (PD) incrementally up to 16–20 mm (Hercules; Cook Medical). Patients with gastric malignancy, previous pyloric surgery or no documented follow-up were excluded. Most-therapeutic response was assessed at first follow-up post-procedure and graded as ‘good’, ‘partial’ or ‘none/poor’. Patients were grouped according to type of therapy and indication.
Results: There were no immediate or late complications observed, 31 procedures were performed for gastroparesis with a mean post-procedure follow-up of 11 weeks. Overall, a partial or good response was observed in 81% (25/31). Specific treatment with Botox alone (18 procedures) or as part of combination therapy (10 procedures) led to a good or partial response in 86% (24/28) compared to 33% (1/3) who had PD alone (p=0.03). 14 procedures were performed in the post-surgical group with a mean post-procedure follow-up of 10 weeks. Overall, a partial or good response was observed in 93% (13/14); treatment with Botox alone or as part of combination therapy led to a good or partial response in 100% (10/10) compared to 75% (3/4) who had dilatation alone (p=0.1). 6 therapies were performed without a defined indication, 2 patients (33%) had a partial or good response, both of which had combination therapy.
Conclusion: Pyloric intervention with Botox, PD or combination therapy are safe and effective treatment options for patients with gastroparesis or delayed gastric emptying following gastric transposition. Subjective treatment without a clear indication shows little improvement.
Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: We aimed to identify the type and site of lesions being treated in a Western setting as well as the rate, timing and predictors of complications in order to evaluate current admission practice. An electronic database of all ESD procedures performed in our academic institution from 2012–2017 was analysed. Parameters were the number, type, onset and management of complications following ESD. Significant complications (bleeding and perforation) necessitating hospital admission were categorised as early (within 24 hours) and delayed (24 hours to 2 days) post procedure.
Results: A total of 410 ESDs were performed within the time period (225 colorectal, 117 oesophageal, 52 gastric and 16 duodenal). There were 21 complications; ESD for gastric and duodenal lesions had a higher complication rate (11.5% and 12.5% respectively). The table below stratifies the complications according to type, location and onset.

<table>
<thead>
<tr>
<th>Site</th>
<th>Early (within 24 hours)</th>
<th>Delayed (2 days–1 month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal</td>
<td>3/225</td>
<td>6/225</td>
</tr>
<tr>
<td>Oesophageal</td>
<td>1/117</td>
<td>4/225</td>
</tr>
<tr>
<td>Gastric</td>
<td>0/52</td>
<td>2/225 (3.9%)</td>
</tr>
<tr>
<td>Duodenal</td>
<td>0/16</td>
<td>1/225 (0.6%)</td>
</tr>
</tbody>
</table>

Conclusion: ESD in this Western setting was more commonly performed for colorectal and oesophageal lesions rather than gastric as seen in Japan. The complication rate is modest and almost all were managed successfully with an endoscopic approach. They occurred more commonly in gastric and duodenal sites. This may be related to the technical difficulties of resection or low volume of procedures performed at these locations. The use of anticoagulants is a risk
factor for delayed bleeding. Given that the majority of delayed complications occurred than 5 post procedure, a standardised 5 day inpatient stay would prove futile in our cohort.

Disclosure of Interest: P. Bhandari: Educational grants from Fujifilm, Olympus and Pentax

All other authors have declared no conflicts of interest.

P1478 PREDICTIVE FACTORS AND MANAGEMENT OF REFRACTORY BENIGN OESOPHAGEAL STRICTURES

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Introduction: The optimal management and the predictive factors of response to endoscopic dilation of refractory benign oesophageal strictures remains controversial.

Aims & Methods: To evaluate the prevalence and factors predicting response to treatment of benign refractory oesophageal strictures with scheduled endoscopic dilatations

Retrospective analysis of 75 patients submitted to scheduled endoscopic dilation of benign oesophageal strictures between October 2010 and November 2016. Strictures were classified as refractory when ≥5 endoscopic dilations were needed with at least one dilation achieving ≥15 mm of diameter during the course of management of the oesophageal strictures.

Results: The study sample included 42 (56%) male patients and the mean age was 57 ± 17 years. Dysphagia score at baseline was 30 (17–33) semi-solids (2–23) (30.7%), liquids (3–23) (30.7%) and complete (4–12) (16%). Body mass index (BMI) at baseline was 22 ± 5 Kg/m². The aetiology of the benign strictures was: surgical – 31 (41.3%), peptic–15 (20%), caustic–10 (13.3%), radiotherapy–10 (13.3%) and others – 9 (12%). The location of the oesophageal strictures was as follows: proximal third–34 (45.3%), middle third–12 (16%), distal third–27 (36%) and multiple locations–2 (2.7%). Stricture type: simple–44 (58.7%), complex–31 (41.3%). Patients underwent a median of 4 (1–26) endoscopic dilatation over a median period of 19 weeks (1–229). Dilations were done with Savary-Gillard dilators–35 (46.7%), TTS-balloons–24 (32%) or both–16 (21.3%). The mean diameter of dilation achieved was 15.7 ± 2.2 and a dilation diameter of ≥15 mm was achieved in 56 (74.6%) patients. Local injection of corticosteroids during endoscopic dilatations performed at least once in 39 (52%) patients and in ≥25% of dilations in 39 (52%) patients. From the study sample, 25 (33.3%) patients fulfilled criteria of refractory strictures. In this subgroup, there was a significant association with post-surgical aetiology (p = 0.042), higher rate of local injection of corticosteroids (p < 0.001) and higher dilation diameter (p < 0.001). Refractory strictures were significantly associated with the need for local curettage (OR 9.76, 95% CI 0.03–0.46, p = 0.02) by binary logistic regression analysis. However, none of the other factors were found to be independent predictors of response to therapy.

Conclusion: Surgical aetiology was significantly associated with refractory benign oesophageal strictures and these patients were significantly more likely to require local curettage during subsequent dilatations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1490 TRENDS IN CERTIFICATION FOR GASTROINTESTINAL ENDOSCOPY AND VARIATIONS BETWEEN TRAINEE SPECIALTIES: RESULTS FROM THE UK TRAINEE ENDOSCOPY DATABASE

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Introduction: In the UK, endoscopy certification is overseen by the Joint Advisory Group (JAG). Since 2011, certification has been awarded for upper and lower GI endoscopy online via the JAG Electronic Training System (JETS). We aim to analyse trends in endoscopy e-certification, and assess for differences between trainees in gastroenterology (GI), surgical (GS) and non-medical specialties (NME).

Aims & Methods: We prospectively identified trainees awarded certification for gastroscopy, flexible sigmoidoscopy (FS) and colonoscopy from the JETS database. For each specialty, we collected data on lifetime procedural counts, formal assessments, and key performance indicators (KPIs) at the time of certification. Comparisons between specialties were analysed using a combination of chi², Mann-Whitney and median tests.

Results: Between June 2011-Dec 2016, 2857 applications were awarded certification. Numbers of gastroscopy and provisional colonoscopy awarded have been in steady state since 2013, whilst numbers for sigmoidoscopy and full colonoscopy continue to increase. Trainees awarded certification comprised mainly of GI (53.2%), GS (28.5%) and NME (15.8%) trainees. With the exception of FS, most certifications were awarded to GI trainees (Figure 2). Median procedural numbers (p < 0.001) and formatative DOPS counts (p < 0.001) pre-certification varied for each modality in the order of NME > GI > GS. Caecal intubation rates (CIR) at full certification were similar between GI (95.6%) and GS (95.6%, p = 0.81), but lower in NME (93.6%, p = 0.02 vs. GS, p = 0.006 vs. GI), despite no differences at provisional certification (median CIR 95.6%, p = 0.32). Rates of D2 intubation (median 98.7%) varied across groups (GS > GI > NME, p = 0.002). Certification awarded at first attempt were similar across specialties (mean 89.4%, p = 0.19), but varied for gastroscopy (NME 95.5%, GS 90.1%, GI 89.7%, p = 0.01).

Conclusion: Despite variations amongst trainee specialties, endoscopy certification is a transparent and robust benchmark for assessing competency, as evidenced by trainee KPIs. Further studies are required to study the impact of recent changes to certification, and if variations in KPIs exist following certification.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1481 EFFICIENCY AND SAFETY OF ENDOSCOPIC PAPILLECTOMY FOR TREATMENT OF DUODENAL PAPILLA TUMORS

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Introduction: A duodenal papilla tumor is an uncommon neoplasm in the upper gastrointestinal tract. In the early stage, patients often have no complaints and the tumors are usually occasional found during gastroduodenoscopy examination. Endoscopic papillectomy can be achieved with curative resection for benign adenoma and some early papillary carcinoma. However, some complications are accompanied with the procedure, like pancreatitis and bleeding. This retrospective study is to evaluate therapeutic effect and safety of endoscopic papillectomy on duodenal papilla tumors.

Aims & Methods: From June 2009 to November 2016, the information of patients who received endoscopic papillectomy was recorded, which included basic characteristics and clinical outcomes, such as recurrence rate, bleeding, pancreatitis. Clinical outcomes (totally 40 cases) received endoscopic papillectomy. The procedure was completed with gastroscope in 32 cases and duodenoscope in 8 case. Endoscopic mucosal resection (EMR), endoscopic piecemeal mucosal resection (EPMR) and endoscopic submucosal dissection (ESD) was performed in 21, 17 and 2 cases respectively. None of the lesions invaded the submucosal layer.
Pancreatic stents and biliary stents were inserted in 9 and 12 patients respectively. In general, 5% (2/40) and 12.5% (5/40) cases had intraoperative and postoperative bleeding respectively. 20% (8/40) cases suffered from pancreatitis, of which mild, moderate and severe happened in 3, 4 and 1 cases. Six patients had tumor recurrence. And 3 patients received repeat endoscopic papillotomy, two received pancreatic-cystoduodenectomy and one received no other treatments with close follow-up. Two patients died from failures of treatments for papillary tumors and one patient died due to other unrelated cause.

Table: Characteristics and adverse events of endoscopic papillary in cases

<table>
<thead>
<tr>
<th>Sex</th>
<th>Male Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years, mean ± SD)</td>
<td>55.1 ± 10.0</td>
</tr>
<tr>
<td>Endoscope type</td>
<td>Gastroscope DuodenoScope</td>
</tr>
<tr>
<td>Rejection method</td>
<td>EMR EPMR ESD</td>
</tr>
<tr>
<td>Pathological results</td>
<td>LGD, HGD, Tis, Tim, Tsm, Non-tumor</td>
</tr>
<tr>
<td>Tumor sizes (cm)</td>
<td>12, 24, 0, 2, 0, 2</td>
</tr>
<tr>
<td>Bilary Stent</td>
<td>No, Yes</td>
</tr>
<tr>
<td>Pancreatic stent</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Hospital stays (days, mean ± SD)</td>
<td>6.7 ± 13.4</td>
</tr>
<tr>
<td>Follow-up time (months, mean ± SD)</td>
<td>36.6 ± 28</td>
</tr>
<tr>
<td>Adverse events</td>
<td>Intraoperative bleeding</td>
</tr>
<tr>
<td></td>
<td>Postoperative bleeding</td>
</tr>
<tr>
<td></td>
<td>Perforation</td>
</tr>
<tr>
<td></td>
<td>Cholangitis</td>
</tr>
<tr>
<td></td>
<td>Pancreatitis, Mild, Moderate, Severe</td>
</tr>
<tr>
<td></td>
<td>Recurrence</td>
</tr>
<tr>
<td></td>
<td>Surgery</td>
</tr>
<tr>
<td></td>
<td>Mortality</td>
</tr>
</tbody>
</table>

Conclusion: Endoscopic papillary is proved to be efficient in treating papilla tumors without submucosal invasion. However, adverse events like pancreatitis and bleeding should be taken seriously and managed properly.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

**P1482** CHANGES IN SCORING OF DIRECT OBSERVATION OF PROCEDURAL SKILLS (DOPS) FORMS IN ENDOSCOPY TRAINING AND THEIR IMPACT ON COMPETENCE ASSESSMENT

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Introduction: DOPS are validated tools for assessing competence in endoscopy. Previously, DOPS were scored on a 4-point competence-based scale, with scores of 3 and 4 signifying competence. In July 2016, the DOPS rating scale changed to a supervision-based scale that has been shown to be more reliable, with 4 ratings from maximal supervision, up to competent without supervision. We aimed to assess whether changes to the rating scale have affected distribution of scores and hence demonstrate validity.

Aims & Methods: We used the UK trainee endoscopy database (JETS) to collect DOPS scores for gastroscopy (n = 1934), sigmoidoscopy (n = 517), colonoscopy (n = 2296) and polypectomy (n = 370) in the 6-months before July 2016 (old DOPS) and after (new DOPS). Trainees at early stages of training (total procedures ≤ 100). To allow analysis, the new DOPS rating scale was aligned to a 4-point scale, hence a score of 4 on new DOPS = Scores 3 or 4 on old DOPS, and scores on the new and old DOPS compared using the Mann-Whitney U-test. Results: 5117 DOPS (77.7% new and 22.3% old) were included for analysis. Overall, there were variations in distributions of all scores (p < 0.001) between forms (Figure 1). Compared to new DOPS, scores of 1 were underutilised on old DOPS (0.6% vs. 3.0%, p < 0.001). Frequencies of low scores (pooled scores of 1-4) were similar for gastroscopy (p = 0.53) and sigmoidoscopy (p = 0.34), but not for colonoscopy (11.9% vs. 13.9%, p < 0.001) and polypectomy (6.8% vs. 19.9%, p < 0.001). Trainees on old DOPS were more likely to be rated as competent (score 3 or 4) compared to new DOPS (86.4% vs. 85.5%, p < 0.001). On subgroup analysis, this was evident for gastroscopy (86.3% vs. 49.1%, p < 0.001), colonoscopy (86.1% vs. 58.2%, p < 0.001), sigmoidoscopy (90.6% vs. 62.0%, p < 0.001), but not polypectomy (80.1% vs. 67.9%, p = 0.12).

Conclusion: Endoscopy assessors are applying a greater range of scores using a new DOPS rating scale based on degree of supervision, in two cohorts of trainees matched for experience. This indicates better construct validity with the new rating scale. Further work is underway to determine the reliability of the new DOPS to inform summative assessment and certification for UK endoscopy trainees.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1484** PROTECTIVE VACUUM SPONGE IMPLANTATION AND CONTINUOUS EVACUATION OF BILE AND PANCREATIC JUICE FOR PREVENTION OF SECONDARY PERFORATION AFTER PRIMARY SUCCESSFUL ENDOSECOPIC RESECTION OF WIDESPREAD D2/D3 DUODENAL AND PAPILLARY ADENOMATA

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Introduction: Endoscopic resection of duodenal adenomata carries an increased risk of perforation compared to other locations in the upper or lower GI tract. 1,2 Additionally in endoscopic resection of widespread adenomata (Spigelman III/IV) at the level of D2/D3 there is an increased risk of secondary perforation due to auto-digestion of the denuded duodenal wall by pancreatic enzymes and bile independent of the primary endoscopic resection method. We recently reported of the successful implantation of a mini-vacuum sponge with extended length of the suction tube and reduced in volume compared to a standard esophageal vacuum sponge.3

Aims & Methods: From September 9th, 2015 to March 20th, 2017 endoscopic resection of widespread duodenal adenomata >2 cm in D2/D3 was performed in five patients. There was a surgical indication for Whipple’s resection as primary intervention or in case of failure in all patients. All patients agreed and gave their informed consent to the procedure.

Results: Five patients with widespread duodenal adenomata were included (2x papilla, 3x D2/D3 extrapapillary adenomata; 1x tubular; 3x HGIN, 2x LGIN). The macroscopic mean maximum diameter and perpendicular diameter of the lesions were 4 x 2.8 cm (largest 7.5 x 3.7 cm; smallest 2.2 x 1.8 cm). In all cases the implantation of mini-vacuum sponge (ActiVAC) reduced in volume to 1.2 x 1.5 cm (dia, length) with extended suction tube; Braun Corp., Melsungen). Continuous suction was applied over several days (~125 mm Hg; ActiVAC, KCI Medical, Wiesbaden) depending on the size of the resection area and healing status (n = 10 days, 4–14 days). An endoscopic/radiocative vacuum sponge exchange was performed every 3–5 days. In 4 cases additional atraumatic over-the-scope-clips (OTSC, Ovesco Tuebingen) were placed during the procedure and in 5/5 cases additional hemoclips were applied to secure the wall and for hemostasis. In 5/5 cases (100%) an excellent healing could be observed during follow-up. No patient had to be operated during or following the intervention (FU 2-14 mo.). In all cases the resection was curative with ‘en bloc’ resection, though in one case the specimen ruptured during retrieval into three parts (4x HGIN, 1x LGD; 4x R0, 1x Rx). In one case 10 days after resection an acute bleeding occurred with the need of endoscopic clipping and prophylactic radiologic coiling of the gastroduodenal artery with uneventful course. In a second case a minor bleeding occurred without necessity of transfusion during ablation of an OTSC three mo after the primary intervention. All patients were asymptomatic during follow-up.

Conclusion: The endoscopic resection of large duodenal adenomata in D2/D3 is feasible and was safe in our collective using the application of a duodenal mini-sponge as local drainage of bile and pancreatic juice as alternative to Whipple’s resection. The results in this first small collective should be reproduced in a prospective multicentric trial.

Disclosure of Interest: J. Hochberger: Fujifilm Europe: research support, honoraria for lectures Boston Scientific Europe and US; research support, honoraria for lectures ERBE Elektromedizin: research support

All other authors have declared no conflicts of interest.
References

P1405 ENDOSCOPIC CLOSURE OF ACUTE PERFORATIONS OF THE GASTROINTESTINAL TRACT IN ANIMAL MODELS: A SYSTEMATIC REVIEW AND META-ANALYSIS
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Introduction: Acute perforations are one of the recognized complications of both diagnostic and therapeutic gastrointestinal endoscopy. For decades, surgical treatment has been the standard of care, but endoscopic closure has become a more popular approach, due to feasibility and the reduction of the burden of surgery, combined with the availability of various endoscopic closure devices.
Aims & Methods: We aimed to assess the technical and clinical success and safety of endoscopic closure, in total, and for each endoscopic device used in closing acute perforations in animal models. Medical literature (Cochrane library, PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) were looked into. A total of 214 endoscopic closures were randomised controlled trials, met our inclusion criteria (acute, less than 24 hours). A systematic review and meta-analysis were performed on studies reporting technical and clinical success, and low complication rate. Further confirmation from prospective studies in human is needed.
Disclosure of Interest: All authors have declared no conflicts of interest.
Results: 46 studies on animal models were identified. 15 studies, including 4 randomized controlled trials, met our inclusion criteria (acute, less than 4 hours, iatrogenic, no fistulas or leaks, clear documentation of the method of closure, and technical and clinical success). In 5 cases or more of endoscopic closure per study, were analysed. A total of 214 endoscopic closures were attempted in these studies. The overall technical success rate was 94.8% (n = 201/214, 95% CI: 92.9%-96.7%), clinical success was 92.3% (n = 199/214, 95% CI: 88.5%-95.8%), and complication rate was 4.2% (n = 6/214, 95% CI: 1.6%-8.2%). Technical success for endoclamp closure was 84.9% (95% CI: 71.4%-93.6%), and clinical success was 83.2% (95% CI: 69.5%-92.5%), and complication rate was 2.7% (95% CI: 90.1%-99.8%). For OTSC (Over the scope clip device), technical success was 97% (95% CI: 88%-99.7%), clinical success was 97% (95% CI: 88%-99.7%), and complication rate was 1.8% (95% CI: 91.2%-98.8%). The technical success for endostitching (endoscopic suturing device) was 92.7% (95% CI: 82%-98%), clinical success was 87% (95% CI: 74.9%-94.8%), complication rate was 1.9% (95% CI: 91.1%-98.9%).
Conclusion: Our study suggests that endoscopic closure is a suitable treatment option for acute iatrogenic gastrointestinal perforations with a reasonable technical and clinical success rate. Further confirmation from prospective studies in human is needed.
Disclosure of Interest: All authors have declared no conflicts of interest.
References
5. Of the 1862 patients, prevalence of colorectal polyps and adenomatous polyps were 13.1% and 7.8%, respectively. Multivariate analysis revealed that metabolic syndrome (OR, 1.89, 95% CI, 1.13–3.17, P = 0.015) was independent predictor for colorectal polyps. Age over 80 years old (OR, 1.48, CI, 1.4-1.84) was independent predictor for adenomatous polyps.
Conclusion: Metabolic syndrome is risk factor of colorectal polyps in young adults aged >50 years. Age over 40 years old is additional risk factor of adenomatous polyps.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1407 COMPARISON BETWEEN AN ASYMMETRIC (SMALL DOSE IN THE MORNING) AND A SYMMETRIC SPLIT-DOSE REGIMEN OF POLYETHYLENE GLYCOL PLUS BISACODYL FOR BOWEL PREPARATION FOR SCREENING COLONOSCOPY: A RANDOMIZED NON-INFERIORITY CLINICAL TRIAL
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Introduction: Bowel cleansing has a critical role to increase the quality and effectiveness of colonoscopy. International guidelines recommend the use of split-dose regimens of PEG solutions. However, the adoption of split dose regimens in clinical practice remains sub-optimal, in particular in early morning. Aims & Methods: We aimed to compare the efficacy of bowel preparation using an asymmetric split-dose regimen (approximately 25% of the dose is given on the day of the procedure and 75% of the dose is given on the day before) with the standard split-dose regimen in patients undergoing screening colonoscopy. We prospectively enrolled consecutive outpatients undergoing screening colonoscopy. All subjects received a split-dose preparation with a 2L PEG-citrate-simethicone plus Bisacodyl. Patients were randomly assigned to: group A, asymmetric split-dose regimen (1.5 L of PEG + bisacodyl the day before and 0.5 L 3 hours before colonoscopy); group B, symmetric split dose regimen (1 L of PEG + bisacodyl the day before and 1 L 4 hours before colonoscopy). Bowel preparation was evaluated using the Boston Bowel Preparation Scale (BBPS) score. The primary endpoints were the proportion of adequate bowel cleansing (BBPS ≥3) and the overall score of patient satisfaction. Moreover, all patients filled in a nurse-administered questionnaire assessing compliance, tolerability and safety of bowel preparation. The threshold for statistical significance in this study was p<0.05 and a 10% margin was used to demonstrate non-inferiority of asymmetric vs. symmetric split-dose regimen.
Results: 179 patients were enrolled (mean age 60 ± 8 years, males 56%; 88 in group A and 91 in group B. Split-dose was taken by 76/88 and by 77/91 patients in group A and B, respectively (85.2% vs. 88.5%, p=0.831). Failure of cecal intubation occurred in 1 patients for each group. In the ITT analysis, adenoma detection rate [32/76 (42.1%) vs 17/77 (45.4%); p = 0.745] and scores of each colon segment. The full amount of product and adjunctive fluids were taken by 68/76 (89.4) and 71/77 (92.2%) (p = 0.158) in group A and B, respectively. Tolerability and occurrence of adverse events were similar in the two groups.
Conclusion: An asymmetric (low morning-dose) split-dose preparation with a low volume formulation with additional Bisacodyl is not inferior to the standard split-dose regimen in achieving an adequate bowel cleansing in patients undergoing screening colonoscopy. A lower amount of preparation in the morning allow to the patients to wake up later; this regimen could be thus preferred by patients undergoing colonoscopy early in the morning. Further study are needed to determine the efficacy and tolerability of the asymmetric preparation for colonoscopy scheduled in early morning.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1408 SINGLE BALLOON OVERTURE-GUIDED COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION: A NEW APPROACH TO MANAGEMENT OF COLORECTAL ENDOSCOPIC SUBMUCOSAL DISSECTION
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Introduction: Colorectal endoscopic submucosal dissection (ESD) is a technique with remarkably greater difficulty than upper gastrointestinal ESD because of unstable maneuvers and inherited anatomic variability in the colon. Thus, aiming at reducing these restrictions, we have used single balloon (SB) overtube to assist colorectal ESD in cases considered to have difficult operability. In this study, to evaluate the usefulness of a single balloon overtube to assist colorectal ESD.
Aims & Methods: The study included 35 patients with 39 colorectal lesions who underwent ESD (group SB) or ESD without SB (group NSB). The background of the patients in group NSB were corrected by using the propensity score matching method. The application of the combined use of SB was determined when the circumferential access to the lesion was difficult, and paradoxical movement was observed. Results: The characteristics of the lesions in group SB were as follows: proximal, 28 lesions; distal, 9; mean size of tumors, 37.6 ± 9.8 mm; gross findings of laterally spreading tumor of granular type (LST-G), 11 lesions; non-granular type (NG) tumors, 28; adenomas, 11; mucosal cancers, 22; and submucosal cancers, 6. The mean procedure time was significantly shorter in group SB (129.3 ± 30.7 min vs 106.0 ± 24.5 min; p < 0.05). No significant differences were found in en bloc resection, complete resection, postoperative bleeding, and perforation rates. No accidental symptom associated with balloon endoscopy was observed. Conclusion: Using a balloon overtube can be expected to improve not only access to the lesion but also facilitate scope manipulation for colorectal ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.
domains—Communication (COMM), Situational Awareness (SITA), Leadership (LEAD) and Decision-making (D&M). Each MARS domain was represented by 10 items and is assessed on a 7-point scoring scale—endoscopists should score >90 in each domain (80–90 = need for improvement, <80 = suboptimal performance). CIR and PDR measures are routinely calculated for all colonoscopists using the HICCS Electronic Reporting System with manual validation of these data. Feedback is presented on a quarterly basis to practitioners—endoscopists are expected to achieve 90% CIR and 20% PDR. Correlation of these factors with practitioners ENTS scores were measured using the Pearson test.

ENTS, CIR and PDR scores by colonoscopist

<table>
<thead>
<tr>
<th>Operator</th>
<th>COMM</th>
<th>SITA</th>
<th>LEAD</th>
<th>T&amp;D&amp;M</th>
<th>CIR(%)</th>
<th>PDR(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>96</td>
<td>99</td>
<td>100</td>
<td>100</td>
<td>95.2</td>
<td>72.5</td>
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<tr>
<td>2</td>
<td>94</td>
<td>94</td>
<td>87</td>
<td>95</td>
<td>83.6</td>
<td>49</td>
</tr>
<tr>
<td>3</td>
<td>99</td>
<td>100</td>
<td>97</td>
<td>98</td>
<td>90.8</td>
<td>51</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>91.5</td>
<td>47</td>
</tr>
<tr>
<td>5</td>
<td>79</td>
<td>73</td>
<td>73</td>
<td>85</td>
<td>91.7</td>
<td>34.5</td>
</tr>
<tr>
<td>6</td>
<td>100</td>
<td>99</td>
<td>99</td>
<td>98</td>
<td>87.5</td>
<td>34.5</td>
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<tr>
<td>7</td>
<td>66</td>
<td>59</td>
<td>62</td>
<td>69</td>
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<td>8</td>
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<td>100</td>
<td>98</td>
<td>99</td>
<td>83.8</td>
<td>20</td>
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<tr>
<td>9</td>
<td>74</td>
<td>83</td>
<td>84</td>
<td>86</td>
<td>87.5</td>
<td>31.5</td>
</tr>
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Results: 9 endoscopists with known variability in standard colonoscopy KPIs consented to an assessment of ENTS using the MARS tool. Their ENTS scores were correlated with existing KPIs for each colonoscopist (Oct 2016-Mar 2017), with an overall positive correlation between ENTS domains and CIR (COMM 0.58, SITA 0.66, LEAD 0.66; D&M 0.75) and PDR (COMM 0.49, SITA 0.55; LEAD 0.50; D&M 0.60). Three endoscopists were identified as having sub-optimal scores in all of the ENTS domains (operators 5, 7, 9). Taking into account important KPI thresholds 2 out of (33%) of these endoscopists identified were not meeting CIR targets (c.f. 66% of ENTS competent group) and one (33%) did not meet PDR targets (c.f. 0% in ENTS competent group).

Colonoscopy: The MARS is a practical way to measure of ENTS performance designed as a 360-degree feedback and identifies areas for development within independently practitioners that are not currently highlighted by standard colonoscopy KPI measures. There is some correlation with current KPI feedback panels but utilizing a specific validated ENTS assessment tool allows better current assessment panels. Both CIR and PDR primarily depend on the colonoscopists' individual skills rather than the team elements required by polypectomy or EMR and these more complex tasks may show stronger correlation with MARS ENTS evaluation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1492 EARLY ECONOMIC MODELLING OF EMI-137 TO IMPROVE THE DETECTION RATE OF POLYPS IN PATIENTS WITH INCREASED COLON CANCER RISK

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Introduction: Safety and diagnostic accuracy of colonoscopy depend on the quality of bowel cleansing. Several factors have been reported to affect the quality of bowel cleansing, one of them being hospitalization.

Aims & Methods: We performed a prospective, randomised endoscopist blinded clinical trial between February 2016 and January 2017 included. Our aim was to evaluate the potential impact that the use of EMI-137, a novel bowel preparation, would have on colorectal polyps detected at colonoscopy.

Results: Of the 42 patients included in the study, 21 patients were randomized to a bowel preparation in which EMI-137 was used (b.i.d., 4L polyethylene glycol solution) and in the remaining 21 patients only standard polyethylene glycol was used (control). The addition of EMI-137 fluorescent agent to standard WL colonoscopy results in a lifetime per-patient average additional NHS cost of £426 and an additional 0.04 QALYs, giving an incremental cost-effectiveness ratio (ICER) of £11,245 per additional QALY. The cost-effectiveness of EMI-137 was sensitive to the proportion of polyps that are dysplastic at the time of colonoscopy. The results of this modelling exercise have since been used to inform the design of Phase II/III clinical studies.

Conclusion: The results of this early economic modelling exercise demonstrated that EMI-137 has the potential to be cost-effective for patients participating in the UK National Bowel Cancer Screening Programme. The value of information analyses have highlighted the key parameters for which further evidence is required, and this will be used to inform the design of future clinical studies.

Disclose Disclosure of Interest: A. Davies: I am the CMO at Edinburgh Molecular Imaging
I. Wilson: I am the CEO at Edinburgh Molecular Imaging
All other authors have declared no conflicts of interest.

Reference

P1493 RANDOMIZED CLINICAL TRIAL EVALUATING THE EFFECT OF A VISUAL EDUCATIONAL BOOKLET ON THE PREPARATION OF COLONOSCOPY IN HOSPITALIZED PATIENTS

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Introduction: Safety and diagnostic accuracy of colonoscopy depend on the quality of bowel cleansing. Several factors have been reported to affect the quality of bowel cleansing, one of them being hospitalization.

Aims & Methods: We performed a prospective, randomised endoscopist blinded clinical trial between February 2016 and January 2017 included. The early economic modelling exercise demonstration that EMI-137 has the potential to be cost-effective for patients participating in the UK National Bowel Cancer Screening Programme. The value of information analyses have highlighted the key parameters for which further evidence is required, and this will be used to inform the design of future clinical studies.

Disclosure of Interest: A. Davies: I am the CMO at Edinburgh Molecular Imaging
I. Wilson: I am the CEO at Edinburgh Molecular Imaging
All other authors have declared no conflicts of interest.

Reference
Table 1 Continued

<table>
<thead>
<tr>
<th>PATIENTS N = 136 (n)</th>
<th>Standard management (n = 70)</th>
<th>Educational booklet (n = 66)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Obstructive Pulmonary Disease (135)</td>
<td>6 (8.57%)</td>
<td>5 (7.58%)</td>
<td>0.81</td>
</tr>
<tr>
<td>Obstructive Sleep Apnea Syndrome (136)</td>
<td>6 (8.57%)</td>
<td>3 (4.55%)</td>
<td>0.34</td>
</tr>
<tr>
<td>Cirrhosis (136)</td>
<td>2 (2.86%)</td>
<td>3 (4.55%)</td>
<td>0.95</td>
</tr>
<tr>
<td>Stroke (135)</td>
<td>8 (11.59%)</td>
<td>8 (12.12%)</td>
<td>0.90</td>
</tr>
<tr>
<td>Mild dementia (136)</td>
<td>3 (4.29%)</td>
<td>1 (1.52%)</td>
<td>0.34</td>
</tr>
<tr>
<td>Constipation (135)</td>
<td>14 (20%)</td>
<td>9 (13.85%)</td>
<td>0.34</td>
</tr>
<tr>
<td>Antidepressants (136)</td>
<td>13 (18.57%)</td>
<td>7 (10.61%)</td>
<td>0.19</td>
</tr>
<tr>
<td>Alzheimers disease (136)</td>
<td>2 (2.86%)</td>
<td>2 (3.03%)</td>
<td>0.95</td>
</tr>
<tr>
<td>Sarcoidosis (135)</td>
<td>2 (2.90%)</td>
<td>2 (3.03%)</td>
<td>0.95</td>
</tr>
<tr>
<td>Bowel Surgery (136)</td>
<td>1 (1.43%)</td>
<td>0 (0%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Colonrectal cancer 8 (11.43%)</td>
<td>8 (12.12%)</td>
<td>0.90</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** The use of a visual educational booklet for the preparation of colonoscopies does not provide a significant improvement in hospitalized patients in our health area. Heart disease and/or colon cancer were predictors of poor preparation for colonoscopy. An optimized preparation should be considered for this type of patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P1494 STUDY OF ULCERATIVE COLITIS COMPPLICATED BY PRIMARY SCLEROSING CHOLANGITIS**

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**Introduction:** Primary sclerosing cholangitis (PSC) is often associated with autoimmune diseases, and approximately 70% of PSC patients in Europe/United States and 32% in Japan also have ulcerative colitis (UC). The while the complication of PSC is confirmed in about 5% of UC patients, the clinical features of UC associated with PSC differ from those of UC without PSC.

**Aims & Methods:** We investigated the clinical and colonoscopic features of colitis associated with PSC. We retrospectively examined the clinical features, including the clinical course and colonoscopic findings, of 25 colitis patients with PSC attending our hospital between 2000 and 2010.

**Results:** The male-to-female ratio was 12:13 and the age at diagnosis of PSC was 49 ± 15 years. PSC was the initial diagnosis in 12 patients (48%), while colitis was the first to be diagnosed in 4 patients (16%), and both diseases were found concurrently in 9 patients (36%). Among the 21 patients with the diagnosis of PSC, 15 were operated (62%) before the diagnosis of PSC and the latter was recognized by screening. There were 12 patients with UC (52%) and 11 patients with nonspecific colitis (48%). Among the 24 patients in whom the disease extent was assessed, 22 had pancolitis, 1 had left-sided colonitis, and 1 had proctitis. Inflammation predominately affected the right colon in 20/22 patients with pancolitis and also involved the terminal ileum in 9 patients (48%). The Mayo score for colonoscopic evaluation of UC was 1 in 16 patients (64%), 2 in 8 patients (32%), and 3 in 1 patient (4%). There were no rectal lesions in 10 patients (40%). Liver biopsy was performed in 17 patients, and Ludwig’s stage was Stage I in 1 patient (6%), Stage II in 12 patients (71%), Stage III in 3 patients (18%), Stage IV in 1 patient (6%). Ludwig’s stage did not correlate with the Mayo score. All patients with PSC and enterocolitis received oral ursodeoxycholic acid (UDCA), including 13 patients with UDCA only (52%), 2 patients with combination of sulphasalazine (SASP) (8%), 5 patients in combination with 5-aminosaliclyic acid (5-ASA) (20%), 2 patients in combination with prednisolone (PSL) (8%), 1 patient with the combination of SASP+PSL (4%), and 2 patients with 5-ASA+PSL (8%). The UDCA dose was 300 mg in 2 patients (8%), 600 mg in 15 (60%), and 900 mg in 8 (32%).

**Conclusion:** In colitis patients with PSC, there was no clear association between colonoscopic disease activity and the severity of PSC. There was no sex difference and the age at diagnosis of PSC showed a bimodal distribution (30 s and 60 s). Pancolitis was very frequent and predominantly affected the right colon, but disease activity was low. Rectal lesions were mild or absent. About half of the patients had inflammation of the terminal ileum.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

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**Introduction:** Primary sclerosing cholangitis (PSC) is often associated with autoimmune diseases, and approximately 70% of PSC patients in Europe/United States and 32% in Japan also have ulcerative colitis (UC). While the complication of PSC is confirmed in about 5% of UC patients, the clinical features of UC associated with PSC differ from those of UC without PSC. Since July 2016, electronic assessment forms (DOPS) for UK trainee endoscopists have been updated to include ENTERS as an assessable domain. We aimed to assess the uptake and distribution of ENTERS scoring in DOPS and their correlation with other endoscopic skills, across all assessable endoscopic modalities.

**Aims & Methods:** We identified all DOPS submitted between July 2016 and Feb 2017 from the UK endoscopy trainee database (JETS) and acquired data on trainees, procedures and scores. We collated scores for each of the 4 assessable domains (pre-procedural, procedural, post-procedural and ENTERS) into overall outcomes of “not competent” (if any domain items required supervision) or “competent”, and compared this to the overall competence rating. Statistical analysis was performed using chi2 and regression modelling.

**Results:** 860 DOPS were prospectively collected, with ENTERS assessed in 99.3%. Competency rates of individual ENTERS items are summarised in Table 1. Rates of overall ENTERS competency (defined as all items scoring competent) varied across procedures (p<0.001): ERCP 39.8%, EUS 44.1%, gastroscopy 59.6%, colonoscopy 62.3%, PEG 71.1%, sigmoidoscopy 72.4%, and polypectomy 73.2%. Scores by individual ENTERS components are displayed in Table 1. Of DOPS awarded overall competency, 5.9% (240/4077) lacked full competence in ENTERS (p=0.10 across modalities). Across trainee specialties and endoscopic modalities, competency was greater for “communication and teamwork” (77.1% overall), but least with ‘judgement and decision making’ (68.3%). Competency in ENTERS increased with lifetime procedural count (OR 1.008 per increase in procedure, p<0.001), and correlated strongly with other assessable domains, including overall score (p<0.001). After adjusting for procedural count, factors predictive of ENTERS competence included trainee seniority (OR for ST5 level: 1.96, p<0.001), surgical trainees (OR 1.21, p=0.014), trainees performing polypectomy (OR 2.02, p<0.001), and higher DOPS count (OR 1.03 per increase in DOPS, p<0.001).

**Conclusion**: ENTERS is an assessable domain within endoscopy training, with scores that correlate with other procedure-related skills, demonstrating construct validity and convergent and discriminant validity. Competency of ENTERS develops with procedural count, and vary with trainee seniority and specialty. Longer term data are required to assess the impact of ENTERS on certification.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

**Table 1: Unadjusted ENTERS scores by endoscopic modality.**
Introduction: The development of Endoscopic Non-Technical Skills (ENTS) is associated with expert performance and high quality endoscopic outcomes. Whilst ENTS domains have been incorporated into Joint Advisory Group (JAG) Direct Observation of Procedural Skills (DOPS) forms, used as training tools, knowledge of ENTS domains amongst independent practitioners varies. To improve performance in this area of practice requires validated measurement tools and specific feedback against which improvement can be measured. We have previously developed a validated 360-degree multi-assessor rating scale (MARS tool) based on experienced endoscopy assistant ratings for ENTS processes and outcomes of ENTS comprising 10 related but independent practice points. Providing an optimised feedback format for this data is likely to maximise the potential benefits of measuring ENTS performance.

Aims & Methods: We aimed to provide an optimised format for performance enhancing feedback in the ENTS domains and basis for specific auditable outcomes and performance indicators. Local colonoscopists gave consent to application of the ENTS questionnaire. The validated MARS tool assesses 4 ENTS domains - Communication (COMM), Situational Awareness (SITA), Leadership (LEAD) and Judgement & Decision-making (J&DM). Each MARS domain in the administered questionnaire was represented by 10 items and is assessed on a 7-point scoring scale. We sought to develop 1) a format to illustrate an individual’s overall performance in each of the 4 main ENTS domains in comparison to other operators and 2) a detailed domain breakdown highlighting areas of underperformance 3) Collate feedback on the presentation formats.

Results: 9 endoscopists consented to an assessment of ENTS using the MARS tool. The MARS questionnaires were administered during January 2017–relating to the prior 3 months clinical practice. Acceptable performance thresholds were set as ≥90% good-excellent ratings in each domain. Need for improvement was defined as 80–90% good-excellent ratings (i.e. 10–20% average or poor ratings) and sub-optimal performance as ≤80% or less good-excellent ratings (i.e. >20% average-poor ratings). Good intra- and inter-rater reliability was demonstrated for these cut-off values during validation of the MARS tool. Scatter plots were used to present the overall domain ratings for COMM, SITA, LEAD and J&DM domains allowing comparison with other endoscopists. To provide more detailed domain-specific feedback to endoscopists an individual report is generated of 4 domain tables summarising the question items and using a ‘traffic-light’ display to help operators quickly identify those specific skills that require areas for improvement. The consensus reported regarding the MARS feedback helpful and indicated that it was ‘likely’ or ‘very likely’ to prompt an alteration in practice. A suggestion to add an additional column to the summary table indicated where performance level has changed in subsequent audit rounds is being considered.

Conclusion: The MARS tool is a practical way to measure ENTS performance allowing the observer to generate an audit of a robust quality assurance system. The benefits of providing overall comparative data has been established previously in sharing more established key performance indicators. The feedback format for data derived from the MARS tool has additionally provided detailed domain-specific ENTS performance ratings that brings to attention areas for improvement in a clear and understandable way that can be re-tested as part of an integrated audit cycle.

Disclosure of Interest: All authors have declared no conflicts of interest.
and O2 have relatively dark xenon light sources and maximum optical magnifi-
cation at 110 times, respectively. Therefore, the differences in visualization of mucosal blood flow in the small and large bowel among the
groups were considered to be attributable to differences in instrument efficiency.

Conclusion: Our results show that magnifying observation with BLI is superior to
that with ODI regarding the observation of mucosal blood flow in the small and
large bowel. We are planning to conduct a study on the clinical application of
magnifying observation with BLI for visualization of mucosal blood flow in the
small and large bowel.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1499 MULTIPLE COLORECTAL ADENOMAS WITHOUT APC OR MUTYH GERMINE MUTATION: A HETEROGENEOUS SUBGROUP OF PATIENTS

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Introduction: Multiple colorectal adenomas (MCRA) can be defined as an endedo-
sic feature of ≥ 10 colorectal adenomas in patients (pts) without APC or MUTYH germine mutation. At present its clinical features, management and the presence of extracolonic cancer are not well studied.

Aims & Methods: The aim of the present study is to better define the clinical characteristics at diagnosis and during follow-up of MCRA affected patients. Focally submucosal fibrosis on endoscopic examination or submucosal fibrosis on endoscopic submu-
cosal dissection of colorectal LSTs and excluded lesions of the depressive or ulcerative type. Each data is

Results: The mean age at MCRA diagnosis was 50.1 ± 14.6 years (range, 19 to 79
years) and 20 pts (41.6%) had at least a first degree relative affected with color-
ecal neoplasia. Clinical features at diagnosis: the number of polyps ranged
between 10 and 20 in 43.7% of the cases; 21 and 50 in 27.1%; > 50 in 29.2%;
22.9% of pts had one or more adenocarcinomas (ADC); 16.6% had a previously
diagnosed extracolonic cancer (breast, endometrial, thyroid, lung, bladder, brain, larynx). Twenty-five pts (52%) needed surgery, ten underwent a subtotal cotie-
obteny and fifteen a total colectomy. During follow-up twenty-two (55%) pts
developed recurrent adenomas and two (5%) had one or more ADC in the retai-
ned colorectum; 12.5% of pts developed duodenal adenomas, one had a dia-
ral adenoma; we recorded one case of abdominal wall desmoid.

Conclusion: MCRA patients in the present study had similar clinical character-
istics to MUTYH associated Polyposis (MAP) affected patients. They were
generally diagnosed at a mean age of > 50 years, they had more than 20 polyps
(56.3%) at diagnosis, associated with ADC in 22.9% of the cases and required
surgery in the majority of cases (52%). During follow-up, pts also developed
recurrent adenomas. Clinical characteristics and family history in these patients
support the hypothesis that pathogenic alterations in yet unknown genes may be involved. The promising technology aimed at this purpose.

However, these patients should undergo a close surveillance than those with sporadic adenomas.

Disclosure of Interest: All authors have declared no conflicts of interest.

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mucosal fibrosis affect the results of endoscopic submucosal dissection
S, Nakazawa J, Taguchi H, Hashimoto S, Numata M, Uto H, Tsuobuchi H, Ido A. Preoperative classification of submucosal fibrosis in colorectal laten-
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Ohnita K, Nakao K, Kohno S, Shikawa S, Clinico pathological factors asso-
ciated with clinical outcomes of endoscopic submucosal dissection for color-

P1500 EVALUATION THE RELATIONSHIP BETWEEN NUMBERS OF BIOPSY PER CASE AND DEGREE OF FIBROSIS IN COLON

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Korea, Republic of

Introduction: A degree of fibrosis on targeted lesion is one of the widely known
factors which affects the results of Endoscopic mucosal resection (EMR) and
Endoscopic submucosal dissection (ESD). Severe fibrosis is associated with com-
lications such as perforation, post-coagulation syndrome and bleeding.

Disclosure: All authors have declared no conflicts of interest.

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May;30(5):872–8.
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mucosal fibrosis affect the results of endoscopic submucosal dissection
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ly spreading tumors by endoscopic ultrasonography. Endos Int Open. 2015
K. OutCome of endoscopic submucosal dissection for colorectal sub-
5. Isomoto H, Nishiyama H, Yamaguchi N, Fukuda E, Ishii H, Ikeda K,
Ohnita K, Nakao K, Kohno S, Shikawa S, Clinico pathological factors asso-
ciated with clinical outcomes of endoscopic submucosal dissection for color-

P1501 ADVANCED NEOPLASIA YIELD IN PATIENTS UNDERGOING COLONOSCOPY AFTER SCREENING FLEXIBLE SIGMOIDOSCOPY: DOES THE DISTAL COLON PATHOLOGY PREDICTS THE YIELD IN PROXIMAL COLON?

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Introduction: Currently patients undergoing a screening flexible sigmoidoscopy
(Bowel Scope screening) examination at the age of 55 are referred for colono-
scopy if the following polyp criteria are met: polyp > 1 cm, villous histology, high
grade dysplasia, 3 or more adenomas or > 20 hyperplastic polyps (HP)

Aims & Methods: Objective is to assess the proportion of patients who had an
advanced adenoma (size > 3 cm, villous or high grade dysplasia on histology) in the
proximal colon when referred for a colonoscopy after a screening flexible
sigmoidoscopy. A retrospective cross-sectional study of patients who underwent
Bowel Scope screening between July 2013 - July 2016 at St Mark’s Bowel
Cancer Screening (BCS) Centre was performed. Epidemiological, procedural and polyp
data were retrieved from the endoscopy and Bowel Cancer screening database.

Results: 9960 patients had a screening flexible sigmoidoscopy in the time period.
Descending colon was reached in 82% of patients. Advanced adenomas were
detected in 351 (3.2%) patients. 520 (5.2%) patients had a colonoscopy following
screening flexible sigmoidoscopy as per the BCS protocol. Median age at was 55
years (male: female ratio 2:1). Cœcal intubation was achieved in 98% (510/520)
cases.

Table 1: Proximal colonic pathology during colonoscopy

(continued)
All other authors have declared no conflicts of interest.

Table 1 Continued

<table>
<thead>
<tr>
<th>Indication</th>
<th>Number of patients</th>
<th>Proximal Advanced adenoma</th>
<th>Proximal SSA/P</th>
<th>Proximal advanced SSA/P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma &gt; 1 cm</td>
<td>153</td>
<td>14.4%</td>
<td>8.5%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Villous features</td>
<td>189</td>
<td>14.3%</td>
<td>3.2%</td>
<td>0.5%</td>
</tr>
<tr>
<td>High-grade dysplasia</td>
<td>36.4%</td>
<td>8.3%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Others (&gt;1 cm non adenomatous poly, &gt;20 hyperplastic poly, &gt;3 adenomas)</td>
<td>169</td>
<td>5.3%</td>
<td>5.8%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Conclusion: Distal colonic advanced adenomas are a marker of synchronous proximal colonic adenomas and sessile serrated polyps. When colonscopies were performed for other indications (non-adenomatous poly >1 cm, multiple distal HP polyps) the yield in the proximal colon was significantly smaller. These "soft" indications for colonscopy accounted for a significant additional workload that appears unjustified.

Disclosure of Interest: B.P. Saunders: Advisory board member of Olympus UK
All other authors have declared no conflicts of interest.

P1502 LEARNING CURVE FOR OPTICAL DIAGNOSIS OF COLORECTAL POLYPS USING CUMULATIVE SUM ANALYSIS
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Introduction: Optical diagnosis for diminutive and small colorectal polyps is an attractive option to reduce costs and streamline patient care. The American Society of Gastrointestinal Endoscopy Preservation and Incorporation of Valuable Endoscopic Innovations (PIVI) established a 90% diagnostic threshold for real time endoscopic assessment of the histology of diminutive colorectal polyps. For adoption of optical diagnosis in clinical practice, colonoscopists must be trained and show on-going competence. The learning curve for trainees to achieve the competency has not been fully explored.

Aims & Methods: Aim is to evaluate the minimum number of polyps to achieve and maintain the optical diagnostic thresholds per PIVI standards using an upward CUSUM plot. Four trainees without previous experience in optical diagnosis at our institution participated in this prospective study. Four weeks before the commencement of the study they were given a training module on optical diagnosis (OD). OD was based on NICE and WASP classification.1 During the study period (January 2016-August 2016), each trainee documented the optical diagnosis of polyps less than 10 mm in size. Confidence levels of OD were noted at the same time. Patient demographics and polyp details (site, size, Paris classification and histology) were collected prospectively. OD of each polyp was compared against the polyp histology. Polyps without the histological confirmation were excluded from the analysis. Every trainee had on-going feedback on their performance.

Results: A total of 708 polyp observations were performed by trainees during the study period. Total number of adenomas, hyperplastic polyps and sessile serrated adenomas/polyps (SSA/P) were 364, 214 and 52 respectively. Trainees OD performance was plotted on a upward CUSUM plot.

Table 1: Trainees optical diagnostic performance

<table>
<thead>
<tr>
<th>Trainee</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Positive Predictive Value</th>
<th>Negative Predictive Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainee 1</td>
<td>95%</td>
<td>96%</td>
<td>94%</td>
<td>92%</td>
</tr>
<tr>
<td>Trainee 2</td>
<td>91%</td>
<td>87%</td>
<td>83%</td>
<td>91%</td>
</tr>
<tr>
<td>Trainee 3</td>
<td>89%</td>
<td>94%</td>
<td>88%</td>
<td>94%</td>
</tr>
<tr>
<td>Trainee 4</td>
<td>92%</td>
<td>92%</td>
<td>91%</td>
<td>93%</td>
</tr>
</tbody>
</table>

All 4 trainees achieved sustained accuracy (90% threshold) in OD within 12–58 observations. The number of polyps required to reach the plateau varied between 12 to 58. Every trainee’s confidence level improved over time (from 69% to 89%) and the effect was augmented by in- vivo feedback and revision of training module. Table 1 summarises the optical diagnostic performance of all 4 trainees. Negative predictive value for adenomas were above 90% for all trainees.

Conclusion: The CUSUM scores of all 4 trainees in the study reached the PIVI standards plateau by the 58th polyp observation. In- vivo feedback and continued training appears important to maintain the performance. Our preliminary findings could be used as a guide to plan the certification process for implementation of optical diagnosis.

Disclosure of Interest: B.P. Saunders: Advisory board member - Olympus UK
All other authors have declared no conflicts of interest.

P1503 THE CLINICAL VALUE OF ENDOSCOPIC FULL-THICKNESS RESECTION FOR COLORECTAL SUBMUCOSAL TUMORS ORIGINATING FROM THE MUSCULARIS PROPRIA: A PROSPECTIVE SINGLE-CENTER STUDY
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Introduction: Given diminishing quality of life caused by colectomy and resection, a minimally invasive treatment is desirable for colorectal submucosal tumors (SMTs).

Aims & Methods: The aim of the current study was to evaluate the clinical efficacy, safety and feasibility of endoscopic full-thickness resection (EFTR) for colorectal SMTs originating from the MP layer. A prospective study was carried out, including a consecutive cohort of 56 patients who underwent EFTR for colorectal SMTs originating from the MP layer between January 2008 and September 2014 in our center. Among these patients, 21 located in the colon, 9 located in the intraperitoneal rectum and 26 located in the extraperitoneal rectum. The tight adhesion of the lesion to the serosal layer was identified before EFTR in all cases. EFTR was performed using a standard ESD technique under direct endoscopic view. The defect of colorectal wall was closed after resection in all cases. Complete resection rate, complications and lesion recurrence were evaluated.

Results: Successful EFTR was performed in 54 (96.4%) patients. The other 2 patients were transferred to suffer laparoscopic right hemicolectomy and EFTR combining laparoscopic operation respectively, because the lesions involved the external organs and were too difficult to get an e block resection endoscopically. The endoscopic resection rate and complete resection rate were both 96.4% (54/56). Among 54 cases, 52 of these lesions were performed with EFTR without laparoscopic assistance, while 2 needed laparoscopic assistance to get the defect closed after resection. The median operation time was 45 min (range, 20–130 min). The median maximum diameter of resected tumors was 1.5 cm (range, 0.5–5.0 cm). Accurate histopathologic results were acquired from all the resected lesions, including 18 leiomyomas, 11 gastrointestinal stromal tumors (GISTS), 8 fibrous tumors, 3 schwannomas, 11 granulomas, 2 displaced endometrium, and 1 hamartoma. Three patients had local peritonitis and two patients developed postoperative bleeding. All of them recovered after receiving conservative treatments. No single case developed diffuse peritonitis. No lesion residual or recurrence was found during the follow-up period ranging 2–54 months.

Conclusion: EFTR appears to be a safe, feasible, and effective procedure for providing accurate histopathologic evaluations, as well as a curative treatment for colorectal SMTs originating from the MP layer. However, it should be performed by the very experienced endoscopists.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1504 COLONIC ESD BY UTILIZING SHORT DOUBLE BALLOON ENDSCOPE—HOW TO TREAT DIFFICULT CASES IN COLONIC ESD?
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Introduction: Colon ESD has been a standard treatment in the world. However, sometimes it is hard to remove the colon tumor during ESD. When we find it difficult to detach the tumor from the muscularis propria, we need to consider the following three points: if we don’t have enough experience and skill, we should take the training more. If there are lots of vessels and fibrosis in the submucosal layer, it is necessary to choose adequate tools. And if patients have complicated colon, suitable endoscope need to be selected. In such cases we always use DBE.

Aims & Methods: We evaluated the outcomes of colon ESD by using DBE (DBE-ESD). Short DBE we used were EC450B5, EN530Bi and EI530BT (Olympus Co., Tokyo, Japan). We’ve performed DBE-ESD on 211 lesions in 184 patients. We analyzed the lesions located in the proximal colon, and the following items were examined: arrival time, procedure time, rate of negative margin, perforation rate, length of hospital stay and recurrence rate in the 5th year after the ESD.

Results: There were 159 lesions located in the proximal colons. The median arrival time to the lesion was 7.9 min, operation time 51.1 min, negative rate of horizontal margin 99.4%, vertical margin 99.4%, perforation rate 0%, median length of hospital stay 3.1 days, and recurrence rate in patients with more than 5 year follow-up 0%.

Conclusion: Because the balloons and the overtube retained the scope at stable position, we were able to get good working space. Therefore, DBE should be one option for difficult cases in ESD.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1505 WITHDRAWAL TIME MONITORING AND FULL-SPECTRUM ENDOSCOPY IMPROVE ADENOMA DETECTION RATE

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Aims & Methods: evaluation of the hidden areas of the colon. Colonoscopy. Monitoring withdrawal time (WT) and use of full-spectrum endoscope (SFVE) (n = 330) or with FUSE (n = 330) without a dedicated WT protocol. In this phase, colonoscopy WT were measured without the endoscopists’ knowledge of being monitored. In phase 2, endoscopists were informed of being monitored and performed further 660 colonoscopies either with SFVE (n = 330) or with FUSE (n = 330).

Results: No differences were observed among the four arms in terms of demographic, clinical features, and indications to colonoscopy. WT was lower in phase 1 arms compared to phase 2 arms (SFVE: 267 ± 96 vs. 387 ± 65, p = 0.001; FUSE: 293 ± 112 vs. 430 ± 93, p = 0.001). When endoscopists were aware of being monitored and used full-spectrum endoscope we observed a higher ADR [phase 1 SFVE 27.3% (90) phase 1 FUSE 33.0% (109) phase 2 SFVE 33.6% (111) phase 2 FUSE 41.8% (138); p = 0.001] and adenoma per colonoscopy (APC) [phase 1 SFVE 0.43 ± 0.85 phase 1 FUSE 0.56 ± 1.08 phase 2 SFVE 0.11 ± 0.24 phase 2 FUSE 0.71 ± 1.08; p = 0.004]. The detection rate of adenoma located proximally to the splenic flexure was higher in phase 2 arms (phase 1 SFVE 11.2% vs. phase SFVE 16.4%, p = 0.056; phase 1 FUSE 12.7% vs. phase 2 FUSE 18.9%, p = 0.033), whereas adenoma located distally to the splenic flexure was higher in the FUSE arms compared to SFVE arms, but these differences were not significant (Phase 1 SFVE 20.0% vs. Phase 1 FUSE 24.8%, p = 0.081; Phase 2 SFVE 21.8% vs. Phase 2 FUSE 27.0%, p = 0.147).

Conclusion: Unmonitored endoscopists have a sub-optimal WT, which increases with experience. Use of full-spectrum scopes combined with WT monitoring results in increase of adenoma detection rate. In particular, monitoring WT increases the detection of adenomas in proximal colon, whereas the use of FUSE seems to increase the detection of adenomas in distal colon.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1506 HIGH LEVELS OF “PRESUMED POLYP MISS RATE” AT 1 AND 3 YEARS FOLLOWING INDEX SCREENING COLONOSCOPY: NO ROOM FOR COMPLACENCY


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Introduction: Polyp detection rate remains as an imperfect tool and the adenoma miss rates vary between 6-27%.

Aims & Methods: Aim is to determine the presumed miss rate for adenomas and sessile serrated polyps (SSAs/SPs) after a complete screening colonoscopy. Methodology: A prospective observational study was performed at our bowel cancer screening centre over 12 months from July 2015. Patients who underwent a surveillance colonoscopy following an index colonoscopy were included (one and three-year surveillance). All colonoscopies were performed by 6 experienced, accredited bowel cancer screening endoscopists. Polyp characteristics and procedural data were prospectively recorded and collected. Polyp histology and epidemiology data were retrieved from our endoscopy database. A polyp was considered as “missed” if the index colonoscopy if at 1 year surveillance it was not adjacent to a scar (a recurrence) or at 3 years if >5 mm in size and not adjacent to a scar.

Results: 241 patients underwent a surveillance colonoscopy (male: female 2:1, median age 65 years). 90/241 (37.3%) patients had a one-year surveillance colonoscopy. There was no significant difference in the quality of bowel preparation, caecal intubation rate and total procedure time between index and surveillance procedures. Total number of polyps detected during index and surveillance colonoscopies were 815 and 469 respectively. The presumed miss rate of polyps, adenomas, SSAs/SPs and advanced adenomas were 37.8% (469/1241), 22.1% (167/768), 41.7% (2048) and 15.2% (36236) respectively. More adenomas were missed in the proximal colon when compared to distal colon (26.64% vs 18.04%, p = 0.01). Table 1 illustrates the distribution of missed adenomas in each segment of colon. Adenoma miss rates per size as follows: < 5 mm, 6-9 mm and >10 mm were 24.27 and 8% respectively. Higher number of polyps (>3 detected during index colonoscopy independently correlated with high miss rates (84.3% vs 72%, p = 0.04).

Table 1: Missed polyps at different colonic segments

<table>
<thead>
<tr>
<th>Location</th>
<th>Adenoma miss rate (%)</th>
<th>Sessile serrated adenoma miss rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectum</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Rectosigmoid junction</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Sigmoid colon</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>Descending colon</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Splenic flexure</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>Heparic flexure</td>
<td>30</td>
<td>57</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>26</td>
<td>50</td>
</tr>
<tr>
<td>Caecum</td>
<td>26</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion: Our study highlights that there is likely to be a significant miss rate for adenomas and SSAs/SPs even after careful index colonoscopy. Miss rate was higher when multiple polyps are seen at the index examination. This finding appears to justify the current BSOG (British Society of Gastroenterology) guidelines for a yearly surveillance colonoscopy when multiple polyps are seen. The presumed miss polyp rate at 1 & 3 years may be justified as a new quality metric within screening programmes.

Disclosure of Interest: B.P. Saunders: Advisory board member of Olympus UK. All other authors have declared no conflicts of interest.

P1507 IMPACT OF PERIODONTAL DISEASE ON PREVALENCE OF COLORECTAL NEOPLASIA IN PATIENTS UNDERGOING ROUTINE SCREENING COLONOSCOPY

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Introduction: Systemic diseases including several types of cancer have been associated with periodontitis, potentially owing to the constant systemic inflammatory state in those patients. Data on a potential association of periodontal disease and colorectal neoplasia is scarce and conflicting.

Aims & Methods: Data from 25,407 patients undergoing healthy check up assessment periodontal disease according to periodontosis-risk classes (PRC 0-healthy gingiva, PRC 1 - tatar or plaque, PRC 2 - redness or swelling) and screening colonoscopy between 2009 and 2012 in Austria were included. Colonoscopy outcomes were compared between patients with and without signs of periodontal disease using multivariate models adjusting for age, sex, smoking, alcohol consumption, diabetes and BMI.

Results: In multivariate adjusted models, patients with periodontal disease had similar odds for the detection of colorectal polyps as those without signs of periodontal disease [adjOR 1.07; 95% CI: 0.91; 1.247]. Regarding the prevalence of adenomas, patients with periodontal disease, likewise, had similar odds as those with healthy periodontal tissue [adjOR 1.01; 95% CI: 0.84; 1.213]. Similarly, those with periodontal disease had comparable odds for colorectal adenomas as those without signs of periodontal disease [1.05 (0.78; 1.418)].

In the table below the adenoma detection rate (ADR) and advanced adenoma detection rate (AADR) divided into the periodontosis-risk classes.

Table 1: ADR (adenoma detection rate) and AADR (advanced adenoma detection rate) according to the periodontosis-risk classes

<table>
<thead>
<tr>
<th>PRC 0</th>
<th>PRC 1</th>
<th>PRC 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma (ADR)</td>
<td>19.34%</td>
<td>19.56%</td>
</tr>
<tr>
<td>Advanced adenoma (AADR)</td>
<td>5.42%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Conclusion: Periodontal disease has no impact on the adenoma and advanced adenoma detection rates in a large screening colonoscopy cohort.

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: Adults with confirmed colitis (ulcerative colitis extending beyond the rectosigmoid junction and crohn’s colitis affecting at least the left colon) with lesions at least 20 mm in size within the colitis segment were included. Data including demographics, clinical history, lesion characteristics, method of resection and post-resection surveillance were collected prospectively in patients from January 2011 to November 2016. Resection techniques included endoscopic mucosal resection (EMR), endoscopic submucosal dissection (ESD) and hybrid ESD. Surveillance of resection site with magnification chromoendoscopy (mCE) was performed at 3 months with pan colonic mCE at 1-year post resection and annually thereafter.

Results: Thirty lesions satisfied the inclusion criteria in 13 patients. Patient demographics and clinical data are presented in table 1. Mean lesion size was 47.3 ± 22.4 (20–90) mm. All lesions were non-polyoid with distinct margins and no ulceration. High-frequency mini-probe ultrasound confirmed intramucosal lesions in 5 cases where pit/vascular pattern was distorted due to inflammation. In 6 cases, 69% lesions were deeply scarred of which 66% had experienced prior instrumentation. Resection of a single lesion was performed at the right colon, 9 at left-half colon and 31 at rectum. The mean diameter of the lesions was 3.26 ± 1.27 (0.8–12.0) cm. There were not intraoperative complications including serious bleeding and perforation. Delayed bleeding on the second post-ESD day was diagnosed in 1 (1.6%) patient who was cured by transfusion. 3(4.9%) patients suffered post-ESD electrocoagulation syndrome and perforation did not present in all cases. In this group with transanal tube discharge of the gas and liquid in the intestine. The efficacy of this method to reduce incidence of complications and to promote recovery of intestinal function have been verified by a number of studies. Based on this, we applied transanal tube to some patients with colorectal ESD, hoping to provide new ideas for the prevention and treatment of complications.

Table 1: Baseline characteristics.

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<th>Patient Demographics</th>
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Age at time of resection (mean, SD, range) (years) 57.31 ±/−12.7, 30–81
Male (n) (%) 10 (77)
Female (n) (%) 3 (23)
Clinical Data
Duration of disease (mean, SD, range) (years) 19.9, 14.2, 1–50
Disease extent
Spleenic Flexure (n) (%) 3 (23)
Pan-colonic/Extensive (n) (%) 10 (77)
Primary Serosing Cholangitis
IBD Medication
5-ASA* (n) (%) 11 (84)
Azathioprine (n) (%) 2 (15)
Biologics (n) (%) 1 (7)
ASA Physical Status Classification

Conclusion: This cohort series demonstrates that endoscopic resection of large non-polyoid lesions in association with colitis is feasible using an array of resection methods, safe and has good long term outcomes in a western tertiary endoscopic centre.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1510 OUTCOMES FOLLOWING UNDERWATER ENDOCOSCOPIC MUCOSAL RESECTION (UEMR) OF > 10MM COLONIC POLYPS: A PROSPECTIVE DUAL-CENTRE STUDY

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Introduction: Underwater endoscopic mucosal resection (UEMR) is an alternative to thermal EMR for the resection of colonic polyps. With this technique, water insufflation is used in place of air or CO2, and submucosal lifting is usually not required, as water-immersed submucosal cushions itself from the muscularis propria. Theoretically, this reduces the risk of diathermy-induced injury, and allows for more complete resection margins.

Aims & Methods: In this prospective dual-centre study, we aim to evaluate the safety and efficacy of UEMR for clinically significant (>10 mm) colonic polyps. Studied outcomes included: completeness of UEMR, 2 intraprocedural and 30-day complication rates, 2 percentage requiring submucosal lift, and 4 rates and predictors of polyp recurrence. Procedures were performed by two screening endoscopists accepting tertiary referrals at St Mark’s Hospital, London, and Russell’s Hall Hospital, Dudley, UK. Recurrence was defined as the presence of any polyp tissue at the resection site. Endoscopy records were examined and correlated with histology. Uni-variate analyses were performed using Pearson’s chi² to identify predictors of measured outcomes.

Results: Between June 2014 and March 2017, and A total of 85 patients (median age 69.5 years, interquartile range [IQR] 11, 50.6%) underwent UEMR of 97 colonic polyps (median size 25 mm, IQR 25 mm, range 10–160 mm). 13 (13.4%) were recurrences following previous conventional EMR. Polyps were predominantly left sided (66%) with flat (63.5%) or sessile (35.4%) morphology. 43.8% of polyps were removed en bloc, whilst argon plasma coagulation (APC) was used in 17.3%. Histology comprised of: low-grade dysplasia (80.2%), high-grade dysplasia (12.5%), adenocarcinoma (3.1%) and non-adenomatous sessile serrated adenomas (4.2%). Overall, resection at index UEMR was deemed endoscopically complete in 97.9%. Submucosal lift was required in 27.8% and positively correlated with polyp size >30 mm (OR 3.58, 95% CI 1.37–9.38, p = 0.01), but not morphology (flat vs. sessile, p = 0.099). The 30-day complication rate was 4.1% (n = 4), comprising: bleeding (n = 2, average diameters: 35 mm) and delayed rebleeding (n = 2; average diameter: 57.5 mm), with haemos-tasis achieved for all cases. No cases of perforation or mortality were identified. Of the 60.8% (n = 59) who attended for repeat endoscopy post-UEMR, the rate of recurrence or residual polyp was 14.8% (9/63) at 4 months and 15.9% (22/140) within 1 year. Significant predictors of post-UEMR recurrence included: piece-meal vs. en bloc resection (OR 5.50, 95% CI 1.10–27.6, p = 0.03) and recurrent polyp (OR 4.17, 95% CI 1.02–17.05, p = 0.01), and allows for more complete resection margins.

Conclusion: UEMR is a safe alternative to conventional EMR for the management of clinically significant colonic polyps. However, our post-UEMR recurrence rate of 22.0% appears higher than other studies,[2] but may be skewed by the tertiary nature of referrals. Although randomised trials are awaited, we suggest that those performing UEMR should attempt en bloc resection where possible, and consider wider resection margins for recurrent polyps.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1511 WATER-AIDED COLONOSCOPY - RESEARCH FOCUS IN THE PAST DECADE AND CURRENT CLINICAL PRACTICE

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Introduction: Water-aided techniques have forged a paradigm shift in endoscopic diagnosis and therapy. The inauguration (10/22/2014) of the International WATERS with memberships worldwide attested to participants’ commitment to advance clinical, educational and research missions. To aid planning of future work in each of these areas, a descriptive study of water-aided colonoscopy was performed.

Aims & Methods: The aims of this study were two-folds. Study 1: To assess the frequency of water-assisted colonoscopy in the past decade and current practice. To obtain a cross-sectional snapshot of current clinical practice. Study 1: Studies registered at Clinicaltrials.gov were searched for using the search term "water colonoscopy". Study 2: Members of International WATERS voluntarily participated in a survey. Data collection was carried out after obtaining the proportion of participants with different forms of seda-tion, respondents selected yes (1) or no (0) responses to each of 16 questions related to their practice of water-aided colonoscopy.

Results:
Study 1: In the past decade, 48 trials of water-aided colonoscopy were registered at Clinicaltrials.gov. They aimed at evaluation of insertion pain in unsedated, minimally sedated, or on demand sedation patients; assessment of efficacy in difficult colonoscopy; study of the impact on adenoma detection; and underwater mucosal resection or polypectomy. Study 2: Questionnaire responses are summarized in Table 1. Respondents: n = 23. Water-aided colonoscopy is used in patients sedated with propofol, minimal sedation on demand (3–16%), but more commonly in patients with moderate or no sedation (30–34%). During insertion 95.5% use infusion of water and only 36.4% leave the air/CO2 pump on. 42.9% and 33.3% record volumes infused and suctioned upon arrival to the cecum. 52.4% remove almost all infused water during inser-tion. 71.4% and 59.1% performed polypectomy (<20 mm and >20 mm, respec-tively) underwater during withdrawal.

Table 1A: % of respondent’s patients

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Mean SD</th>
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<tbody>
<tr>
<td>Sedated with propofol</td>
<td>16 30</td>
</tr>
<tr>
<td>Receive minimal sedation</td>
<td>11 19</td>
</tr>
<tr>
<td>Are unsedated</td>
<td>34 35</td>
</tr>
<tr>
<td>Receive on demand sedation</td>
<td>3 5</td>
</tr>
<tr>
<td>Receive moderate sedation</td>
<td>30 39</td>
</tr>
</tbody>
</table>

Table 1B: Proportion of respondents using the following approaches (%)

<table>
<thead>
<tr>
<th>Approach</th>
<th>Proportion</th>
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<tbody>
<tr>
<td>Infuse water during insertion</td>
<td>95.5</td>
</tr>
<tr>
<td>Leave air/CO2 pump on during insertion</td>
<td>36.4</td>
</tr>
<tr>
<td>Keep track of volume of water</td>
<td>19.0</td>
</tr>
<tr>
<td>Keep track of volume of water infused at different insertion locations</td>
<td>14.3</td>
</tr>
<tr>
<td>Perform polypectomy (&lt;20 mm) underwater</td>
<td>insertion</td>
</tr>
<tr>
<td>Perform polypectomy (&gt;20 mm) underwater</td>
<td>insertion</td>
</tr>
<tr>
<td>Remov almost all infused water during insertion</td>
<td>withdrawal</td>
</tr>
</tbody>
</table>

Conclusion: The variable modes of application amongst responders who profess to use water-aided colonoscopy reflect the versatility and strength of the paradigm-changing approach, which is easily adaptable to meet the diverse needs of individual colonoscopists. Standardization based on results of randomized controlled trials appears to be prudent to permit further assessment of water-aided colonoscopy in clinical, educational and research settings.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1512 ENDOCOSCOPIC SUBMUCOSAL DISSECTION: RESULTS ANDライブ CURVE OF A LARGE PROSPECTIVE SERIE OF 183 CASES IN THREE CENTERS

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Introduction: Endoscopic submucosal dissection (ESD) is a suitable technique used for the endoscopic management of selected early gastrointestinal neoplasms (EGN).

Aims & Methods: This is a prospective study of patients with EGN eligible for ESD in three tertiary hospitals. The main goal was to evaluate initial therapeutic results and learning curve of ESD. Initial Technical success rates, procedure speed, en-bloc & R0 resection, R0, speed and complications rates were prospectively evaluated. The results of the learning curve were analysed by chronological order of bles of 50 cases. Perforation was established as any disruption of the muscular layer, regardless of size or identification of perioperative fat. Time of procedure was considered from initial submucosal injection to final detachment of the specimen.

Results: ESD was attempted in 183 lesions from January 2012 to April 2017. Majority of procedures were performed at Puerta de Hierro University Hospital (160/87.4%). Mean age was 67 (SD 10.6) years, with male proportion 55.2%. Most common location was colorectal (77.8%), followed by gastric (12.8%) and esophageal (9.4%). Success was observed in 96.2% of patients with en-bloc and R0 resection of 93.9% and 92.3% respectively. Mean lesion size was 46.5 mm (range 8–130) with a mean speed of 9.01 min/cm2 (range 1–209). Perforation was
the main complication (48 (26.2%) events), requiring surgery in 5 (10.4%) cases. Perforation was also statistically significant in comparison to location (p = 0.05) and LST morphology (p = 0.05). Most frequent location of perforation was transverse colon (OR 88.3; SE 137), followed by descending colon (OR 13.5; SE 19.4) and splenic flexure (OR 6.3, SE 11.8). Perforation was more common in LST-NG lesions vs LST-G (OR 14.1; SE 19.3 vs 11.6 SE 15.0). Perforation rates were not statistically associated with the presence of severe submucosal fibrosis compared to absence of fibrosis (0.8 SE 0.6 vs 1 SE 1; p = 0.9). Post-ESD complications were observed in 15 (8.2%) patients (delayed perforation(7), bleeding(4), electrical burn injury syndrome(1), severe esophageal stricture(1), haemopterri- nome(1) and splenic rupture(1)). Six cases (40%) were managed with surgery. Results from the learning curve progression according to consecutive chronological blocks of 50 cases (33 last bloc) are summarized in table 1. Initial success increased from 94% to 100%; speed of ESD decreased after the first 50 cases (15.5 cm²/min), up to 6.7 and 6.5 cm²/min in the last 2 blocs. A high perforation rate in the first period (32%) was reduced to 18–30.3% the following periods. Endoscopic treatment was successful in most cases of perforation (89.6%). Surgery was required for severe complications, incomplete ESD and/or perforation (n, %) (16 cases, 8.7%).

Conclusion: On clinical ESD, high rates of success and en-bloc and R0 resection can be achieved along the learning curve. Perforation is the most common complication and is a still a challenge for Western countries. However, increasing experience reflects a high success in endoscopic management of perforation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Endoscopic submucosal dissection: European Society of Gastrointestinal Endoscopy (ESGE) Guideline

P1515 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR COLORECTAL NEOPLASIA: THE EXPERIENCE OF A UK TERTIARY REFERRAL CENTRE
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Introduction: Despite the advantages of endoscopic submucosal resection (ESD) demonstrated in large series from the far east, the procedure is not commonly practiced in the west and its role in standard practice is still debated. Although limited evidence of its efficacy in European practice is emerging, very few centres in the United Kingdom perform ESD regularly, if at all. We report the experience of a UK tertiary referral institution using ESD as part of a lesion specific, pragmatic approach to endoscopic resection in a complex patient cohort. Aims & Methods: Consecutive patients who underwent endoscopic submucosal resection of colorectal lesions ≥2 cm were included. Lesions were assessed with magnification chromoendoscopy supplemented by colonoscopic ultrasound in selected cases. A lesion specific approach was used to decide on resection technique, which included assessment of morphology, pit pattern, risk of submucosal invasion, and presence of submucosal fibrosis or scarring. ESD was used where en bloc resection was deemed essential, and was a preferred approach to assist snare resection was not included. Results: 116 lesions (mean size 58.8 mm) were resected using ESD (n = 58) and hybrid ESD (n = 58). 82 (70.7%) had been subjected to prior attempts at resection (n = 58) or extensive sampling. Only 11 lesions had no prior biopsies performed. En bloc resection was achieved in 93.1% where ESD was used alone, with a recurrence rate of 4.7% after a mean follow up of 19.7 months. There were 6 microporations treated with either endoscopic clips or antibiotics alone with no adverse sequelae, and one clinically significant perforation requiring surgery. However, the resected lesion in this case contained an invasive adenocarcinoma with deep submucosal invasion—there was no residual tumour in the surgical resection specimen. Post- procedure bleeding occurred in 6 patients, none of which needed further treatment. 91% of cases were successfully performed as day case procedures. 97% of patients without invasive cancer were free from recurrence and had avoided surgery at last follow-up.

Conclusion: Colorectal ESD can be used as part of a standard lesion specific approach to a western referral centre to deliver safe and effective organ conserving treatment to patients with large challenging lesions. Knowledge regarding lesion assessment and selection in western practice should be improved to reduce the incidence of prior heavy manipulation and guide appropriate referral.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1514 RISK OF STENOSIS AND OUTCOMES FOLLOWING ENDOSCOPIC RESECTION OF LARGE COLORECTAL LESIONS INVOLVING MORE THAN 75% OF THE LUMINAL CIRCUMFERENCE
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Contact E-mail Address: aemmanuel@nhs.net

Introduction: Little is known about the risk of stenosis and outcomes following endoscopic resection of lesions in the colorectum which leave extensive mucosal defects. A limited number of studies suggest significant stenosis rates, although reports on outcomes and suggested management are conflicting. We determined the risk of stenosis and outcomes of endoscopic resection of colorectal lesions leaving mucosal defects ≥75% of the circumference.

Aims & Methods: Patients who underwent endoscopic resection of colorectal lesions ≥2 cm were included. Resection technique included EMR, ESD and hybrid techniques involving ESD. Patients were grouped according to circumferential extent of the mucosal defect after resection. Surveillance colonoscopy was performed at 3 and 12 months. Clinicopathological characteristics and outcomes were compared between groups.

Results: 435 colorectal lesions ≥2 cm were resected using EMR (n = 342), ESD (n = 45) or hybrid techniques (n = 48). Circumferential extent of the resulting mucosal defect was ≥75% in 41 patients. 8 lesions were fully circumferential: 1 caecal lesion and the rest in the recto-sigmoid and rectum. 3 of these circumferential lesions contained deep invasive adenocarcinoma and 1 benign lesion ultimately required surgery. The 41 lesions with a mucosal defect ≥75% of the circumference had a mean size of 100.5 mm vs 49.0 mm for other lesions (p < 0.001). These patients had significantly more complications (16.7% vs 4.7%, p < 0.001), including a higher rate of perforation (8.3% vs 2.3%, p = 0.02), although none required surgery, and a significantly higher rate of recurrence (44.8% vs 9.2%, p < 0.001). 79% of patients without cancer were free from recurrence and had avoided surgery at last follow-up compared to 97% of patients with mucosal defects <75% (p < 0.001). Stenosis occurred in 7 patients: 4 lesions extensively involving the rectum and recto-sigmoid and 2 lesions involving the sigmoid colon extending to the rectosigmoid. 1 of these involved a mucosal defect of only 50% of the circumference and 3 were fully circumferential. 1 patient had a symptomatic anorectal stenosis requiring dilatation under anaesthesia, 1 patient was asymptomatic but underwent early dilatation after the first surveillance endoscopy at 3 months. The remaining patients were asymptomatic and managed expectantly. In all these latter cases spontaneous improvement in the stricture was noted at the subsequent surveillance endoscopy.

Conclusion: The majority of patients with these extensive complex lesions can successfully be treated with endoscopic resection and avoid surgery. However, these patients have a significantly greater risk of complications and recurrence and should be managed in a tertiary institution. Although there is a significant risk of stenosis, it appears that most cases are asymptomatic and spontaneously improve with expectant management.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1515 RISK OF HIGH-GRADE DYSPLASIA AND SUBMUCOSAL INVASION IN DIFFERENT MORPHOLOGICAL SUB-TYPES OF LARGE COLORECTAL NEOPLASTIC LESIONS RESECTED AT A UK TERTIARY REFERRAL UNIT
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2Endoscopy, King’s Institute of Therapeutic Endoscopy, RS/United Kingdom

Contact E-mail Address: aemmanuel@nhs.net

Abstract: P1512

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<th>101–150</th>
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<td>3/50(26%)</td>
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<td>Perforation (n, %)</td>
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<td>5/50(10%)</td>
<td>13/50(30%)</td>
<td>48/183(26.2%)</td>
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<td>1/50(20%)</td>
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Introduction: Although it is well recognised that the risk of invasive carcinoma in Appplanation neoplastic lesions differs according to morphology, the incidence of invasive cancer varies between studies and there is limited data from large western series to inform practice. The importance of appropriate resection techniques, including the use of ESD, is increasingly recognised in western practice. It is therefore imperative that the risk of submucosal invasion is assessed as accurately as possible to prevent inappropriate attempts at resection. We determined the risk of submucosal invasion and high-grade dysplasia (HGD) in different morphological sub-types of large colorectal lesions subjected to endoscopic resection.

Aims & Methods: Colorectal lesions ≥2 cm subjected to endoscopic resection were included. Lesions were assessed with magnification chromoendoscopy. Clinicopathological data recorded included morphological type according to Paris classification, sub-types of laterally spreading tumours (LST), degree of dysplasia, presence of submucosal invasion and outcomes following resection.

Results: 435 colorectal lesions ≥2 cm were resected. Mean lesion size was 55.2 mm (range 20 mm–160 mm). The frequency of and the incidence of high-grade dysplasia and invasive adenocarcinoma in the different morphological sub-types are shown in Table 1. The incidence of high-grade dysplasia (8.6%) and invasive adenocarcinoma (1.2%) was very low in LST granular homogenous lesions.

**Table 1**

<table>
<thead>
<tr>
<th>Morphology</th>
<th>Mean size (mm)</th>
<th>High-grade dysplasia (%)</th>
<th>Invasive adenocarcinoma (%)</th>
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<tbody>
<tr>
<td>Is</td>
<td>36.7</td>
<td>2(33.3)</td>
<td>1(16.7)</td>
</tr>
<tr>
<td>Isp</td>
<td>37.8</td>
<td>21 (27.6)</td>
<td>7(9.2)</td>
</tr>
<tr>
<td>Ha</td>
<td>27.2</td>
<td>5 (10)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Ha + Ic</td>
<td>35.0</td>
<td>3 (100)</td>
<td>2 (66.6)</td>
</tr>
<tr>
<td>LST G H</td>
<td>54.3</td>
<td>15 (8.6)</td>
<td>2 (1.2)</td>
</tr>
<tr>
<td>LST G MN</td>
<td>83.3</td>
<td>49 (43.0)</td>
<td>12 (10.0)</td>
</tr>
<tr>
<td>LST NG</td>
<td>45.0</td>
<td>4 (36.4)</td>
<td>2 (18.2)</td>
</tr>
</tbody>
</table>

LST G H = LST granular homogenous LST G MN = LST granular mixed nodular LST NG = LST non-granular ESD or hybrid ESD was used to resect 97 lesions. 53% of lesions had been subjected to previous failed attempts at resection, >6 biopsies or had tattoo injected at their base prior to referral. Of 29 invasive adenocarcinomas, 9 were deemed incurable by endoscopic resection (superficial submucosal invasion with no adverse prognostic features). Of the remaining 20, 5 patients refused surgical resection, 5 were unfit for major surgery and 10 had had tumour in the surgical resection specimen, 5 had residual tumour in their resection cavity. Only 1 patient was initially benign lesions developed adenocarcinoma in subsequent lesions—all of these were early cancers with nodal metastases at surgical resection.

Conclusion: In one of the largest European series reporting the incidence of invasive carcinoma in different morphological sub-types of colorectal neoplastic lesions, we confirm that LST granular homogenous type lesions have a very low incidence of invasive carcinoma and that care should be taken in the choice of resection technique for other sub-types of LSTs which more frequently harbour malignancy. Appplanation neoplasms assessment and classification to aid metachronous lesion selection is essential to this process.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1517 OUTCOMES OF ENDOSCOPIC RESECTION OF RECURRENT COLORECTAL LESIONS TREATED AT A UK TERTIARY REFERRAL CENTRE**

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Introduction: Endoscopic resection of large colorectal lesions, especially by piecemeal resection (EMR), carries a significant risk of recurrence. Although several series examine the outcomes and risk of recurrence following endoscopic resection, few focus on the outcomes of patients being treated for recurrence after initial expert resection, and these mostly focus on one technique to deal with recurrence. We evaluated the outcomes after recurrence of colorectal lesions after apparent successful endoscopic resection in a specialised UK tertiary institution employing a range of resection techniques.

Aims & Methods: Consecutive patients who underwent endoscopic resection of colorectal lesions ≥2 cm were included. All lesions were assessed with magnification chromoendoscopy supplemented by colonoscopic ultrasound in selected cases. A lesion specific approach was used to decide on resection technique. Outcomes were evaluated for patients treated for recurrent lesions.

Results: Of 396 colorectal lesions ≥2 cm initially resected, recurrence occurred in 48 patients. 36% of these patients had already had a mean of 1.6 previous failed attempts at resection prior to referral to our institution, and 66% had had either a failed attempt at resection or extensive sampling involving >6 biopsies or tattoo placed under the lesion. 69% of patients were successfully treated with further endoscopic resection and avoided surgery. 27 recurrent lesions larger than 20 mm were treated with endoscopic resection, with a mean lesion size of 48.3 +/- 19.8 mm. Techniques used were EMR (n = 16), ESD (n = 2), Hybrid ESD and EMR (n = 9). The remaining lesions <2 cm were resected using EMR. A mean of 1.4 +/- 0.75 procedures were required to achieve successful endoscopic treatment of recurrence. Of 23 patients who were ultimately successfully treated with endoscopic resection, 15 required a single further endoscopic resection after recurrence, 8 patients required 2 or more further resections. 8 patients required surgery, 3 as a result of developing invasive adenocarcinoma with the recurrence. There were no perforations as a result of endoscopic resection of recurrent lesions.

Conclusion: These data demonstrate the challenges of an advanced endoscopic resection service in much of western practice where patients with recurrent lesions represent a particularly complex cohort, most of whom have already had extensive prior manipulation or attempts at resection. Familiarity with a range of resection techniques and appropriate equipment is essential to successfully treat recurrent lesions in this group with endoscopic resection, which can be achieved in the majority of patients without significant morbidity.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1518 THE EFFECTIVENESS OF NEW TECHNIQUE WITH SELF-EXPANDABLE METALLIC STENT INSERTION IN TREATING RIGHT-SIDED COLORECTAL OBSTRUCTION**

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Introduction: Self-expandable metallic stent (SEMS) is widely used to treat malignant colonic obstruction. However, most reports about SEMS insertion have represented a particularly complex cohort, most of whom have already had extensive prior manipulation or attempts at resection. Cannulation time between straight and curved type guiding tube, technical and clinical success, complications, and technical difficulties were analyzed. We compared the results between SEMS insertion and decompression tube placement in right colons and the outcomes of SEMS insertion between right- and left-sided colonic obstructions.

Results: Cannulation time with a curved type guiding tube decreased of all cases (20mn vs 8.5mn). For ascending colons, the technical and clinical success rate of SEMS insertion with new technique significantly 100% (10/10). There was no...
P1519 ENDOSCOPIC FULL-THICKNESS RESECTION FOR COLONIC LESIONS. INITIAL EXPERIENCE IN 3 CENTERS OF CATALONIA

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Introduction: Endoscopic full-thickness resection (EFTR) in the colon using the FTRD kit is a recent technique that allows en-bloc resection of colonic lesions that are poor candidates for resection by endoscopic mucosal resection (EMR). It does not require the injection of a solution into the submucosa and allows an en-bloc resection of colonic lesions up to approximately 30 mm. We present results of the initial experience in 3 centers of Catalonia.

Aims & Methods: We retrospectively analyzed the clinical, endoscopic and anatomicopathological data of all cases of EFTR performed in 3 centers in Catalonia using the FTRD kit (Ovesco Endoscopy, Tübingen, Germany) during the period between June 2015 and January 2017. All patients underwent the procedure under deep sedation with propofol, all patients were duly informed of the technique and potential complications derived from the procedure, obtaining written informed consent prior to the procedure. All EFTR resections in the colon were performed using the FTRD kit (Ovesco Endoscopy, Tübingen, Germany), grasping and pulling the lesion in the base of the polyp, deploying the OTSC and resecting the tissue over the OTSC with the preloaded snare. Clinical assessment was performed before and after procedures with a complete blood test before procedure. Blood test was not routinely used after procedures. Demographic, clinical, endoscopic and histologic data were collected from each patient, and analyzed with STATA software.

Results: 16 endoscopic full-thickness resections of the colon were performed. The mean age of the patients was 69 years (53–79), with men being 88%. The indications were recurrent/residual lesions with non lifting sign (75%) and unresected lesions with non lifting sign (25%). The locations were juxtavalvular (n = 3), transverse colon (n = 4), descending colon (n = 3), sigma, stub or anastomosis (n = 4) and location (right/left colon).

Conclusion: Endoscopic full-thickness resection is a safe and feasible technique for selected cases in colon.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1521 HOT AVULSION TECHNIQUE - A FIRST-LINE APPROACH FOR TREATMENT OF VISIBLE RESIDUAL NEOPLASIA DURING ENDOSCOPIC MUCOSAL RESECTION OF COLORECTAL POLYPSES?

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Introduction: Endoscopic mucosal resection (EMR) has been shown to be useful in the removal of large colorectal adenomas. These lesions are often resected by using a piecemeal technique, which a risk of recurrence in 10% to 30% of cases. Recently, hot avulsion technique (HA) has shown promising results in the resection of residual fragments of large colorectal adenomas, with lower recurrence rate.

Aims & Methods: The aim of this study was to evaluate the efficacy and safety of HA at index EMR and at EMR local recurrence. We did a retrospective study based on all the HA performed between June 2015 and February 2017. The endoscopic characteristics, complications and recurrence rate after the initial HA were evaluated.

Results: 33 HA were performed among 29 patients (16 men and 13 women) with an average age of 69 years. The average follow up time was 11 months. HA was used to remove residual adenomatous tissue at 17 index EMR (mean size of the lesion (30 mm) and to remove recurrent fibrotic adenomatous tissue at EMR scar in 12 cases (mean size of recurrence tissue 14 mm). HA was successful in removing residual/recurrent adenomatous tissue in all patients. There were no immediate or long term adverse events. Comparing the two groups, local recurrence after initial HA occurred in one case at the index EMR group (1/17) and in 2 cases at the local EMR recurrence group (2/12). The overall recurrence rate in patients with a minimum 6 months follow up was 15% (3/20).

Conclusion: HA is a safe and effective technique to eradicate both residual tissue in large colorectal adenomas and recurrent fibrotic adenomatous tissue at EMR site, with low recurrence rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

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ification of an existing technique for management of nonlifting areas of a poly-
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manship of visible residual neoplasia during EMR of colorectal poly-

P1522 QUALITY IN BOWEL CLEANSING, PERFORMANCE MEASURES AND PATIENT SATISFACTION USING DIFFERENT PURGATIVES IN SCREENING COLONOSCOPY
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Introduction: Quality of bowel preparation and adenoma detection rate (ADR)
are routinely assessed in screening colonoscopy. However, data on patient experi-
ence are scarce.
Aims & Methods: This prospective non-interventional study compared bowel
preparation quality according to the Harefield Scale, performance quality mea-
sures and patients satisfaction in screening colonoscopies performed within an
Austrian quality assurance program.
Results: Colonoscopies performed by 20 endoscopists were included in this
study. 50.3% of screened individuals were women. Because of the unequal patient count using CitraFlx® (CF, n = 261), Picoprep® (PP, n = 2678), Klean-Prep® (KP, n = 804) and Moviprep® (MP, n = 1252), PC and
CF were grouped as low volume (LV) purgatives. Age and gender adjusted
success rates and ADR per purgative were 97.0% and 23.3% for LV, 97.5%
and 32.5% for KP and 93.5% and 26.0% for MP. Women had higher success
rates than men (p = 0.007) and success rate decreased with patients’ age
(p = 0.008). The consequence regarding comparison of the entire volume was
best with LV (89.2%, KP 87.6%, MP 87.3%), which had a significant effect on
success rate p = 0.027. 93.5% of patients in the LV group would use the same
purgative again compared to 68.4% in the KP and 73.2% in the MP group.
Conclusion: All investigated purgatives met the required quality standards of
≥90% rate of adequate bowel preparation according to the current ESGE guide-
lines. Success rates were higher in women and younger patients. Although only
<90% of patients consumed the whole volume, the majority of patients would
use the same purgative again.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1524 DIFFERENCES IN QUALITY OF BOWEL PREPARATION AT SCREENING COLONOSCOPIES IN PRIVATE PRACTICES AND HOSPITALS
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Introduction: Bowel preparation influences the adenoma detection rate and is
therefore an important quality parameter in screening colonoscopy. According
to ESGE guideline “Performance measures for lower gastrointestinal
endoscopy: a European Society of Gastrointestinal Endoscopy (ESGE) Quality
Improvement Initiative”, 90% of colonoscopies should have adequate bowel
preparation. The aim of this study was to investigate whether there is a difference
in quality between private practices and hospitals.
Aims & Methods: Data from screening colonoscopies performed within quality
certificate in Austria (2012 - 2017) provided by 245 endoscopists were evaluated.
The recording of the quality of the bowel preparation was described as one of the
EMR site.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1525 DIFFERENCES BETWEEN BOWEL PREPARATION QUALITY OF SURVEILLANCE AND SCREENING COLONOSCOPY
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Introduction: bowel preparation is necessary for a successful and com-
plete colonoscopy. Minimum of adequate rate (excellent + good + fair) should be
90% according the actual ESGE guidelines (Kaminski et al, Endoscopy 2017).
The aim of study was, to verify if there is a difference at quality of preparation
between screening and surveillance colonoscopy. It might be that there is an
improvement at surveillance colonoscopy due to better knowledge.
Aims & Methods: 107,614 examinations from 288 endoscopists were analysed
between 2012 and 2017 within the Austrian certificate of screening colonoscopy.
For bowel preparation different categories were used: excellent, good, fair,
unsatisfactory, poor only in the right colon. Data are shown as Mean and SD.
Results: ES78 surveillance colonoscopies (43.88% female, mean age 66.67) and
99271 screening colonoscopies (51.94% female, mean age was 62.31) were
included. Within screening colonoscopy 37.59% (SD = 31.50) were excel-
pres vs. 34.60% (SD = 33.98) within surveillance colonoscopy, good 47.43
(SD = 27.28) vs. 45.61% (SD = 31.28), fair 11.39% (SD = 11.58) vs. 14.39%
(SD = 21.69), poor 2.38% (SD = 3.06) vs. 3.68% (SD = 9.75), unsatisfactory
0.77% (SD = 1.20) vs. 0.89% (SD = 3.69), poor only in the right colon 0.69%
(SD = 1.81) vs. 0.39% (SD = 1.22). Calculations revealed no significant differ-
ces among screening and surveillance colonoscopies relating the following
categories: excellent (p = 0.4357), good (p = 0.5911), unsatisfactory (p = 0.6282)
and poor only in the right colon (p = 0.1672). Purgative preparation varies signi-
ficantly between screening and surveillance in groups of fair (p = 0.0454) and poor
(p = 0.0497). Bowel preparation influences the adenoma detection rate (ADR). Mean ADR in excellent preparation was 22.16% (SD = 16.36%), in good
25.41% (SD = 17.30%), in fair 24.63% (SD = 19.44), in poor 19.94%
(SD = 25.57), in unsatisfactory 12.08% (SD = 22.77) and in poor only in the
right colon 24.22% (SD = 30.89%). Adequate rate in screening colonoscopy
was 96.22% (SD = 3.98%) vs. 95.07% (SD = 10.45%) in surveillance
colonoscopy. Rates correspond to ESGE guidelines and do not differ signifi-
cantly (p = 0.058). Conclusion: Data showed distinctions between fair and poor, whereas there were more
fair and more poor prepared patients at the surveillance colonoscopy, than at
the screening colonoscopy. Age of patients at surveillance colonoscopy was
higher, hence D-H, Freed normalized improvement. ADR in excellent, good and
fair bowel preparation was adequate. In poor, unsatisfactory was low and ADR
at poor only in the right colon is high due to low count (N = 374).
Disclosure of Interest: All authors have declared no conflicts of interest.

P1525 RISK FACTORS FOR RESIDUAL NEOPLASIA AFTER ENDOSCOPIC MUCOSAL RESECTION OF LATERALLY SPREADING TUMORS
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Introduction: Laterally spreading tumors (LSTs) are important precursors of
colorectal carcinoma. They are usually removed by endoscopic mucosal resection
(EMR). However, local residual neoplasia (LRN) may occur during follow-up.
The aim of the study was to evaluate the occurrence of LRN and the risk factors
for its presence.
Aims & Methods: This retrospective study in a high-volume tertiary-referral
center examined patients who had undergone EMR between 2013 and 2015
and who had had at least 1 surveillance colonoscopy after the initial treatment.
LRN was defined histologically as the presence of neoplastic tissue in the post-
EMR site.
Results: 160 laterally spreading tumors were diagnosed in 138 patients (62% men,
mean age 67 years). Mean follow-up interval for surveillance colonoscopy was
6 months. Residual neoplasia at surveillance endoscopy was present following 21%
(35/160) EMRs. Single variate analysis showed occurrence of an increased risk of
residual neoplasia for LST ≥ 20 mm (p = 0.006), villous adenomas (p = 0.001),
piecemeal resection (p = 0.011) and G-type morphology (p = 0.003). In multi-
ariate analysis, only size of the lesion (p = 0.080) and villous component
(p = 0.043) were found to be a significant risk factor for LRN.
Conclusion: This retrospective study shows that the occurrence of LRN is fre-
cent. Careful colorectal surveillance after EMR and the use of new methods
to further reduce residual neoplasia are needed.
Disclosure of Interest: All authors have declared no conflicts of interest.
P1527 BOWEL PREPARATION FOR FLEXIBLE SIGMOIDOSCOPY: COMPARISON OF POLYETHYLENE GLYCOL ELECTROLYTE SOLUTION (PEG-ES) AND PHOSPHATE ENEMA IN 4,949 PATIENTS AT TWO UK HOSPITALS

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Introduction: Flexible sigmoidoscopy is increasingly used to examine the left side of the bowel for diagnostic and surveillance purposes, and is now part of the UK bowel cancer screening programme. It is crucial to achieve adequate bowel cleansing in order to optimise the diagnostic yield of the test, and also to minimise the number of repeat procedures. However, the optimum bowel preparation for this procedure has consistently been debated.1,2,3

Aims & Methods: Both phosphate enema and (PEG-ES) are commonly used for bowel preparation in flexible sigmoidoscopy at both hospitals participating in this study. We therefore wanted to compare the outcomes for these two methods. We retrospectively reviewed all the patients who underwent flexible sigmoidoscopy from January 2014 to December 2016 using each hospital’s electronic database. This study included patients with large colonic lesions (LCLs, >20 mm) performed for surveillance or diagnostic purposes. The primary outcome was the adequacy of bowel preparation and the secondary outcomes were the number of patients who required repeat procedures.

Results: In total 6196 patients underwent flexible sigmoidoscopy during the study period (males 2885 (46.56%), mean age 62.80 years, range 16–101 years). 1247 (20.13%) patients were excluded from further analysis for the following reasons: N=297 patients were not enrolled at procedure-time (n=284) or at 15 days for adverse events and follow-up (n=13) because they only had phosphate enema. The results are summarised in the table below.

Contact Disclosure of Interest: All authors have declared no conflicts of interest.

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*P<0.05

EFFECTIVE BUT INTERVALS CAN BE WIDENED

P1528 MANAGEMENT OF RESECTION OF LARGE COLONIC LESIONS IN A REAL-LIFE SETTING: THE SCALP STUDY

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Aim of present study is to evaluate the management of endoscopic resections of LCLs performed over a 6-month period were collected by a web-based database. All patients undergoing LCLs resection were enrolled at procedure-time and followed-up at 15 days for adverse events and at 6 months for endoscopic/histological recurrence.

Results: 1452 LCLs (mean size 30.6 mm, SD 12.4; 41.4% lateral spreading tumor, 28.1% sessile, and 30.5% pedunculated) removed in 1329 patients (58% males, mean age 66±11.4 years) were analysed. An endoscopic mucosal resection (EMR) was performed in 57.9%, snare polypectomy in 34.7%, underwire EMR in 1.2% and endoscopic submucosal dissection in 6.2% of the lesions. Patients with LCLs, 19.4% were on ATT (62.5% aspirin, 12.2% thienopyridines, 4.8% dual antiplatelet, 15.4% vitamin K antagonists [VKAs], 5.1% direct oral anticoagulants [DOACs]). Aspirin and/or thienopyridines were withdrawn before resection in 53.6% and 91.7% of patients, respectively. Overall, intra- and post-procedural bleeding requiring endoscopic therapy occurred in 8.1% of patients; 28% of them were on ATT, which had always been withheld, but in 48% of patients on aspirin. At multivariate analysis, intra-procedural bleeding was correlated with increasing polyp size (Odds Ratio 1.02 95% Confidence Interval 1.01–1.04), and inversely with execution of pre- and post-resection prophylaxis maneuvers (Odds Ratio 0.55 95% Confidence Interval 0.37–0.82 and Odds Ratio 0.55 95% Confidence Interval 0.37–0.82 respectively). As concerns

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Introduction: Endoscopic resection of large colonic lesions (LCLs, >20 mm) is effective and it is associated with an acceptable incidence of incomplete resection and complications when performed by appropriately trained endoscopists in resource centers.1,2,3 Scanty data on the management of these lesions outside referral centers are reported in the literature.

Aims & Methods: Aim of present study is to evaluate the management of endoscopic resection of LCLs and intra-procedural complications in a real-life setting. In a prospective, multicenter, observational study in 20 centers, data from consecutive endoscopic resections of LCLs performed over a 6-month period were collected by a web-based database. All patients undergoing LCLs resection were enrolled at procedure-time and followed-up at 15 days for adverse events and at 6 months for endoscopic/histological recurrence.

References

*P<0.05

Conclusion: Our large retrospective study showed that oral preparation with PEG-ES gave significantly better results than phosphate enema, which gave acceptable results in only 67.5% of the patients. As a result of this study, PEG-ES is now the preferred option at our hospitals, if there is no contraindica-
complications, delayed bleeding occurred in 4.5% of the subjects, whereas perforation occurred in 1.5% (0.9% early and 0.6% delayed) of patients, 86.7% of whom were successfully managed endoscopically. At the moment, 6-months follow-up is available for 35% of the patients, with a positive endoscopic and/or histological recurrence documented in 22.8%.

Conclusion: The management of resection of LCLs varies widely. The incidence of intra-procedural bleeding correlates with polyp size and prophylactic maneuver, and its endoscopic management is successful in most of cases. Overall, complication rate is marginal and efficacy is good, even in a real-life setting.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1529 ENDOSCOPIC REMOVAL OF HIGH-RISK COLORECTAL ADENOMAS: SAFE AND EFFECTIVE?
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Introduction: The incidence and mortality of colorectal cancer (CRC) can be decreased trough the removal of precancerous adenomas. Endoscopic removal of polyps over 2 cm is considered a high-risk procedure both for complications and malignant transformation.

Aims & Methods: The aim of this study was to evaluate the outcome and complication rate after endoscopic removal of polyps over 2 cm. In this retrospective study clinical and demographic data of patients undergoing polypectomy due to colorectal adenomas between 2012 and 2017 were collected. Data of endoscopic procedures, complications of polypectomy and histological assessments of the removed polyp were obtained.

Results: Data of 100 patients (male/female: 58/42) was analyzed in the study. Follow-up of the 106 removed polyps proved to be pedunculated, 21 were sessile and 34 flat. Six patients had more than one large polyp (>2 cm). The locations of the removed polyps were rectum in 33, sigmoid colon in 38, coecum in 12 and other parts of the colon in 23 patients. In 65 cases, polyps were excised with endoscopic mucosal resection (EMR) or hybrid endoscopic submucosal dissection (ESD). In 41 cases snare was used to remove the polyps in one or more pieces. Based on histological findings 54 (50.9%) polyps were shown to be low-grade adenomas, 34 (32.07%) high-grade adenomas, 1 (0.9%) polyp was hyperplastic, and 17 (16.03%) proved to be malignant among which complete endoscopic resection was achieved in 9 patients (52.9%). Additional smaller polyps were found in 39 patients and a synchronous cancer in 7. During polypectomies 91 hemoclips were deployed to close suspected perforation (8 cases) to cease bleeding (10) or for prevention. Postpolypectomy syndrome developed in 8 cases. Second-look colonoscopy was required in 8 cases due to bleeding within a mean of 4 days after the first examination. Hemoclip insertion was needed in 5 cases and epinephrine injection in 1 case. The bleeding stopped spontaneously in 4 days after the first examination. Surgical intervention was not needed in any case.

Conclusion: Malignant transformation was revealed in 16% of the polyps over the size of 2 cm. Complete endoscopic removal of these polyps was successfully performed in half of the patients. Endoscopic removal of high-risk polyps is safe in experienced hand.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1530 WHAT IMPROVED AND WHAT REMAINS TO BE ACHIEVED IN ORDER TO COMPLY WITH THE NEW RECOMMENDATIONS OF POLYPECTOMY BY THE EUROPEAN SOCIETY OF GASTROINTESTINAL ENDOSCOPY
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Introduction: The choice of polypectomy technique differs according to regional preferences and availability. This year, in order to standardize the approach to this techniques, the European Society of Gastrointestinal Endoscopy (ESGE) published recommendations for colorectal polypectomy and endoscopic mucosal resection (EMR).

Aims & Methods: We aimed to evaluate the recent evolution of the adherence to the recommendations of colorectal polypectomy and EMR at a tertiary center. We conducted a univariate analysis of polypectomy and mucosectomy techniques performed consecutively between January and June of 2011 and 2016 at a tertiary center. According to the recommendations, the excision of sessile and flat polyps is considered adequate when performed with cold biopsy forceps or cold snare for polyps ≤3 mm, cold snare if 4-9 mm, or cold hot snare if 10-19 mm and EMR if ≥20 mm. Polypectomy of pedunculated polyps is considered adequate when performed with a diathermic loop in polyps ≤20 mm. Polypectomy of pedunculated polyps is considered adequate when performed with a diathermic loop in polyps ≤20 mm. Polypectomy of pedunculated polyps is considered adequate when performed with a diathermic loop in polyps ≤20 mm.

Results: We included 1721 endoscopic procedures of polypectomy and EMR, corresponding to 896 patients (64.2% men; mean age = 64±6.11.0 years). 1381 (80.2%) sessile polyps, 153 (8.9%) flat lesions and 187 (20.9%) pedunculated polyps were identified, with a mean size of 7.9±7.0 mm. Regarding sessile and flat polyps, one of the recommended excision techniques was performed in: 84.6% (n=270) of ≤3 mm polyps (75.7% in 2011 vs. 95.8% in 2016; p < 0.001); 22.2% (n=109) of 4-5 mm polyps (12.5% vs. 36.5%; p < 0.001); 13.4% (n=59) of 6-9 mm polyps (5.4% vs. 23.8%; p < 0.001); 100% (n=206) of 10-19 mm polyps and 100% (n=88) of ≥20 mm lesions. For pedunculated polyps, the recommended technique was adequate in: 99.3% (n=134) of polyps of size <20 mm (100% vs. 97.6%; p > 0.05) and in 84.6% (n=44) of those ≥20 mm (82.6% vs. 86.2%; p > 0.05). Overall, 52.3% (n=900) of endoscopic procedures of polypectomy or EMR were performed as recommended; 42.7% (n=410) in 2011 vs. 64.5% (n=490) in 2016; p < 0.001.

Conclusion: Even before publication of the European recommendations, there has already been an increase in the proportion of polypectomies performed adequately in the different groups of lesions. There is still a need to adjust clinical practice in some subgroups, especially in polyps of size 4-9 mm, in order to strictly comply with the recommendations.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
that precludes conducting a mucosal incision far from tumor margins. A careful endoscopic follow-up is mandatory to detect residual neoplasms.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1532 SELF-EXPANDABLE METALLIC STENT IN THE DAILY PRACTICE OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF MALIGNANT NON-PEDUNCULATED COLORECTAL LESIONS

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Introduction: Endoscopic submucosal dissection (ESD) of malignant colorectal neoplasms over 2 cm in diameter has been gaining acceptance in treatment of early colorectal cancer. The highest recurrence rate following wide-field endoscopic mucosal resection (W-EMR) for advanced colorectal neoplasia is infrequent: results of risk factors in 1008 cases from the Australian Colonic EMDR (ACE) study. Gut. 2015 Jan;64(1):57–65.

References

P1533 RISK FACTORS FOR ADENOMA RECURRENT AFTER ENDOSCOPIC MUCOSAL RESECTION OF LARGE COLORECTAL POLYPS

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Introduction: Endoscopic mucosal resection (EMR) has been shown to be a safe and effective technique for removal of large colorectal adenomas. However, local adenoma recurrence remains a significant limitation, with prior published data describing recurrence rates of 10% to 30% post EMR.

Aims & Methods: This study aimed to evaluate the outcomes of EMR for large colorectal adenomas and identify the risk factors for adenoma recurrence. We did a comparative subgroup analysis by Long-Rank test were carried out to detect the impact of real times with patients of the same risk. An adjustment for baseline covariates (high-grade dysplasia, villous component) by Cox analysis was also performed.

Results: The real follow-up times in ≥3 adenomas (n = 853, 73.16%) and ≥ lade- nona ≥ 10 mm (n = 779, 66.81%) were 38.54 ± 11.57 and 38.66 ± 11.68 months. The risk of advanced lesions were 0.26%, 1.46%, 2.83%, 9.09% and 10.38% (p = 0.046). The most important increase was at 3–4 years (p = 0.52/month). The proportion of advanced lesions within 1–2 adenomas and ≥3 adenomas subgroups at 48 months was 5.43% and 10.43% (p = 0.001), with no differences in small adenomas ≤10 mm (p = 0.478).

Conclusion: The risk of advanced lesions in high-risk patients increased significantly at 36–60 months after baseline colonoscopy, being more important in ≥3 adenomas subgroup. There were no differences for 1–3 years interval.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1534 THE INFLUENCE OF THE REAL FOLLOW-UP TIMES DURING A COLORECTAL CANCER SCREENING PROGRAM IN DAILY PRACTICE

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Introduction: European colorectal screening guidelines have modified the follow-up interval times based on baseline colonoscopy findings in recent years. In addition, the waiting list and individual conditions may modify the real follow-up times and this could impact in advanced adenoma detection rate in follow-up and patients outcome.

Aims & Methods: The aim of the present study was to comparatively analyse the risk of advanced lesions (advanced adenoma, invasive cancer) in high-risk patients included in a colorectal cancer screening program with different real follow-up times. One-thousand one-hundred and sixty-six patients (mean age: 60.66 ± 5.86 years, 69.1% men) who underwent a baseline colonoscopy with ≥3 adenomas and/or ≥10 mm between 2007–2012 were included. A Kaplan-Meier regression and a comparative subgroup analysis by Long-Rank test were carried out to detect the impact of real times with patients of the same risk. An adjustment for baseline covariates (high-grade dysplasia, villous component) by Cox analysis was also performed.

Results: The real follow-up times in ≥3 adenomas (n = 853, 73.16%) and ≥ lade- nona ≥ 10 mm (n = 779, 66.81%) were 38.54 ± 11.57 and 38.66 ± 11.68 months. The risk of advanced lesions were 0.26%, 1.46%, 2.83%, 9.09% and 10.38% (p = 0.046). The most important increase was at 3–4 years (p = 0.52/month). The proportion of advanced lesions within 1–2 adenomas and ≥3 adenomas subgroups at 48 months was 5.43% and 10.43% (p = 0.001), with no differences in small adenomas ≤10 mm (p = 0.478).

Conclusion: The risk of advanced lesions in high-risk patients increased significantly at 36–60 months after baseline colonoscopy, being more important in ≥3 adenomas subgroup. There were no differences for 1–3 years interval.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1535 CLINICAL OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION OF MALIGNANT NON-PEDUNCULATED COLORECTAL LESIONS

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Introduction: Conventional endoscopic resection, such as snare polypectomy and endoscopic mucosa resection (EMR) of benign polyps in colon and rectum reduces colorectal cancer (CRC) incidence and mortality but the role of endoscopic colorectal ESD in the management between EMR and December 2016. Resected lesions larger than 20 mm in diameter with at least 3 months follow up were included. Patients referred for surgery were excluded.

Results: During the study period, 201 colorectal lesions ≥20 mm in size were removed (95.2% with associated invasion). Mean lesion size was 35 mm and 137 (68.2%) were located in the rectum and left colon. 66 lesions (32.8%) were larger than 40 mm in diameter. Piecemeal resection was performed in 171 lesions (85.1%). Local adenoma recurrence occurred in 44 cases (21.9%) after a mean time of follow up of 7.6 months, and the majority was managed with polyectomy or new EMR. The cumulative risk of adenoma recurrence was 7.5% at 3 months, 15.5% at 6 months and 17.1% at 12 months. In the multivariate analysis, the variables associated with a high risk of recurrence were lesions ≥40 mm in size (p < 0.0001) and intra-procedural bleeding (p = 0.029). The recurrence rate was higher in the patients treated with argon plasma coagulation (p = 0.046).

Conclusion: After EMR of large colorectal adenomas, local recurrence rate was 21.9%. The risk factors for adenoma recurrence include lesions ≥40 mm and intra-procedural bleeding. Argon plasma coagulation was not associated with lower recurrence rate.

Disclosure of Interest: All authors have declared no conflicts of interest.

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254 patients that underwent colorectal ESD at the endoscopy unit at Skane University Hospital in Malmo¨, Sweden from January 2013 to December 2016. Indications for ESD were flat and sessile lesions larger than 20 mm in diameter with low or high graded dysplasia (251 cases). Moreover, three patients with known colorectal adenocarcinoma underwent ESD due to significant morbidity excluding surgery. Lesions were identified and included 29 cases of histologically verified submucosal invasive CRC in this study.

Results: This study included 29 patients with median age of 69 years (range 44–89 years). Median tumour size was 40 mm, ranging from 20–70 mm. Tumours were either flat (Paris classification H1, 6 cases), sessile (Paris classification 1s, 19 cases) or a combination of flat and sessile (4 cases). Half of the lesions were located in the rectum and half in the colon. En bloc resection was achieved in 24 cases (83%), piecemeal resection in 4 cases (14%) and ESD was incomplete in one case (4%). Complete the procedure was 89 min (range 594 min). Macroscopic complete resection was obtained in 26 cases (90%). R0 resection was found in 20 specimen (69%), RX was found in 3 cases (10%) and R1 was found in 5 cases (17%). Lymphovascular involvement was seen in 6 cases (21%). The mean number of sessions was as follows: Sm1: 15, Sm2: 7, Sm3: 7. In total four suspected immediate perforations occurred, three of these were managed conservatively (clips, fasting and antibiotics) and in one case, ESD was aborted and the patient was taken to emergency surgery. Pathological assessment of the resected sigmoid segment revealed T3N0. No acute significant bleeding occurred during the procedures. One patient sought emergency care 12 days after the procedure with rectal bleeding, no colonoscopy was performed to determine the site of bleeding. Five patients underwent additional surgery since the pathological report stated that the resection was R1. Tumour residue was only found in one of the five resected specimens. 18 patients have undergone endoscopic follow up, to this date without any sign of recurrence. Two patients await surgery and three patients await endoscopic follow up, to this date without any sign of recurrence.

Conclusion: We herein present our findings on performing ESD on 29 patients with early CRC. Our results indicate that colorectal ESD is a safe and effective treatment in meticulously chosen patients even with malignant lesions. Further studies with longer follow up is needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1536 ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) VS HYBRID DISSECTION: WHICH TECHNIQUE TO FAVOR IN LARGE COLORECTAL LESIONS?

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Introduction: Large colorectal lesions (> 20 mm) can be removed endoscopically by endoscopic mucosal resection (EMR), often in a piecemeal fashion resulting in low en bloc and radical (R) resection rates. In this context, submucosal dissection (ESD) allows en bloc resection whatever the size, but still remains technically difficult and time consuming. A hybrid endoscopic technique has been developed, called simplified or hybrid dissection. The aim of our study was to evaluate the different complications of endoscopic submucosal dissection by hybrid technique compared to classical endoscopic submucosal dissection.

Aims & Methods: Our study was carried out from January 2013 to June 2016 from a prospective database. The 40 lesions removed by hybrid technique were compared to the 103 lesions removed by classical ESD. The hybrid technique was performed as follow: submucosal injection around the lesion of macromolecules, circumferential mucosal incision and submucosal dissection using the tip of a single-strand snare by endo-cut Q mode, central submucosal injection of the lesion and final resection with the single-strand snare, if possible in one-bloc. Patient characteristics, tumor location and size, dissection characteristics, \"block\" resection rate, R0 resection rate (healthy margins), procedure and hospitalization time, and complications were identified and compared with the so-called \"classical\" ESD technique.

Results: Lesions were more frequently located in the colon (vs rectum) in the hybrid dissection group compared to the ESD group (72.5% versus 26.8%, p < 0.001). The lesions were type IIc according to Paris classification in 10% of the hybrid dissection group compared to 24% in the ESD group (p < 0.001). The mean size of the lesion was lower in the hybrid dissection group than in the ESD group (32.4 mm ± 13 mm compared to 54.4 mm ± 26.7 mm, p < 0.001). An en bloc resection was performed in 52.5% and 84.4% in the hybrid dissection and ESD group, respectively (p < 0.001). The procedure time (including general anesthesia time) was lower in the hybrid dissection group compared to the ESD group (105 min ± 62 min vs 191 min ± 73 min, p < 0.001, respectively). The hospitalization time was lower in the hybrid dissection group compared to the ESD group (1.1 days ± 1.13 days vs 2.8 days ± 1.8 days, p < 0.001). R0 resection rates were lower in the hybrid dissection group than in the ESD group (47.5% and 61% respectively, p < 0.001). Hybrid dissection was performed for adenocarcinoma, adenoma with high grade dysplasia and adenoma with low grade dysplasia in 12.5%, 42.5% and 40%, respectively. The rate of adenocarcinoma was lower compared to the ESD group (1.1 days vs. 2.8 days, p < 0.001, respectively). The lesions were type IIc according to Paris classification in 10% of the hybrid dissection group compared to 24% in the ESD group (p < 0.001). In case of complication, there was no need of surgical treatment in the hybrid dissection group, but was needed in one patient in the ESD group.

Conclusion: Hybrid dissection is less effective in terms of en bloc resection of large colorectal tumors. Classical endoscopic submucosal resection should be preferred, especially in case of suspected adenocarcinoma despite longer procedure and hospitalisation time.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1537 TRENDS IN STATISTICS REGARDING EFFECTIVE ELECTRIC ERCP PROCEDURES IN THE VENETO REGION: A RETROSPECTIVE STUDY BASED ON ADMINISTRATIVE DATABASES

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Introduction: Since its introduction in 1968, Endoscopic retrograde cholangio-
pancreatography (ERCP) has become a cornerstone of the diagnostic and therapeu-
tic use to diagnosed and to treat conditions associated to the pancreatico-biliary system. It is nevertheless associated to the highest risk of complications of all routine endoscopic procedures. It is important to have a thorough understanding of the potential complications and the adverse events that may be associated to ERCP procedures so that these may be managed appropriately should they occur. The aim of this study was to examine the trends in ERCP usage here in the Veneto Region (Northeastern Italian area) and, in particular, the complications and mortality rate associated to it.

Aims & Methods: Utilizing an anonymous database of hospital discharge records referring to the period between 2007 and 2015, a retrospective study was carried out to examine the complications associated to ERCP. All of the elective hospitalizations for gallstones in the bili duct during which the procedure was carried out within two days of being hospitalized were examined. Hospitalizations for neoplasms were not considered. The study considered the onset of complications or death as outcome indicators as well as the patients' post-procedure status; the patients who had undergone surgery (e.g. cholecystectomy) were excluded from our analysis; the associations between the type of hospital where the patients were being assisted both with regard to the type of organization (Hub or Spoke model) and the type of management (public/private) were also evaluated.

Results: A total of 3,136 admissions out of total of 14,626 hospital days (SD: 4.6 ± 5.8 days) were identified in a total of 40 hospitals, 6 (15%) of which presented sex ratio were provided with data and the mean age, which was equal to 68.3 ± 14.2 (range 6–98 yrs), was higher in the females (69.1 ± 14.9 vs. 67.5 ± 13.5); significant differences during the period examined were not noted. A total of 212 complications (6.8%) were registered: these included acute pancreatitis (4.5%), cholangitis (1.3%), sepsis (0.4%), acute cholecystitis (0.3%), cardiopulmonary complications (0.2%), perforations and hemorrhage (0.2%). The complications that presented, which were significantly higher in the female sex (7.3% vs. 6.2%; p < 0.05), besides a greater average hospital stay in those suffering (110 ± 13.9 vs. 42.2 ± 16.3 days). The complications, including the complications, were carried out and no differences linked to their characteristics. The stratification of complications according to the type of hospital (range 2–17%) did not change over the period examined.

Conclusion: Study findings uncovered that pancreatitis was the most common post-procedure ERCP complication in the patients studied; the total complication rate was in line with that reported in the literature. That result and the fact that no correlation was found between the type and percent of complications and the type of hospital can be attributed to the effective regional hospital organization characterized by a capillary network of specialists capable of performing complex endoscopic procedures throughout the region limiting the need for transferring patients from one hospital to another.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1538 EFFECT OF OBESITY, DIABETES AND DIABETES MELLITUS ON THE RISK OF POST-ERCP PANCREATITIS

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Introduction: Risk factors for post-endoscopic retrograde cholangiopancreato-
graphy pancreatitis (PEP) have been widely investigated. Nevertheless, studies focusing in metabolic conditions especially obesity, dyslipidemia and diabetes mellitus (DM) are still limited for the frequency of PEP based on the consensus criteria. The patients with obesity (Body mass index BMI ≥ 30 kg/m²), dyslipidemia (triglyceride > 2g/L or LDL-cholesterol > 1.6g/L) and DM (history of DM or fasting glucose level
Disclosure of Interest: external biliary fistulas, jaundice and accompanying cholangitis. In some cases, ERCP is a safe and effective way to manage biliary complications of biliary stenting due to stricture of the bile duct and two others required naso-occlusion balloon and/or Dormia basket. Nevertheless, two patients required with satisfactory results. Thus, hydatid membranes (36%) or daughter cysts cyst cavity (41%) and distal stenosis (3.3%). ES was then performed in all cases cholangiographic findings were: dilation of the biliary tract (21.3%) with filling papilla was impossible in 6 cases (8.9%) and the endoscopic sphincterotomy (ES) results did not indicate any need of injection of contrast to achieve a complete ductogram. In all ERCP performed for HHD whether before or after surgical treatment over a period. The rate of obesity, dyslipidemia and DM was 23.7%, 8.1% and 19.7% respectively. A PEP occurred in 13 patients with an overall incidence of 5.8%. The rate of PEP was 3.8% in patients with obesity, 11.1% in patients with dyslipidemia and 9.1% in patients with DM. Although PEP was more frequent in dyslipidemia (11.1% vs 5.3%) and DM (9.1% vs 5.3%) groups, results did not rich a statistical significance (p = 0.30, p = 0.30 respectively). This could be explained by the protective effect of other hand, PEP was less frequent in the obesity group (3.8% vs 6.9%) but there was no statistical significance p = 0.28.

Conclusion: In our study, metabolic conditions were not associated with an increased risk of PEP. It seems not to be wise to evaluate and two others required conditions in larger prospective studies since the expanded prevalence of metabolic syn-drome in general population.

Disclosure of Interest: All authors have declared no conflicts of interest.

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A514 USE OF MICROCATHERETERS IN ECHOENDOSCOPY-GUIDED BILIOPANCREATIC RENDEZVOUS–INITIAL EXPERIENCE
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Background: The need of injection of contrast to achieve a complete ductogram during endoscopic sphincterotomy for pancreaticobiliary strictures is a technically demanding procedure, and the intraductal manipulation of the guidewire remains the most challenging step. Passing the guidewire through the needle may cause its fragmentation on the sharp metallic bevel. We have described the method of using a microcatherer for EUS-guided rendezvous, which allows easier handling and exchange of the guidewire, while avoiding both the risk of fragmentation and the need of injection of contrast to achieve a complete ductogram.

Aims & Methods: We aimed to evaluate the early experience of the microcathereter method in EUS-guided rendezvous procedures in the biliary and pancreatic ducts. During EUS-guided biliary or pancreatic rendezvous, initial puncture of the duct of interest was attempted with a 19G needle without styllet and

Disclosure of Interest: All authors have declared no conflicts of interest.

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cebo in the prevention of post-ERCP pancreatitis: a multicenter rando-
previously flushed with contrast. A 0.025” guidewire was then inserted through the needle into the duct and advanced anterogradely to the papilla. If further manipulation was necessary to enter the duodenum, movements were performed with caution in order to avoid fragmentation of the guidewire. Whenever the passage through the papilla was not achieved or the guidewire movements were hazardous, we performed a microcatheter technique. After removing the needle, leaving the guidewire in situ, a 3F, 150 cm microcath- eter was inserted over the guidewire into the duct. Then, manipulation of the guidewire, guidewire exchange and contrast injection were performed according to the discretion of the endoscopist. We reviewed the cases of EUS-guided pancreatic or biliary rendezvous performed in our unit using microcatheters from September 2015 to March 2017. Technical success was considered when the rendezvous could be completed.

Results: Nine patients with previous unsuccessful manipulation of the guidewire with the needle during EUS-guided biliary or pancreatic rendezvous underwent a microcatheter-guided attempt on the same procedure. Pancreatic rendezvous was attempted in 3 cases (2 chronic pancreatitis, 2 pancreas divisum and 1 pancreatic cancer) and biliary rendezvous in the other 4 (3 biliary stenosis and 1 ampulla of Vater). Technical success was achieved in 7 patients (78%) with the microcatheter technique. Technical failure occurred in 1 patient with biliary stenosis in whom a EUS-guided hepatocystogastrostomy was performed in the same procedure and in 1 patient with chronic pancreatitis with symptomatic pancreatic duct stenosis. There were no adverse events after the procedure, irrespective of technical success.

Conclusion: In our series, using a microcatheter for the indwelling manipulation of the guidewire increases the EUS-guided rendezvous technical success without increasing the complication rate, irrespective of technical success.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
P1545 NEWLY DEVELOPED BASKET FOR DIGITAL Single-OPERATOR CHOLANGIOSCOPY FOR MANAGEMENT OF RESIDUAL STONES AFTER LITHOTRIPSY


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Introduction: Detection of residual or fragmented stones after lithotripsy for retained common bile duct stones can be improved by digital, single-operator cholangioscopy (SOC) by high resolution imaging quality. However, therapeutic intervention for the removal of residual CBD stones is limited by lack of appropriate accessories.

Aims & Methods: We evaluated the role of SOC and newly developed dormia basket for the evaluation and removal of residual stones after lithotripsy. From March to October 2016, 34 patients who had undergone lithotripsy for retained CBD stones with no evidence of filling defects in occluded balloon cholangiography were included. After balloon cholangiography, the bile duct was evaluated by SOC for the complete evacuation of stones. Detected residual CBD stones were directly retrieved with newly developed dormia basket inserted into the working channel of SOC. The incidence of residual stones detected by SOC, and the success rate of residual stone retrieval under SOC were investigated.

Results: SOC was successfully performed in all patients. Of these, 11 patients (32.4%) had residual CBD stones. The residual stones were successfully removed in 10 patients (90.9%) by dormia basket under SOC. (84.6%) except residual stones of grade 1, bile duct. There were no complications associated with SOC or direct stone removal.

Conclusion: Digital SOC combined with newly developed dormia basket is useful for the detection and extraction of residual stones after lithotripsy for retained CBD stones by evaluating under SOC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1546 ASSOCIATION BETWEEN PREDICTIVE FACTORS AND RADIATION DOSE DURING ENDOSCOPIC RETROGRADE CHolangiopancreatography

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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) relies on the use of ionizing radiation in the form of fluoroscopy. Because use of fluoroscopy has positive relationship with radiation exposure, it makes a risk of the development of cancer and other radiation toxicity. The increasing exposure of patients and endoscopists to radiation is concerning.

Aims & Methods: The aim of our study was to evaluate of predictive factors of radiation exposure to the patients and endoscopists during procedure as determined by radiation dose in dose area product (DAP), absorbed dose (AD) and fluoroscopy time. And we correlated them with age, sex, body mass index, diagnosis, duration of procedure, procedure name and procedure complexity.

Results: As a result of analysis of the 892 ERCPs performed during 4 years, the mean duration of fluoroscopy time was 5.52 mins (95% CI, 5.15–5.93). Mean radiation duration were as follows: CBD stones (n = 511, 5.76 mins); malignant stenosis of bile duct (n = 189, 5.78 mins); pancreatic disease (n = 95, 5.28 mins); benign stenosis of bile duct (n = 51, 5.32 mins); and periampullary stenosis (n = 30, 5.84 mins). Multivariate analysis revealed that prolonged duration of fluoroscopy time was related with specific factors of patient included age, BMI, diagnosis and procedure complexity (all p < 0.05). Among the parameters, procedure complexity was the most significant relation with radiation dose. In addition, two more procedures performed during ERCP and mechanical lithotripsy (all p < 0.05).

Conclusion: ERCPs are associated with significantly higher radiation exposure to patients and endoscopists. The endoscopic retrograde cholangiopancreatography registry is to monitor the radiation dose at the national level and will help in quality improvement. Efficacy, safety and impact on different pancreatobiliary disorders will be also measurable.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1547 DEVELOPMENT OF AN ERCP REGISTRY FOR QUALITY CONTROL AND BenchmarkING

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Introduction: To obtain representative information about invasive endoscopic procedures is a principal goal to monitor efficacy and safety. A web-based, online central registry can serve this aim allowing structured data collection and analysis on a national and international level and will help in quality improvement. Efficacy, safety and impact of the specific procedure will be measured. The indication of ERCP is to observe long term outcome. Four patients (4%) died during this period, but only 1 death was related to the procedure, caused by unresolved cholangitis. The indcication of ERCP were the following: bile duct disorder based on laboratory or imaging data was in 60.7%, jaundice in 31.8%, cholangitis in 16%, acute biliary pancreatitis in 5%, pancreatic disorder in 3%. The difficulty of procedures was evaluated: grade 1–22%, grade 2–45%, grade 3–30%, grade 4–3%. Fifty-nine procedures were performed in patients with newly operated gall-bladder and 100; Billroth I–10.7% (n = 46, 4.89 mins). Multivariate analysis revealed that prolonged duration of fluoroscopy time was related with specific factors of patient included age, BMI, diagnosis and procedure complexity (all p < 0.05). Among the parameters, procedure complexity was the most significant relation with radiation dose. In addition, two more procedures performed during ERCP and mechanical lithotripsy (all p < 0.05).

Conclusion: ERCPs are associated with significantly higher radiation exposure to patients and endoscopists. The specific procedure will be also measurable.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1548 DOUBLE-BALLON ENTEROSCOPY FOR ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAHY IN PATIENTS WITH SURGICALLY ALTERED UPPER GASTROINTESTINAL TRACT

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Introduction: Double-balloon enteroscopy-assisted endoscopic retrograde cholangiopancreatography or DBE-ERCp allows access to the biliary ducts of patients with surgically altered upper gastrointestinal tract. We studied the feasibility and efficacy of DBE-ERCp at our institution.

Aims & Methods: This is a retrospective study of all patients with surgically altered GI anatomy who underwent DBE-ERCp at our institution between February 2011 and March 2017. The primary endpoint was the global success rate of DBE-ERCp. The secondary endpoints were (1) the success rate of enteroscopy defined as reaching the desired postsurgical anatomic target, (2) the diagnostic success rate defined as successful cannulation of the native papilla or requiring surgical and/or radiological therapy(G2), regarding recurrence of biliopancreatic pathology, major complications and post-procedure 30-days mortality.

Results: A total of 153 ERCP procedures were carried out in 103 patients with SMGA (mean age:75.4±11.3years, men:80.6%). The breakdown of surgical pathology was 62.1% Roux-en-Y (n = 80), Billroth II-10.7%(n = 11); Roux-en-Y-8.7%(n = 9); post-duodenopancreactectomy-2; gastric sleeve-1. The predominant indication of ERCP was the use of balloon-assisted enteroscopy. In 23 patients with no endoscopic technical/therapeutic success, surgical (n = 14) or the endoscopic approach (n = 11) was performed. Comparing G1 vs G2, there were no differences in the recurrence rate of biliopancreatic disease (21.5% vs 36.0%; p = 0.205) or mortality (0% vs 8.0%; p = 1.000). However, G2 group had a high rate of major complications (12.8% vs 6.0%; p = 0.016).

Conclusion: The technical and therapeutic success rates of ERCP in patients with SMGA were 62.1% and 93.7%, respectively (lower in Roux-en-Y). Given the increased number of patients with SMGA and the high rate of complications associated with radiological and surgical therapies, it is essential to optimize ERCP technique rather than conventional endoscopy/duodenoscopy, including the use of balloon-assisted enteroscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1549 ASSOCIATION BETWEEN PREDICTIVE FACTORS AND RADIATION DOSE DURING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAHY

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Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) relies on the use of ionizing radiation in the form of fluoroscopy. Because use of fluoroscopy has positive relationship with radiation exposure, it makes a risk of the development of cancer and other radiation toxicity. The increasing exposure of patients and endoscopists to radiation is concerning.

Aims & Methods: The aim of our study was to evaluate of predictive factors of radiation exposure to the patients and endoscopists during procedure as determined by radiation dose in dose area product (DAP), absorbed dose (AD) and fluoroscopy time. And we correlated them with age, sex, body mass index, diagnosis, duration of procedure, procedure name and procedure complexity.

Results: As a result of analysis of the 892 ERCPs performed during 4 years, the mean duration of fluoroscopy time was 5.52 mins (95% CI, 5.15–5.93). Mean radiation duration were as follows: CBD stones (n = 511, 5.76 mins); malignant stenosis of bile duct (n = 189, 5.78 mins); pancreatic disease (n = 95, 5.28 mins); benign stenosis of bile duct (n = 51, 5.32 mins); and periampullary stenosis (n = 30, 5.84 mins). Multivariate analysis revealed that prolonged duration of fluoroscopy time was related with specific factors of patient included age, BMI, diagnosis and procedure complexity (all p < 0.05). Among the parameters, procedure complexity was the most significant relation with radiation dose. In addition, two more procedures performed during ERCP and mechanical lithotripsy (all p < 0.05).

Conclusion: ERCPs are associated with significantly higher radiation exposure to patients and endoscopists. The specific procedure will be also measurable.
anastomosis, and (3) the therapeutic success rate. We used a 2.2-mm DBE with a 2.0-mm opening channel (EN-450 T5, or EN850 Fujinon inc Saitama Japan).

**Results:** A total of 12 patients (sex ratio 1:1) with a mean age of 65 [47–82] underwent 14 DBE-ERCP. 7 patients had Roux-en-Y gastro-jejunostomy with a biliary stent, 4 patients had Roux-en-Y with a native papilla, and 1 patient had a Billroth II gastric bypass. Enteroscopy success rate was 93% (13/14 procedures). The diagnostic success rate was 85% (11/13 procedures) with 4/5 of native papillae. Therapeutic interventions including sphincterotomy (n = 4), biliary stone extraction (n = 4) and biliary dilation (n = 2) were needed in 8/11 procedures and their success rate was 100%. The global success rate of DBE-ERCP was 78% (11/14 procedures). Our results were comparable to those of the literature (global success rate of 82%). The only complication was one case of superficial intestinal lacerations without perforation (complication rate 7%).

**Conclusion:** DBE-ERCP in patients with surgically altered UI GI anatomy is a safe and efficient procedure with a global success rate of 78%. Using shorter enteroscopes with wider operating channel in the future might improve the success rate of this technique.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


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**P1550 TRANSPANCYEREC PHINTOTOMY (TPS) FOR DIFFICULT BILIARY CANNULATION: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Introduction:** Biliary cannulation may be difficult in 10–15% of patients (1) and needle-knife sphincterotomy is more often used as a rescue treatment. A more recent study showed that difficult cases is transpancreatic sphincterotomy. Both situations are well known as post-ERCP pancreatitis risk factor (2). To best of our knowledge only few studies compared success rate and adverse events in these techniques (3-7).

**Aims & Methods:** We aimed to compare the efficacy and safety of NKS comparing to TPS in difficult biliary cannulation We conducted a bibliographic search using PUBMED, EMBASE including 2 RCTS and 4 non randomized trials from January 2000 to December 2016. OR using the Manthel-Haenszel method was used for dichotomous variables. Quantitative synthesis was performed using Review Manager version 5.0. Primary outcome was success rate. Secondary outcomes were rate of overall complications, and pancreatitis. Clinical heterogeneity was assessed by I2 value, where a value exceeding 50% indicated of heterogeneity. A random effect model was used in case of heterogeneity.

**Results:** Success rate was higher in NKS group compared to TPS [OR 2.98 (95% CI 1.01–8.85, p = 0.05). Complications and risk of pancreatitis was similar in both group (OR 0.74 (95% CI 0.51–1.00, p = 0.13; OR 1.09 (95% CI 0.68–1.75 p = 0.71)].

**Conclusion:** NKS is associated with higher success rate with equal risk of complication and pancreatitis risk compared to TPS. Further and well design RCTs are needed before a firm conclusion could be made.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

CBD stones

Disclosure of Interest:

15 mm was balloon dilator combined with retrieval balloon. Intermediate Conclusion: (P choledocholithiasis with a mean stone diameter of 7.1 mm and a mean CBD 67.2%. Overall, we had a success rate of 91.3% for endoscopic removal of META-ANALYSIS OF PROSPECTIVE CONTROLLED TRIALS

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meter of 12.4 mm. In Group 6 we included cases which required combined tech-
group was 90% for a mean stone diameter of 14.8 mm with a mean CBD diameter of 13.3 mm. By associating the basket with a retrieval balloon (Group 4) we obtained a 100% success rate of endoscopic removal for a mean stone diameter of 9.6 mm with a mean CBD diameter of 12.9 mm. We also analyzed the para-
meters of patients who underwent endoscopic extraction by using a retrieval balloon combined with balloon dilator (Group 5). The success rate in this group was 90% for a mean stone diameter of 14.8 mm with a mean CBD diameter of 12.4 mm. In Group 6 we included cases which required combined tech-
niques (=3). We observed a mean stone diameter of 9.4 mm with a mean CBD diameter of 13.8 mm in patients solved endoscopically, compared to those referred to surgery who had a mean stone diameter of 14.2 mm with a mean CBD diameter of 14.3 mm (P < 0.001). In this group the success rate was 67.2%. Overall, we had a success rate of 91.3% for endoscopic removal of choledocholithiasis with a mean stone diameter of 7.1 mm and a mean CBD diameter of 12.1 mm, compared to 3.8% of cases referred to surgery with a mean stone diameter of 13.6 mm and a mean CBD diameter of 14.3 mm (P < 0.001).

Conclusion: The most successful endoscopic method to remove large stones ≥15 mm was balloon dilator combined with retrieval balloon. Intermediate stones ≤7.5 mm could be successfully removed by using retrieval balloon or lithotriptor or a combination of basket with retrieval balloon ± balloon dilator. Most CBD stones <7 mm were successfully removed by using basket. In conclusion, any diameter >7 mm will most probably require more elaborate techniques.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P3552 DICLOFENAC AND INDOMETHACIN IN THE PREVENTION OF POST-ERCP PANCREATITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF PROSPECTIVE CONTROLLED TRIALS

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Introduction: Diclofenac and indomethacin are the most studied drugs for preventing ERCP pancreatitis (PEP), but their use is controversial.

Aims & Methods: Our aim was to evaluate all trials published in full text and studied efficacy of diclofenac or indomethacin prospective controlled with placebo or non-treatment for the prevention of PEP in adult patients undergoing ERCP. Systematic search of databases (PubMed, Scopus, Web of Science, Cochrane) for relevant studies published from inception to 30 June 2016.

Results: Our meta-analysis of 4741 patients from 17 trials showed that diclofenac or indomethacin significantly decreased the risk ratio (RR) of PEP to 0.60 (95% confidence interval:0.46-0.78, P = 0.0001), number needed to treat (NNT) was 20, and the reduction of RR of moderate to severe PEP was 0.68 (95% CI 0.43–0.97, P = 0.0339). The efficacy of indomethacin compared to diclofenac was similar (P = 0.98). The efficacy of indomethacin or diclofenac did not differ according to timing (P = 0.99) nor between patients with average-risk and high-risk PEP (P ≥0.0523). The effect of intra-rectal administration of indomethacine or diclofenac was not significant (P = 0.1507), but rectal route was very effective (P = 0.0005) with a NNT of 19. The administration of indomethacin or diclofenac was avoided in patients with renal failure. Substantial adverse events were not detected.

Conclusion: The use of rectally administered inexpensive and safe diclofenac or indomethacin before or closely after ERCP is recommended in every patient (without renal failure) undergoing ERCP.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P5553 RECTAL DICLOFENAC AND PANCREATITIS AFTER ENDOSCOPIC RETROGRADE CHOLANGIODUODENOSCOPY

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Introduction: Rectal diclofenac or indomethacin reduces the risk of pancreatitis after endoscopic retrograde choledangiopancreatography (ERCP). Most studies of its efficacy included high-risk cohorts and excluded low-risk patients. We investigated the potential of rectal diclofenac to prevent post-ERCP pancreatitis (PEP) in a variety of patients.

Aims & Methods: A cohort of 1534 ERCPs performed at the Hospital Clinico of Valladolid between 2009 and July 2016 was collected. The median age of the patients was 75 years old (between 1 and 102 years). 54% were male and 45.9% female. There were 93 procedures in which cannulation of the desired pathway was not achieved but the papilla had been manipulated so they are patients who were not allocated to the study. There were 36 patients with renal failure. Substantial adverse events were not detected. There were differences in the number of sphincterotomies in which it was greater in the Diclofenac group (p=0.004). There was also a greater number of Wirsung cannulations in the group treated with Diclofenac (p=0.004). There were a total of 47 PEP (3.1%), being 78.3% mild acute pancreatitis. Taken as a whole the patients had no difference in the number of PEP between the two groups, since in those treated with Diclofenac there was 3.4% and in the non-treated patients 2.8%.

When selecting only patients with de novo sphincterotomy, there was no difference between the number of PEP between the two groups being 4.4% in those treated with Diclofenac versus 4% in the untreated patients. In those patients who were cannulated Wirsung, an incidence of PEP of 8.2% was observed in the group treated with Diclofenac, compared to 3.8% in the non-treated group (p=0.006). There were no differences between those treated with Wirsung’s prosthesis and those not treated in both groups. There was no PEP in patients treated with pancreatic prosthesis.

There was a higher incidence of PEP in women in both groups and a trend towards greater number of PEP among those treated with Diclofenac, although without statistical significance. There was also a greater number of PEP in patients under 40 years of age treated with Diclofenac compared to those not treated with 14.3% versus 7.1% (p=0.024).

No differences were found between the groups treated and not treated with Diclofenac when crossing with sphincter dysfunction of Oddi, previous PEP, number and sizes of choledocholithiasis and sizes with the appearance of PEP.
Conclusion: In this retrospective cohort study of patients undergoing ERCP that included low-risk patients, rectal diclofenac was not associated with a significant decrease in the absolute rate of pancreatitis. In our study, diclofenac decreases the impact of PEP in those patients who are cannulated the pancreas.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1555 A PILOT STUDY OF PROBE-BASED CONFOCAL LASER ENDOMICROSCOPY FOR COMPUTER-AIDED DIAGNOSIS OF BILE DUCT CANCER BY USING THE DEEP LEARNING TECHNOLOGY

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Introduction: The confocal laser endomicroscopy (CLE) is of two types, an endoscope-based CLE (eCLE), which is integrated in the tip of the endoscope, and a probe-based CLE (pCLE), which goes through the accessory channel of the endoscope. The biliary tract, which cannot be reached by using eCLE, is observable with pCLE by using cholangioscopy. pCLE has the advantage of obtaining a magnification image that is like taking a biopsy tissue specimen but noninvasively, without the interference of bleeding and mucous secretion. However, it is sometimes difficult because only few gastroenterologists can achieve the required level of diagnostic accuracy.

Aims & Methods: We developed a computer-aided diagnosis (CAD) system based on pCLE imaging using deep learning technology. The purpose of this study was to determine the usefulness of this CAD system for the diagnosis of bile duct cancer. We prepared the classifier of the extracted features of the bile duct cancer pCLE images by using the deep learning framework presented by Kyocera communication system Co. Ltd. Japan. The pCLE images by Cellvisio (Mauna Kea Technologies, France) were obtained through the SpyGlass DS (Boston Scientific Corporation, USA). Learning sets were constructed by using 49 images of normal area and 23 images of cancer lesion. The test sets of the pCLE images were constructed using 6 images of normal area and 14 images of cancer lesion separately from the learning set.

Results: The accuracy, sensitivity for cancer diagnosis, specificity, negative-predictive value, positive-predictive value of our CAD system by test set were 69.8%, 50%, 100%, 53.8%, and 100%, respectively. The 7 false-negative diagnoses, indicating a 1.0 probability, did not show signs of bile duct cancer at all. A constant diagnosis was possible while being extremely small. False-negative diagnoses with the appropriate learning sets.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1556 COMPARISON OF EUS-GUIDED FINE NEEDLE BIOPSY TECHNIQUES FOR CORE TISSUE ACQUISITION AND DIAGNOSTIC PERFORMANCES IN PANCREATIC SOLID LESIONS

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Introduction: Acquisition of core tissue in endoscopic ultrasound-guided tissue sampling (EUS-TS) is necessary for histologic diagnosis and immunohistochemical staining in the diagnosis of some solid mass lesions. Although recent studies revealed the superiority of core biopsy needle in the specimen adequacy, core biopsy still remains that which EUS-TS techniques would result in better acquisition of core tissue and diagnostic accuracy.

Aims & Methods: The aim of our study was to evaluate EUS-TS techniques with a ProCore needle using suction and slow pull suction for solid pancreatic lesions with the input of cytopathologists. Patients who referred to EUS-TS for pancreatic mass were enrolled. We performed EUS-guided fine needle biopsy (EUS-FNB) using a ProCore needle (Cook Medical, Limerick, Ireland) with two needle passes and applied each pass of different techniques (suction or slow pull suction) which were randomly allocated. EUS-TS specimens were evaluated by one experienced cytopathologist who was blinded to applied techniques. The acquisition of core tissue and diagnostic performances were compared between two techniques.

Results: From Aug. 2014 to Dec. 2016, 94 patients with pancreatic mass were enrolled and 12 patients were excluded due to no final diagnosis (n = 5), cystic lesion (n = 5) and loss of follow up after EUS-TS (n = 2). Finally, 82 patients (48 males; median age, 63 years) with 164 needle passes were included without technical failure and procedure-related adverse events. The median size of the lesion was 1.1 cm (range, 0.2–6.0 cm). There were 66 benign lesions and 14 benign lesions. Overall core tissue diagnosis and diagnostic accuracy was 84.8% (139/164) and 73.2% (120/164), respectively. There was no significant difference between suction and slow pull suction in the acquisition of core tissue (85.4% vs. 84.1%, p = 1.000) and diagnostic accuracy (72.0% vs. 74.4%, p = 0.592).

Conclusion: Although our study revealed no differences between EUS-TS techniques in the core tissue acquisition and diagnostic accuracy for pancreatic solid lesions, further prospective study including variable lesions and sizes of needle is needed to validate for optimal application and sequences of EUS-FNB techniques.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1560 EUS-GUIDED GALLBLADDER DRAINAGE FOR ACUTE CHOLECYSTITIS WITH A SILICONE-COVERED NITINOL SHORT FLARED ENDS STENT: A CASE SERIES

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Introduction: Gallbladder drainage, performed by EUS-guided positioning of specially designed fully covered metal stents, may be considered a valid option in patients with cholecystitis unfit for surgery. We describe the first case series of patients with diagnosis of acute cholecystitis treated conservatively using a silicone-covered nitinol stent with bilateral anchor flanges (NAGI-stent).

Aims & Methods: Our aim was to evaluate the feasibility and clinical impact of EUS-guided drainage with NAGI-stent in patients with acute cholecystitis unfit for surgery. Sixteen consecutive patients (9 males; mean age: 84 yeg; 94% with diagnosis acute cholecystitis according to Tokyo guidelines criteria, not suitable for surgical approach, were conservative treated and drained with EUS-guided short flared stents positioning. The procedure was performed in 2 tertiary endoscopy units, with the use of the pCLE technology. The 7 false-negative diagnoses, indicating a 1.0 probability, did not show signs of bile duct cancer at all. A constant diagnosis was possible while being extremely small.

Conclusion: Automated diagnosis of bile duct cancer can be achieved by using the deep learning technology of pCLE imaging. Our CAD system will be improved with the appropriate learning sets.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1561 EFFICIENCY COMPARISON BETWEEN 22 G VERSUS 25G NEEDLES DURING ENDOCOSCOPIC ULTRASOUND FINE NEEDLE ASPIRATION FOR SOLID PANCREATIC MASSES: A SYSTEMATIC REVIEW AND META-ANALYSIS BASED ON RCTS


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EUS-guided gallbladder drainage (EGBD) is gaining popularity as an alternative method for drainage of the gallbladder in patients suffering from acute cholecystitis that are at high-risk for cholecystectomy. However, the long-term outcomes and the learning curves of the procedure are uncertain.

Aims & Methods: We intended to compare the efficiency in the diagnosis of solid pancreatic lesions through the EUS-FNA with 25G and 22G needles. Studies were analyzed from five databases (Medline, Scopus, Cochrane, LILACS and CINAHL), without year or language restriction, using an extensive search strategy. Only randomized trials comparing 22G and 25G needles were included. Two independent reviewers went through the literature search and the results were analyzed by fixed and random effects. The diagnostic characteristics were calculated for a 95% confidence interval.

Results: 50 patients were recruited during the study period. The mean (S.D.) age was 57.9 (15.3) years and 31/50 (62%) were male. 50 patients were American Society of Anesthesiologists grading of ≥3 and the mean (S.D.) age-adjusted Charlson comorbidity index was 5.96 (1.82). The mean (S.D.) size of the gallbladder was 9.94 (9.83) cm. The hospital stay was 6.78 (5.36) days and follow-up was 48.58 (31.58) days. The overall technical success and clinical success rates were 96% and 86% respectively. Clinical success was not achieved in 7 patients as they suffered from 30-day mortality, 6 were due to uncontrolled sepsis and multi-organ failure even after adequate gallbladder drainage. 1 patient had a post-operative pneumonia resulting in death. 15 patients (30%) suffered from 30-day adverse events with 6 of these being attributable to the procedure. Maldeployment of the stent occurred in 6 patients and this was managed by placement of an additional metallic stent to bridge the gallbladder to the gastric or duodenal lumen. Recurrent cholecystitis occurred in 1 patient (2%) during follow-up.

When comparing the first 25 procedures to the subsequent 25 procedures, significant differences were observed in the procedural time [29.21 (10.65) vs 15.6 (1.66) minutes, P < 0.001], the need of an additional stent [24% vs 0%, P = 0.022] and hospital stay [7.76 (5.13) vs 5.75 (5.50) days, P = 0.099]. While no differences were observed in the technical and clinical success rates and adverse events.

Conclusion: EGBD is a safe and effective method for achieving gallbladder drainage in patients that are at high-risk for cholecystectomy. Performance of 25 procedures are required to gain competency in the procedure.

Disclosure of Interest: A.Y.B. Teoh: I am a Consultant for Boston Scientific, Taewoong Medical and Cook Medical Corporation.

All authors have declared no conflicts of interest.

References

P1563 TECHNICAL FEASIBILITY STUDY OF EUS-GUIDED HYDROGEL MICROPARTICLE INJECTION INTO THE PANCREATIC HEAD-DUODENAL WALL INTERFACE IN A CADAVERIC MODEL
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Introduction: Despite advances in radiotherapy for pancreatic cancer, local gastrointestinal (GI) toxicity still remains one of the major limitations to effective dose delivery and further dose escalation due to the close proximity of the GI wall to the pancreas, particularly in the head region. One potential method to reduce local GI toxicity would be to increase the physical distance between the head of the pancreas and the duodenal wall. A novel, injectable hydrogel, synthesized as iodinated polyethylene glycol microparticles, has been FDA-approved for use as a soft tissue fiducial marker. The hydrogel remains stable for 3 months and is absorbed by 7 months. To date, there has been no reports on the technical feasibility of endoscopic ultrasound (EUS)-guided hydrogel injection into the interface between the head of the pancreas and the duodenal wall to increase the peri-pancreatic space for the course of radiotherapy.

Aims & Methods: We aimed to evaluate the technical feasibility of EUS-guided hydrogel injection into the interface between the head of the pancreas and the duodenal wall in a cadaveric model. Baseline CT was performed on three unfixed cadaveric specimens. Using a linear EUS scope, the interface between the duodenal wall and the head of the pancreas was identified in a cadaveric model. A 19G needle was used to inject the hydrogel into the peri-pancreatic space with creation of a visible separation between the duodenal wall and the pancreatic parenchyma. The procedure was repeated along the length of the head and uncinate of the pancreas. CT was performed post procedure to confirm location and to measure the distance created between the duodenum and pancreas. Gross dissection of the pancreas and duodenum was performed to evaluate localization of the hydrogel.

Results: All three cadavers underwent successful EUS-guided injection of the hydrogel. Cadaver 1 received a total injection volume of 9 cc at the peri-pancreatic space along the head of the pancreas measuring 11.77 mm in maximal diameter. Cadaver 2 received a total injection volume of 27 cc with creation of peri-pancreatic space along the head and uncinate of the pancreas measuring 13.20 mm in maximal diameter. Cadaver 3 received a total injection volume of 10 cc with creation of peri-pancreatic space along the head of the pancreas measuring 12.89 mm in maximal diameter. The hydrogel was clearly visualized during EUS with hyperechoic echogenicity and on post-procedure CT images without any artifacts in all cases.

Conclusion: EUS-guided delivery of hydrogel is feasible and results in an increase in the peri-pancreatic space in a cadaveric model. The hydrogel is clearly visualized on EUS and CT without significant artifacts. Further studies are warranted to evaluate feasibility, effectiveness and safety in a clinical model.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1562 OUTCOMES AND LEARNING CURVES OF EUS-GUIDED GALLBLADDER DRAINAGE WITH LUMEN APPosing STENTS
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Introduction: EUS-guided gallbladder drainage (EGBD) is gaining popularity as an alternative method for drainage of the gallbladder in patients suffering from acute cholecystitis that are at high-risk for cholecystectomy. However, the long-term outcomes and the learning curves of the procedure are uncertain.

Aims & Methods: This was a retrospective review of all patients that received EGBD in the Prince of Wales Hospital between June 2012 to March 2017. All procedures were performed or supervised by a single operator. EGBD was performed in patients that are at high-risk for cholecystectomy and suffering from acute cholecystitis or on long-term cholecystostomy tube drainage. Outcome parameters included demographics, technical and clinical success, procedural characteristics, adverse events and follow-up duration.
P1564 EX-VIVO RADIOFREQUENCY ABLATION OF PORCINE LIVER: A PRELIMINARY STUDY OF EFFICACY OF A NEW SYSTEM

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Introduction: There are few published studies about the use of a novel radiofrequency (RF) system (EUSRA RF needle; VIVA RF generator; STARMed Co, Ltd; Koyang, Korea), with poor standardization of the procedure in terms of ablation powers and ablation times, resulting in great heterogeneity of the results.

Aims & Methods: To standardize the radiofrequency ablation (RFA) procedure using this new system performing ex-vivo tests on porcine liver in order to find the best ablation power and ablation time to produce the maximum size of coagulative necrosis at histological examination. The system consists in a radiofrequency generator delivering electric energy, a 19 Gauge needle (150 cm in length with a 10 mm monopolar electrode), a peristaltic pump (to perfuse the needle with chilled saline solution, maximizing the ablation volume without tissue charring), an isolating plate and a pedal to deliver RFA. Liver samples were treated at different ablation powers (10, 20, 30 and 40 Watts (W)); each ablation power was applied for a duration of 1, 3, 5, 7 and 15 minutes, according to Fibonacci escalation dose scheme, used in phase I studies. We registered macroscopically: the size (millimeters) of the global treated area and the size of the coagulative necrosis (millimeters) around the needle insertion point, and microscopic coagulative necrosis and surrounding zone.

Results: The lower ablation power (10 W) produced the maximum macroscopic ablation area, RFA application time at 10 W showed a good linear correlation with both the sizes of total macroscopic ablative area (R = 0.92) and central macroscopic ablative area (R = 0.89). Histologically the pathologist described two different injured zones by thermal effect: a central small and well-demarcated coagulative necrosis around the needle insertion point (A zone) with a maximum diameter of 4 millimeters and a surrounded larger area of “diaphanization” (B zone), showing mild signs of cellular alterations (cytoplasmic hypochromia) without cellular necrosis. A zone sizes didn’t change among different ablation times (mean size: 3.25 mm) whilst B zone diameter increased with the increase RF application at the fixed power of 10 W. At the microscopic analysis the pathologist didn’t see any difference in size of coagulative necrosis among the different ablation powers (R = 0.24).

Conclusion: With this new system is feasible and effective to produce very small areas of coagulative necrosis (millimeters) well-demarcated in respect to the surrounding parenchyma and could be useful, in the future, to treat, with multiple passes and higher precision, target lesions with a flexible needle. Moreover, the system can produce larger zones of mild cellular alterations at lower ablation powers (10 W), increasing with the increase of ablation times, but it needs future in-vivo animal studies in order to assess the evolution of these zones (evolving into fibrosis/necrosis recovery).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1565 THROMBOEMBOLIC DISEASE DIAGNOSED BY ENDOSONIC ULTRASOUND IN PancreATIC CANCER: A CASE SERIES

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Introduction: Malignant associated thromboembolic disease (TED) has a complex multifactorial pathogenesis. Tumor cells expresses procoagulant activity in response to the tumor. Thrombotic risk varies substantially according to cancer location and pancreatic cancer is one of the leading causes. The clinical spectrum includes migratory superficial thrombophlebitis, arterial thrombosis, deep venous thrombosis, portal vein thrombosis and disseminated intravascular coagulation. We want to assess the role of endoscopic ultrasound (EUS) diagnosing TED in pancreatic cancer patients.

Aims & Methods: We perform a retrospective review of all EUS cases for pancreatic cancer in two centers and assess all EUS images and findings.

Results: In a period of 6 months, a total of 55 EUS for pancreatic neoplasms were performed in two centers. TED was present in 5 patients (9%): 3 were male and the mean age was 70 (range, 46–81). In 1 patient the EUS indication was a large abdominal mass whose origin was not clear, in the remaining 4 the indication was the pancreatic neoplasm. In all of them was performed EUS with fine-needle aspiration (FNA). EUS identified a peripheral pulmonary embolism (PE) and 1 inferior vena cava thrombus (IVCT) with right atrial extension: 2 (3.6%) had previously been diagnosed by computed tomography (CT) but 3 (5.4%) were not previously known. In all these, CT confirmed diagnosis.

Table 1: Demographic, clinical and ultrasonographic characteristics of the patients.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Neoplasm</th>
<th>Cytology</th>
<th>Age (F/M)</th>
<th>Location</th>
<th>Area</th>
<th>Pathology</th>
<th>TED</th>
<th>Confirmation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Pancreatic</td>
<td>Adenocarcinoma</td>
<td>64</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Pancreatic</td>
<td>Adenocarcinoma</td>
<td>70</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Pancreatic</td>
<td>Adenocarcinoma</td>
<td>81</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Pancreatic</td>
<td>Adenocarcinoma</td>
<td>81</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Pancreatic</td>
<td>Adenocarcinoma</td>
<td>46</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: To the best of our knowledge, this is the first case series of EUS-based TED diagnosis in pancreatic cancer patients. This series underlines importance of a systematic, station approach EUS technique, namely in the mediastinum regardless the clinical indication. TED is a common complication of pancreatic cancer and has major therapeutic and prognostic implications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1566 THE ROLE OF EARLY ENDOSONIC ULTRASOUND FOLLOWING TRANSBILIARY ULTRASOUND IN PATIENTS WITH SUSPECTED BILIARY COLIC

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Introduction: Cholecodolithiasis is the most common cause of biliary pain, leading to diagnostic and therapeutic errors. Patients admitted by cholecystitis presents an incidence of cholecodolithiasis ranging from 8% to 20%. When the suspicion of cholecodolithiasis is confirmed, stones should be removed by ERCP, but this operative measurement is associated with high rates of adverse events as post-ERCP pancreatitis, bleeding or perforation. A correct diagnosis of cholecodolithiasis, before ERCP, is mandatory to decrease the operative risk and health care costs. Endoscopic ultrasound (EUS) has a high sensitivity and specificity in the diagnosis of CBD stones and could substitute other imaging modalities as CT-scan or MRCP, when indicated.

Aims & Methods: The aim of our study was to assess the role of early EUS (<48 hours), in patients undergoing US in emergency room for suspected biliary colic. We retrospectively evaluated all the patients arrived at first aid for suspected biliary colic, (i.e. right upper quadrant pain and/or epigastric region, associated with an elevation in serum ALT, AST, GGT, ALP, or total bilirubin, but in absence of amylase or lipase elevation). All patients, irrespective of the finding at the US, performed an EUS within 48 hours since admission. Data are presented as proportions with 95%-CI and mean±standard deviation (SD). Correlation between categorical variables was evaluated by computing the “phi” coefficient. We computed the number needed to misdiagnose, i.e. the number of patients who need to be tested in order for one to be misdiagnosed by the test, as 1/(1-diagnostic accuracy).

Results: Overall, from January 2016 to December 2016, 88 patients (56% female; mean age 64 ± 17 years) were admitted to our hospital for suspected biliary colic. All the analyses were run with R Studio (version 1.1.453). Further, US documented common bile duct (CBD) stones in 58 (65%) patients, CBD sludge in 4 (5%) subjects, whereas no cholecodolithiasis was found in 26 (30%) patients. At EUS examination CBD stones were found in 70 (80%) patients. Comparing US to EUS, US gave false negative results in 16 (18%) cases and false positive findings (i.e. identifying CBD stones not documented by EUS) in 8 (9%) patients. The two diagnostic procedures showed little correlation (phi = 0.289).

The number of
patients needed to be tested by US in order to provide an incorrect diagnosis was

liathisis. Retrograde biliary cannulation during ERCP was performed over the

Aims & Methods: We aimed to evaluate the efficacy and safety of EUS-guided rendezvous to diagnose malignancy.

References


P1567 BILIOPANCREATIC RADIOFREQUENCY ABLATION: COMPARISON OF THE THREE CURRENTLY AVAILABLE DEVICES IN A PIG MODEL

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Introduction: Three devices are currently available to perform radiofrequency ablation (RFA) of biliopancreatic lesions. From animal models, results are scarce.

Aims & Methods: Radiofrequency ablation was performed in four live pigs on the common bile duct and the liver parenchyma using an endobiliary probe (endoHBP), on the liver and pancreatic parenchyma using an RFA catheter through an echoendoscope and biopsy needle (EUS RFA) and using a needle-shaped endoscopic ultrasound (EUS-SSA) through an endobiliary probe. The EUS RFA ablation time and power were allowed to vary. The animals were sacrificed 2 hours after the procedure. Histopathological assessment of the maximal depth of thermal lesions was performed on three representative slides for each RFA implant.

Results: In the common bile duct, the depth of ablation ranged from 215 ± 47 (Power = 8 W, Time = 90 s) to 330 ± 43 µm (Power = 10 W, Time = 30 s), suggesting that power is the most important parameter in this location. Conversely, depth of ablation in the liver parenchyma using the endoHBP probe ranged from 947 ± 237 µm (Power = 10 W, Time = 30 s) to 1960 ± 20 µm (Power = 10w, Time = 180 s), suggesting that time is the most important parameter for RFA in the liver.

Conclusion: The EUS RFA probe in the liver parenchyma showed a tissue necrosis increasing with the power setting used, ranging from 1901 ± 451 µm (Power = 8 W, Time = 120 s) to 2457 ± 1047 µm (Power = 12 W, Time = 120 s). This was not observed in the pancreatic parenchyma, where tissue damage ranged from 3108 ± 373 (Power = 8, Time = 120 s) to 2305 ± 78 µm (Power = 12 W, Time = 15 s). The EUS-SSA ablation of the liver parenchyma resulted in tissue damage from 1573 ± 245 µm (Power = 30w, Time = 11 s) to 1545 ± 120 µm (Power = 70 W, Time = 9 s). In the pancreas, ablation depth ranged from 3616 ± 475 µm (Power = 30w, Time = 15 s) to 3805 ± 446 µm (Power = 70 W, Time = 15 s).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1568 ENDOSCOPIC ULTRASOUND-GUIDED RENDEZVOUS FACILITATES BILIARY CANNULATION IN CASE OF INACCESSIBLE INTRA-DIVERTICULAR PAPILLA

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Introduction: Endoscopic ultrasound (EUS)-guided rendezvous techniques facilitate common bile duct (CBD) access during subsequent endoscopic retrograde cholangiopancreatography (ERCP) in a single session. Cases of initial ERCP failure mainly comprise malignant biliary or ampullary infiltration and altered anatomy of the papilla, the former accounting for the majority of reports in the literature.

Aims & Methods: We aimed to evaluate the efficacy and safety of EUS-guided rendezvous in a series of distal CBD obstruction with failed initial ERCP, due to inaccessible intra-diverticular papilla. Consecutive patients with distal CBD obstruction, in whom selective biliary cannulation at ERCPP was unsuccessful due to large duodenal diverticulum, underwent EUS-guided rendezvous. CBD puncture was performed via the transduodenal approach and the guide wire was advanced antegrade across the papilla. The echoendoscope was then exchanged for a duodenoscope and a sphincterotome was inserted through the papilla alongside or over the wire, to allow further manipulations.

Results: A total of 2480 ERCPs performed over a 4-year period, 18 cases were selected to undergo EUS-guided rendezvous due to the presence of a large ampullary diverticulum. Primary indication for ERCP was CBD stones in 15 patients, pancreatic head cancer in 2 patients and cholangiocarcinoma in 1 patient. Mean age of the patients was 77 years (range 62–91) and mean diameter of the CBD was 16 mm (range 8–21). Successful CBD puncture with antegrade passing of the wire into the duodenum and subsequent ERCP, in the same session, was achieved in 2/3 (66.6%) cases of malignant obstruction and in 13/35 (38.6%) cases of
P1570 EARLY CAPSULE ENDOSCOPY PROVIDES BETTER BLEEDING LOCALIZATION VALUE IN PATIENTS PRESENTING WITH NON-HEMATEMESIS GASTROINTESTINAL BLEEDING WHEN COMPARED TO CLINICAL SYMPTOMS ALONE

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Introduction: Traditionally, clinical symptoms such as melena were used as strong predictors for an upper GI bleeding source with primary evaluation with an EGD (esophagogastroduodenoscopy). Little consideration was given to the small bowel. It has been known for decades that melena can originate from the nose to the right colon and hematochezia can originate from the proximal gut to the rectum. Thus, current endoscopic approaches have limited localization value and diagnostic yields. We hypothesize capsule endoscopy (VCE) provides better localization of bleeding when compared to clinical symptoms alone.

Aims & Methods: We conducted a single-center randomized trial of 73 consecutive patients presenting to the University of Massachusetts Medical Center with NHGB (melena, hematochezia/anemia, or guaiac-positive stools/anemia). Exclusion criteria included presence of pacemaker, dementia, non-English speaking, hemodynamically significant bleeding. Patients were randomized to SOC arm versus early capsule (EC) deployment. The EC group received a primary diagnostic procedure based on clinical symptoms that was dictated by the gastroenterologist on service, who was at liberty to choose the procedure sequence as they felt appropriate.

Results: In the SOC group, 73 were included. 2 patients from the initial included group were excluded (one due to technical capsule failure and one was transferred from an outside hospital). Baseline characteristics were similar and depicted in Table 1. The EC group (n = 34) had localization of presumed source of bleeding (n = 23) of patients at the time of the first diagnostic procedure compared to 48.4% (n = 16) in the SOC group (p = 0.02). Active bleeding or stigmata of recent bleeding at the time of the first procedure was seen in 64.7% (n = 22) of patients in the EC groups compared to only 30% (n = 10) in the SOC group (p = 0.003). However, when melena was still the only symptom in the SOC (n = 26) group, EGD was the most commonly chosen primary diagnostic procedure (n = 23), but was only diagnostic 52% of the time. After complete diagnostic evaluation in the SOC group, patients presenting with anemia had lesions localized in the esophagus (33.3%), stomach/duodenum (46.2%), small bowel (11.5%), colon (11.5%), but 27% had no source identified. EC group had lesions localized to the esophagus (2.9%), stomach/duodenum (35.2%), small intestine (8.8%), colon (20.5%), and 32.3% did not have lesions identified. Patients with SB MRI evidence of bleeding symptoms in the EC group had EGD was never diagnostic as a primary procedure, colonoscopy (COLO) had a 50% diagnostic rate, and VCE was diagnostic 100% of the time.

Conclusion: VCE used as the first test in patients with NHGB detects active bleeding more often than the SB approach, since it examines much more of the GI tract than EGD and COL alone. Detection of the anatomic site of bleeding allows for better therapeutic decisions.

Disclosure of Interest: S. Jawaid: This study was funded by an unrestricted grant from Olympus who had no role in the study. All other authors have declared no conflicts of interest.

P1571 MUCOSAL HEALING RATES INDUCED BY ADA-LUMUMAB IN ISOLATED SMALL BOWEL CROHN’S DISEASE: PROSPECTIVE EVALUATION BY CAPSULE ENDOSCOPY

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Introduction: Mucosal healing (MH) of isolated small bowel Crohn’s Disease (CD) induced by anti-tumor necrosis factor alpha agents are scarce.

Aims & Methods: 1) To evaluate MH rates by capsule endoscopy (CE) in patients with isolated small bowel Crohn’s disease (SB-CDAI) actively treated with adalimumab (ADA). 2) To correlate MH with clinical and biological indices of remission. This was a prospective observational, single center study. CD patients with isolated (per CE) active (CDAI > 220) SB disease, who were recommended ADA by their treating physician were consecutively recruited; first CE was performed prior to commencing ADA, and the second-14-week after starting ADA. All enrollees underwent a patency capsule study to confirm patency. Disease severity was assessed by the capsule endoscopy Crohn’s Disease activity index (CECDAI) score. MH was defined as CEDCAI score <3.

Results: Out of 31 patients screened, 24 were eligible, and 22 completed the study (as two patients developed an allergic reaction to ADA and were withdrawn). Females: 12 (54.5%), median disease duration: 3 years (IQR 1–7), biologic exposure: ADA (n = 23), Sanofi (n = 1). After ADA treatment, we found MH was detected in 8/22 patients (36.4%), CDCAI < 150 in 11/22 patients (50%), normal- ization of CRP in 7/22 patients (31.8%), and normalization of fecal calprotectin in 8/22 patients (36.4%). Inflammatory indices significantly decreased within 14 weeks of ADA treatment compared with baseline: median CEDCAI 5 (1–16) vs 10 (5–20), p = 0.001; median CDCAI 150.8 (109.8–211.5) vs 256 (240–252.5), p < 0.001; median CRP 0.14 (0.07–0.5) vs 1.1 (0.2–1.5) mg/dL, p = 0.002; median fecal calprotectin 83 (80–139) vs 126 (61.5–265.5), pg/gram, p = 0.014. MH detected by CE did not correlate with normalization of either CDAI <150, CRP, or fecal calprotectin in the same group.

Conclusion: ADA induced MH in 36% of CD patients with isolated active SB disease. MH did not correlate with either clinical or biological remission. Thus, further evaluation should be performed after 52 weeks of maintenance therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1572 CORRELATION BETWEEN SMALL BOWEL MRI, FAECAL CALPROTECTIN AND CAPSULE ENDOSCOPY IN THE INVESTIGATION OF INFLAMMATORY BOWEL DISEASE

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Introduction: Capsule endoscopy (CE) is widely used to investigate the small bowel (SB). However, patients with isolated small bowel disease (IBD) are considered to be at higher risk for capsule retention. The ESGE recommends using dedicated cross-sectional imaging to assess SB patency in patients with known Crohn’s Disease (CD) prior to CE. Evidence suggests that a combination of SB MRI and faecal calprotectin (FC) may be more effective in assessing SB inflammation compared to an individual modality alone. We aimed to assess the effectiveness of this approach.

Aims & Methods: Retrospective, multicentre study; consecutive patients who had undergone both SB MRI and CE within 6 months of each other were included.

Results: 82 patients (28M/54F, Mean age 41.4yrs) underwent both CE and SB MRI at 4 centres in the United Kingdom, Israel and Portugal. Indications included suspected SB infection (n = 81), IBD reassessment (n = 21). Overall, there were 3 incomplete CEs, but no case of SB capsule retention. Of 82 SB MRIs, 4 patients had evidence of SB obstruction, 10 had SB thickening and/or inflammation, 3 had other findings (SB pneumatisos, polyps). 64/82 cases were normal and 1 study had poor contrast, precluding any conclusion. Of the 4 patients with SB obstruction, 2 had normal SB CE findings. Of the 10 patients with SB thickening and/or inflammation seen on MRI, 6 had corresponding CE findings; in particular, there were 2 cases with strictures on CE and 4 cases with mucosal inflammatory changes. 64 patients had normal SB MRI and 35 (54.7%) had a normal CE. 18/64 (28.1%) patients had mucosal inflammatory changes on CE; 2 of them had strictures which were eventually traversed by the capsule. 10 patients had other non-inflammatory findings on CE. Of 18 patients with normal SB MRI, 9 had a raised FC (> 150µg/g), 5 had borderline FC levels (50–100µg/g). None of the patients in this group had normal FC levels; the mean FC was 637±844.4µg/g. In the group of patients with both normal SB MRI and CE, 16/35 had raised FC, 7 patients had borderline FC levels. The overall mean FC for SB MRI and CE was 662±221µg/g but the mean FC between patients with SB inflammation seen on CE and patients with normal SB MRI and CE was significantly different (p = 0.004).

Conclusion: A significant proportion (28.1%) of patients with normal SB MRI to investigate possible SB inflammation had CE findings showing SB inflammation, including 2 patients with strictures. However, no retention occurred in this group. Raised FC was significantly associated with CE findings despite normal SB MRI.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1573 HOW MANY CAPSULE ENDOSCOPY STUDIES CAN BE READ IN A GIVEN SESSION BEFORE ACCURACY IS AFFECTED?

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Introduction: The interpretation of small bowel capsule endoscopy (SBCE) requires a high level of concentration. An abnormality may be present on just a few of the many thousands of images presented for interpretation. It is
unknown whether fatigue affects the accuracy of SBCE reporting and how many SBCE sessions can be performed in one session. Aims & Methods: Thirty-two participants (16 experienced SBCE readers and 16 novices) were invited to participate in this study. Each participant was asked to read 6 pre-selected SBCE studies consecutively. These studies were presented in a random order. All readings took place using the single-view mode, where readers were able to choose the frames per second viewed from a range of speeds. Fatigue was measured subjectively using a Likert scale and objectively using a computer-based psychomotor vigilance test. These measures were performed at prior to commencing the study and after every second capsule read. Accuracy in lesion detection was determined by comparison with a gold standard reading derived from the non-consecutive readings of two expert capsule readers. Accuracy was plotted against the order in which SBCE studies were read. The aim of this study was to determine whether fatigue influences the accuracy of SBCE interpretation and how many cases can be read before accuracy declines.

Results: In keeping with existing literature, high intra-reader variability amongst the participants was observed, with experienced readers reaching kappa values of 0.51 with the gold standard and 0.08 amongst novices. All progressive SBCE studies were read the mean speed increased for both experts and novices, with a mean reduction of 10 minutes between the first and the last study read. This was associated with faster reading speeds selected in progressive studies read. Where accuracy was analysed with respect to the reading speed chosen, a negative correlation between increasing speed and accuracy was demonstrated, with 31% of lesions detected when read at 6–10 frames per second, compared to 15% when using the 22–28 speed. There was no significant change in accuracy with progressive capsule read when the group was analysed as a whole. The accuracy of experienced readers declined after just one study read, from 38% to 27% and plateaued thereafter. Novice readers demonstrated no significant change in the time points, with a trend towards improvement, perhaps indicating skills acquisition during the study.

Conclusion: The accuracy of SBCE reporting declines after one study reporting in a given period of time by expert SBCE readers. The optimal time interval between readings needs to be explored. This does not affect novice readers perhaps demonstrating skill acquisition.

Disclosure of Interest: All authors have declared no conflicts of interest.
cases to obtain an automatic histological classification of colonic polyps. Our automated system is set up on the segmentation of textural elements from polyp surface and their correlation with Kudo’s pit pattern classification. Textural elements are identified as bright regions in polyp surface and there are characterized according to their shape into tubular and circular: a high presence of tubular patterns is associated to an adenomatous histology whereas the absence of prominent tubular structures is associated to non-adenomatous. Taking this into account, we characterized segmented bright regions using a tubularity metric (Tub) designed to obtain low values for circular shapes and high values for tubular shapes of the regions of the same area. We tested our method in high definition (HD) while light polyp images which were obtained with a colonoscope Olympus CF-H190 at Hospital Clinic in Barcelona. Neither conventional nor virtual chromoscopy were used. These images were selected to show as much variability in polyp appearance as possible. We used the mean of all Tub values for an image to classify it into two classes: Adenoma and Non-Adenoma. A ROC curve was constructed to select the optimal threshold value of Tub. Then, we compared the histology prediction provided by our system and the actual histology obtained after lesion removal.

**Conclusion:** A computer vision system based on bright regions in the image has a high accuracy for on-line prediction of polyp histology during colonoscopy. Though the use of shape characterization is promising, the inclusion of other polyp characteristics (i.e. shape, color, vessels...) as well as enlarging the validation database could improve the robustness of our methodology.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Results:**

<table>
<thead>
<tr>
<th>Histological grade</th>
<th>Automatic prediction</th>
<th>Adenoma histology</th>
<th>Non-adenoma histology</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma</td>
<td>8</td>
<td>36</td>
<td>2</td>
<td>46</td>
</tr>
<tr>
<td>Non-adenoma</td>
<td>5</td>
<td>36</td>
<td>41</td>
<td>81</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>38</td>
<td>51</td>
<td>102</td>
</tr>
</tbody>
</table>

**References:**


**Introduction:** The formation of fibrotic tissue in intestinal wall of Crohn’s Disease (CD) patients is transmural and mucosal biopsies are unrepresentative of real intestinal damage. Magnetic Resonance Enterography (MRE) allows a transmural study of the bowel loops. Recently the percentage of gain of contrast enhancement (PNL) by radiologist or gastroenterologist and also considered the true pseudo-negative lesions misdiagnosed with CTC interpretation (true PNL) by radiologists and gastroenterologists. Because we conceived true PNL showed the limitation of CTC interpretation instead of PNL involved a human error.

**Results:**

<table>
<thead>
<tr>
<th>Polypoid</th>
<th>Nonpolypoid</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>True PNL</td>
<td>0-1 Ip</td>
<td>0-1 Ip</td>
</tr>
<tr>
<td>True PNL</td>
<td>0-Ia</td>
<td>0-Ia</td>
</tr>
<tr>
<td>True PNL</td>
<td>0-IIa</td>
<td>0-IIa</td>
</tr>
<tr>
<td>True PNL</td>
<td>0-IIia</td>
<td>0-IIia</td>
</tr>
</tbody>
</table>

**Conclusion:**

CTC was proven to be a reasonably useful approach to obtain the image of colon diseases before any invasiveness to the patient. On CTC interpretation, lower protruded lesion was considered less detectivity than highly protruded lesion like 0-1a lesion.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1578 ANALYSIS OF CT COLONOGRAPHY MISS RATE OF LARGE NEOPLASTIC LESIONS DETERMINED BY COLONOSCOPY ON JAPANESE NATIONAL CT COLONOGRAPHY TRIAL (JANCT)**

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**Introduction:** CT colonography (CTC) may be readily used for imaging of the colon in elderly or poor risk patients with colon polyps and cancer because of its non-invasiveness and relatively short inspection time. However, there are some drawbacks to make a misdiagnosis may be inevitable. Therefore, analysis of misdiagnosis case is crucial on the new modality for the colon cancer screening examination.

**Aims & Methods:** We evaluated the misdiagnosed case of large neoplastic lesions determined by colonoscopy in JANCT by CTC with radiologist and gastroenterologist interpretations1). Out of 1257 cases enrolled in JANCT, 1181 cases were actually studied, omitting 76 cases according to the exclusion criteria. More than 16 DAS CT were used for CTC, respectively. Images were retrospectively reconstructed by using a 0.5 mm section index. The CTC examination was prepared by PEG-C solution before scanning. CO2 gas as an effervescent agent was then administrated just before scanning. This was used for the contrast medium. CTC images were analyzed by AZE Virtual Plane software. The CTC and CS were independently analyzed by endoscopist and radiologist in blind fashion. We investigated misdiagnosed lesions with CTC more than 10 mm detected by CS. We considered the pseudo-negative lesions misdiagnosed with CTC interpretation (PNL) by radiologist or gastroenterologist and also considered the true pseudo-negative lesions misdiagnosed with CTC interpretation (true PNL) by radiologists and gastroenterologists.

**Results:** PNL was diagnosed by CS at 0-Ip (8 cases, 8 lesions) and 0-Ia (17 cases, 19 lesions), respectively according to the criteria of the Paris classification. True PNL was also diagnosed at 0-Ip (1 case, 1 lesion), 0-Ia (5 cases, 6 lesions) and 0-IIa (11 cases, 13 lesions), respectively. True PNL/PNL ratio was 0-Ip 12.5%, 0-IIa 50% and 0-Ia 68.5%, respectively. There was no difference in PNL at 0-IIa.

**Conclusion:**

The accuracy of CTC for the colon cancer examination is dependent on the new modality for the colon cancer screening examination.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**Reference**


**P1579 DIFFUSION-WEIGHTED MAGNETIC RESONANCE FOR ASSESSING FIBROSIS IN CROHN’S DISEASE**

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**Introduction:** The formation of fibrotic tissue in intestinal wall of Crohn’s Disease (CD) patients is transmural and mucosal biopsies are unrepresentative of real intestinal damage. Magnetic Resonance Enterography (MRE) allows a transmural study of the bowel loops. Recently the percentage of gain of contrast enhancement (PNL) has been proven useful to study fibrosis in CD patients. Diffusion Weighted Imaging (DWI) through the restriction of the apparent diffusion coefficient (ADC) allows an accurate evaluation of disease activity in CD patients. Diffusion Magnetic Resonance Imaging (MRI) has been proved useful to study fibrosis in CD patients. The ADC allows an accurate evaluation of disease activity in CD patients.

**Aims & Methods:** The aim of this study is to investigate if DWI sequence of MRE was able to identify intestinal fibrosis in CD patients candidate to surgery, using the histopathology specimens and percentage of gain as gold-standard. Thirty ileocolonic CD patients who have an active disease at MRE before the surgery. The histopathological examination was performed using an histologic score for inflammation (AIS) and fibrosis in the stenotic segment and in the ileum before the stenosis.

All population had an active disease at MRE. ADC value had a significant correlation with fibrosis score (r = 0.648; p < 0.0001), AIS (r = 0.763; p < 0.0001) and percentage of gain (r = 0.687; p < 0.0001). A strong correlation emerged between wall thickness and fibrosis score (r = 0.671; p < 0.0001). The...
threshold of wall thickness for fibrosis was 10 mm (95% CI 9.0–10.9). The cut-off of ADC value for fibrosis was <1.1 × 10^{-3} \text{mm}^2/\text{s} with a sensitivity of 71.79% and specificity of 94.44% (AUC = 0.85).

Conclusion: The DWI sequence with ADC value can identify fibrosis in intestinal lesions with high accuracy. The use of contrast medium may improve the accuracy of fibrosis detection.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1580 MOLECULAR IMAGING OF c-MET IN THE CLINICAL MANAGEMENT OF GASTROINTESTINAL CANCERS
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Introduction: The primary indication for c-Met targeted optical imaging agent EMI-137 is benign lesions during colonoscopy screening, including flat lesions that are difficult to detect by normal white light endoscopy. We have evaluated the potential benefit of EMI-137 and analogues beyond colorectal cancer screening since c-Met is up-regulated in many other cancers.

Aims & Methods: We have synthesised analogues of EMI-137 where the fluoroscent reporter was replaced by a radionuclide chelating moiety for PET imaging. We performed a proof-of-concept study in mice to establish the fluorescence and PET imaging characteristics of EMI-137 and analogues.

Results: We identified a number of promising applications within Digestive Oncology; gastric cancer, locally-advanced rectal cancer, and bile duct cancer surgery are all life-threatening indications with urgent healthcare problems that could be improved by using imaging of c-Met with EMI-137. Compatible imaging systems are commercially available for these indications. There is also strong evidence for c-Met as a biomarker in stratification in Barrett’s oesophagus (BO), a potentially precancerous lesion with the risk of progression to oesophageal cancer. Progression rates are low and overall survival rates in BO patients are similar to the general population. However, due to the poor prognosis of oesophageal cancer, patients with BO lesions are managed by regular endoscopic surveillance and biopsy. This means that there is arguably a disproportionate healthcare burden relative to the level of risk.

Conclusion: Gastric cancer, locally advanced rectal cancer, and bile duct cancer surgery are all strong evidence for c-Met as a valid target, and the healthcare problems are clear and widely recognized, with EMI-137 having the potential to high-turnover active procedures in serious, life-threatening conditions. An imaging agent that enabled more accurate risk stratification of BO patients would lead to a change in patient management, with the potential to remove unnecessary biopsy and to reduce the frequency of surveillance.


P1581 HOMEMADE FIXATION OF FULLY-COVERED SELF-EXPANDING METAL STENT
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Introduction: Esophageal self-expandable metal stents are currently used as an alternative for surgical treatment in esophageal neoplasia, benign strictures, fistulas and anastomotic leaks. Migration is a common complication after stent placement and has higher rates when fully covered stents are employed. Covered stents prevent tumor ingrowth and can be removed easily, they can be used in the closure of fistulas and leaks. External fixation of the stent with Shim’s technique seems to be efficient in preventing stent migration, but has a high cost and is not always available. Fixation by clipping or sutures has similar limitations. We developed a homemade technique for external fixation of the stent using dental floss to prevent stent migration. We pull stripes of dental floss into the stent mesh and use a method similar to exchange of a nasobiliary drainage catheter, the dental floss is drawn out through the nose, tied a knot into it and its loose end is fixed to the patient’s carbole.

Results: Upper gastrointestinal endoscopy was performed after two weeks and the proximal end of the stent was evaluated. If it was embedding the esophageal mucosa and did not separate from the esophagus with air insufflation, the external fixation was removed. Otherwise, the fixation was kept for another 2–4 weeks when a new endoscopic evaluation was performed. Patients were evaluated 15–30 days after stent placement. In cases of migration of the entire length of the stent into the stomach, the patient received a new stent and the same fixation method was employed. In cases of stents partially migrated through the cardia, the same stent was repositioned and fix and with dental floss stripes as previously described.

Conclusion: According to the results we believe this homemade technique using dental floss for external fixation of stents is a simple and cheap method that can be applied and used to prevent stent migration.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1582 CLINICAL OUTCOME WHEN USING SELF-EXPANDING METAL STENT IN OBSTRUCTIVE COLORECTAL CANCER IN 248 PATIENTS OVER 7 YEARS EXPERIENCE FROM A TERTIARY CENTER
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Introduction: The reported incidence of colorectal cancer in Sweden in 2014 was 60-65/100,000 inhabitants and caused 25-30 deaths/100,000. Of all colorectal cancer, approximately 15-20% debuts with acute obstructive symptoms. There is no consensus in these indications (open surgery) have been shown to lead to mortality risk up to 20% and morbidity risk of 45–50%, followed by increased need for intensive care and more infections and stoma complications”. Self-expanding Metal Stent (SEMS) for relieving malignant colorectal obstruction is a treatment option for non-curative cases or for bridging the patient for later surgery. Studies have shown "clinical success" of SEMS at 90%. An article from 2007 concludes that SEMS in acute colon obstruction has better results regarding sickness and side effects compared with acute open surgery.

Aims & Methods: Our compilation covers the years 2010–16, when 248 SEMS interventions(53% men, 47% women, age 28–97) were performed at SU/Ostra Hospital. In 78% of cases, the obstruction was located below the left flexure. In 80%, SEMS was made for palliative purposes.

Results: Technically, SEMS succeeded in 98% of cases and had clinical success in 90% of cases(absence in need of emergency surgery). Complications (colony perforation) occurred in 6% of the cases. Mortality within 30 days was 11% and within 90 days 22%. Both SEMS and open surgery are in agreement with regard to 90-day mortality for the indication was palliative vs. bridging, 29 resp. 3%. Based on the clinical outcomes "success" vs "failure", the 90-day mortality was 19 resp. 55%.

Conclusion: Our interpretation is that SEMS is an effective method of acceptable safety regarding complications in acute malignant colon obstruction. The method is suitable for both intended intestinal relief for palliative purposes, as well as awaiting later curative measure (bridge to surgery).

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1583 ENDOSCOPIC TREATMENT OF ESOPHAGEAL FISTULAS
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Introduction: Tracheoesophageal fistulas are severe complications which commonly occur secondary to malignant tumors of the esophagus. Other causes include mediastinal or respiratory tract tumors, surgery, radiotherapy and trauma. Without treatment they often lead to pulmonary and gastroenterological complications, such as pneumonia, acute respiratory distress syndrome and poor nutrition. The purpose of this study was to assess the efficacy of endoscopic treatment performed in our clinic for esophageal fistulas.

Aims & Methods: We performed a retrospective study on 43 patients admitted in our clinic between January 2015 and April 2017 for esophageal fistulas.

Results: The average age of the patients included in the study was 54 years old. The causes leading to the tracheoesophageal fistulas were the following: esophageal malignancy in 18 cases (41.8%), surgery in 8 cases (18.6%), respiratory tract malignancy in 6 cases (14%), gastric sleeve in 5 cases (14%), radiotherapy in 3 cases (7%) and trauma in 2 cases (4.6%). In every case, the treatment of choice was placement of fully-covered metallic stents. A number of 16 patients needed reinforcement, with a mean of 2 reinforcements per patient. Regarding recurrent fistulas, endoclips were used in one case (2.3%), additional stenting in 11 cases...
A total of 452 endoscopic interventions (mean 3.4 per patient, median 2 treatments) were included in this retrospective cohort study. A follow-up was available for 135 patients (female n = 68, mean age 47.5 years, BMI: 22.8 ± 4.98 kg/m², duration of illness: median 25.1 months). In 165 cases, the dominant stricture was located in the ileocecum, in 105 in the colon, esophagus (90), duodenum (54), upper gastrointestinal tract (bleeding: n = 4), and cSEMS (1). Dilatation was performed to a mean of 14 mm (SD: 2.4, range 7 to 24 mm). In seven cases complications occurred after endoscopic treatment (bleeding: n = 5; infection: n = 1; perforation: n = 1) which resulted in an extension of the hospital stay (n = 5), antibiotic therapy (1) and surgery (1). Immediate clinical success was observed in 438 of 452 cases (96.9%). A single intervention was performed in 61/135 patients (45.2%), two interventions in 36 (26.7%), and three or more in 38 (28.1%). In 41 of 135 patients (30.4%), surgical treatment of the stricture was required in the course of disease.

Conclusions: Endoscopy as first-line treatment of symptomatic stricture in CD is safe and effective. Repetitive dilation is feasible with a significant reduction of clinical symptoms, and surgery was required in about 30% of patients at long-term follow-up.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1558 Efficacy and complications of palliative oesophageal stenting, experiences of a tertiary referral centre in the UK

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Introduction: Palliative stenting is now established as a major treatment for dysphagia resulting from incurable oesophageal malignancies. The malignant stricture of the oesophagus can lead to multiple possible complications after oesophageal stent insertion; most of these present with increasing dysphagia; however pain, bleeding, and reflux are also common. Although data on rates of various complications are available, there are no agreed standards to audit performance against, nor any requirement to do so. As this is a palliative procedure, success in symptom control is paramount; if this is not being achieved, then the appropriateness of the procedure must be questioned. As with any invasive procedure, complication rates are affected by modifiables: technical (e.g. stent length and site of stent insertion), operator experience, patient co-morbidities and performance status. As a result of these variables, stated complication rates also vary. Only one study reported a rate of dysphagia (29%); migration occurred in 5-15% of cases, tumour ingrowth: overgrowth 5-20%, and food bolus obstruction in 5-15%. Quoted median survival ranged from 61-104 days, with a 30-day mortality of 20-28%.

Aims & Methods: Our aim was to scrutinise the efficacy and the safety of our palliative oesophageal stenting work. A retrospective study of all patients undergoing oesophageal stent insertion at our unit, between 01.01.2012 and 01.04.2016 was undertaken, looking for evidence of complications, repeat interventions, and for survival statistics after stent insertion. Patients who had undergone stent insertion for reasons other than oesophageal malignancy were excluded.

References
**P1587 LONG-TERM RESULTS: WHEN RE-STENOSIS COMES AFTER ESOPHAGEAL STENTING?**

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**Introduction:** Self-expanding metallic stents (SEMS) is a well-established form of palliative treatment for dysphagia in esophageal cancer. Progression of the tumor after stenting with re-stenosis is a serious problem in patients with better prognosis and longer survival.

**Aims & Methods:** The aim of this study was to assess the timing and probability of esophageal re-stenosis after stenting by tumor growth. We performed a retrospective analysis of patients with advanced esophageal cancer who was under palliative total stenting treatment. Patients were included in this study if they were placed 2 cm distal and 2 cm proximal of the stenosis. Of 97 patients, 18 (18.5%) patients were bleeding, 2 (1.3%) were tracheo-oesophageal fistula formations, 1 (0.7%) was delayed perforation, 1 (0.7%) was a too short stent, 1 (0.7%) was a disintegrating stent and 1 (0.7%) was a compression of the bronchi. Median survival of the 125 patients after stent insertion was 96 days (SD 128) and 30-day mortality was 11.2% (14 patients). It is important to note that with retrospective data analysis, some data is not available, due to variations in recording at the time and a reliance on the patient to report symptoms to a clinician. Currently 2 patients are still alive.

**Results:** Palliative stenting at this centre continues to be an effective treatment for patients with dysphagia from esophageal cancer. On the whole, outcomes from stenting at this unit compare favourably with published data in terms of dysphagia, other complications, and mortality. Steps to improve post-procedure monitoring in the form of a “sten t registry” with prospective collection of data by telephone or face-to-face follow-up could be useful in future service development.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P1588 SELF-EXPANDABLE METAL STENTS ARE A VALID OPTION IN PATIENTS WITH LONG-TERM SURVIVAL FROM ADVANCED ESOPHAGEAL CANCER**

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**Introduction:** Self-expandable metal stents (SEMS) are often used for palliative treatment of dysphagia in patients with advanced esophageal cancer, with anticipated limited survival. However, due to previous reports of high adverse event (AE) rates when used long-term, concerns have been raised with the use of SEMS in patients with survival longer than 3 months.

**Aims & Methods:** We aimed to the role of esophageal SEMS in patients with advanced esophageal cancer and expected survival longer than 6 months. Technical success was defined as successful deployment of the stent in the correct position. Clinical success was defined as relief of dysphagia 1 week after placement.

This was a retrospective study of patients with clinical dysphagia and advanced esophageal cancer who underwent SEMS placement with a stent dwelling time of greater than 6 months. In all patients the indication for stent placement was dysphagia due to esophageal malignancy.

**Results:** Forty-two patients were followed for 298 days (183–861 days). At the end of follow-up the mortality was 93%. The majority of lesions were located at the proximal/middle esophagus (55%), and were traversable using an ultrathin gastro scope in 79% of patients; in no patient could a standard upper endoscope be passed. Twenty-nine-nine patients (74.6%) underwent further therapy (chemotherapy and/or radiotherapy) with SEMS in situ; however, only 14 began therapy before development of an AE (4 patients underwent further therapy after AE). Clinical improvement occurred in all patients, however 59% of patients continued to experience an AE (15 migrations, 8 overgrowth/ingrowths and 2 stent-induced fistulae). The median stent patency was 236 days (19–513). Two AEs occurred within 30 days of stenting, 7 occurred between 30–90 days, 7 occurred between 90–180 days, and 9 occurred after 180 days. Endoscopic management was attempted in every SEMS-related AE (20 patients required a second SEMS, 2 had successful SEMS repositioning and 1 was treated with argon plasma; 2 SEMS were removed without the need for further therapy), with a clinical success of 100%, however, in 7 patients the previously treated AE recurred (1 in overgrowths and 6 migrations). Multivariate analysis showed that strictures traversable with an ultrathin gastro scope were associated with a higher risk of AEs (OR 11.7, 95% CI [1.2–114.6], p = 0.035).

**Conclusion:** Long-term esophageal stenting in patients with advanced esophageal cancer in patients with a high survival rate and a high prevalence of AEs without an impact on mortality, and most could be managed endoscopically. Strictures traversable only using an ultrathin gastro scope are a risk factor for AEs.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**

Ghalab M, Pereira T, M. A. Ghalab, E. Rodrigues-Pinto, T.H. Baron.

**P1589 NOVEL PERCUTANEOUS TECHNIQUES IN MANAGEMENT OF POST-CHOLECYSTECTOMY COMPLICATIONS**

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**Introduction:** The incidence of iatrogenic bile duct injury (BDI) remains high despite increased awareness of the problem with significant impact on patient’s well-being and even survival despite seemingly adequate therapy. Over the past years, endoscopic and percutaneous biliary interventions became readily
available in many centers and have revolutionized the management of iatrogenic biliary vascular injuries.

**Aims & Methods:** Evaluate the role of intervention radiology procedures to manage different post-cholecystectomy complications focusing on the novel techniques to improve the final outcome. From June 2014 to June 2016, 30 patients presenting with post-cholecystectomy complications were referred to interventional radiology unit in our university hospital. They were 9 males and 21 females (age range: 18-66 years). Patients presented with biliary leaks (n=12), biliary strictures with intraparenchymal biliary dilations (n=21), postoperative hernia (n=2) and bleeding related to hepatic artery pseudo-aneurysm (n=1). Different types of interventional procedures were performed, including: Percutaneous trans-hepatic drainage (PTD) (n=16), sequential dilatation of biliary stricture with increasing catheter calibers over 6 months followed by manometric studies before catheter withdrawal (n=6), biliary stenting with plastic stent (n=2), Insertion of pigtail catheter (n=15), preoperative progressive pneumo-peritoneum for their adhesiolysis effect to manage post-operative huge incisional hernias before their surgical repair (n=1), and selective embolization of bleeding hepatic artery pseudo-aneurysm (n=1) using tissue adhesive (n-Butyl 2 Cyanoacrylate).

**Results:** All percutaneous procedures were technically successful. No recorded early or late complications. After manometric studies, all managed cases with biliary strictures did not show any clinical evidence of restenosis during 6 months follow-up. Overall, 14 out of 30 patients (46.7%) were only managed by different interventional radiology procedures. Second step surgical repair was needed for 13 patients (43.3%) and endoscopic managed for 3 patients (10%) with biliary leaks.

**Conclusion:** Minimally invasive interventions were valuable techniques in the management of different post-cholecystectomy complications. In fully equipped centers, expert multidisciplinary teams would achieve high cure rates for iatrogenic biliary injuries.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1590 WHAT IS THE ROLE OF ANGIOGRAPHY IN ACUTE COLONIC AND SMALL BOWEL BLEEDING?**


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**Introduction:** Angiography is a diagnostic and therapeutic modality that is widely available for upper gastrointestinal bleeding but is used less frequently when the source of bleeding is placed distally to the Treitz angle.

**Aims & Methods:** To assess the usefulness of angiography in the diagnosis of colonic and small bowel bleeding and to determine the efficacy and complications of therapeutic procedures. Retrospective study; we included all patients with colonic and small bowel bleeding that were submitted to arteriography with or without embolization, admitted to the gastroenterology department of a tertiary hospital between February 2006 and November 2016. Statistics: Chi-square/Fisher exact test, T-student.

**Results:** During the period 2006-2016 there were 68 evaluated, 63.6% male, mean age = 75 years (29–95). Angiography was done for: bleeding recurrence (36.2%), hemodynamic instability (33.3%), both (27.3%) or failure to endoscopic hemostasis (3%). The aetiology after angiographic study was: presumed diverticular (n=28), angiodysplasia (n=8), confirmed diverticular (n=6), tumoral (n=5), post-mucosectomy/polypectomy (n=4), unclarified (n=12), others (n=3): Dieulafoy, ileum ulcers, radiation proctitis. Angiography showed additional clinical information in 18.8% of patients (n=17). Twenty-three patients (34.8%) underwent arterial embolization, all with technical success, with bleeding recurrence in 3, of which only one was submitted to surgery; there were 2 cases of bowel ischemia. The reasons for deciding not to embolize were: absence of active bleeding (90.7%) and end-vessel bleeding (9.3%). There were no differences between the groups in demographic data, comorbidities, mortality, source of bleeding, haemoglobin at admission/diagnosis and coagulation (p > 0.05). Arterial embolization was more frequent if hemodynamic instability (p = 0.029); The average time of hospital stay was lower in the group submitted to embolization (8.8 vs 11.5 days, p = 0.014). Overall, 11 patients died, due to: re-bleeding/hypovolemic shock (n = 5), exacerbation of comorbidities (n = 3), hospital acquired infection (n = 2) or post embolization complication (n = 1).

**Conclusion:** Arteriography was a valid option for the diagnosis of colonic and small bowel bleeding; allowed therapeutic intervention in more than one third of patients, with 87% of clinical success and reduction of hospitalization time.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1592 PROPENSITY SCORE ANALYSIS OF 18-FDG PET/CT ENHANCED STAGING IN PATIENTS UNDERGOING SURGERY FOR OESOPHAGEAL CANCER**


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**Introduction:** Surgery for radical treatment of oesophageal cancer carries significant inherent risk. Objectively Identifying patients that are high risk of complications is of importance. The aim of this study was to assess the prognostic value of physical fitness variables determined objectively by cardiopulmonary exercise testing (CPET) in patients undergoing potentially curative surgery for oesophageal cancer (OC) within an enhanced recovery programme.

**Aims & Methods:** Consecutive 180 OC patients (106 ACA, 11 SCC, 3HGID) underwent preoperative PET/CT with prospective recording of morbidity and survival. Non-parametric receiver operating characteristic (ROC) curves and logistic regression were used to assess the relationship between PET variables and post-operative morbidity severity score (MSS). 

**Results:** Of 180 patients, 120 were included for analysis (median age 65 yr., 100 male, 75 neoadjuvant therapy); 60 did not proceed to surgery and were excluded. Postoperative morbidity and mortality occurred in 83 (69%), CD ≥ 3 in 27, 22.5% and 4 (3.3%) patients respectively. ROC curve analysis showed oxygen uptake (peak V02) gave an area under the ROC of 0.66 (95% CI 0.55 to 0.77, p < 0.004, 0.015), and optimum cut-off of 28 ml/kg/min (sensitivity 53%, specificity 55%). Anaerobic Threshold (AT) gave an area under the ROC of 0.62 (95% CI 0.51–0.74, p = 0.048) and optimum cut-off of 10.5 ml/kg/min (sensitivity 60%, specificity 44%). Multivariable analysis revealed peak V02 to be the only independent factor to predict morbidity severity CD ≥ 3 (OR 0.85, 95% CI 0.75–0.97, p = 0.018). Cumulative survival was associated with operative MSS (Chi² 4.892, DF 1, p = 0.027) but not with PET variables. Conclusion: PET/CT is a significant predictor of morbidity after oesophagectomy with peak V02 the most important factor.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**WEDNESDAY, NOVEMBER 01, 2017 09:00-14:00**

**SURGERY III - HALL 7**

**P1591 PROGNOSTIC VALUE OF CARDIOPULMONARY EXERCISE TESTING FOR MORBIDITY RISK AND SURVIVAL AFTER OESOPHAGECTOMY FOR CANCER**


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**Introduction:** Surgery for radical treatment of oesophageal cancer carries significant morbidity risk. Objectively Identifying patients that are high risk of complications is of importance. The aim of this study was to assess the prognostic value of physical fitness variables determined objectively by cardiopulmonary exercise testing (CPET) in patients undergoing potentially curative surgery for oesophageal cancer (OC) within an enhanced recovery programme.

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**Conclusion:** PET/CT is a significant predictor of morbidity after oesophagectomy with peak V02 the most important factor.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1593 PREDICTION OF LYMPH NODE METASTASIS FOR SUPERFICIAL ESOPHAGEAL CANCER WITH USING RANDOM FOREST ANALYSIS**

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**Introduction:** Although surgical techniques and perioperative management for esophageal cancer has been developed, it cannot be still safe to be performed esophagectomy. Therefore, endoscopic submucosal dissection (ESD) for the superficial cancer has been increased. We also need to consider the risk of lymph node metastasis before treatment in each patient and the aim of this study is to predict lymph node metastasis for superficial esophageal cancer.
Disclosure of Interest: Cancer surgery and ICW and SIR were the most important prognostic indicators.

Conclusion: In our series, patients used Positive Attitude to manage everyday life (oppositional strategies) or drugs to self-medicate (i.e. emotional indifference or drugs) were used, social abilities were compromised. Moreover, after surgical intervention coping seemed to be a stable feature. Therefore, in the early follow-up after surgery multidisciplinary team can identify and the coping features of patients in order to improve them to prevent QoL worsening.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1596 A RELIABLE AND ACCURATE ALGORITHM TO QUANTIFY THE TUMOR STROMA QTS AMONG TUMOR ENTITIES: HIGH INFLTRATION OF CD3+ AND CD8+ LYMPHOCYTES CORRELATES WITH IMPROVED SURVIVAL IN HEPATOCELLULAR CARCINOMA AND PANCREATIC CANCER

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Introduction: The tumor micro environment plays a vital role in the growth of malignancies. Through for example tumor-infiltrating lymphocytes (TILs) it influences overall and disease free survival of patients in various cancer entities. Therefore, the aim of this study was to identify our own TIL quantification algorithm to optimize the accuracy of counting TILs with high reliability and reproducibility. The aim of this study is to describe coping styles and QoL after esophagectomy for esophageal cancer and therefore represent potentially reversible prognostic risk factors. Bioelectrical Impedance Analysis (BIA) is a non-invasive, easily reproducible and simple means of accurately measuring body composition.

Aims & Methods: The aim of this study was to assess the prognostic value of body composition variables determined objectively by bioelectrical impedance analysis (BIA). In this retrospective study, we evaluated potentially curvilinear surgery studies in thoracic oncology (OC) and gastric cancer (GC) within an enhanced recovery programme (ERP). Consecutive 168 OG patients [mean age 65 (24-86) yr., 131 male, 105 OC, 64 GC, 157 ACA, 8 SCC, 3 Neuroendocrine] underwent preoperative measurements of systemic inflammatory response [SIR, including FBC, CRP, Albumin, and modified Glasgow Prognostic Score (mGPS)]. Patients underwent multi-frequency (0.5 kHz, 50kHz and 100kHz) BIA assessment using a Maltron Bioscan 920 (Maltron International Ltd., Essex, UK), and Cardio Pulmonary Exercise (CPX) assessment was performed selectively (70 OC, 27 GC). Primary outcome measure was Clavien Dindo (CD) morbidity severity score (MSS) of 3.

Results: Oesophagectomy was performed in 106, gatrectomy in 64, and laparotomy only in 25 patients. Postoperative morbidity and mortality occurred in 75 (49 OC, CD ≥ 3 in 35, 21%) and 4 (2%) patients respectively. On univariable analysis, MSS ≥ 3 was associated with anaerobic threshold (p = 0.001), CRP (p = 0.001), mGPS (p = 0.011), intra-cellular water (ICW, p = 0.041), and extra-cellular water content (p = 0.015). Multivariable binary logistic regression revealed ICW content [IQ vs. UQ CD ≥ 3, 35, 37%, OR 1.32 (95% CI 1.06–1.61). ICC ≥ 3, 37%, OR 1.03 (0.99-1.06) p = 0.076] to be independently associated with MSS.

Conclusion: Flow variability in morbidity severity was observed after OG cancer surgery and SIR were the most important prognostic indicators.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1594 PROGNOSTIC SIGNIFICANCE OF CARDIORESPIRATORY FITNESS, BODY COMPOSITION ANALYSIS, AND SYSTEMIC INFLAMMATORY RESPONSE IN UPPER GASTROINTESTINAL CANCER

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Introduction: Malnutrition is associated with higher rates of operative morbidity and therefore represent potentially reversible prognostic risk factors. Bioelectrical Impedance Analysis (BIA) is a non-invasive, easily reproducible and simple means of accurately measuring body composition.

Aims & Methods: The aim of this study was to assess the prognostic value of body composition variables determined objectively by bioelectrical impedance analysis (BIA). In this retrospective study, we evaluated potentially curvilinear surgery studies in thoracic oncology (OC) and gastric cancer (GC) within an enhanced recovery programme (ERP). Consecutive 168 OG patients [mean age 65 (24-86) yr., 131 male, 105 OC, 64 GC, 157 ACA, 8 SCC, 3 Neuroendocrine] underwent preoperative measurements of systemic inflammatory response [SIR, including FBC, CRP, Albumin, and modified Glasgow Prognostic Score (mGPS)]. Patients underwent multi-frequency (0.5 kHz, 50kHz and 100kHz) BIA assessment using a Maltron Bioscan 920 (Maltron International Ltd., Essex, UK), and Cardio Pulmonary Exercise (CPX) assessment was performed selectively (70 OC, 27 GC). Primary outcome measure was Clavien Dindo (CD) morbidity severity score (MSS) of 3.

Results: Oesophagectomy was performed in 106, gatrectomy in 64, and laparotomy only in 25 patients. Postoperative morbidity and mortality occurred in 75 (49 OC, CD ≥ 3 in 35, 21%) and 4 (2%) patients respectively. On univariable analysis, MSS ≥ 3 was associated with anaerobic threshold (p = 0.001), CRP (p = 0.001), mGPS (p = 0.011), intra-cellular water (ICW, p = 0.041), and extra-cellular water content (p = 0.015). Multivariable binary logistic regression revealed ICW content [IQ vs. UQ CD ≥ 3, 35, 37%, OR 1.32 (95% CI 1.06–1.61). ICC ≥ 3, 37%, OR 1.03 (0.99-1.06) p = 0.076] to be independently associated with MSS.

Conclusion: Flow variability in morbidity severity was observed after OG cancer surgery and SIR were the most important prognostic indicators.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1595 COPING AND QUALITY OF LIFE AFTER ESOPHAGECTOMY FOR CANCER

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Introduction: Coping is one the most challenging and burdening opera-
tion for its length and the variety of anatomical districts involved. Nowadays, as consequence of the improved postoperative mortality, effects of esophagectomy are chronic and quality of life (QoL) has become one of the main outcome measures of esophagectomy. In fact, QoL after esophagectomy is a relevant issue nowadays, especially after potentially curvilinear surgery studies in thoracic oncology (OC) and gastric cancer (GC) within an enhanced recovery programme (ERP).

Aim and methods: The aim of this study is to describe coping styles and QoL after esophagectomy for esophageal cancer. The aim of this study was to assess the prognostic value of body composition variables determined objectively by bioelectrical impedance analysis (BIA). In this retrospective study, we evaluated potentially curvilinear surgery studies in thoracic oncology (OC) and gastric cancer (GC) within an enhanced recovery programme (ERP). Consecutive 168 OG patients [mean age 65 (24-86) yr., 131 male, 105 OC, 64 GC, 157 ACA, 8 SCC, 3 Neuroendocrine] underwent preoperative measurements of systemic inflammatory response [SIR, including FBC, CRP, Albumin, and modified Glasgow Prognostic Score (mGPS)]. Patients underwent multi-frequency (0.5 kHz, 50kHz and 100kHz) BIA assessment using a Maltron Bioscan 920 (Maltron International Ltd., Essex, UK), and Cardio Pulmonary Exercise (CPX) assessment was performed selectively (70 OC, 27 GC). Primary outcome measure was Clavien Dindo (CD) morbidity severity score (MSS) of 3.

Results: Oesophagectomy was performed in 106, gatrectomy in 64, and laparotomy only in 25 patients. Postoperative morbidity and mortality occurred in 75 (49 OC, CD ≥ 3 in 35, 21%) and 4 (2%) patients respectively. On univariable analysis, MSS ≥ 3 was associated with anaerobic threshold (p = 0.001), CRP (p = 0.001), mGPS (p = 0.011), intra-cellular water (ICW, p = 0.041), and extra-cellular water content (p = 0.015). Multivariable binary logistic regression revealed ICW content [IQ vs. UQ CD ≥ 3, 35, 37%, OR 1.32 (95% CI 1.06–1.61). ICC ≥ 3, 37%, OR 1.03 (0.99-1.06) p = 0.076] to be independently associated with MSS.

Conclusion: Flow variability in morbidity severity was observed after OG cancer surgery and SIR were the most important prognostic indicators.

Disclosure of Interest: All authors have declared no conflicts of interest.

Comparison of manual counting to the computed methods showed mostly excellent accuracy of the obtained results using intraclass correlation with reliability analysis (ICC) and coefficient B with linear regression (B):
computed counting methods achieve mostly excellent accuracy. ISC is accurate for sections with high background staining. IAC can be used in sections with low background staining. With the QTS Algorithm quantification of cells in the tumor stroma is reliable and accurate. Furthermore, clinical correlations after the use of this algorithm show results according to the literature: High infiltration of CD8 + T lymphocytes correlates with favorable prognosis in HCC and PCa. The future use of immunoscopy systems may help to predict prognosis after resection.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Sun et al., The predictive value of centre tumour CD8(+) T cells in patients with hepatocellular carcinoma: comparison with Immunoscan OneStarget. 2015. 

P1598 LIVER RESECTION IN OBESE PATIENTS WITH HEPATOCELLULAR CARCINOMA

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Introduction: Liver resection disease has been recognized as a risk factor for hepatocellular carcinoma (HCC). On the other hand, there are few reports concerning liver resection (LR) in obese patients.

Aims & Methods: We performed curative LR in 471 patients with HCC between 2001 and 2015. In this study, we defined an obesity as no less than 25 of body mass index (BMI). We compared clinicopathological findings, operation details, and surgical outcomes of the obese and non-obese patients. Furthermore, we assessed the safety and the benefit of laparoscopic partial hepatectomy and left lateral segmentectomy in the obese patients.

Results: Among 471 patients, 123 patients (26.1%) were defined as obese. Among them, 20 patients (4.2%) showed no less than 30 of BMI. Diabetes, hypertension, and hyperlipidemia were significantly more common, and the patients with hepatic tumors in the obese patients group than in the non-obese patients group (p < 0.05). The two groups showed no differences in the liver function tests except the indocyanine green retention rate at 15 minutes. There were no significant differences between the two patients group in the number of tumors, diameter of tumor, prevalence of cirrhosis, frequency of portal invasion, the operative procedure, operative duration, blood loss, incidence of postoperative complications, postoperative hospital stay, and in-hospital mortality (3.3% vs. 1.4%). No significant difference was found in relapse-free survival rate, or overall survival rate between the two groups, too. Thirteen patients underwent laparoscopic surgery, and 34 patients had open surgery. The two groups showed no difference in the background, including BMI. However the operation time (265 min vs. 397.5 min) and the postoperative hospital stay (14 days vs. 18 days) were significantly shorter, and the blood loss (50 ml vs. 600 ml) was less in the laparoscopic surgery group than in the open surgery group (p < 0.05).

Conclusion: Liver resection in the obese patients with HCC was safe, and laparoscopic liver resection might be more useful for reducing the surgical stress and reducing the hospital stay.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1599 TIMING OF ELECTIVE CHOLOECYSTECTOMY AFTER ACUTE CHOLECYSTITIS - A POPULATION-BASED STUDY
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Introduction: Acute cholecystectomy as treatment of acute cholecystitis is standard of care. However, many patients are still treated conservatively and undergo elective surgery 2 weeks following the primary admittance is postulated as a good timing for an elective surgery but there are no studies on the optimal timing for delayed cholecystectomy.

Aims & Methods: The aim of our study was to determine when it is most advantageous to perform surgery less than 2 weeks after an episode of acute cholecystitis. All patients treated for acute cholecystitis in Sweden during the years of 2006 and 2013 were identified through the Swedish Inpatient Register. This cohort was cross-linked with the Swedish register for gallstone surgery. Choice of surgical outcome was retrieved with definition of a new arrival of endoscopy in the hospital. The impact of time from admission to surgery with regards to operative time, percentage of procedures completed with minimally invasive technique, peri and postoperative complications and bile duct injury or bile leakage was analysed with logarithmic transformation of time and multivariable logistic regression adjusting for gender and age.

Results: During the years 2006 to 2013, 31091 patients were treated for acute cholecystitis in Sweden. After exclusion of patients that did not perform surgery, were not registered in GallRiks and patients that were treated with acute cholecystectomy 5352 patients were identified that underwent planned surgery. In multivariate linear regression analysis with adjustment for gender and age the risk for peri- and postoperative complications, bile duct injuries and bile leakage and amount procedures not completed with minimally invasive technique decreases with time from the last hospitalization to surgery. All p-values < 0.05.

Conclusion: For those undergoing elective cholecystectomy after an acute cholecystitis the safety increases if surgery is performed later than 30 days after discharge.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1600 MIXED REALITY SURGERY USING CT-BASED PATIENT-SPECIFIC IMMERSIVE 3D HOLOMAG ENHANCED SPATIAL IMMERSION IN HEPATO-PANCREATO-BILIARY AND GASTROINTESTINAL SURGERY
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Introduction: We developed a CT-based patient-specific holographic surgical simulation navigation system of immersive mixed reality (MR).

Aims & Methods: The aim of this study is to identify its benefit of simulating, analyzing and evaluating operative surgical treatment options in gastrointestinal and hepato-pancreato-biliary surgery.

We used our original immersive MR application using HoloLens, that is a pair of MR smartglasses built-in head-mounted display. By reconstructing the patient-specific 3D surface polygons of each organ out of the patient’s MDCT images, MR anatomy was displayed on the glasses three-dimensionally during actual surgery. The multi-touch interface and the gesture controlled manipulation by surgeons’ hands with surgical gloves was useful for intraoperative anatomical references of tumors and vascular position under sterilized environment. It allowed the user to manipulate the spatial attributes of the virtual and real anatomies, which can enhance spatial awareness. The use of our systems reduced the length of the operation and discussion time.

MR navigation assistance could support complex procedures with the help of pre- and intra-operative imaging with better visualisation of the surgical anatomy and spatial awareness with visualisation of surgical instruments in relation to anatomical landmarks.

Conclusion: We report illustrative benefits of the immersive MR in surgical planning, simulation, education, and image-guided navigation. This could overcome the limitations of the conventional image-guided surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1602 EFFICACY OF DOUBLE PIGTAIL STENT FOR POST OESOGASTRIC SURGICAL LEAKS NON LINKED TO BARIATRIC SURGERY: A PILOT BI-CENTRE RETROSPECTIVE STUDY

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Introduction: Post-surgical leaks are the first complication after non-bariatric oeso-gastric surgery in terms of frequency and morbidity. Anatomistic fistulae change the prognostic of the operated patient increasing the length of stay, increasing costs, increasing mortality and increasing risks of oncological recurrence. Surgery is still a possibility of treatment in particular in case of severe sepsis but the role of endoscopy developed with development of a new armamentarium of endotherapy dedicated to such complications. In cases of post laparoscopic sleeve gastrectomy leaks, a shift is ongoing between closure or diversion methods (Ovesco, clips, covered self expandable metal stents (SEMS)) and internal drainage (double pig tail stents). Two large studies have just reported a high efficiency and a low complication rate with internal drainage with double pig tail stents for post sleeve gastrectomy leaks. No data are available for such an endoscopic internal drainage in fistulas of the upper digestive tract non-linked to bariatric surgery. Here we report the results of a pilot bi-centre retrospective study.

Aims & Methods: A retrospective study of all upper digestive tract leaks non linked to bariatric surgery and treated by double pig tail stent (DPTS) in two...
Introduction: Abdominal compartment syndrome (ACS) is serious complication of big number of surgical interventions. According the data of the World Society of the Abdominal Compartment Syndrome (WSACS), rate of mortality without treatment is more than 90%, after treatment from 25% to 75% [1]. Patients with ruptured abdominal aortic aneurysms (rAAA) are the group of high risk regarding complication. Rate of incidence ACS at these patients is between 8% to 25%[2]. According to data of various authors, from one third to one half of them have died [3]. One of the main cause of this is the absence of good monitoring of intraabdominal pressure in this group of patients[4]. Currently, we have one effective way of treatment for this pathology: decompressive laparotomy[5]. But prophylaxis becomes more important point, if we take to attention mortality after start the develop of abdominal compartment.

Aims & Methods: We aimed to investigate the impact of implantation polypropylene mesh in abdominal wall on rate of development ACS and it severity for patients after open repairing of ruptured abdominal aortic aneurysm. Patients with rAAA (total amount n = 87 patients) were operated in standard volume. Before finish of surgery in study group (n = 49, 34 males, 15 females, average age 64 years (ages range from 25 to 77 years) patients had infrarenal type of rAAA. Middle laparotomy or thoracophrenodiaphragmal access was used. After surgery intraabdomenral pressure was controlled by intravesical method during first seven days after operation. We fixed rate of complication and mortality in both groups. We followed-up patients after surgery and controlled far outcomes too. First mesh implantation was performed at 24 February 2014, last at 03 March 2017.

Results: In study group we fixed 5 cases of ACS (10.2%), including 3 cases of light ACS (intraabdominal pressure (IAP) – 12–15 mmHg), 1 case of moderate ACS (IAP – 15–21 mmHg), and 1 case of severe ACS (IAP > 21–25 mmHg). Decompressive laparotomy was performed in one case with satisfactory result. In general, mortality in study group was 18.4% (9 cases). In control group we fixed 9 cases of ACS (23.7%), including 3 cases of light ACS (intraabdominal pressure (IAP) – 12–15 mmHg), 2 cases of moderate ACS (IAP 16–20 mmHg), and 3 cases of severe ACS (IAP 21–25 mmHg) and 1 case with very severe ACS (IAP more than 25 mmHg). Decompressive laparotomy was performed in three cases, satisfactory result was achieved in one case, in two cases patients have died from polyorgan insufficiency. In general, mortality in control group was 28.9% (11 cases). We did not find any specific complication, related with implantation of polypropylene mesh during all three years of follow-up.

Conclusion: 1. Implantation of polypropylene mesh is a safe and effective procedure for prophylaxis of ACS for patient with rAAA. 2. Implantation of mesh allows to avoid ACS for patient with rAAA and related with it complication and outcomes. 3. It is possible to implantate polypropylene mesh for other deseases, not only for rAAA, but this point requires further investigations.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1604 ENDOSCOPIC PERORAL DRAINAGE (EPOD) OF PERITONEAL COLLECTIONS AND ABSCESSSES SECONDARY TO BARIATRIC SURGERY LEAKS: THE PARADIGM SHIFT OF SEEING PERITONEUM AS AN ORGAN AMENABLE FOR FLEXIBLE PERITONEAL INTERVENTIONS
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Introduction: Peritoneal collections and abscesses after Bariatric Surgery (BS) leaks are dreaded complications. Laparoscopic or open surgery and percutaneous CT drainage are the current indications. Endoscopic management of pancreatic collections is a rationale for Endoscopic Peroral Drainage (EPOD) approach in cases of BS leaks with abdominal collections.

Aims & Methods: The aim of this study is to evaluate utility and safety of EPOD to treat peritoneal collections and abscesses secondary to BS leaks. Methods: This retrospective study included 65 consecutive patients from 2007 to 2015 at a single center (40 Sleeve gastrectomy, 25 gastric bypass) after 5 to 21 days from...
surgery. Patients presented heart rate over 120 bpm. Images from CT showed left side free abdominal wall with no free abdominal membranes. An Upper Gastrointestinal (UGI) was performed to localize the leak opening and enter to peritoneal cavity. Either 9.8 or 5.8 mm diameter gastroscopy were used. In 10 patients with orifices smaller than 5.8 mm balloon dilatation of the leak opening allowed peritoneal access. The technique was performed under local anesthetic (100 to 700ml). Sample was taken for bacterial cultures. The cavity was flushed and suctioned out with sterile saline solution (200ml to 1000ml). In cases of inadequate location surgical drains catheters were repositioned or replaced using endoscopic forceps and snare. Fluid drainage was conducted using a ureter catheter. Replacement of urinary catheters was performed advancing with endoscopes through the leak all the way down to the skin. Once the tip of the endoscope was outside the peritoneum the latex drains were removed. Catheters were snared or grabbed and pulled back into the peritoneum leaving the proximal end close to the fistula opening. In 5 patients without surgical drainage systems one laparoscopic port was localized inside peritoneum and re-opened under endoscopic vision to allow drainage catheters placement. In 8 patients peritoneal adhesions were endoscopically lifted using endoscopic forceps and knives to facilitate peritoneal navigation.

Results: Heart rate returned to normal within 24 hours and leukocytosis improved after 72 hours. In 50% of patients heart rate returned to normal immediately. Average time for the whole procedure was 45 minutes. Abdominal catheters were removed between 7 and 18 days once full resolution of the drainage was achieved. Twenty patients were discharged within the first 24 hours. The rest were discharged between 3 and 8 days. Partially covered SEMS were placed for 6 to 8 weeks leading to complete closure of leaks. There were no adverse events related.

Conclusion: EPOD for peritoneal collections and abscesses secondary to BS leaks is feasible, safe and highly effective.

Disclosure of Interest: All authors have declared no conflicts of interest.
Disclosure of Interest: All authors have declared no conflicts of interest.

References

WEDNESDAY, NOVEMBER 01, 2017 09:00-14:00
IBD III - ASSALING THE EFFECT OF ETHNICITY ON URINARY METABOLIC PROFILES IN INFLAMMATORY BOWEL DISEASE
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2Divison Of Digestive Diseases, Department Of Surgery And Cancer, Imperial College London, London/United Kingdom
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Introduction: Urinary metabolic profiling has been shown to distinguish patients with inflammatory bowel disease (IBD) from healthy controls (HC), and also separate ulcerative colitis (UC) from Crohn’s disease (CD) in Caucasian (Cau) cohorts (1). Diet and lifestyle also have an effect on metabolic profiles (2), and separate ulcerative colitis from Crohn’s disease from UC, replicating previous studies. South Asian IBD patients could not be separated from healthy controls which may be due to lower numbers of South Asian patients in this study, and specifically less Crohn’s disease patients where stronger discriminating models have been shown in Crohn’s disease in previous studies. In Crohn’s disease, Caucasians and South Asians could be separated, but Caucasian and South Asian patients could not be distinguished in the UC cohort, possibly suggesting the metabolic milieu in Crohn’s disease is stronger and less influenced by the impact of ethnicity.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

IN PATIENTS WITH QUIESCENT ULCERATIVE COLITIS
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Introduction: Reduced saccharolytic fermentation has been described in patients with quiescent ulcerative colitis (UC). Such defects may differ across colonic regions along with acute variations in dietary fibre intake. These aspects deserve further study.

Aims & Methods: We aimed to define regional colonic fermentation by direct intestinal pH-transit profiling in patients with quiescent UC following acute variations in fermentable fiber intake. A randomized, double-blind, crossover trial was performed. Patients with quiescent UC (Partial Mayo Score ≤1; faecal calprotectin <150μg/g) and healthy controls who were not taking any

Results: The phenotype of South Asian Crohn’s disease was not significantly different to Caucasian Crohn’s disease in this cohort. In the South Asian UC group there was more pancolitis (p = 0.051) and less proctitis (p = 0.008). There were more vegetarians in the South Asian group. OPLSDA was able to separate patients with IBD from healthy controls, and also UC from Crohn’s disease, in the Caucasian cohort, but this separation could not be replicated in South Asians (negative Q2 values).

Conclusion: The separation between Caucasian and South Asian healthy controls may reflect differing lifestyles including diet. Caucasian IBD patients could be separated from healthy controls, and Crohn’s disease from UC, replicating previous studies. South Asian IBD patients could not be separated from healthy controls which may be due to lower numbers of South Asian patients in this study, and specifically less Crohn’s disease patients where stronger discriminating models have been shown in Crohn’s disease in previous studies. In Crohn’s disease, Caucasians and South Asians could be separated, but Caucasian and South Asian patients could not be distinguished in the UC cohort, possibly suggesting the metabolic milieu in Crohn’s disease is stronger and less influenced by the impact of ethnicity.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Table 1: Colonic pH and transit responses to acute changes in fermentable fiber intake

<table>
<thead>
<tr>
<th>Group</th>
<th>Overall mean pH (95% CI)</th>
<th>Mean fecal pH (95% CI)</th>
<th>Mean distal colonic pH (95% CI)</th>
<th>Median [IQR] CTT (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC n = 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low fiber</td>
<td>6.4 (6.2–6.8)</td>
<td>5.6 (5.3–5.7)</td>
<td>7.9 (7.6–8.2)</td>
<td>17 (9–23)</td>
</tr>
<tr>
<td>High fiber</td>
<td>6.3 (6.0–6.5)</td>
<td>5.3 (5.2–5.4)</td>
<td>8.1 (7.8–8.4)</td>
<td>21 (16–39)</td>
</tr>
<tr>
<td>p-value</td>
<td>0.20</td>
<td>0.001</td>
<td>0.09</td>
<td>0.13</td>
</tr>
<tr>
<td>Healthy n = 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low fiber</td>
<td>6.9 (6.5–7.2)</td>
<td>5.5 (5.2–5.8)</td>
<td>8.0 (8.5–8.8)</td>
<td>16 (15–37)</td>
</tr>
<tr>
<td>High fiber</td>
<td>6.3 (6.0–6.5)</td>
<td>5.4 (4.9–5.5)</td>
<td>7.7 (7.4–8.0)</td>
<td>18 (15–32)</td>
</tr>
<tr>
<td>p-value^2</td>
<td>0.02</td>
<td>0.15</td>
<td>0.04</td>
<td>0.58^2</td>
</tr>
</tbody>
</table>

Table 1: Colonic pH and transit responses to acute changes in fermentable fiber intake

Conclusion: A high fermentable fiber diet partially increased colonic fermentative activity in patients with quiescent UC compared to controls. Moreover, contrary to controls, UC patients exhibited an increase in distal pH and heterogeneous colonic transit responses after a high fermentable fiber intake. Our findings suggest that abnormalities in motility and regional defects in the function of the colonic microbiota exist despite quiescent disease.

Disclosure of Interest: C.K. Yao: The Department of Gastroenterology, Monash University benefits financially from the sales of a digital app and booklet on the low FODMAP diet. R.E. Burgell: Rebecca has received consultancy fees from Allergan. The Department of Gastroenterology, Monash University benefits financially from the sales of a digital app and booklet on the low FODMAP diet. J.S. Barrett: The Department of Gastroenterology, Monash University benefits financially from the sales of a digital app and booklet on the low FODMAP diet. J.G. Muir: The Department of Gastroenterology, Monash University benefits financially from the sales of a digital app and booklet on the low FODMAP diet. P.R. Gibson: PG has served as consultant or advisory member for AbbVie, Ferring, and Allergan; Pfizer; and Takeda; research support from AbbVie & Janssen; speaking honoraria for his institution from AbbVie, Janssen, Ferring, Takeda, Mylan & Pfizer.

All other authors have declared no conflicts of interest.

P1610 FECAL MICROBIAL DYSBIOSIS IN CHINESE PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Introduction: Microbial dysbiosis in the gut has been suggested to play an important role in the pathogenesis of inflammatory bowel disease (IBD).

Aims & Methods: In this study, we aimed to analyze the fecal microbiota in Chinese patients with IBD. Fecal samples from 15 patients with Crohn’s disease (CD), 14 patients with ulcerative colitis (UC) and 13 healthy individuals were subjected to 16S rDNA sequencing. The V4 hypervariable regions of 16S rDNA were sequenced by the Illumina MiSeq2500 platform. Quality control and operational taxonomic units (OTUs) were calculated with QIIME software.

Results: Significant differences in community richness and microbial structure were observed both in CD and UC compared with normal controls. At the phylum level, analysis of the microbial compositions revealed that the Proteobacteria percentages, were significant higher in IBD than in controls. While at the genus level, we found that the abundance of Ruminococcus gnavus was 23 genera in UC, particular the Escherichia genus, were significantly different when comparing with controls. We next surveyed the taxonomic composition distribution between different phases of disease, detecting that the abundance of the Bacteroides was significantly decreased in active UC group compared with inactive CD group. However, the Proteobacteria was only nominally increased in active CD relative to inactive CD, which did not hold significance after correction. Furthermore, the relative abundance of the Bacteroidetes, especially the Bacteroides, was negatively correlated with the calculated Crohn’s disease activity index (CDAI).

References: Our findings showed the specific characteristics and dysbiosis of fecal microbiota within Chinese IBD patients. In addition, the abundance of the Bacteroides was significant lower in active UC group than in inactive CD group which was negatively correlated with the CDAI, indicating that the Bacteroides could be related with the disease activity.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1612 OGR1 (GPR80) EXPRESSION IS INCREASED IN INTESTINAL INFLAMMATION AND CORRELATES WITH DISEASE ACTIVITY IN PATIENTS WITH IBD

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Introduction: The aim of this study was to elucidate the effects of iron supplementation on hypoxia-mediates responses in the intestinal epithelium. For this purpose, serum starved Caco-2 monolayers were subjected to normoxia (21% O2) or hypoxia (0.2% O2) in the presence and absence of ferric ammonium iron citrate (FAc) and the iron chelator deferoxamine (DFO). Total RNA was isolated and changes in the expression of tumor necrosis factor (TNF), interleukin (IL)-1β, MIT-1, and ferritin was assessed by real-time quantitative PCR. Western blot analysis was performed with antibodies against ferritin, p-CAF, HIF-1α, p-PTOR, and LC3. mRNA synthesis in Caco-2 cells under hypoxia was blocked using actinomycin D. Chromatin immunoprecipitation experiments were carried using antibodies against NF-κB and primers for promoter binding regions of TNF and IL-1β. Healthy volunteers (n = 10) were subjected to hypoxic conditions resembling an altitude of 4,000 m above sea level for 3 h using a hypobaric chamber. Serum samples were collected the day prior to hypoxia, and one day, one week and one month after hypoxia.

Methods: Environmental hypoxia has been established to influence the development of inflammatory bowel disease (IBD). Adaptation to low oxygen tension are mediated through hypoxia inducible factor (HIFs), which are tightly regulated by oxygen and iron levels through the action of hypoxiastylases. Dietary iron is mainly absorbed by duodenal enterocytes through the divalent metal transporter (DMT)-1. Iron is inside the enterocytes, it is either sequesentered into ferritin or transported out of the enterocyte into the circulation by ferroportin (FPN). Regulation of uptake, storage and export of iron is mediated by signals reflecting oxygen and intracellular iron levels in enterocytes, and systemic iron requirements. Central to systemic iron regulation is the liver hormone hepcidin, which regulates and is regulated by systemic iron levels. Heptcind expression is induced by cytokines and results in anemia of inflammation.

Results: Hypoxia induced the mRNA expression of TNF and IL-1β concomitantly to the pro-inflamatory role of NF-κB, which has been found that the abundance of Ruminococcus gnavus was significantly decreased in active UC group compared with inactive CD group. However, the Proteobacteria was only nominally increased in active CD relative to inactive CD, which did not hold significance after correction. Furthermore, the relative abundance of the Bacteroidetes, especially the
P1616 MICROBIAL PROFILE OF NEWLY DIAGNOSED PATIENTS WITH ULCERATIVE COLITIS DIFFERS WITH ETHNICITY: RESULTS OF AN INCEPTION COHORT TIME SERIES ANALYSIS

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Introduction: Ulcerative colitis (UC) phenotype in South Asian (SA) migrants differs to Caucasians with a predominant pan-colonic extent. A separate study showed mucosal profiles with lower bacterial diversity in the SA group.2 The significance of these findings is unclear due to small sample size. Henceforth, a larger study was performed with a comprehensive analysis of microbiota in UC patients from different ethnicities.

Methods: Samples were collected from 48 UC patients recruited in a prospective inception cohort study at diagnosis (time point 1; months 0–3) and 2 further time points over one year (time point 2: months 4–8, time point 3: months 9–12). Patients were stratified by ethnic group (SA, Caucasian, Other), treatment (none, 5-ASA, Azathioprine and Steroids) and disease duration. Health controls (HC) were recruited locally among the staff at St. Marks Hospital. For 16S pyrosequencing the hypervariable region (V1) of the 16S rRNA gene was amplified by PCR. The amplicons were subjected to sequencing using Illumina MiSeq technology. The sequences were loaded onto the QiIME pipeline. Statistical analysis was performed using STAMP 2.1.2 software with Welch’s two-sided t-test for comparing two groups. Microbial richness was calculated based on Chao index. Weighted Unifrac metrics were applied to construct Principal Coordinate Analysis (PCoA) plots.

Results: Ninety-four faecal samples were collected. Sample collection for all time points included SA (n = 13), Caucasian (n = 9), healthy SA (n = 11) and healthy Caucasian (n = 12). There was no significant difference in relative abundance of bacteria between treatment groups (5-ASA, Azathioprine, Steroids, None) and time points (1 vs 3), comparing healthy SA and healthy Caucasians, there was only one significant difference in relative abundance of Clostridiales at the family level. (Increased in SA group). The Chao1 diversity index showed a trend towards lower diversity in the SA group compared to Caucasians although there was no significant difference. There were significant increases in Bifidobacterium, Bikenellaceae, Lactobacillaceae and Streptococaceae (Table 1) and significantly decreased relative abundance in Barnesiellaceae, Anaerostipes and Ruminococcaceae.

Conclusion: Increased Bifidobacteria and Lactobacillaceae in the SA group is consistent with the previous study. A possible explanation is the consumption of fermented foods in the SA group although there was no difference between healthy SA and Caucasian controls. There is a trend towards lower diversity in the SA group and reduced Bacteroides which are consistent with the UC dysbiosis described in the literature. Functional analysis of this unique microbial profile through metagenomic and metabolomic techniques may explain the different disease behaviour in the SA group.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

TABLE 1: Summary of Bacterial Taxonomic Findings in South Asians (SA) and Caucasians with ulcerative colitis. 1Increase or decrease in SA relative to Caucasians.

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Change*</th>
<th>Family</th>
<th>Genus</th>
<th>Change*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actinobacteria</td>
<td>Increased</td>
<td>Bifidobacteriaceae</td>
<td>Increased</td>
<td>Bifidobacterium</td>
</tr>
<tr>
<td>Bacteroidetes</td>
<td>Decreased</td>
<td>Bacteroidales</td>
<td>Decreased</td>
<td>Barnesiellaceae</td>
</tr>
<tr>
<td>Fimbriaeae</td>
<td>Decreased</td>
<td>Lactobacillaceae</td>
<td>Increased</td>
<td>Lactobacillus</td>
</tr>
<tr>
<td>Clostridiales</td>
<td>Decreased</td>
<td>Streptococcaceae</td>
<td>Increased</td>
<td>Streptococcus</td>
</tr>
<tr>
<td>Lachnospiraceae</td>
<td>Decreased</td>
<td>Anaerostipes</td>
<td>Decreased</td>
<td>None</td>
</tr>
<tr>
<td>Ruminococcaceae</td>
<td>Decreased</td>
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<td>Increased</td>
<td>None</td>
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<tr>
<td>Verrucomicrobia</td>
<td>Increased</td>
<td>Proteobacteria</td>
<td>Decreased</td>
<td>Paracollibacter</td>
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</table>

P1614 VITAMIN D SUPPLEMENTATION REDUCES FAECAL CALPROTECTIN AND ALTERS INTESTINAL MICROBIOTA COMPOSITION IN PATIENTS WITH ACTIVE ULCERATIVE COLITIS

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Introduction: There is evidence for vitamin D as an immunomodulator in patients with IBD, but results from clinical trials to date are inconclusive. It is uncertain whether vitamin D supplementation may affect the intestinal microbiota.

Aims & Methods: This study aimed to assess the effect of vitamin D replacement in deficient patients with and without ulcerative colitis (UC) on inflammation and faecal microbiota. Vitamin D was replaced over 8 weeks to patients with active UC, inactive UC, and non-IBD controls with baseline 25(OH) vitamin D < 30 nmol/L, and markers of inflammation and stool collected for microbiota analyses by next generation sequencing.

Results: Eight patients with active UC, 9 with inactive UC and 8 non-IBD controls received 40,000 units of vitamin D weekly over 8 weeks. No demographic differences were noted across the groups. Mean baseline 25(OH) vitamin D levels were 34 (range 12–49) nmol/L. Vitamin D supplementation increased mean 25(OH) vitamin D to 111 (range 71–158) nmol/L (P < 0.001), and reduced parathyroid hormone levels from mean 4.3 to 3.3 pmol/L (p = 0.017). No change in baseline medications for UC took place in patients with UC, except for one patient with active UC who ceased his 5-aminosalicylic acid. Faecal calprotectin levels reduced from median 275 to 91 μg/g (p = 0.023) in patients with active colitis, but did not change in patients with inactive colitis or non-IBD controls. Similar improvements in albumin, platelet count and symptomatic disease activity indices were noted. No changes in overall bacterial diversity were noted. There was a trend towards an increase in abundance of Ruminococcus gnavus post vitamin D supplementation in active UC patients, but this did not reach statistical significance.

Conclusion: Vitamin D supplementation was associated with reduced intestinal inflammation in patients with active UC. A randomised controlled trial evaluating vitamin D in IBD is required along with further investigation of potential mechanisms by which vitamin D may alter specific microbial composition.

Disclosure of Interest: M. Garg: This work was supported by the European Crohn’s and Colitis Foundation Fellowship awarded to Dr Mayur Garg, and St Mark’s Association Grant awarded to Prof Nicola Hart and Dr Mayur Garg. All other authors have declared no conflicts of interest.
P1615 SUPPRESSION OF PHOSPHOLIPASE A2 OF INTESTINAL MICROBES MEDIATES ACUTE INFLAMMATION IN A GENETIC MOUSE MODEL OF ULCERATIVE COLITIS

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Aims & Methods: Attack by commensal microbiota is one component for induction of inflammatory episodes in ulcerative colitis (UC). In UC, the mucus layer is intrinsically devoid of phosphatidylcholine (PC) resulting in low hydrophobicity which facilitates bacterial invasion. Colonic ectophospholipase-carrying bacterial strains are likely candidates to break the PC mucus barrier. Therefore we aimed to evaluate the effect of phospholipase A2 (PLA2) inhibitors on inflammation in a genetic UC mouse model.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1616 THE IMPACT OF THE RS800516 POLYMORPHISM ON G PROTEIN-COUPLED RECEPTOR GPR65 (TDAG8) PH-ASSOCIATED SIGNALLING IN INTESTINAL INFLAMMATION


Aims & Methods: Attack by commensal microbiota is one component for induction of inflammatory episodes in ulcerative colitis (UC). In UC, the mucus layer is intrinsically devoid of phosphatidylcholine (PC) resulting in low hydrophobicity which facilitates bacterial invasion. Colonic ectophospholipase-carrying bacterial strains are likely candidates to break the PC mucus barrier. Therefore we aimed to evaluate the effect of phospholipase A2 (PLA2) inhibitors on inflammation in a genetic UC mouse model.

Result: Luminal UDCA-LPE reduced the PLA2 activity in stool by 36.4%.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1617 B2-STRUCTURING AND B3-PENETRATING PHENOTYPE IN CROHN’S DISEASE: CHANGING PATTERN OF MACROPHAGES POPULATION AND WNT SIGNALING

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Aims & Methods: The aim of the present study is to analyze the pattern of expression of macrophage markers and Wnt ligands in surgical resections from Crohn’s disease (CD) patients with different disease behavior. CD patients were categorized according to Montreal classification (age at diagnosis, location and behavior). mRNA was isolated from resections patients presenting an strictureing (B2) or a penetrating (B3) behavior or from patients with colorectal cancer (control). The expression of macrophage markers (CD206, CD68, iNOS, Arginase) and Wnt ligands was analyzed by RT-

Conclusion: B3-patients seem to present a higher infiltration of macrophages since increased expression of markers classically used to detect pro-inflammatory (CD86) and regulatory/pro-resolving/pro-fibrotic phenotypes (CD206, ARG) was detected in this group. These patients also presented a generalized overexpression of Wnt ligands together with augmented DKK1 mRNA levels. B2- patients showed a more complex situation with ligands that present increased (Wnt3), reduced (Wnt2B) or unchanged expression in the absence of significant variations in the levels of macrophage markers (Table). Relative expression levels were measured as fold change and compared with control group.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1619  GTS-21, A7 NICOTINIC ACETYLCHOLINE RECEPTOR AGONIST, ATTENUATE DSS-INDUCED COLITIS BY IMPROVING INTESTINAL MUCOSAL BARRIER FUNCTION

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Introduction: The intestinal inflammation is reduced by electrical stimulation of the different vagus nerves. Cholinergic neural output may be a target to minimize tissue damage in autoimmune disease. Cholinergic neural output can modulate innate immune responses through stimulation of α7 nicotinic acetylcholine receptors (α7nAChR). GTS-21, a selective α7nAChR agonist, has previously demonstrated to inhibit the inflammation associated with rheumatoid arthritis (RA). In this study we investigate whether GTS-21 protects against DSS-induced colitis and its potential mechanism.

Aims & Methods: Male BABL/c mice (8–10 weeks old, n = 32) were randomly divided into 4 groups: normal control group, DSS-induced group, GTS-21 treatment control group (DSS-induced mice treated with GTS-21), -BGT group (DSS-induced mice treated with a-BGT and GTS-21) (n = 8, each group). DSS group was given final concentration of 3.5% DSS drinking water, the treatment group was treated with GTS-21 (20mg/kg intraperitoneal injection) per day, a-BGT group was pre-treated with a-BGT (0.1 mg/kg/day, intraperitoneal injec- tion) for 30 min prior to GTS-21 injection, and the control group received saline. Caco2 cells were randomly divided into 4 groups: normal control group, TNF-α-induced group, GTS-21 treatment control group, a-BGT group. TNF-α group of Caco2 cells were exposed to 25 ng/ml TNF-α, GTS-21 group were given 100 ng/ ml GTS-21 for 30min prior to TNF-α; a-BGT group pre-treated with a-BGT (50 ng/ml) for 30 min prior to GTS-21 injection. BAY 11-2058 (NF-κB inhibitor) group were given 50 ng/ml BAY-11-2058 for 30min prior to TNF-α. Disease activity index, macroscopic scores, and colonic damage were determined. The intestinal permeability of mice was measured by fluorescein-isothiocyanate-dex- tran (FITC-Dex). Western blot was used to detect the tight junction protein and NF-κB associated protein expression.

Results: Compared with DSS-induced mice, DAI score decreased and colonic length improved after administration of GTS-21 (9.1±0.74 cm vs 6.85 ± 0.53 cm, P < 0.01). The HAI score decreased (1.25±1.32 vs 10.5±2.64, P < 0.05). The α7nAChR antagonist a-BGT can eliminate those protective effects (Figure 1).

2. The intestinal permeability improved after administration of GTS-21 compared with DSS-induced mice (49.52 ± 28.59 µm vs 157.7 ± 32.40 µm/g P < 0.05), whereas a-BGT can block the effect (115.50 ± 11.0 µm/g vs 49.52 ± 28.59 µm/g P < 0.05) (Figure 2, 3). The expression and distribution of tight junction protein in DSS-induced mice were enhanced after treatment with GTS-21 (p < 0.05) (Figure 4, 5). GTS-21 attenuated the NF-κB activation (p < 0.05) (Figure 6). A-BGT induction reversed the inhibitory effect of GTS-21 (p < 0.05) (Figure 6). GTS-21 improves the distribution of tight junction proteins in the intestinal epithelial cells induced by TNF-α (Figure 7). GTS-21 reduces nuclear translocation of NF-κB in Caco2 cells induced by TNF-α (Figure 8).

Conclusion: Tha7 nicotinic acetylcholine receptors agonist GTS-21 can attenuate the intestinal inflammation in DSS-induced mice, which may be due to improving intestinal mucosal barrier function by enhancing the expression of tight junction protein.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1621 ANAEMIA PREVALENCE AND TREATMENT APPROACH FOR INFLAMMATORY BOWEL DISEASE

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Introduction: For inflammatory bowel disease (IBD), anaemia is the most frequently observed extra intestinal finding, prevalence of which varies from 6% to 74%. It’s of great importance to determine and treat anaemia as it lowers patients’ life quality and leads to labour loss. The main causes of anaemia in IBD are iron deficiency anaemia (IDA) and anaemia of chronic disease (ACD).

In this study, we aim to specify the type and prevalence of anaemia along with a treatment approach for inflammatory bowel disease (IBD). We conducted a retrospective study on 465 patients, who were diagnosed with IBD and followed up at our hospital from June 2015 to June 2016 (male: 254; female: 211; average age: 47 ± 14.4, Crohn disease: CD: 257, Ulcerative Colitis (UC): 108; Crohn disease vs. Ulcerative Colitis: P < 0.001). According to WHO criteria, severe anaemia is defined as haemoglobin value is below 13g/dl in men and 12g/dl in women.

Results: In our study, we determined that 50.3% of total 465 patients had anae- mia, which was more frequent in women then men (64% vs. 39%, p < 0.001). Anaemia frequency was higher in CH cases (57%) then in UC cases (41%) (p = 0.001). CD involvement were as follows: 54.5% in ileal involvement, 60.4% in colonic involvement and 58.5% in ileocolonic involvement. Furthermore, 27.5% of UC patients had proctitis (E1) involvement while 41% of CD patients had involvement in left colon (E2) and 31.5% had pancolitis involve- ment. There was no significant relation between anemia frequency and duration of disease (p = 0.216). We specified the following types of anaemia: IDA only 32.9% (77), ACD only 5.5% (13), IDA and ACD combination 6.8% (16), anae- mia stemming from B12/folic acid deficiency 6.4% (15), and anaemia with no etiology 30.7% (72). 50% of patients with anemia received treatment; 23% of IBD patients had oral iron intake and 41% of them had parenteral iron treatment while 53% of patients who were suffering from megaloblastic anaemia got B12/folic acid treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


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Conclusion: We found out that almost half of all IBD patients (50.3%), whom we followed up, had anaemia, the most frequent reason of which was IDA. Almost half of these patients received anaemia treatment. We should increase the treat- ment rate in our IBD patients that have anaemia.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1624 EFFECT OF T CELL ACTIVATION AND INFLAMMATION ON THE INTERACTION BETWEEN T CELLS AND ENTERIC GLIAL CELLS
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Aims & Methods: To analyse the interactions between immune and enteric neural cells, EGC isolated from the myenteric plexus of the rat digestive tract were co-cultured with CFSE-labeled T cells. Impact of T cell activation on neuro-immune interactions was investigated by treating T cells with anti-CD3/anti-CD28 antibodies. To determine whether inflammatory conditions favored the contacts between glial and immune cells, EGC were treated with LPS or TNF/IL1 prior their exposition to T cells. After 2 hours, non-adherent cells were removed and the T cells interacting with EGC (S100+) were counted. Immunocytochemistry were also used to characterize the subpopulations of T cells (CD4+, CD8+) that contact glial cells.

Results: Analyses reveal that non-activated T lymphocytes are capable of interacting with EGC. They also show that activation of T cells with anti-CD3/anti-CD28 antibodies increases the number of T lymphocytes interacting with EGC. Interestingly, an increased number of EGC-T cell interactions was observed after pre-treatment of EGC with inflammatory stimuli. This phenomenon was also noted with activated T cells. Characterization of T cells show that both CD4 and CD8 cells are capable of contact with EGC.

Conclusion: Our present data reveal that EGC interact with T cells. These contacts are favored by T cell activation but also by EGC exposure to inflammatory cytokines. Further experiments are required to characterize these neuro-immune interactions but they suggest that EGC-T cell contact may play a crucial role in case of inflammatory bowel diseases. This work is supported by the Association François Aupetit.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1625 ENTERIC GLIAL CELLS REACTION TO INFLAMMATION IS LOST IN CROHN’S DISEASE
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Introduction: Enteric glial cells (EGC) are essential to intestinal epithelial barrier (IEB) homeostasis. In healthy intestines, EGC reduce IEB permeability and promote mucosal healing. In inflammatory bowel disease (IBD) such as Crohn’s Disease (CD) and Ulcerative Colitis (UC), both EGC phenotype and IEB functions are altered, but putative involvement of EGC in IBD pathogenesis remains unknown. If the astrocyte reactivity is well studied, the reaction of EGC to chronic inflammation is not well documented. We investigated whether EGC impact on IEB permeability was altered in an inflammatory environment and in IBD patients.

Aims & Methods: Rat EGC as well as human EGC from control, CD and UC patients were stimulated with the cytokine T1 (TNFα+IL1beta; 1 to 100ng/ ml) or LPS for 2 or 4 days. Reactive EGC phenotype where characterized and reactive EGC functional impact on IEB permeability was studied (i) in vitro using human intestinal epithelial cells (IEC) in a non-contact co-culture model, or (ii) in vivo by grafting the treated rat EGC in colon wall of Sprague Dawley rats.

Results: Rat and human control EGC induced a significant reduction of IEB permeability after T1 treatment when compared with untreated or LPS treated EGC. LPS or T1 treatment had no significant effects on IEB. In vivo colon wall grafting with control EGC did not modify the permeability whereas colon wall grafting with EGC preconditioned by T1 significantly reduced

Conclusion: ZIP7 induces disruption of the intestinal barrier, which was associated with activation of endoplasmic reticulum stress in IBD. It is expected to provide a novel mechanism of IBD and provide a new target for the treatment of IBD.

Disclosure of Interest: All authors have declared no conflicts of interest.
the permeability when compared to control animals. Human EGC from control or UC patients treated with T1 induced a decrease in IEB permeability too, but EGC from CD patients did not.

Conclusion: This work is not only the first evidence showing that reactive EGC can have beneficial effects upon IEB permeability, but also shows that EGC from CD but not UC patients have lost these reactivity. This could define EGC as active players in CD pathogenesis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1626 PROSTACYCLIN REVERSES COLITIS THROUGH THE DOWN REGULATION OF INTESTINAL EPITHELIAL PERMEABILITY

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Introduction: In inflammatory bowel disease (IBD) both intestinal epithelial barrier (IEB) permeability and PTGIS expression are altered. Nevertheless the role of the lipid mediator PG12 produced by PTGIS in IEB regulation is unknown. The present study concerns the control of IEB permeability by PG12 and its involvement in the development of colitis.

Aims & Methods: Induction of permeability from control or IBD biopsies was established using high sensitivity liquid chromatography tandem mass spectrometry. Consequences of flosan PG12 analogous supplementation were evaluated in a DSS-induced mice model of colitis, measuring disease activity index (DAI), inflammation (pro-inflammatory cytokine mRNA) and IEB permeability (sulfonic acid flux). Molecular mechanisms involved were assessed by quantification of junctional and pro-proliferative vs pro-apoptotic protein expression (western blot and immunostaining). Eventually PG12 impact on reversing IEB breakdown was assessed ex vivo measuring permeability of mice or human mucosal explants treated with staurosporine apoptosis inducer, or permeability of IBD biopsies both treated or not with flosan.

Results: Biopsies from IBD patients had lower PG12 production compared to control patients, and addition of flosan reduced their permeability. In vivo PG12 supplementation significantly reduced DAI, and inflammation (Interferon mRNA) as well as reduced IEB permeability. DSS-inducedavage of Caspase 3 is normalized by flosan. Ex vivo, staurosporine-induced permeability of mice or human mucosal explants is entirely inhibited by flosan.

Conclusion: This study not only presents a role of PG12 in controlling IEB permeability by the regulation of apoptosis mechanisms, but also reveals that increased permeability in IBD patients can be fixed by PG12 supplementation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1627 7α-HYDROXY-4-CHOLESTEN-3-ONE FOR DIAGNOSIS AND MANAGEMENT OF BILE ACID MALABSORPTION: FIRST YEAR CLINICAL EXPERIENCE

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Introduction: 7α-hydroxy-4-cholesten-3-one (7HCO) is a reliable method to diagnose bile acid malabsorption (BAM). Since 7HCO is an intermediate metabolite in the bile acid synthesis, increased levels reflect bile acid production, which is the case in BAM.

Aims & Methods: We evaluate retrospectively, prospectively collected clinical data during the first year after implementation of a new test using ultrahigh performance liquid chromatography coupled to mass spectrometry to measure 7HCO (see reference). In adult patients with clinical suspicion of BAM, unexplained diarrhea and a subgroup with obesity 7HCO was measured. Levels <30 ng/mL are considered as normal values. The decision to treat with cholestyramine was at the discretion of the treating physicians.

Results: We performed 126 7HCO analysis in 112 patients (62% female, mean age 51+-16 years) with a mean level of 84 +/- 91 ng/mL. Cholestyramine treatment was more likely initiated in patients with Crohn’s disease (RR 1.8; 95%CI 0.9-3.7) or ileocecal resection (RR 3.1; 95%CI 1.7-5.7). Diarrhea improved in 60% of patients with a 7HCO level above 40 ng/mL. Thresholds of 60 or 100 ng/mL do not improve prediction of response to cholestyramine treatment.

THCO measurement in subgroups

<table>
<thead>
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<th>Subgroups</th>
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<td>94*</td>
<td>96</td>
<td>&lt;5-300</td>
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<tr>
<td>No diarrhea</td>
<td>33</td>
<td>59*</td>
<td>71</td>
<td>&lt;5-300</td>
</tr>
<tr>
<td>Cholestyramin treated</td>
<td>27</td>
<td>167*</td>
<td>105</td>
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</tr>
<tr>
<td>Cholestyramin untreated</td>
<td>85</td>
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<td>67</td>
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</tr>
<tr>
<td>Crohn’s disease (CD)</td>
<td>18</td>
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<td>105</td>
<td>13-300</td>
</tr>
<tr>
<td>Ileocecal resection (IR)</td>
<td>26</td>
<td>197</td>
<td>105</td>
<td>28-300</td>
</tr>
<tr>
<td>CD + IR</td>
<td>13</td>
<td>214</td>
<td>94</td>
<td>41-300</td>
</tr>
</tbody>
</table>

| Obese (mean BMI 39.1 kg/m²) | 21     | 62           | 49 | 6-244 |

Conclusion: A 7HCO measurement above 40 ng/mL seems to be associated with a good response to cholestyramine treatment, which suggests clinical bile acid malabsorption. However, most patients have higher levels, particularly in Crohn’s disease after ileocecal resection. These preliminary results warranted confirmation on a larger scale.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1628 THE ROLE OF SEVERAL CYTOKINES IN THE PATHOGENESIS OF AUTOIMMUNE INFLAMMATION IN PATIENTS WITH UC/IBD COLITIS

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Introduction: Ulcerative colitis (UC) is a clinical type of inflammatory bowel diseases, The pathogenesis of UC remains unclear. Nowadays the role of T-helpers type 17 (Th17) as well as cytokines they release is discussed in pathogenesis of autoimmune inflammation in UC.

Aims & Methods: The aim of study is to analyze the serum levels of following cytokines: interleukin (IL)-17A and F, 21, 22, 23 in UC patients both in the acute stage of disease and remission.Forty eight UC patients in the acute stage and twenty patients in remission were included into the study. Serum cytokine levels were analyzed using multiplex immunoassay for Th17 cytokines (Bio-Rad, USA). Statistical analysis was performed using STATISTICA 6.0 Software Package. The control group consisted of 11 healthy volunteers.

Results: Statistically significant increase of IL-17A level (15 pg/mL [12.11;23.38]; 14.68 pg/mL [11.29;17.19] respectively) was observed in patients with UC both in acute stage and remission compared to controls (7.36 pg/mL [5.18;8.06], p=0.00007, #Validation Range 5–300 ng/mL respectively). The same trend was observed regarding IL-7, which median values were higher both in acute stage (156.51 pg/mL [133.44;233.53]) and remission (144.02 pg/mL [133.44;154.43]) compared to control group (98.31 pg/mL [89.14;124.86], p=0.00007, p=0.00029 respectively). The same trend was observed regarding IL-21, which median values were higher both in acute stage (5.1 pg/mL [4.03;6.01] compared to controls, however differences were not statistically significant (p=0.06; p=0.172 respectively). Increase of described cytokines levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation.Statistically significant increase of IL-10 in remission (27.99 pg/mL [17.53;33.55]) compared to controls (4.36 pg/mL [3.26;15.25], p=0.0046) was found as well. IL-10 was also higher in patients with acute stage (21.93 [3.61;33.55] compared to controls, however differences were not statistically significant (p=0.06; p=0.172 respectively).

Conclusion: Increase of IL-17A, IL-17F, IL-21, IL-22 levels could be a sign of Th17 functional overactivity suggesting autoimmune type of inflammation. IL-17A and IL-21 produced by Th17 cells might be considered as markers of active autoimmune inflammation in UC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1629 APN32e IS INVOLVED IN THE STEROID-REFRACTORY \textit{V. Loric}\textsuperscript{1}, A. Garcia-Jaraquemada\textsuperscript{1}, J.E. Naves\textsuperscript{1}, J. Carmona\textsuperscript{1}, E. Cabrè\textsuperscript{1}, M. Mañosa\textsuperscript{1}, J. Manyè\textsuperscript{1}, E. Domènech\textsuperscript{1}
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Introduction: The steroid-refractoriness is a common complication of ulcerative colitis (UC), and an unpreventable clinical mechanism of action (MoA) has been implicated in corticosteroid failure. However, there are no conclusive studies on the molecular functions involved in UC steroid-refractoriness.

Aims & Methods: Therefore, we decided to know in depth the MoA related to the steroid-refractoriness. Aims of this study were: 1) to look for the expression of ANP32e in steroid-refractory UC patients with UC steroid-refractoriness involved chromatin remodeling modifications. The results of these comparisons were integrated into mathematical models generated by means of Systems Biology.

Results: These models reproduced the updated molecular interactions on glucocorticoids and UC, and integrating our experimental data, we identified a potential MoA that includes 64 key proteins, 18 of them capable of perfectly classifying patients with a good response to glucocorticoids and the non-responders. The biological functions of these proteins have been associated with inflammation (e.g. RelA), glucocorticoid receptor transcription (e.g. NRC1 and NCOA3) and angiogenesis (e.g. VEGF), mainly. But among these 18 proteins, the APN32e has never been related to either steroid-refractoriness or ulcerative colitis. APN32e is a putative NACHT-H2A.Z exchange (H2A.Z is part of the nucleosomes 26) and DNA from rectal biopsies was obtained before and on the 3rd day of glucocorticoid treatment. Then, whole-genome expression profiles using microarrays (Illumina, USA) and profiles microRNA by sequencing (Illumina, USA) were analysed. After quality control, omics data were compared between phenotypes. The ANP32e expression was significantly correlated with the CDAI score at 4 years (r = 0.01) and at 5 years (r = 0.68). Differently, in the ileal biopsies at 6 months, colonic phenotype of the ileum and the expression of ANP32e had a negative correlation (r = -0.003). The percentage of expression of sulfomucins in the ileal biopsies at 12 months was higher in patients with UC steroid-refractoriness involved chromatin remodeling modifications. The Spearman correlation test, differences between groups by".

Disclosure of Interest: All authors have declared no conflicts of interest.

P1630 CO-HOUSING DSS TREATED MICE WITH HEALTHY MICE RESULTS IN FASTER NORMALIZATION OF THE INTESTINAL MICROBIOTA AND PROMOTES RECOVERY

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Introduction: The intestine is populated with myriads of bacteria, which form a complex ecosystem and have tremendous impact on our health. In inflammatory bowel disease (IBD), shifts in microbiota composition and a reduction in overall diversity have been described. There are attempts to therapeutically transfer the microbiota might have beneficial effects during intestinal inflammation and opens the possibility to systematically study the effect of genetic alterations in donor and/or recipient on the outcome of FMT.

Methods: To analyse the effect of co-housing of experimental mice with healthy mice, results of expression of ANP32e and in the nuclear localization at baseline, between patients with a good response to glucocorticoids and the non-responders. The MoA was significantly correlated with the CDAI score at 4 years (r = 0.01), and at 5 years (r = 0.68; p = 0.001). Differently, in the ileal biopsies at 6 months, colonic phenotype of the ileum and the expression of ANP32e had a negative correlation (r = -0.003). The percentage of expression of sulfomucins in the ileal biopsies at 12 months was higher in patients with UC steroid-refractoriness involved chromatin remodeling modifications. The Spearman correlation test, differences between groups by "

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A total of 132 patients with IBD were randomly assigned to single each influenza strain was measured by inhibition of hemagglutination. (end of influenza season) in the single group and 4 points in the booster group collected at 3 points (before vaccination, 4 weeks after vaccination and after the rivalent influenza vaccine was administered subcutaneously. Serum samples were assigned to adult patients with crohn’s disease or ulcerative colitis, and quad-monotherapy and 20 received anti-TNF-alpha single agent therapy. Nineteen patients received combination therapy of immunosuppressant and anti-TNF-α agents.

Aims & Methods: Single vacation group and booster group were randomly assigned to adult patients with crohn’s disease or ulcerative colitis, and quadrivalent influenza vaccine was administered subcutaneously. Serum samples were collected at 3 points (before vaccination, 4 weeks after vaccination and after the end of influenza season). Antibody titers against each influenza strain were measured by inhibition of hemagglutination.

Results: A total of 132 patients with IBD were randomly assigned to single vacation and booster groups. Eighteen patients received immunomodulatory monotherapy and 20 received anti-TNF-alpha single agent therapy. Nineteen patients received combination therapy of immunosuppressant and anti-TNF-α agents. No significant difference between the single vacation group and booster group was observed (geometric mean titer: H1N1: p = 0.81; H3N2: p = 0.79; B:Phuket: p = 0.82; B:Texas: p = 0.84). In patients treated with infliximab, serum levels of anti-influenza A antibodies were higher than in patients receiving no immunosuppressant therapy. In patients treated with infliximab, serum levels of anti-influenza B antibodies were also higher than in patients receiving no immunosuppressant therapy.

Conclusion: Serological response rate to influenza vaccination was low in IBD patients receiving immunosuppressant therapy, especially infliximab, even with a quadrivalent influenza vaccine.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Conclusion: The most frequently observed IBD-related malignancy is CRC, biological therapy was ever given for 4/10 patients with IBD-related mortality.Localized by earlier death than in the rest and in the non-IBD population.

Disclosure of Interest: 

Aims & Methods: The aim of the study was to assess AC HPV infection prevalence and its risk factors in a gastroenterology population. The "Human PAPILLOMAVIRUS Anal infection - PAPILLAN" study took place in a French university hospital gastroenterology unit. Consecutive patients were prospectively recruited at the occasion of a colonoscopy, whatever the indication. On the colonoscopy day, under local anesthesia, AC smear was sampled with a dedicated brush for molecular analysis. HPV detection and genotyping was performed with the INNO-LiPA assay. Risk factors for any HPV, and high risk (HR) HPV infection were assessed by bivariate and multivariate analysis after logistic regression.

Results: A total of 469 consecutive patients (median age 54 years, 52% women) had suitable anal swabs for HPV DNA detection. Among them 101 had immunosuppressive bowel disease (IBD), 70 had CD. 112 patients had at least one immunosuppressive treatment for IBD or another condition. Overall 34% of the population had a detection of any HPV type in AC smears. HR HPV prevalence was 18%, LR HPV prevalence was 9% and HPV16 prevalence was 7%. Most prevalent HR HPV types were, by decreasing order, HPV16, HPV51, HPV52 and HPV39. Among all patients with HPV positive or HR HPV positive samples, 65.6% and 65.9% were women, respectively (p = 0.0001; p = 0.0035, compared to men). Regarding medical history, HR HPV and HPV16 prevalence were significantly higher in Crohn’s disease (CD) patients (35.4% vs. 30.4% and 9.7% vs. 4.7%, p < 0.001; 14% vs. 7.1%, compared to the rest of the study population). Eleven/12 patients (50%) with perianal CD had an AC infection with any HPV. Multivariable analysis associated female gender and history of sexually transmitted disease with the presence of any HPV in AC; and female gender, history of sexually transmitted disease, lifetime and past year number of sexual partners, active smoking and immunosuppressive treatment (OR 5.3) with the presence of HR HPV.

Conclusion: We demonstrated that CD patients harbor more frequent AC infection with HR HPVs and that immunosuppressive treatment is an independent risk factor for HR HPV infection at this site. These findings strongly support prophylaxis with vaccination and adequate screening in our patients.

Disclosure of Interest: L. Vuitton: Speaker for Abbvie, Hospira, MSD, Ferring, Grifols, Pivot. Research grants from MSD, Takeda Consulting fees from Ferrin, Abbvie
S. Koch: Speaker for Abbvie, MSD, Norgine, Olympus
All other authors have declared no conflicts of interest.

L. Plastaras: Speaker for Hospira, Abbvie, MSD

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Introduction: Extended spectrum beta-lactamase producing Enterobacteria (ESBL-E) is the most frequently found multi-drug resistant bacterium colonizing the gut of inflammatory bowel disease (IBD) patients. Changes in the microbiome may act as a trigger in IBD inflammation process. Aims & Methods: The aim of the study was to analyze whether gut colonization with ESBL-E is associated with clinically relevant disease activity increase in ulcerative colitis (UC) and in Crohn’s disease (CD). All consecutive patients with confirmed UC and CD diagnosis, previously hospitalized in two largest tertiary medical care centres in Riga, Latvia during a 7-year period (2010-2016) were included in the study, interviewed, rectal swabs were collected, Enterobacteria were cultured and analyzed for ESBL presence according to EUCAST guidelines. To clinically evaluate disease activity UC patients were evaluated according to Mayo score, Montreal classification, adapted Truelove and Warren's criteria and CD patients according to Crohn's disease activity index (CDAI), suggested by ECCO IBD guidelines (2016).

Results: A total of 101 patients with UC and 47 patients with CD were tested for gut colonization with ESBL-E. We found that 12 (11.9%) of the UC patients and 5 (10.6%) of the CD patients were colonized with ESBL-E. Statistical significant differences were found in all UC clinical disease activity scores between patients with and without gut colonization with ESBL-E and showed tendency towards statistical significance in CD. The mean disease activity according to Mayo score in UC patients without ESBL-E colonization was 3.44 (SD = 2.07), whereas in patients with ESBL-E colonization it was 5.08 (SD = 2.84) (p = 0.015). Most of the UC patients without ESBL-E colonization (n = 63; 70.8%) were in clinical remission, whereas half of the patients with ESBL-E colonization (n = 6;
50% had mild to moderate to severe disease activity, according to Montreal classification disease activity section (p = 0.037). Most of the UC patients with out ESBL-E colonization (n = 88; 91%) had mild disease activity, whereas half of the patients with ESBL-E colonization (n = 6; 50%) had moderate disease activity, according to modified Truelove and Witt’s criteria (p < 0.001). Most of the CD patients without ESBL-E colonization (n = 38; 90%) had moderate disease activity, whereas most of the patients with ESBL-E colonization (n = 3; 60%) had severe disease activity, according to CDAI (p = 0.05).

Conclusion: Gut colonization with ESBL-E might increase disease activity in outpatients. Further studies could be clinically relevant and help to improve diagnostic and treatment protocols for IBD patients, because eradication of ESBL producing bacteria might reduce IBD disease activity.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1637 IS SMOKING CESSATION LINKED TO NEW ULTERCITE COLITIS CASES? A RETROSPECTIVE COHORT-BASED HYPOTHESIS M. Greubel1, L. Biedermann2, S. Vavricka3, A. Schoepfer4, A. Macpherson5, J. Puilleral6, C. Claire-Willi7, N. Fournier7
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Introduction: Smoking has a differential effect on inflammatory bowel diseases (IBD); deleterious for Crohn’s disease (CD) and protective for ulcerative colitis (UC). Thickness of the mucus layer, immune system (cytokines production), microvascular and intestinal microbiome are potential mechanistic factors influenced by the nicotine and numerous other substances. It has been hypothesised that smoking cessation is associated with the second peak of diagnosis in UC patients after 50 years old. Our aim was to confirm this hypothesis using data on smoking status at IBD diagnosis.

Aims & Methods: Adult IBD patients included in the Swiss IBD cohort from November 2006 to November 2015 were asked about their smoking status at diagnosis. We compared the proportion of former smokers in 10-year groups of UC and CD patients.

Results: 2361 IBD patients (1366 CD, 995 UC) were included in the analysis. Among them 52% of CD ans 24% of UC patients were smokers at diagnosis (proportion of smokers in Switzerland (2014): 29%). The higher proportion (66%) of former smokers at diagnosis was in the 30 to 60 years old group of UC patients compared to only 26% in CD patients between 40 to 50 years old (p = 0.001). On a gender basis, the higher proportion of former smokers is particularly significant high among male 50–60 years old with UC (68%) and CD (62%) and among female 40–50 years old with UC (36%) and CD (29%). The proportion of former smokers at diagnosis increases dramatically and significantly over 60 years old (52%).

Conclusion: The proportion of former smokers at diagnosis increases dramatized and significantly over years in UC patients compared to CD patients. A possible explanation for this could be the indirect effect of smoking cessation on the second peak of diagnosis in ulcerative colitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1638 THE IMPACT OF INFLAMMATORY BOWEL DISEASE ON HARD TEETH TISSUES-PRELIMINARY RESULTS FROM POLIBD STUDY D. Piatek1, I. Korona-Glowniak4, N. Fournier1, A. Malm2, S. Jarmakiewicz3
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Introduction: In aetiology of inflammatory bowel disease (IBD) role of microorganisms including those from the oral cavity is taken into account. Oral bacteria are known for biofilm formation and enamel demineralisation leading to the formation of cavities.

Aims & Methods: The aim of the study was to determine the state of hard teeth tissues measured by DMFT index in adult patients with ulcerative colitis (UC) and Crohn’s disease (CD). The study involved 119 UC and CD patients aged from 18 to 72 (mean 34.45). Disease phenotype at diagnosis was classified according to the Montreal classification and only the patients who had undergone surgical intervention of the entire UC tract were included. Following, the data on the occurrence of extraintestinal symptoms, the incidence of IBD in the family, type of treatment, including surgery, were also collected. The complete assessment of the hard teeth tissues based on the DMFT index (decayed, missing, filled teeth) was performed.

Results: The study population was characterized by a high DMFT index with mean value 19.35. There was a significantly higher number of filled (F) and lower number of lost teeth (M) among patients who underwent respective surgery.

Conclusions: Smoking increased in women with CD, unrelated to disease activity, compared to healthy women. The study population was characterized by a high DMFT index with mean value 19.35. There was a significantly higher number of filled (F) and lower number of lost teeth (M) among patients who underwent respective surgery.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1639 RESTING ENERGY EXPENDITURE IN WOMEN WITH CROHN’S DISEASE: A CROSS-SECTIONAL STUDY N. Imperatore1, I. Cioffi2, R. Sammarco2, A. Testa3, A. Rispo4, M. Marra5, F. Contaldo6, N. Caporaso1, F. Castiglione1, F. Pasanisi1
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Introduction: Crohn’s disease (CD) is a chronic inflammatory disease that can affect any section of the gastrointestinal tract. Malnutrition is a common sequela in these patients and many pathogenic mechanisms could be involved such as poor dietary intake, altered energy expenditure, nutrient malabsorption and/or losses.

Aims & Methods: This cross-sectional study aimed to evaluate the resting energy expenditure (REE) in CD patients, in accordance with clinical status of disease, compared to a control group.

Methods: All consecutive adult CD women were prospectively enrolled, while a group of healthy women, matched for age and weight, served as control group (C). CD women were classified in clinically active disease (CD-A) and clinical remission (CD-R) according to Crohn’s Disease Activity Index (CDAI) (>150 and <150, respectively). All subjects underwent REE measure by indirect calorimetry with a canopy system, while body composition variables, such as fat-free mass (FFM) and fat mass (FM), were assessed by bio-impedance analysis (BIA).

Results: Finally, forty-two women with CD, 23 with clinically active disease (CD-A; CDAI = 219 ± 53) and 19 in clinical remission (CD-R; CDAI = 83 ± 41) were recruited for the study, while 40 matched-healthy women were enrolled as control group (C). We found that body weight, FFM and phase angle (PA) differed among groups; nevertheless when it was adjusted for FFM, we observed that body weight was significantly lower for CD-A in comparison with C (CD-A: 6.5 ± 3.5 kg vs C: 6.9 ± 3.8 kg; p = 0.02). FFM was reduced in women with CD than C (CD-A: 39.6 ± 4.3 kg and CD-R: 39.5 ± 6.8 kg vs C: 44.4 ± 4.8 kg; p < 0.01) while PA was lower for CD-A compared to both CD-R and C (CD-A: 45.5 ± 0.6 vs CD-R: 60.0 ± 5.4 and C: 61.1 ± 5.4; p < 0.001). REE did not differ among groups; nevertheless when it was adjusted for FFM, we observed that REE/FFM increased for both CD-A and CD-R groups compared to C (CD-A: 4.96 kcal/kg vs C: 4.63 kcal/kg; p < 0.01). REE did not differ among CD-A and CD-R groups.

Conclusion: These preliminary results show that REE, when adjusted for FFM, is increased in women with CD, unrelated to disease activity, compared to healthy subjects and this could negatively affect the energy balance and contribute to weight loss.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1640 MAGNETIC RESONANCE CHOLANGIOGRAPHY ABNORMALITIES IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE
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Introduction: Primary sclerosing cholangitis (PSC) is a rare and devastating complication of inflammatory bowel disease (IBD). There is no standard for the screening of primary sclerosing cholangitis (PSC) in patients with IBD. Magnetic resonance cholangiography (MRC) may replace liver biopsy in this clinical situation. The main objective of this prospective observational study was to assess the frequency of MRC-detected liver diseases, including PSC, in adult IBD patients with liver function abnormalities and to identify clinical and biological characteristics associated with these findings.

Aims & Methods: From June 1, 2009 to January 31, 2017, 421 patients were included and screened with MRC: cohort 1 included 206 IBD patients with liver abnormalities; cohort 2 included 28 IBD patients without liver abnormalities; and cohort 3 included 187 non-IBD patients with liver abnormalities. Two senior radiologists independently evaluated MRC findings.

Results: MRC abnormalities were observed in 18% of patients in the cohort 1; 3.6% in the cohort 2 and 31% in the cohort 3 (Table 1). Based on MRC, we found respectively 11.2%, 0%, and 7% of PSC in cohorts 1, 2, and 3. 29.2% of IBD patients with liver abnormalities had infra-clinical PSC. A history of post-intestinal resection (P = 0.0357), abnormal gamma-glu-tamyl transferase values (P = 0.0064), and abnormal alkaline phosphatase values (P = 0.021) were significantly associated to suspected PSC.

Table 1: MRC abnormalities in cohorts 1, 2 and 3

Results of MRC

<table>
<thead>
<tr>
<th></th>
<th>Total Normal</th>
<th>Ductopenia</th>
<th>Doubt</th>
<th>PSC</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>206 150 (72.8%)</td>
<td>28 (13.6%)</td>
<td>9 (4.4%)</td>
<td>23 (11.2%)</td>
<td>0</td>
</tr>
<tr>
<td>Cohort 2</td>
<td>28 27 (96.4%)</td>
<td>1 (3.6%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cohort 3</td>
<td>187 116 (62.0%)</td>
<td>0</td>
<td>13 (7.0%)</td>
<td>58 (31.0%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion: Using MRC in patients with IBD, we found a higher prevalence of PSC than based on clinical symptoms. Systematic screening for PSC using MRC could be recommended in routine practice for IBD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1641 TRUECOLOURS ULCERATIVE COLITIS (TCUC): WILL PATIENTS WITH UC COMPLETE DIGITAL QUESTIONNAIRES IN REAL-TIME?
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Introduction: TCUC is a comprehensive real-time web-based programme for IBD patients with liver abnormalities had infra-clinical PSC. A history of post-intestinal resection (P = 0.0357), abnormal gamma-glu-tamyl transferase values (P = 0.0064), and abnormal alkaline phosphatase values (P = 0.021) were significantly associated to suspected PSC.

Table 1: Adherence to Questionnaires

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Adherence over 6 months</th>
<th>First 3 months</th>
<th>Last 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily symptom (SCCAI) questionnaire</td>
<td>76%</td>
<td>81%</td>
<td>72%</td>
</tr>
<tr>
<td>Fortnightly QoL questionnaires</td>
<td>95%</td>
<td>96%</td>
<td>94%</td>
</tr>
<tr>
<td>IBD-Control-8, CUCQ-8 and EQ5D</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Conclusion: Patients with UC will collect digital data in real-time, with good adherence to symptom, QoL, outcome questionnaires and FCaI home testing. Usability was classified as ‘superior’ but further improvements are possible. Larger studies are required to determine cost effectiveness.

Disclosure of Interest: A. Walsh: An unrestricted educational grant from Abbvie Pharmaceuticals was received for this work. Buhlmann laboratories provided all IBDDoc kits for this study. All other authors have declared no conflicts of interest.

P1642 BODY COMPOSITION AS A PREDICTOR FACTOR OF DISEASE OUTCOME IN INFLAMMATORY BOWEL DISEASE– RESULTS OF 3-YEAR FOLLOW-UP
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Introduction: Malnutrition and altered body composition can develop in patients with inflammatory bowel diseases (IBD) for a variety of reasons. Malnutrition and sarcopenia may worsen disease outcome in chronic disorders, raise the risk of infections and hospitalisation.

Aims & Methods: We followed 198 IBD outpatients (144 CD and 54 UC) for 3 years to indentify potentional risk factors of unfavourable disease outcome. Baseline body composition were measured by bioelectrical impedance analysing (BIA) method to evaluate nutritional status. Penalized logistic regression was used for the multivariate modelling of the outcome, with two sets of -prespecified - predictor variables age, sex, CU/CD, BMI, FFMI.

Results: According to our results 19.2% of the patients (n = 38) were underweight (had BMI < 18.5 kg/m²) and 29.8% (n = 59) had alarming low fat-free mass index (FFMI) and were at risk of sarcopenia. Overall 31.5% (n = 62) of the patients needed steroid therapy and 53.5% (n = 106) was given anti-TNF. Almost third of the participant (30.8%, n = 61) was hospitalized due to disease flair or its complication at least once during the follow-up time. The mean period of hospitalization was 19.14 ± 32.7 days. 20.2% (n = 40%) of all participants have undergone intestinal surgery. Hospitalization was positively associated with sarcopenia risk: alarming low FFMI was associated with an OR of 3.06 (95% CI: 1.01–9.40, p = 0.0456). The risk of operation was higher in patients with lower BMI: OR = 1.55 (95% CI: 1.05–2.29, p = 0.0277) for 5 units decrease; no other association was significant in the models.

Conclusion: Our results suggests that low BMI is a risk factor of surgery in inflammatory bowel disease patients. Furthermore alarming low FFMI is a pre- dictor of need of hospitalization and that suggests more serious flares. Identification of malnutrition and altered body composition has notable impor- tance in disease outcome among IBD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1643 CONTRAST-ENHANCED ULTRASOUND IS HELPFUL IN THERAPEUTIC DECISION MAKING IN PATIENTS WITH STRICTURING CROHN’S DISEASE

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Introduction: The majority of Crohn’s disease (CD) develop structuring complications of the disease at some point. The proper selection of patients with potential benefit of therapy escalation is crucial in order to avoid unnecessary bowel resections and to avoid the affected bowel segment. At intravenous contrast-enhanced ultrasound (CEUS) has been shown to correlate with disease activity but there are no data available on the benefit of CEUS for the therapeutic decision making in this clinical setting.

Aims & Methods: The aim of the study was to evaluate the clinical outcomes of CD patients with stricturing disease managed based on the CEUS findings. CD patients with stricturing disease were recruited from two IBD centre between June 2015 and February 2017. Patients with penetrating disease complications were excluded. CEUS was performed using 2.4 mL of intravenous contrast (SonoVue, Bracco Imaging). Patients having rapid uptake (within 20 second after injection) were indicated for therapy escalation, patients without uptake with obstructive symptoms were referred for surgery, patients without uptake and no obstructive symptoms remained at the stable medication. In patients with the minimal follow-up of one year clinical and endoscopic remission was evaluated.

Results: In total, 27 patients were included (10 men; median age 37 yrs, range 23–67; 22 pts with ileo-coecal localization, 3 pts with multiple small bowel segments involvement, 2 pts with colonic disease). Seventeen patients (63%) had rapid uptake at the CEUS; 13 of these patients had therapy escalation (3 pts intensification or switch of another biological; 10 pts had therapy step-up to antiTNF or immunomodulator). Remaining 10 pts were stable on their ongoing medication. Patients who underwent surgery in the group with rapid uptake, all but two patients achieved sustained remission after therapy escalation. Two patients initially responded to therapy but have lost response and eventually needed surgery. For surgery. Three patients had no symptoms and no therapeutic changes were made. Twenty-five patients had follow-up longer than 12 months (median 18 months, range 13–23). In the group of patients with rapid uptake, all but two patients achieved sustained remission after therapy escalation. Two patients initially responded to therapy but have lost response and eventually needed surgery. In the group with rapid uptake, patients without surgery remained in remission without any changes in the medication. Patients who underwent surgery in the group with rapid uptake, all but two patients achieved sustained remission after therapy escalation. Two patients initially responded to therapy but have lost response and eventually needed surgery. In the group with rapid uptake, patients without surgery remained in remission without any changes in the medication. Patients who underwent surgery in the group with rapid uptake, all but two patients achieved sustained remission after therapy escalation. Two patients initially responded to therapy but have lost response and eventually needed surgery.

Conclusion: Contrast-enhanced ultrasound might be helpful in guiding the therapeutic decision making between surgery and therapy intensification in patients with strictureting Crohn’s disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1645 DIAGNOSTIC DELAY AND PREDICTIVE FACTORS FOR CROHN’S DISEASE IN AN ALGERIAN POPULATION

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Introduction: Crohn’s disease (CD) is a chronic inflammatory bowel disease whose diagnostic delay (DD) is highly variable. A delay in diagnosis of CD may be detrimental to the patient, delaying appropriate therapeutic management. Factors Influencing SD may be a function of the country’s health system, but also linked to the particular clinical and evolutionary profile of the disease. The objective of this study was to measure the DD of CD, to describe its distribution and evolution over time and to The factors associated with a long DD (>Q3).

Aims & Methods: All patients with certain or probable CD between 2004 and 2016 identified by The department’s inflammatory disease hospital registry was included. The socio-demographic characteristics collected included: the patient’s medical, reproductive and socio-economic characteristics. The factors associated with a long DD (>Q3).

Results: Among 247 patients with CD; 90 had a median SD of 3 months. A DD > 7 months was considered a diagnostic delay observed in most patients is 157. In univariate and multivariate analysis at diagnosis, the female sex (54.25%), young age (37.24%), absence of evacuation (27%), presence of extra-digestive manifestations (25.91%) and Isolated lesions (L1) (34%) and penetrating phenotype (B3) (28.67%) were associated with a long delay. Diagnostic delay factor was not associated with a long delay.

Conclusion: This study shows that most of the patients, 63.56% have a diagnostic delay significantly associated with the female sex. The young age, the absence of weight loss and a localization of the disease limited to the bowel had the delay in the penetrating phenotype of disease. No socioeconomic variables or reflective of access to care were found to influence.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1644 FERTILITY AND PREGNANCY IN IBD - OUR EXPERIENCES

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Introduction: Inflammatory bowel disease (IBD) commonly affects patients during their reproductive years, making the interaction between fertility, pregnancy and IBD an important issue for both genders. As these are the reproductive years, patients and physicians often have concerns regarding the interaction between fertility, pregnancy outcomes, and neonatal outcomes.

Aims & Methods: The aim of the study was to evaluate the lifestyle habits and the fertility of IBD patients and evaluate the factors that affect fear of family planning. Finally we investigated the factor which have influence on family planning.

Methods: A personal questionnaire was sent to 148 patients with IBD (72 with CD and 76 with UC) from our IBD population. Personal questionnaires were reviewed one year before conception and throughout pregnancy.

Results: In 2017 total 27 patients were included (10 men; median age 37 yrs, range 23–67; 22 pts with ileo-coecal localization, 3 pts with multiple small bowel segments involvement, 2 pts with colonic disease). Seventeen patients (63%) had rapid uptake at the CEUS; 13 of these patients had therapy escalation (3 pts intensification or switch of another biological; 10 pts had therapy step-up to antiTNF or immunomodulator). Remaining 10 pts were stable on their ongoing medication. Patients who underwent surgery in the group with rapid uptake, all but 2 patients achieved sustained remission after therapy escalation. Two patients initially responded to therapy but have lost response and eventually needed surgery. In the group with rapid uptake, patients without surgery remained in remission without any changes in the medication. Patients who underwent surgery in the group with rapid uptake, all but 2 patients achieved sustained remission after therapy escalation. Two patients initially responded to therapy but have lost response and eventually needed surgery.

Conclusion: Contrast-enhanced ultrasound might be helpful in guiding the therapeutic decision making between surgery and therapy intensification in patients with strictureting Crohn’s disease.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1646 TUBERCULOSIS IN INFLAMMATORY BOWEL DISEASE: UNDER TUMOUR NECROSIS FACTOR ALPHA ANTAGONIST–THE RISK BEYOND SCREENING

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Introduction: Tumour necrosis factor alpha antagonist (anti-TNFa) has revolutionized the treatment of the inflammatory bowel disease (IBD). Considering that it plays a central role in immune-mediated modulation, there are some concerns about safety and ongoing treatment. The main patient-related reasons for “voluntary infertility” were fear of congenital abnormality secondary to medications of IBD (68%) and concern about genetic risk of IBD in child (56%). 30% of male and 75% of female patients had concerns about safety and ongoing treatment. The main patient-related reasons for “voluntary infertility” were fear of congenital abnormality secondary to medications of IBD (68%) and concern about genetic risk of IBD in child (56%). 30% of male and 75% of female patients had concerns about safety and ongoing treatment. Pregnancy was planned in 77% of cases, the childbearing and delivery was without any complication. Prematurity and low birth weight occurred in 6-6 cases (10%-10%). IBD was in remission in most cases, during pregnancy 25% of the patients had flare. 40% of women could breastfeed their baby after 6 months.

Conclusion: The management of IBD in women during their reproductive years should include consideration of their family planning decisions, and education counseling regarding the overall safety of medications and the importance of medication adherence should occur prior to conception. Disease control prior to desired conception and throughout pregnancy is the most important factor to keep in mind when caring for the IBD patients. Educating the patients will help to achieve successful outcomes both for patients and babies.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: We intend to know the incidence of tuberculosis in IBD patients under anti-TNFα therapy in a single tertiary referral centre, analyzing the tuberculosis screening methods and demographic characteristics. IBD patients treated with anti-TNFα therapy between January 2000 and December 2016 were retrospectively analyzed.

Results: During this period, 166 patients received anti-TNFα therapy. Before anti-TNFα treatment, screening for LT was performed through medical history, chest X-ray, tuberculin skin test (TST) and/or IGRA. Forty-two patients (25%) had positive screening and received tuberculosis prophylaxis prior to anti-TNFα therapy. Seven patients were exposed to tuberculosis while under anti-TNFα treatment (four women, mean age 44 ± 7 years and mean IBD duration 10 ± 8 years). Six of them had a negative LT screening (methods: 4 TST and 2 IGRA) and one patient had positive TST screening, been treated with isoniazid before starting anti-TNFα therapy. During screening three patients were under immune suppressive and one under corticosteroid therapy. In the IGRA negative screening patients, the diagnosis of tuberculosis occurred within the first 10 weeks after starting anti-TNFα. There were five cases of miliary tuberculosis and two of pulmonary disease. Despite difficult diagnosis, all patients were treated successfully, six of whom needed hospitalization.

Conclusion: In our centre the incidence of tuberculosis in IBD patients under anti-TNFα therapy was 4.2% and most of them presenting with a severe disease pattern. The therapeutic regime of tuberculosis was effective and no mortality was recorded. This patient had a previously negative screening, two of them with IGRA, been considered a high sensitivity and specificity screening method. Therefore, a surveillance strategy for IBD patients with anti-TNFα therapy is needed.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Beglinger C, Dudler J, Mottet C, Nicod L, Seibold F, Villiger PM, et al. Tuberculosis in anti-TNF therapy was 4.2% and most of them presenting with a severe disease pattern. Despite difficult diagnosis, all patients were treated successfully, six of whom needed hospitalization.

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Disclosure of Interest: All authors have declared no conflicts of interest.

References

Conclusion: The HBI score self-administered by the patient through a mobile app resulted in a high percentage of agreement with the gastroenterologist evaluation, and high negative predictive value for disease activity. Results of the MedCron study encourage the use of this mobile app and gives some hints on its conditions of use as a support for the involvement of patients in the management of their disease. Future studies will help to define its precise role in clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Disclosure of Interest: All authors have declared no conflicts of interest.
P1649 EVALUATION OF MODIFIED MAYO ENDOSCOPIC SCORE AND DUBLIN ENDOSCOPIC SCORING SYSTEM IN PATIENTS WITH ULTRACOLONIC ULCERATIVE COLITIS EXTENSION, IN THE PREDICTION OF RELAPSE


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Introduction: Current endoscopic activity scores for Ulcerative Colitis (UC) do not take into account the extent of mucosal inflammation. Recently, two endoscopic scores that combine the assessment of severity and disease extension were developed, the Modified Mayo Endoscopic Score (MMES)1 and Degree of Ulcerative Colitis Burden of Luminal Inflammation (DUBLIN).2

Aims & Methods: We aimed to evaluate the relation of the scores with disease activity and as predictive factors of clinical relapse. Patients with UC in clinical remission (partial Mayo score [pMS] ≤ 1) who underwent colonoscopy between January/2010 and December/2013 were included. MMES and DUBLIN scores were calculated. Analytical and histological activity (defined by Geboes score ≥ 3.1 and Nancy score = 2.4) as well as predictive factors of relapse and relapse-free time were evaluated. Relapse was defined as pMS > 2, therapy to induce remission, hospitalization and/or colectomy.

Results: 82 patients were selected, 51.2% (n = 1,342) female, mean age 49.4 ± 13.7 years. MMES ranged between 0–13.8 and DUBLIN between 0–9. MMES and DUBLIN scores presented good correlation (r = 0.945, p < 0.001). MMES was higher in patients with histological activity defined by Nancy (3.7 ± 4.0 vs. 0.8 ± 1.5; p < 0.001) and Geboes (4.0 ± 4.2 vs. 1.3 ± 2.4; p = 0.005). DUBLIN was also higher in patients with histological activity defined by Nancy (1.9 ± 2.1 vs. 0.5 ± 0.8; p = 0.001) and Geboes (2.0 ± 2.3 vs. 0.7 ± 1.2; p = 0.002). There was no significant correlation between both scores and analytical activity. Relapse occurred in 36.6% (n = 30) of patients, with a cumulative risk of 9.8, 18.4, 25.9, and 42.0% at 12, 24, 36, and 60 months, respectively. Mayo Endoscopic Subscore (MES) (p < 0.001), MMES (p < 0.001), DUBLIN (p < 0.01), Geboes (p = 0.03) and Nancy scores (p = 0.001) presented a significant association with relapse. In multivariate analyses, MES (OR = 2.32; p < 0.001), MMES (OR = 1.19; p < 0.001) and DUBLIN (OR = 1.36; p < 0.001) were predictive of relapse independently from histology. Areas under the ROC curve were 0.71 (MES), 0.75 (MMES), 0.74 (DUBLIN), and were predictive of relapse, with MMES significantly higher than MES by a difference of 0.037 (0.002–0.072); p < 0.001), MMES (OR = 5.21 vs. 0.55; p = 0.001), and DUBLIN (OR = 5.09 vs. 0.53; p = 0.001) presented a significant association with relapse. In multivariate analyses, MES (OR = 2.32; p < 0.001), MMES (OR = 1.19; p < 0.001) and DUBLIN (OR = 1.36; p < 0.001) were predictive of relapse independently from histology. Areas under the ROC curve were 0.71 (MES), 0.75 (MMES), 0.74 (DUBLIN), and were predictive of relapse, with MMES significantly higher than MES by a difference of 0.037 (0.002–0.072); p = 0.03.

Conclusion: MMES and DUBLIN scores correlate with each other and with histological activity. They are independent predictors of relapse. MMES was superior to MES in the prediction of relapse.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1651 CORRELATION BETWEEN THE LÉMANN INDEX AND THE INFLAMMATORY BOWEL DISEASE- DISABILITY INDEX IN CROHNS' DISEASE

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Introduction: Crohn’s disease (CD) is a chronic progressive destructive disease, resulting in cumulative structural bowel damage, which may predict long-term disability. The Lémann Index (LI) has been developed to measure CD-related bowel damage, including bowel surgery, presence of strictureting and penetrating lesions (Pariente and al, Gastroenterology 2015). The first Inflammatory Bowel Disease - Disability Index (IBD-DI) has recently been validated (Gower-Rousseau, Gut 2015).

Aims & Methods: The aim of the present study was (1) to identify factors associated with bowel damage and with disability in CD and (2) to evaluate the correlation between the LI and the IBD-DI. We performed a prospective study in the tertiary referral center of the Claude Huriez Hospital in Lille from September 2016 to November 2016, including all consecutive CD outpatients. Bowel damage was assessed by the LI calculated according to the published LI protocol. Abdominal and pelvic Magnetic resonance imaging (MRIs) were reviewed and read by the same couple of one gastroenterologist and one radiologist. The IBD-DI was also calculated for all patients. Factors associated with LI and IBD-DI levels were identified by means of bivariate analyses of variance.

Results: 130 patients were prospectively and retrospectively included. Median age was 34.0 (interquartile range [IQR]: 26.0–46.0) and median disease duration was 10.0 (IQR: 5.0–17.0) years. 65 patients (50%) underwent at least one resection surgery. The median LI was 10.8 (IQR: 6.0–17.5). Disease duration (p < 0.0001), cumulative anal location (p < 0.0001) and CD activity (p < 0.0001) were associated with higher LI scores. Median IBD-DI was 25.0 (IQR: 14.7–41.1). Female gender (p = 0.02), CD activity (p < 0.0001) and current anoperineal lesions assessed by clinical examination and pelvic MRIs (p = 0.001) were associated with higher IBD-DI scores. The correlation coefficient between the LI and the IBD-DI was 0.12 (t = -0.05, 0.29; p = 0.154).

Conclusion: In a large cohort of CD patients from a tertiary referral CD center, disease duration, anal location and CD activity are associated with bowel damage assessed by the LI, while female gender, disease activity and current anoperineal lesions are associated with disability assessed by the IBD-DI. Correlation between the LI and the IBD-DI was low.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Pariente et al, Gastroenterology 2015
Gower-Rousseau et al, Gut 2015
In UC patients, we observed higher expression of IL-8.

Results: CD and UC patients.

expression of cytokines in inflamed and non-inflamed mucosa separately for and reversely transcribed. We normalized the expression of the target genes to the mRNA was extracted from mucosal biopsy samples, isolated by a RLT buffer from inflamed mucosa from sigma (CD, UC) and terminal ileum (CD).

Hospital Bratislava. We took biopsies from non-inflamed and if present also section of study. The cohort consisted of 87 consecutive IBD patients (47 CD, 40 UC) who underwent colonoscopy at the IBD centre of University Hospital Bratislava. We performed biopsies and paired samples from inflamed mucosa from sigma (CD, UC) and terminal ileum (CD).

mRNA was extracted from mucosal biopsy samples, isolated by a RLT buffer from inflamed mucosa from sigma (CD, UC) and terminal ileum (CD).

mRNA was extracted from mucosal biopsy samples, isolated by a RLT buffer and reverse transcribed. We normalized the expression of the target genes to the expression of the house-keeping gene (GAPDH). Finally, we compared the expression of cytokines in inflamed and non-inflamed mucosa separately for CD and UC patients.

Results: In UC patients, we observed higher expression of IL-8 (p = 0.04), IL-23 (p = 0.019) TLR2 (p = 0.002), CCR1 (p = 0.007), CCR2 (p = 0.037), CCR5 (p = 0.001), CD206 (p = 0.001), TNFz (p = 0.002) and IL-6 (p = 0.006) in the inflamed mucosa from sigma. In CD patients, we observed increased expression of CCL5 (p = 0.005) and IL-8 (p = 0.001) in the inflamed mucosa of a terminal ileum and decreased expression of CCL5. Also, in group of patients with CD we did not observe the difference of the expression of mRNA cytokines between the inflamed and non-inflamed mucosa of sigma.

Conclusion: There was a significant difference in the mRNA cytokine profiles between CD and UC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: The aetiology of Crohn’s disease (CD) and ulcerative colitis (UC) is not known. Recent data suggest a different cytokine profile between CD and UC.

Aims & Methods: The aim of this study was to analyse the expression of mRNA of proinflammatory, regulatory anti-inflammatory cytokines, chemokines and their ligands (IL-6,-8,-10, 12, IL-23, TNFz, CCR1, CCR2, CCR5, CCL5, and transcription factor FoxP3) in the inflamed and non-inflamed intestinal biopsy samples of IBD patients. We performed a cross-sectional study. The cohort consisted of 87 consecutive IBD patients (47 CD and 40 UC) who underwent colonoscopy at the IBD centre of University Hospital Bratislava, Bratislava/Slovak Republic.

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Disclosure of Interest: All authors have declared no conflicts of interest.
P1655 MONITORING OF LABORATORY PARAMETERS DURING THIOPURINE MAINTENANCE THERAPY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE: AN UNNECESSARY BURDEN?

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Introduction: Although thiopurine-induced myelotoxicity and hepatotoxicity rarely occur during maintenance thiopurine therapy for inflammatory bowel disease (IBD), current guidelines advise laboratory monitoring every 3 months. This study was performed to assess the current laboratory monitoring regime in thiopurine maintenance therapy with regards to consequences of myelotoxicity and hepatotoxicity.

Aims & Methods: In this multicenter cohort study, we evaluated adult IBD patients with quiescent disease who were on maintenance thiopurine therapy between 2000–2016. Data collection started after 12 consecutive months of thiopurine treatment. The primary outcome was therapy adjustment, i.e. therapy cessation or dose reduction, due to myelotoxicity (leukocyte count < 4.0 10^9/l, platelet count < 150 10^9/l) and/or hepatotoxicity (alkaline phosphatase (AP), gamma-glutamyltransferase (>GT), alanine aminotransferase (ALT) and/or aspartate aminotransferase (AST) above the upper limit of normal (ULN)). The secondary outcomes were prevalence of myelotoxicity and hepatotoxicity and additional diagnostic procedures due to this toxicity.

Results: This study included 223 IBD patients (55% female, 64% with Crohn’s disease, mean age at diagnosis 27.2 years (SD 11.5)). Median follow-up was 3.2 years (IQR 1.9–4.7). The mean monitoring frequency was 3.3 assessments per treatment year (SD 1.8). Toxicity was observed in 445/2402 laboratory assessments (18.5%) in 120 patients. In total, 20 (0.8%) therapy adjustments were performed and 25 laboratory assessments (1.0%) led to additional diagnostic procedures. Myelotoxicity, observed in 244 assessments, led to 11 dose reductions and in 3 patients therapy was stopped. For hepatotoxicity, observed in 201 assessments, 2 dose reductions were performed and in 4 patients therapy was stopped. Ninety percent of observed toxicity were mild leukopenia (leukocyte count 3.0–4.0) or mild hepatotoxicity (< 2 ULN), primarily in the first years of treatment. Dose adjustments were more often associated with moderate leukopenia (leukocyte count < 3.0) than with mild leukopenia (p < 0.01). In total, 2 complications were recorded, 1 patient was hospitalized because of pancytopenia and received red blood cell transfusion, and 1 patient was treated for a CMV infection. Both patients presented with symptoms in clinic with preceding normal laboratory values. No mortality due to thiopurine-induced toxicity was observed.

Conclusion: Although mild toxicity is common during maintenance thiopurine therapy, adjustments based on laboratory assessments are rare. Therefore, a less intensive regime to monitor thiopurine-induced toxicity should be considered.

Disclosure of Interest: N.K.H. de Boer: Nanne de Boer has received a research and travel grant from Takeda outside the submitted work and served as principal investigator and consultant for Teva.

C. J. van der Woude: CJW has served as a speaker and a consultant for Abbot, Abbvie, MSD and as a consultant for Shire and received funding from Janssen Biologics BV.

All other authors have declared no conflicts of interest.

P1656 ULTRASOUND ELASTICITY IMAGING PREDICTS THERAPEUTIC OUTCOMES IN PATIENTS WITH CROHN’S DISEASE TREATED WITH ANTI-TUMOR NECROSIS FACTOR ANTIBODIES

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Introduction: Intestinal fibrosis represents one of the main sources of morbidity for patients with Crohn’s disease (CD), as its onset is associated with the development of CD-related complications which increase the likelihood of hospitalization and surgery. Ultrasound elasticity imaging (UEI) is a non-invasive ultrasonographic technique developed to evaluate tissue fibrosis by measuring tissue strain after application of a force. We have recently demonstrated that UEI can reliably detect severe ileal fibrosis in patients with Crohn’s disease. We therefore hypothesized that a more severe range of fibrosis might influence the therapeutic response to anti-tumor necrosis factor (TNF) treatment.

Aims & Methods: The aim of this explorative study was to assess the ability of UEI to predict therapeutic outcome in active CD patients treated with anti-TNF antibodies. 30 patients with ileal or ileocolic CD (20 males, age 38.8 ± 14.5 years) initiating anti-TNF treatment were enrolled in the study. All patients completed the induction phase and underwent scheduled maintenance therapy with anti-TNF for 16.1 ± 8.5 months. Patients underwent bowel ultrasound and UEI at baseline and 14 weeks after initiation of anti-TNF. Bowel wall stiffness at UEI was quantified by calculating the strain ratio (SR) between the bowel wall and the surrounding mesenteric tissue. Receiver operating characteristic curve analysis was used to identify the best SR cut off able to predict surgery/bowel obstruction.

Results: Five patients (16.6%) underwent surgery or hospitalization for bowel obstruction during the follow up. Frequency of CD-related surgeries or hospitalizations was significantly greater in patients with SR ≥ 2 at baseline than in patients with SR < 2 (p = 0.02). A significant reduction in bowel thickness was observed after 14 weeks of anti-TNF treatment (from 5.8 ± 1.5 mm to 5.1 ± 1.7 mm, p < 0.005), while SR values remained unaltered (1.5 vs 1.3, p = 0.5). A significant inverse correlation was observed between values of strain ratio at baseline and thickness variations following anti-TNF therapy (p = 0.007). Eight out of 30 patients (27%) achieved transmural healing at 14 weeks. Baseline SR was significantly lower in patients with transmural healing than in patients not achieving this endpoint (1.06 ± 0.16 vs 1.67 ± 0.17, p < 0.05).

Conclusion: This explorative study shows that UEI is able to predict therapeutic outcomes, including CD-related surgeries and transmural healing, in patients with Crohn’s disease treated with anti-TNF therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1657  CLINICAL CHARACTERISTICS OF RECTAL-SPARING ULCERATIVE COLITIS

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Introduction: Ulcerative colitis (UC) generally involves the entire large intestine except for the rectum to the ileocecal junction. However, some patients with moderate or severe UC lack any obvious rectal involvement (known as rectal-sparing (RS)-UC).

Aims & Methods: In this study, we evaluated the differences in the clinical characteristics between patients with rectal sparing UC with or without RS. Of the 437 inpatients with rectal UC who achieved remission between April 2001 and September 2016 (follow-up period: 915 ± 53 days, mean ± SD), 57 patients were classified as RS-UC and 340 patients without RS (standard [S]-UC) group. Patients of the two groups were compared for gender, age at onset, site of involvement, disease duration, pretreatment clinical activity index (CAI, Lichtiger score), Hb, C-reactive protein (CRP), total dose of prednisolone (PSL) before the achievement of remission, duration of hospitalization, emergency admission and endoscopic response (UCEIS), and relapse rate (UCEIS-100%, S-UC: 30%, RS-UC: 50% 1000 days post-remission). Patients with RS were defined as those without any detectable rectal inflammation despite not receiving local treatment, such as rectal enemas, suppositories or suppositories. Remission was defined as CAI ≤ 5.

Results: RS was observed in 57 (10.4%) patients. There were significant differences in CRP (RS-UC: 5.1 ± 6.0, S-UC: 2.3 ± 3.4 mg/l) and pretreatment endoscopic scores (Mayo: RS-UC: 2.7 ± 0.3, S-UC: 2.4 ± 0.5; UCEIS: RS-UC: 6.02 ± 3.1, S-UC: 4.9 ± 3.2). However, there was no significant difference in the relapse rate at 100 days after remission (RS-UC: 18%, S-UC: 15%). However, the two groups showed significant differences in the relapse rates at 300 days (RS-UC: 38%, S-UC: 17%), 500 days (RS-UC: 52%, S-UC: 68%), and 1000 days (RS-UC: 77%, S-UC: 62%) after remission.

Conclusion: Our results showed that RS is not an uncommon finding among patients with UC. Based on the higher CRP, endoscopic score, and relapse rates in the RS group, than the standard UC group, we recommend aggressive treatment with RS.

Disclosure of Interest: All authors have declared no conflicts of interest.

References:

P1658  EVALUATION OF COLONIC MUCOSA WITH FLEXIBLE SPECTRAL IMAGING COLOR ENHANCEMENT (FICE) IN PATIENTS WITH LONG TERM ULCERATIVE COLITIS DURING DYSPLASIA SCREENING

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Introduction: Ulcerative colitis (UC) associated colorectal cancer risk (CRC) is related to the age of onset and duration and anatomic extent of the disease. The risk correlates with the duration of the disease (1). Current guidelines recommend beginning the surveillance colonoscopy after eight to ten years of disease; random biopsies should be obtained from 4 quadrants of every 10 cm of the colon. In addition, any suspicious lesions should be biopsied. Recent endoscopic imaging technologies provide a more detailed visualization of the superficial microstructure of the mucosa and vascularity. Thus it is possible to get targeted biopsies. The purpose of this study is to evaluate the image patterns of dysplasia in ulcerative colitis, and their histopathological correlation, by using a virtual chromoendoscopy technique, FICE and to investigate the effectiveness of this technique.

Aims & Methods: The purpose of this study is; to evaluate the image patterns of dysplastic changes in ulcerative colitis, and their histopathological correlation, by using a virtual chromoendoscopy technique, FICE and to investigate the effectiveness of this technique.

Results: In a total of 18 patients, by evaluating 123 colonic segments, 1831 images were evaluated. Biopsies were taken from 258e34 tissue samples. The examination of FICE images showed that the best imaging channels are 2, 6, 9 for normal mucosa; 3, 7, 9 for polyps; and 2, 3, 9 for colitis. When all the images are analyzed, channels 2 and 9 were found to be significantly different from other channels. When the most rated channels, 2 and 9, were compared to the WLE, the FICE image is better for evaluation of the mucosal and vascular structure. However, there were no significant difference between channels 2 and 9.

Conclusion: There were no significant superiority of FICE, in dysplasia screening. Consistent with the literature, this study showed us that FICE, with its ability to detect diminutive polyps, and evaluating surface patterns without magnification, can be used in the assessment of the severity of inflammation. For this purpose, more clinical trials should be conducted. Our study showed no superiority of FICE in UC. Channels 2 and 9 are the best image channels of FICE in UC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1659  DYBOSIS OF THE GUT MICROBIOTA IN RELATION TO DISEASE ACTIVITY IN INFLAMMATORY BOWEL DISEASE

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Introduction: The gut microbiome is thought to be relevant to the pathogenesis of inflammatory bowel disease (IBD). We aimed to explore associations between microbial gut microbiota and clinical as well as inflammatory disease activity in an inception cohort of treatment-naive IBD patients as well as with inflammatory activity in symptomatic non-IBD patients and healthy controls. The term ‘dysbiosis’ expresses alterations in the gut microbial community.

Aims & Methods: Patients were classified according international criteria, including endoscopic and histopathological assessment. Clinical disease activity in Crohn’s Disease (CD) patients was measured by the Harvey-Bradshaw index (HBI), and in ulcerative colitis (UC) patients by the Simple Clinical Colitis Activity Index (SCCAI). Inflammatory activity was assessed by CRP and faecal calprotectin (Fcal). (FCAL® ELISA, Buthmann laboratories AG).

Stool samples were collected within 60 days prior to and 14 days after the diagnosis, and stored at –80°C. Antibiotic treatment within the last two months or an exclusion criteria such as fecal calprotectin (Fcal) levels of > 175 mg/g were generated by 16S rRNA analyses, using the GA-map™ Dysbiosis Test. Dysbiosis was defined as none, mild or severe (1). Differences in disease activity between levels of dysbiosis severity were analysed using ANOVA at a significance level of P < 0.05. Differences in correlations between dysbiosis severity and gut microbiota profiles were generated using ANCOVA. P-values corrected for multiple testing, using Benjamini-Hochberg correction, are presented.

Results: There were associations found between Fical and dysbiosis in CD patients (P < 0.02), while not for UC and symptomatic non-IBD patients. No association was found between HBI and dysbiosis in CD patients (P = 0.23), and between SCCAI and dysbiosis in UC patients (P = 0.32). Microbiota: Increasing dysbiosis severity in UC, CD and non-IBD patients yielded lower abundance of Faecalibacterium prausnitzii, and higher abundance of Proteobacteria, a profile typically observed in gut inflammatory conditions. In addition, the commensal bacteria Bifidobacterium yielded lower abundance with increased dysbiosis severity in UC and non-IBD patients, and in combination with elevated levels of Fcal and/or in UC patients. In the healthy controls, increasing dysbiosis severity yielded higher abundance of Proteobacteria.

Conclusion: In conclusion, a relationship between faccial dysbiosis in subgroups of the patient population and the disease activity in IBD is possible. According to gut bacteria profiles and abundance may potentially be used to differentiate between severity in UC and CD patients, as a non-invasive tool to monitor disease activity in IBD.

Disclosure of Interest: M.K. Karlsson: Employee of Genetic Analysis AS
L. Finnby: Employee of Genetic Analysis
C. Casen: An employe of Genetic Analysis
All other authors have declared no conflicts of interest.

P1660 SIMPLIFIED MR ENTEROCOLONOGRAPHY CUTO-OFFS BASED ON ENDOSCOPIC FINDINGS FOR ACTIVITY ASSESSMENT OF CROHN’S DISEASE
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Introduction: Crohn’s disease (CD) is a lifelong inflammatory bowel disease. Evaluating the extent and severity of the disease is critical to determine appropriate therapeutic strategies in patients with Crohn’s disease. MR imaging is one of the most recommended technique for detection of large and small bowel lesions, with high reliability and clinical utility of the 3-point MR enterocolonography (MREC) classification for assessing CD activity based on endoscopic findings.

Aims & Methods: 120 patients (70 for derivation cohort and 50 for validation cohort) with CD were enrolled and underwent MREC and ileocolonoscopy or balloon-assisted enteroscopy (BAE). MREC was evaluated for each bowel segment: rectum, sigmoid, descending, transverse, ascending colon, terminal ileum, and jejunum, according to the consensus of two observers in the derivation phase, and independently by three observers in the validation phase, using a 5-point MREC classification based on a lexicon of MR findings. The conventional MR score, or MaRIA, was evaluated simultaneously. Areas under the receiver operating characteristic curves (AUCs) were obtained to assess the accuracy of discriminating deep ulcers. Inter-observer reproducibility was assessed using weighted Kappa coefficients.

Results: BAE was performed in 49 (47%) and 37 (74%) patients in the derivation and validation cohorts, respectively. The AUCs of MREC classification were 89.0% in the derivation phase and 88.5, 81.0, and 77.3% for three observers in the validation phase. The AUCs of MREC classification were statistically non-inferior to those of MaRIA (p < 0.001). The cross-validation accuracy was 81.9% in the derivation and 81.3% in the validation phase. The MREC classification showed good reproducibility.

Conclusion: For clinical use, radiological reporting systems should be simple and provide appropriate levels of accuracy and reproducibility. The 5-point MREC classification meets these requirements, and is useful for evaluating CD activity in the large and small bowel segments.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1661 RISK FACTORS FOR METABOLIC SYNDROME AND ITS COMPONENTS IN INFLAMMATORY BOWEL DISEASE
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Introduction: Metabolic syndrome (MetS) is a combination of biochemical and anthropometric disturbances and a recognized risk factor for cardiovascular disease. A higher prevalence of this condition has been previously reported in IBD patients, correlating to age as in the general population.

Aims & Methods: The aim of this study was to assess the effect of individual disease activity–related putative risk factors for MetS in a group of IBD patients, as well as any protective effects of treatment on MetS or its components. Consecutive IBD patients and age- and sex-matched controls were included during a 1-year period. MetS was diagnosed according to the “harmonized” criteria as the presence of ≥ 3 criteria among elevated waist circumference, blood pressure, blood glucose, serum tryglicerides, or reduced HDL levels. All subjects underwent colonoscopy; endoscopic disease activity was assessed according to SES-CD and Mayo endoscopic scores. CRP, falciparum (FC), hemoglobin and ferritin levels were also measured.

Results: We enrolled 145 consecutive IBD patients (53 Crohn’s disease and 92 ulcerative colitis; 58 M:87 F; mean age 51 ± 18 y3) and 250 age- and sex-matched controls. Overall MetS prevalence was 37% in IBD and 21.6% in controls (OR = 2.1, 95%CI:1.32–3.39). Prevalence according to sex or disease type did not show significant differences. At multivariate analysis, age and BMI > 25 were associated to an increased probability for a positive MetS status both in IBD (OR = 1.341, and OR = 1.601) and controls (respectively OR = 1.374 and OR = 3.74). In patients under 50 years, age (OR = 1.24), CRP (OR = 1.9) and FC (OR = 1.35) positively were associated to MetS status, while a BMI > 25 increased risk at any age (< 50y OR = 3.8, > 50y OR = 1.56). Demographic factors did not associate to MetS status at any age. Interestingly, anti-TNFα treatment was protective in both groups, but reached statistical significance only in older subjects (> 50y OR = 0.08). Regarding individual MetS components, in the < 50y subgroup, age and CRP positivity associated with an impaired glycemic (respectively, OR = 1.15 and OR = 2.28) and lipidemic status (respectively, OR = 1.23 and OR = 2.3). In older patients, CRP positivity only associated to impaired HDL status (OR = 1.6). Importantly, anti-TNFα treatment favourably associated to HDL status (OR = 0.2).

Conclusion: MetS prevalence is increased in IBD compared to healthy controls at any age, and treatments with increased BMI and/or inflammatory markers are at higher risk for MetS, while anti-TNFα agents appear to be protective. The components associated to MetS are differently distributed according to age, with the inflammatory ones prevailing in subjects < 50 years and metabolic disturbances in older patients. These results indicate that efforts should be made to reduce MetS occurrence and associated risks in subjects > 50 years, in younger patients more effective inflammation control measures may prevent MetS and its related long-term neoplastic and cardiovascular complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1662 C-REACTIVE PROTEIN/ALBUMIN RATIO IS A GOOD PREDICTOR OF RESPONSE TO INTRAVENTHROUS CORTICOSTEROIDS IN ACUTE SEVERE ULCERATIVE COLITIS
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Introduction: Patients with acute severe ulcerative colitis (ASUC) have a high risk of rescue medical therapy or colectomy. Recently, the C-reactive protein (CRP)/albumin ratio at the 3rd day of treatment, with intravenous corticosteroids, has been shown to be a predictor of early colectomy in patients with ASUC.

Aims & Methods: To evaluate the accuracy of CRP/albumin ratio on admission, to predict response to intravenous corticosteroids in patients with ASUC. Retrospective assessment of systematically hospitalized patients with first episode of ASUC, who required intravenous corticosteroids. Demographic, clinical, laboratory and endoscopic variables were evaluated on admission. The response to intravenous corticosteroids was defined as absence of complications during a 1-year period. CRP/albumin ratio was considered as non-responsive patients, rescue medical therapy with infliximab or cyclosporine has been instituted. The accuracy of CRP/albumin ratio in predicting non-response to intravenous corticosteroids was assessed by the area under the ROC curve.

Results: 51 patients were included, 30 (58.8%) of them female, with a mean age 34.3 ± 14.5 years. Twelve patients (23.5%) required medical rescue therapy. No patient underwent colectomy. The presence of deep ulcers and a shorter evolution of the disease were associated with lack of response to CRP/albumin ratio of cortico- steroids, p < 0.001 and p = 0.008, respectively. Patients with no response to intravenous corticosteroids had higher CRP admission values and lower albumin values, compared to patients with response, 111 vs 67.5 (mg/L), p = 0.028, 2.8 v.s 3.5 (g/dL), p = 0.005, respectively. The CRP/albumin ratio was 1.4 higher in unresponsive patients 40.06 vs 22.14, p = 0.022, showing a good accuracy for predicting non-response to intravenous corticosteroids with an AUC of 0.746, p = 0.01.

Conclusion: A high value of CRP/albumin ratio was significantly associated with the occurrence of non response to intravenous corticosteroids, at the 3rd day of treat- ment. This index may allow a better risk stratification on admission, of patients with acute severe ulcerative colitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1663 INSUFFICIENT VARIATION OF MEDIUM CORPOSCULAR VOLUME (MCV) IN INFLAMMATORY BOWEL DISEASE UNDER THYOPURINES PREDICTS DIFFICULTY IN ACHIEVING MUCOSAL HEALING AND MUCOSAL DEEP REMISSION COMBINATION WITH ANTI-TNF - THE OTHER SIDE OF THE MCV FLOW STUDY
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Introduction: The MCV flow study confirmed the association ΔMCV ≥ 7fl at week 26-28 of Azathioprine monotherapy (mAzA) with favourable outcomes in a Portuguese IBD population.

Aims & Methods: For this work, our aims were to evaluate the need for step-up therapy in those under mAzA with ΔMCV < 7 and to identify predictors of combined deep remission outcomes (DeepRem), at the same timepoint, for the patients who subsequently began combination therapy with Anti-TNF (AzAExpered + Anti-TNF). Evaluation of patients under mAzA with ΔVMC < 7 at key timepoint week 26-28 treatment, included for The MCV flow study. Demographic characterization and severity of pre-treatment disease was evaluated (Montreal classification, previous surgery status, Mayo score and Crohn’s disease activity index [CDAI]). ΔMCV’s association with DeepRem [Steroid-free clinical remission (CDAI < 150, Mayo < 2) + mucosal healing (MH) + C-reactive protein (CRP) < 10] and need for biological therapy at the end of DeepRem was verified. The independent predictors in patients who subsequently started combination therapy. Statistic: Chi-square test; Binary logistic regression.

Results: A total of 106 IBD patients were evaluated [56.6% men, mean age 39 ± 15.2 years; 58 (14%) operated at week 26-28 of mAzA]. Identified strong association between an average ΔVMC ≥ 7 (n = 70; 66%) with DeepRem (p < 0.05), while a ΔVMC < 7 was associated with biological therapy need (p < 0.05). 45 patients were later started with Anti-TNF therapy

Reference
with fasting hyperglycemia (only 12.5%) had elevated C-reactive protein level but not fasting insulin level - it was within normal range. The highest level of the fasting insulin (over 10 IU/ml) in this group was observed in 3 patients who had to undergo immediate surgical treatment - two of them because of the bowel obstruction and one of them because of the perforation.

**Conclusion**: In our opinion there is a strong connection between fasting glucose, CRP level and exacerbation of the disease in CU patients but not in case of the Crohn’s Disease. In this group the elevated fasting insulin may be a marker of severe illness.

**Disclosure of Interest**: All authors have declared no conflicts of interest.

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**P1664 Fecal Calprotectin Predicts Short-Term Relapse in Inflammatory Bowel Disease Patients in Deep Remission**

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**Introduction**: Most inflammatory bowel disease (IBD) patients with clinically successful treatment seem to have some degree of residual mucosal inflammation. Elevated fecal calprotectin (FC) concentrations can be found despite clinical remission and may indicate relapse risk in asymptomatic IBD.

**Aims & Methods**: The aim of this prospective study was to evaluate whether elevated FC levels can predict short-term clinical and/or endoscopic relapse. We enrolled 60 IBD patients (30 ulcerative colitis - UC, 30 Crohn’s disease - CD) who were in clinical and endoscopic remission. FC was measured using quantitative immunochromatographic point-of-care test (Quantum Blue® Calprotectin, Bühlmann Laboratories AG, Switzerland). Patients were followed-up by FC examination and clinical activity assessment every second month until relapse or up to 24 months.

**Results**: During the follow-up 36 (60%) relapsed and 24 (40%) remained in remission. The mean time to relapse in all patients was 13.9 (range 2-20) months. Significant increase in median FC levels was seen 2 months before relapse (p < 0.001) before endoscopic relapse. ROC analysis indicated that a cut-off of >90 μg/g (OR 24, 95% CI 1-217, p < 0.001) in mean FC values 2 months before relapse could predict relapse in UC patients with 83.3% sensitivity and 82.5% specificity. In CD patients a cut-off of >155 μg/g (OR 193, 95% CI 22-1682, p < 0.001) could predict relapse within two months with 91.7% sensitivity and 94.6% specificity. Constantly normal FC values during the follow-up were predictive for deep remission.

**Conclusion**: It seems that FC elevates two months before clinical and/or endoscopic relapse. FC is a suitable marker for predicting relapse and building a follow-up strategy for IBD patients in clinical practice.

**Disclosure of Interest**: All authors have declared no conflicts of interest.

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**P1665 Glycemic Control and Insulin Resistance in Patient with Inflammatory Bowel Disease - Preliminary Results from the Pblid Study**

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**Introduction**: Hyperglycemia associated with critical illness - also called stress hyperglycemia - has much higher prevalence of severe ill patients. It is connected with many factors, including increased cortisol level, catecholamines uptake, glucagon production, glucoseogenesis, insulin resistance and inflammatory markers. It is not considered as an adaptive response anymore. Hypoglycemia associated with hyperglycemia is associated with poor outcomes and significantly increases mortality rates. That is why stress hyperglycemia and insulin resistance may be a marker of severe illness.

**Aims & Methods**: We analysed the data (glycemia, insulin level, HOMA IR level, C-reactive protein level, HbA1C) of 62 patient aged 18 years and older (20 women and 42 men, 32.26 +/- 13.8 years of age) with IBD hospitalized in our clinic from 2016 to 2017. 16 patient were with Ulcerative Colitis (UC) and 48 patients with Crohn’s Disease.

**Results**: The analysis of patients with Ulcerative Colitis showed that only one of the patients had hyperglycemia within the range of 140-200 mg/dl (the patient had type 2 DM) but interestingly 37.5% of the patients had fasting hyperglycemia over 100 mg/dl. Over 65% of these patient were admitted to our clinic with the exacerbation of the disease and had abnormal level of C-reactive protein, calprotectin (>1800) and fasting insulin level over 10 IU/ml. The analysis of the group of patients with Crohn’s Disease showed different results which may be connected with different metabolic profile of these patients. Most of the patients having diabetes had fasting hyperglycemia (over 12.5%) had elevated C-reactive protein level but not fasting insulin level - it was within normal range. The highest level of the fasting insulin (over 10 IU/ml) in this group was observed in 3 patients who had to undergo immediate surgical treatment - two of them because of the bowel obstruction and one of them because of the perforation.

**Conclusion**: In our opinion there is a strong connection between fasting glucose, CRP level and exacerbation of the disease in CU patients but not in case of the Crohn’s Disease. In this group the elevated fasting insulin may be a marker of severe illness.

**Disclosure of Interest**: All authors have declared no conflicts of interest.

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**References**


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**P1666 THE ROLE OF MR IMAGING IN ASSESSMENT OF LEEMANN INDEX IN THE COURSE OF CROHN’S DISEASE**

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**Introduction**: Crohn’s disease (CD) is a progressive, chronic and destructive inflammatory bowel disease process which, during its course, can lead to complications such as strictures and penetrating lesions (fistulas and abscesses), which may consequently require operative treatment. In some patients, bowel damage is present at the moment of diagnosis. The aim of the study is to assess the initial Lemann Index (LI), which comprehensively evaluates the entire gastrointestinal tract damage in patients with newly diagnosed Crohn’s disease.

**Aims & Methods**: In 209 patients with clinical suspicions of Crohn’s disease MR imaging and histopathology were performed. In 151 patients with confirmed active/chronic CD the Lemann Index has been calculated on the basis of radiological and clinical information for initial assessment of cumulative digestive tissue damage. To create the Lemann Index the gastrointestinal tract was divided into 4 organs: upper digestive tract, small bowel, colon, rectum and anus. Each organ was divided into segments (3 for the upper digestive tract, 6 for the colon/rectum and 1 for anus). Structures and penetrating lesions were assessed at each segment on 4-degree scale (0–3) according to the severity of lesions.

**Results**: Based on the findings of the initial radiological examination, active inflammation process was found in 76 patients and chronic process in 75 patients. The baseline study demonstrated such complications as strictures in 14 patients, fistuluses in 15 and abscesses in 4 patients. For all patients the LI was calculated. The obtained values were within the range from 0 to 22.

**Conclusion**: Over the years, the progression of Crohn’s disease leads to an increase in the value of Lemann Index, therefore, it seems that the evaluation of Lemann Index is a useful method for the first, baseline stage of all following control MR examinations will allow for a more complete assessment of patients in terms of progressive bowel damage and modification of the therapeutic process.

**Disclosure of Interest**: All authors have declared no conflicts of interest.

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**References**


Pooled Results

<table>
<thead>
<tr>
<th>Number of studies</th>
<th>Number of lesions</th>
<th>Number of dysplastic lesions (%)</th>
<th>Sensitivity (95% CI) +</th>
<th>Specificity (95% CI) +</th>
<th>+ve Likelihood Ratio (95% CI) +</th>
<th>-ve Likelihood Ratio (95% CI) +</th>
<th>Diagnostic Odds Ratio (95% CI) +</th>
<th>AUROC (SE AUC) Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual chromoendoscopy</td>
<td>5</td>
<td>987</td>
<td>121 (12.3%)</td>
<td>0.803 (0.72-0.87)</td>
<td>0.833 (0.80-0.86)</td>
<td>5.331 (2.78-10.2)</td>
<td>0.06 (0.06-0.59)</td>
<td>28.21 (6.08-130)</td>
</tr>
<tr>
<td>Dye based chromoendoscopy</td>
<td>6</td>
<td>1767</td>
<td>249 (14%)</td>
<td>0.558 (0.49-0.62)</td>
<td>0.89 (0.87-0.91)</td>
<td>4.21 (2.72-7.5)</td>
<td>0.29 (0.29-0.80)</td>
<td>9.92 (3.71-26.5)</td>
</tr>
<tr>
<td>Magnification endoscopy</td>
<td>5</td>
<td>226</td>
<td>79 (13.3%)</td>
<td>0.899 (0.81-0.96)</td>
<td>0.856 (0.82-0.89)</td>
<td>4.31 (3.86-4.99)</td>
<td>0.06 (0.06-0.33)</td>
<td>53.01 (14.1-199)</td>
</tr>
<tr>
<td>Confocal laser endomicroscopy</td>
<td>8</td>
<td>1179</td>
<td>86 (7%)</td>
<td>0.826 (0.72-0.89)</td>
<td>0.947 (0.93-0.95)</td>
<td>13.11 (5.3-31.2)</td>
<td>0.08 (0.08-0.46)</td>
<td>78.1 (17-341)</td>
</tr>
<tr>
<td>Real-time Kudo pit pattern</td>
<td>10</td>
<td>2724</td>
<td>357 (13%)</td>
<td>0.624 (0.48-0.76)</td>
<td>0.88 (0.83-0.93)</td>
<td>4.09 (3.52-9.05)</td>
<td>0.20 (0.20-0.57)</td>
<td>20.0 (7.9-50.6)</td>
</tr>
<tr>
<td>Real-time CLE</td>
<td>6</td>
<td>402</td>
<td>47 (11.7%)</td>
<td>0.872 (0.70-1.0)</td>
<td>0.96 (0.93-1.09)</td>
<td>15.4 (6.29-37.8)</td>
<td>0.15 (0.13-0.62)</td>
<td>108.74 (21.3-352)</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>6293</td>
<td>1151 (18.1%)</td>
<td>0.807 (0.78-0.83)</td>
<td>0.851 (0.83-0.87)</td>
<td>4.13 (3.66-4.65)</td>
<td>0.20 (0.19-0.21)</td>
<td>71.1 (54.2-94.2)</td>
</tr>
</tbody>
</table>

be required to obtain a 2x2 contingency table. Pooled analysis was done using a random-effects model. Sub-group analysis was performed at real-time Kudo pit pattern based and real-time CLE for characterization of visible lesions. Heterogeneity was assessed using Chi squared and I² statistics.

Results: Our search strategy identified 172 studies of which only 20 met the inclusion criteria. The pooled results are outlined in the table.

Conclusion: Real-time CLE and magnification endoscopy had the best performance characteristics. However there was a lot of heterogeneity in the results. Most CLE and magnification studies were single centre, single expert user which could explain these results. CLE studies were also affected by attrition bias with some studies reporting non-interpretable mages in a significant proportion.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1669 ENDOSCOPIC FINDINGS AND COLONOSCOPIC PERFORATION IN MICROSCOPIC COLITIS: A SYSTEMATIC REVIEW OF THE LITERATURE

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Introduction: Microscopic colitis (MC) is a clinical syndrome of severe watery diarrhoea with few or no endoscopic abnormalities. The incidence of MC is reportedly similar to that of other inflammatory bowel diseases. The need for histological confirmation of MC frequently guides reimbursement health policies. With the advent of high-definition (HD) colonoscopes, the incidence of distinct endoscopic findings reported in MC has risen. This has the potential to improve diagnosis times, increase cost-effectiveness of MC management and diminish the workload and costs of busy modern endoscopy units.

Aims & Methods: Observations on distinct endoscopic findings in MC available until 31st March 2017 were searched systematically (electronic and manual) in PubMed. The following search termsDescriptors were used: collagenous colitis(CC) OR lymphocytic colitis(LC) AND endoscopy, colonoscopy, findings, microscopic colonoscopy, erythema, macroscopic, vascular pattern, perforation, fractures. An additional search for MC AND perforation was made.

Results: Eighty (n= 80) articles, predominantly single case reports (n= 45), were retrieved. Overall, 1,582 (1,159 female; 61.6± 14.1 years) patient(pts) with MC and endoscopic findings were reported. The majority of articles (n= 62) were on CC (756 pts; 77.5% female). We identified 16 papers comprising 779 pts (68.9% female) with LC and 7 articles describing 47 pts (72.3% female) confirmed to have MC. The youngest patient was 10 and the oldest 97 years old. Aside from diarrhoea, symptoms included abdominal pain, weight loss, bloating, flatulence and oedema. In the study group we found 616 (38.9%) pts with macroscopic findings. The most common colonoscopic findings were non-ulcerous lesions i.e. pseudomembranes, a variable degree of vasculature pruning & dwindling, mucosal lacerations & abnormalities such as erythema/or labial nodularity, or surface textural alteration (n= 537; 87.2% pts). Isolated linear ulcerations were identified in 5 pts(0.8%) and in conjunction with non-ulcer lesions in 74 pts(12.9%). The location of endoscopic findings was not reported in 26 articles. Distinct endoscopic findings were described in the left (descending, sigmoid, rectum <20/20 studies), right (cecum, ascending–7/21 studies) & transverse colon (14, as well as duodenum (4), and terminal ileum (2). Colonic perforation was reported in 9 patients (0.57%).

Conclusion: Endoscopic findings are recognized with increased frequency in pts with MC. This could improve MC diagnosis by prompting a more extensive biopsy protocol in such cases and an earlier initiation of treatment. Procedure-related perforation has been reported in this group, therefore, cautious air insufflation is advisable when endoscopic findings are recognised.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Koulouzzidis A, Saced AA. Distinct colonoscopic findings of microscopic colitis: not so microscopic after all? World J Gastroenterol. 2011;17(37):4157-65
**P1670 PREVALENCE AND QUANTITATIVE ASSESSMENT OF LIVER STEATOSIS IN INFLAMMATORY BOWEL DISEASE PATIENTS**


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**Introduction:** It is well recognized that patients with inflammatory bowel disease (IBD) are at risk for nonalcoholic fatty liver disease (NAFLD). Our aim was to evaluate the prevalence and to quantify hepatic steatosis in IBD patients using the controlled attenuation parameter (CAP).

**Aims & Methods:** We prospectively recruited all IBD patients presenting for a disease flare or follow-up visit in our clinic, during a 18 month period. Patients who reported alcohol intake (more than 20 g/day) and those with coexisting viral hepatitis were excluded from analysis. Clinical characteristics and laboratory data were recorded. Hepatic steatosis was evaluated by conventional ultrasound, hepatic steatosis index (HSI) and transient elastography with CAP (Fibroscan, Echosens, Paris). Significant steatosis (S ≥ 1) was defined for a CAP value over 236 [1], and the cut-off of HSI for detecting NAFLD was set at ≥ 36 [2].

**Results:** Altogether 62 IBD patients (35 ulcerative colitis, UC and 27 Crohn’s disease, CD), mean age 45 ± 15 years, 50% female, were included in the analysis. The two groups (UC, CD) were similar regarding disease activity (remission/flare-48.5/31.4% in the UC group, 55.6/44.4% in the CD group), BMI (24.1 and 24.3) and liver function markers (ALT 21 and 21.1; AST 498 and 513 mg/dl). UC patients had higher mean cholesterol values (205.9 vs. 176.4 mg/dl) and 11% of them were diabetic (compared to none in the CD group). Mean CAP was higher in CD compared to UC-246 vs. 225 dB/m, while HSI values were similar between two groups 49.9 vs. 34.6 mg/dl, respectively. US identified 18/29 (62%) patients with fatty liver, HSI detected 3 more patients (21/ 62, 359%) and CAP even 2 more (23/62, 37.1%), yielding an extra 8% detection rate. NAFLD-IBD patients were more likely to have CD phenotype, history of resection, steroid use and longer disease duration.

**Conclusion:** In our cohort, about one in three IBD patients had fatty liver disease, as quantified by CAP. Diagnostic performance of CAP was better than conventional ultrasound and HSI in detecting fatty liver in IBD patients.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

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**P1671 INTESTINAL MICROBIOTA MARKERS AS A NEW TOOL TO SUPPORT IRREVERSIBLE BOWEL SYNDROME DIAGNOSTICS**

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**Introduction:** Irritable Bowel Syndrome (IBS) is a common gastrointestinal disorder that affects around 11% of global population. Despite the high prevalence of IBS, the cause of this disorder remains unknown and the criteria used to diagnose IBS are still unclear. In recent years, disturbances in the intestinal microbiota have been associated to the pathophysiology of IBS. Recently, two accurate biomarkers (Fpra and Eco) have been shown to discriminate between Inflammatory Bowel disease (IBD) and Healthy subjects (H). Therefore, the purpose of this study was to verify the capability of Fpra and Eco abundances to distinguish among healthy subjects, IBS, and IBD patients, in order to create a non-invasive system of diagnostic support for IBS patients.

**Aims & Methods:** A cohort consisting of 33 H, 14 IBS and 18 IBS was enrolled. IBS patients were separated by subtypes: IBS with constipation (C-IBS), IBS with diarrhea (D-IBS) and alternating IBS (A-IBS). Rome IV criteria were used to diagnose IBS patients. Moreover, 29 ulcerative colitis (UC) and 15 Crohn’s disease (CD) patients were also included. All subjects were recruited by the Gastroenterology Services of the Hospital Universitari Dr. Josep Trueta (Girona). At recruitment, patients were separated by subtypes: IBS with constipation (C-IBS), IBS with diarrhea (D-IBS), and alternating IBS (A-IBS) without significant differences were observed, although Fpra abundance was lower in C-IBS. We also used Fpra in combination with Eco as a complementary indicator of dysbiosis (Ratio Fpra/Eco). This ratio allows a good discrimination between H and IBS (P = 0.004). When it comes to discrimination between IBS and IBD patients, significant differences were observed in Fpra/Eco ratio between UC and IBS patients (P = 0.008), but not between IBS and CD patients (P = 0.775). Concerning disorders different to IBS, significant differences were also observed between CD and UC (P > 0.001), between H and UC (P = 0.037), and between CD and UC (P = 0.027).

**Conclusion:** Fpra abundance is a good biomarker to discriminate between healthy subjects and IBS patients. The use of Fpra/Eco ratio allows to distinguish IBS from H and UC patients. In contrast, none of the used biomarkers was able to differentiate IBS and CD patients. These results show that IBS and CD patients share similar dysbiosis parameters opening the need of further study to stabilize any eventual pathogenic link.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1672 DISTINGUISH BETWEEN ULCERATIVE COLITIS AND CROHN DISEASE USING AN ELECTRONIC NOSE AND DATA MINING: PRELIMINARY STUDY**

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**Introduction:** Inflammatory Bowel disease (IBD) and irritable bowel syndrome (IBS) may present in a similar manner [1] [2]. Measuring faecal calprotectin concentration is often recommended to rule out inflammatory bowel disease, however, there are no tests to positively diagnose irritable bowel syndrome and investigative tests are still used to rule out other pathologies [3, 4]. There is a chance, therefore, for novel, non-invasive diseasespecific biomarkers. Volatile organic compounds (VOCs), originating from physiological metabolic processes in the human body, are excreted as waste products through stool samples. For this reason, several biological, non-invasive, simple and low-cost biomarkers of inflammation that are useful in clinical practice for both diagnostic screening and therapeutic or course response monitoring are being evaluated in recent years Evolution of the disease. In this sense, stool markers, and especially calprotectin, have become of great importance in recent years as screening to select patients requiring more diagnostic studies and as a marker of activity for therapeutic follow-up [5]. Can the VOCs from stool samples show differences between ulcerative colitis and Crohn’s disease?

**Aims & Methods:** Five healthy individuals (control group- CON) and nineteen patients diagnosed with IBD were selected for the analysis of their stool VOCs. Healthy participants Healthy control samples (Control) (n = 5) were collected from healthy volunteers workers in the Digestive Diseases Area and they were not related to illnesses related to the gastrointestinal tract and had not undergone antibiotic treatment in the 3 months before sampling. Active patients were defined as a Mayo Clinical score of 3 or more for ulcerative colitis (UC) and a Harvey Bradshaw clinical index of 4 or more for Crohn’s disease (CD). In both cases calprotectin > 300 mg/g or relevant endoscopic lesions. Patients were classified according Montreal and ECCO criteria. This preliminary study is based in a group of CD-UC-CON where was analyzed 10 CD patients, 9 UC patients and 5 controls with 455 samples. Data from stool samples was obtained using eNose MOOSY32 [6].

**Results:** Figure 1 shows the scatter 3D plot with three voltage parameters for the group CD-UC-CON. These parameters mean the voltage from the eNose’s signals on saturation slope (vB) and late saturation (vE) and the number of sensor from the MOOSY32. Table 1 shows the comparative between relative error absolute and classification.

**Table 1:** Different algorithms test for matrix classification by WEKA software. Classification Relative absolute error

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Test Set</th>
<th>Relative absolute error</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLPCross</td>
<td>10</td>
<td>92.0%</td>
</tr>
<tr>
<td>ML</td>
<td>10</td>
<td>94.1%</td>
</tr>
<tr>
<td>BayesNetCross</td>
<td>10</td>
<td>88.3%</td>
</tr>
<tr>
<td>BayesNetCross</td>
<td>10</td>
<td>86.8%</td>
</tr>
<tr>
<td>J4Cross</td>
<td>10</td>
<td>89.6%</td>
</tr>
<tr>
<td>J4Cross</td>
<td>10</td>
<td>89.7%</td>
</tr>
</tbody>
</table>

**Conclusion:** In this preliminary research to distinguish between Ulcerative Colitis and Crohn’s Disease, the best algorithm for patient’s classification was the MLP with 30% to train and 70% to test. Although the high classifications result it is hopeful is necessary continue working to understanding how the eNose’s signals affect to the relative absolute error and improving the algorithms to decrease the error.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
References

Introduction: In patients with inflammatory bowel diseases (IBDs), comprising Crohn’s disease (CD) and Ulcerative colitis (UC), a patient-tailored therapy is an unmet need that requires accurate monitoring of the intestinal disease activity. We demonstrated recently, that the expression of microRNA (miR)-320a follows the disease activity in murine colitis models. In this prospective study we evaluated the potential of miR-320a as a biomarker to monitor the disease activity in IBD patients as well as its potential to distinguish UC/CD from infectious colitis.

Aims & Methods: The miR-320a was measured by qRT-PCR analysis in peripheral blood samples from 36 CD and 34 UC patients with acute flare of disease (n = 51) and in remission (n = 37) as well as in healthy control patients (n = 20) and in patients with infectious colitis (n = 9). Disease activity was assessed clinically applying the Crohn’s disease activity index (CDAI) and the partial Mayo score (pMayo) for UC patients as well as the simple endoscopic score Crohn’s disease (SES-CD) and the endoscopic Mayo score (eMayo) to score endoscopic disease activity.

Results: Both in CD and in UC patients, miR-320a expression in remission was significantly increased as compared to healthy controls (49±8.7/±17 vs. 17±3; both p < 0.001) but distinctly lower as in CD/UC patients with acute flare (1718±488; p = 0.006; 531±107, p = 0.001). In CD patients with acute clinical flare (CDAI > 220), miR-320a expression level were significantly increased as compared to CD patients in clinical remission (CDAI < 15; 267±637 vs. 57±9; p < 0.001) and showed a strong correlation with endoscopic disease activity (r² = 0.70). Similarly, in UC patients, miR-320a also revealed a significant increase in patients with low (pMayo 3-4), moderate (pMayo 5-6) and severe clinical disease activity (pMayo > 6) as compared to UC patients in remission (259±47; 281±26; 1090±204 vs.76±13, all p < 0.001). Furthermore, we detected a significantly enhanced miR-320a expression with increasing endoscopic disease activity (eMayo 1: 99±14 vs. eMayo 2: 301±60, p = 0.006; vs. eMayo 3: 775±245; p = 0.002). Most importantly, miR-320a expression in CD and UC patients with acute flare of disease was significantly increased as compared to patients with infectious colitis (p = 0.001).

Conclusion: The miR-320a expression in peripheral blood from IBD patients follows the clinical and endoscopic disease activity and may distinguish between IBD and infectious colitis. Therefore, miR-320a might serve as biomarker to non-invasively assess the disease activity in IBD patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
3.2 s.d. 4.39 (0.035–14.4)); Quantum Blue level mean 6.31; median 3.7 s.d. 6.27

Results: The IFX levels measured by the point-of-care method were higher than those measured by established ELISA (Promonitor level: mean 4.67, median 3.7 sd 2.67). According to the manufacturer, the lower and upper limits of quantification are: In the Quantum Blue assay 0.4 mg/ml and 20,ug/ml respectively. In the Promonitor assay 0.053 u/g/ml and 14.4 u/g/ml, respectively. All statistics were carried out using the statistical programs IBM SPSS statistics 21 and Epipad version 4.2.

Conclusion: In this cohort of patients with complex perianal fistulae, although in the majority of cases the diagnosis of IB was suggested by the presence of intestinal symptoms, these were absent in 16.7% patients. There should be a higher suspicion of IB in young patients and in those who have perianal disease of greater complexity.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>N = 46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), mean ± S.D.</td>
<td>45.6 ± 13.0</td>
</tr>
<tr>
<td>Male gender, n (%)</td>
<td>22 (47.8%)</td>
</tr>
<tr>
<td>Smokers, n (%) Never Current Ex</td>
<td>4 (8.7%)</td>
</tr>
<tr>
<td>Type of Disease, n (%)</td>
<td>Crohn’s Disease</td>
</tr>
<tr>
<td>Duration of disease (years), mean ± S.D.</td>
<td>12.4 ± 6.8</td>
</tr>
<tr>
<td>Localization of the disease, n (%)</td>
<td>Crohn’s Disease Ileal</td>
</tr>
<tr>
<td>Extraintestinal manifestations, n (%)</td>
<td>21 (45.7%)</td>
</tr>
<tr>
<td>Smokers, n (%) Never Current Ex</td>
<td>4 (8.7%)</td>
</tr>
<tr>
<td>Previous resections (Crohn’s Disease), n (%)</td>
<td>17 (53.1%)</td>
</tr>
<tr>
<td>Re-exploration (Crohn’s Disease), n (%)</td>
<td>7 (13.5)</td>
</tr>
<tr>
<td>Disease involvement Ulcerative Colitis Proctitis Left-sided Extensive</td>
<td>3 (9.1%)</td>
</tr>
<tr>
<td>Behavior (Crohn’s Disease), n (%)</td>
<td>Inflammatory Sticturing</td>
</tr>
<tr>
<td>Fistulizing</td>
<td>14 (2.4%)</td>
</tr>
</tbody>
</table>

Conclusion: In patients with IBD the addition of an immunosuppressant is an effective and safe optimization strategy after loss of response to anti-TNF alpha monotherapy. Low doses of IM are sufficient to achieve a clinical response in this setting.

Disclosure of Interest: F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals. S. Renna: advisory board member for AbbVie and MSD; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Zambon. M. Cotton: Received financial support for the organization of a second level Master degree in inflammatory bowel disease from AbbVie, MSD, Takeda Pharmaceuticals and Sofar. A. Orlando: Advisory board member for AbbVie, MSD, Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Sofar, Chiesi.

All other authors have declared no conflicts of interest.

P1680 THE PRESENCE OF IRRITABLE BOWEL SYNDROME-TYPE SYMPTOMS IN MICROSCOPIC COLITIS IS ASSOCIATED WITH INCREASED PSYCHOLOGICAL COMORBIDITY AND IMPAIRED QUALITY OF LIFE

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Introduction: Patients with microscopic colitis (MC) often present with abdominal pain and diarrhoea, and small cross-sectional surveys suggest that up to one-third may meet diagnostic criteria for irritable bowel syndrome (IBS). However, the impact of IBS-type symptoms in patients with MC, in terms of their effect on psychological health and quality of life has not been assessed.

Aims & Methods: We conducted a cross-sectional survey of individuals with MC. We analysed demographic data, symptoms that met the Rome III criteria for IBS, mood (via hospital anxiety and depression scale (HADS)) and somatiform-type behaviour (via patient health questionnaire-15 (PHQ-15)) and quality of life (QOL) (via SF-36) in order to examine risk factors for, and impact of, IBS-type symptoms in patients with MC.

Results: In total, 157 individuals with MC returned completed questionnaires, 53 (36.6%) of whom met the Rome III diagnostic criteria for IBS. The commonest histological subtype of MC was collagenous colitis (52.9%, n = 83), followed by lymphocytic colitis (38.2%, n = 60), and MC-not otherwise specified (8.9%, n = 14). Individuals meeting the Rome III criteria for IBS had significantly higher levels of anxiety (HADS-anxiety score 8.6 vs. 5.0, P = 0.001), depression (HADS-depression score 6.1 vs. 3.5, P = 0.001), and somatiform-type behaviour (PHQ-15 score 12.5 vs. 7.9, P = 0.001) compared with individuals who did not. Individuals meeting the Rome III criteria scored significantly worse on all domains of the SF-36, except for physical functioning. There were also trends towards these individuals being younger (65 years vs. 69.2 years, P = 0.011) or taking proton-pump inhibitors (58.5%, n = 31 vs. 42.4%, n = 39, P = 0.062).

Conclusion: More than one-third of individuals with MC met diagnostic criteria for IBS and these individuals reported higher levels of anxiety, depression, and somatisation plus impaired quality of life. Management strategies for these symptoms are required.

Disclosure of Interest: J.S. Kane: This work was supported by an investigator-initiated grant from Dr. Falk Pharma UK Ltd. A.C. Ford: This work was supported by an investigator-initiated grant from Dr. Falk Pharma UK Ltd. All other authors have declared no conflicts of interest.

References
P1682 ANEMIA IN INFLAMMATORY BOWEL DISEASES

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Introduction: Anaemia is one of the most common extraintestinal manifestations in inflammatory bowel disease (IBD), with iron deficiency being the most frequent cause.

Aims & Methods: To characterize anaemia in a population of patients with IBD and to evaluate the efficacy of anti-TNF and carrier therapy. We retrospectively analysed 169/1166 patients with IBD followed in a tertiary center between 2010-2016. All the patients received replacement therapy with ferric carboxymaltose, ferric saccharum or transfusional support. We analyzed the effect of immune suppressive therapy with and without anti-TNF: group 1 and 2 respectively.

Active disease was defined as C-reactive protein (CRP) ≥0.5 mg/dl, faecal calprotectin (FC) ≥50 μg/ml or presence of ulcers in colonoscopy. Anaemia was defined according to ECOCC criteria (iron deficiency anaemia (IDA), anaemia of chronic disease (ACD) and mixed anaemia (MA)). Multifactorial anaemia (MFA) was diagnosed when there was also vitamin B12 or folate deficiency.

Results: 169 patients were included: 111 with Crohn’s Disease (CD), 54 with Ulcerative Colitis (UC) and 4 with unclassified IBD. 44.4% were male and the mean age was 32.2 years (range 7-82). 98.2% had anaemia and 1.8% had only iron deficiency; 3.5% and 18.3% had a deficit of vitamin B12 and folate. The mean age was comprised in C and UC were IQR: 30.06–36.74 and 24.96–34.18 years respectively. There was no significant difference in mean UST trough levels in patients who responded to UST induction (median 1160 ng/ml; IQR: 603–1644) as compared to patients who did not respond (median 1556 ng/ml; IQR: 494–2758, p = 0.24). Forty-three (90%) patients received at least 4 injections of UST, with 12 patients who were optimized at the time of dosages. Clinical response was observed in 30.43 (70%) patients. Median UST concentration in clinical responder was 1359 ng/ml (IQR: 554-2068) and 2392 ng/ml in non-responder (IQR: 1496–3494), with no significant difference between the two groups of patients (p = 0.20).

U ST antibodies were undetectable for the 48 patients.

Conclusion: We confirmed that UST treatment is effective in the majority of CD patients refractory to anti-TNF agents. Median trough levels to U ST are not correlated to response and remission to U ST induction and maintenance treatment, with no antibodies developed against UST.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1684 ECONOMIC IMPLICATIONS IN INFLAMMATORY BOWEL DISEASES: RESULTS FROM A RETROSPECTIVE ANALYSIS IN AN ITALIAN CENTRE

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Introduction: Inflammatory bowel diseases (IBDs) are chronic conditions characterized by elevated costs (both direct and indirect). Over the last years also a significative healthcare burden associated with IBD has emerged, due to an increasing use of biological therapies and hospitalization costs. Despite the creation of local or regional databases in Italy data regarding healthcare expenditure are lacking.

Aims & Methods: The aim of this study was to evaluate costs comprehensive of biological treatments and hospitalizations in a series of patients with ulcerative colitis (UC) and Crohn’s disease (CD) and their correlation with demographic and clinical variables. Disease severity was evaluated by clinical scores (partial Mayo score for UC, Harvey Bradshaw Index for CD). We analyzed retrospectively patients treated by biologics referred to our IBD Unit between May 2015 and April 2016 who underwent at least six months follow-up (last visit October 2016). As regards biological therapies costs burdened by our Centre pharmacy for each drug (Infliximab, Adalimumab, Golimumab, Vedolizumab) and for single patient were evaluated. About hospitalizations the average costs of hospital care specific for a department through fares for homogeneous groups of patients i.e. Diagnosis Related Group (DRG) were collected. The mean overall monthly expenditure for each case was then evaluated.

Results: We collected clinical-economical data of 142 patients in biological treatment. We evaluated costs of UST (infliximab, adalimumab, golimumab, vedolizumab) and for each single patient were evaluated. About hospitalizations the average costs of hospital care specific for a department through fares for homogeneous groups of patients i.e. Diagnosis Related Group (DRG) were collected. The mean overall monthly expenditure for each case was then evaluated.

Conclusion: In our study the main cost is due to biological therapy but the subjects enrolled were the most severe in comparison to the whole IBD population under conventional therapy. No differences were found between the type of biologic administered and the way of administration (intravenous or subcutaneous) so the therapeutical choice could be driven by clinical reasons and not only economic ones.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Aims & Methods: We aimed to evaluate all these issues in Sicily through a web-based network of all prescribing centers. The Sicilian Network for Inflammatory Bowel Disease (SN-IBD) is composed by a super Hub coordinator centre and five Hub plus ten Spoke centres. From January 2013, all IBD patients starting a biological agent (incident cases) or already on treatment (prevailing cases) were entered in a web based software. Herein we report data of incident cases about the efficacy of biological therapy after twelve weeks and one year of treatment.

As clinical end-point, we set remission (corresponding to a Mayo Partial Score ≤2 for UC, and to a Harvey-Bradshaw Index ≤5 for CD), and response (reduction of Harvey-Bradshaw Index ≥5 for CD and Mayo Partial Score ≥5 for UC compared with baseline).

Results: From January 2013 to January 2017, 1578 patients were included. Incident cases were 1151 (808 Crohn’s disease [CD], 335 ulcerative colitis [UC]), and 427 were represented as prevalent cases. No significant difference in efficacy was observed between IFX originator and biosimilars. Several factors were identified as predictor of response - independently of the drug employed - at multivariable logistic regression analysis (table 1).

Table 1

<table>
<thead>
<tr>
<th>DISEASE-TIME POINT</th>
<th>VARIABLE OR p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD – 12 WEEKS</td>
<td>Naive to biologics 1.989 &lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>Age (continuous variable) 0.982 &lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>Upper GI tract involvement 0.388 0.002</td>
</tr>
<tr>
<td></td>
<td>Perianal disease 0.650 0.029</td>
</tr>
<tr>
<td>CD – 52 WEEKS</td>
<td>Naive to biologics 2.262 &lt; 0.001</td>
</tr>
<tr>
<td>UC – 12 WEEKS</td>
<td>Naive to biologics 2.188 &lt; 0.001</td>
</tr>
<tr>
<td>UC – 52 WEEKS</td>
<td>Naive to biologics 2.338 &lt; 0.001</td>
</tr>
</tbody>
</table>

Conclusion: In one of the largest “real-life” series of IBD patients on biological therapy reported to date, ADA in CD had a higher success compared to IFX at both 12 and 52 weeks; however, this results could be influenced by the preference of ADA as first-line anti-TNF drug in CD. IFX in UC was superior to GOL and ADA at 52 weeks; once again, this result could be influenced by the preference of IFX as first-line anti-TNF agent in UC; no difference was found between GOL and ADA in UC. Being naïve to biologics is a relevant predictor of response in both CD and UC at any time point. No significant difference in efficacy was observed between IFX originator and biosimilars.

Disclosure of Interest: A. Orlando: Advisory board member for AbbVie, MSD, Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Sofar, Chiesi.

F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals
All other authors have declared no conflicts of interest.

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Introduction: The monitoring of appropriateness, costs, and clinical outcomes of biological therapy in inflammatory bowel disease (IBD) is a relevant need.

Aims & Methods: To address these issues, we present the preliminary data of a large cohort of patients from the SN-IBD network, analysing the efficacy of IFX as first-line anti-TNF agent in UC; no difference was found between GOL and ADA at 52 weeks; once again, this result could be influenced by the preference of IFX as first-line anti-TNF agent in UC; no difference was found between GOL and ADA in UC. Being naïve to biologics is a relevant predictor of response in both CD and UC at any time point. No significant difference in efficacy was observed between IFX originator and biosimilars.

Disclosure of Interest: All authors have declared no conflicts of interest.
P1687 BENEFICIAL EFFECT OF A LOW FODMAPS DIET IN DIFFERENT INTESTINAL DISORDERS

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Introduction: Recent studies have shown that FODMAPs (Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols)-free diet is effective in subjects with Irritable Bowel Syndrome (IBS). Patients with Inflammatory Bowel Diseases (IBD), and colic disease (CD) can experience functional gastrointestinal symptoms unrelated to inflammation, but data about the use of low FODMAPs diet in these settings is still scarce.

Aims & Methods: To evaluate the usefulness of a low FODMAPs diet on patients with IBS, non-active IBD, and CD on strict gluten-free diet (GFD), we performed a dietetic interventional prospective study evaluating the effect of a low FODMAPs diet on patients subjects affected by IBS, CD following at least a 1-year-GFD and IBD who had been experiencing abdominal symptoms without signs of active inflammation. Each subject was put on a low FODMAPs diet after being evaluated by filling out questionnaires concerning on quality of life and symptoms experienced (IBS-SSS and SF-36), and was re-evaluated twice, first after 1 month and second after 3 months.

Results: 127 subjects were enrolled: 56 with IBS, 30 with IBD and 41 with CD. The analysis of the IBS-SSS survey showed that abdominal symptoms improved after 1 month and low FODMAPs diet in all subjects, with statistically significant difference within each group at T0 (average score in IBS: 293 ± 137 SD, average score in IBD: 206 ± 86 SD, average score in CD: 222 ± 65 SD, p < 0.0001). Furthermore, by analyzing the SF-36 questionnaire, while we didn’t observe any significant difference between the three groups in terms of response to diet (p = NS), we observed a clinical improvement from T0 to T3, after the start of the diet, for most of the questionnaire’s domains.

Conclusion: A low FODMAPs diet could be a valid option to counter abdominal symptoms in patients with IBS, non-active IBD or CD on GFD, and, thus improve their quality of life and social relations.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1688 EFFICACY OF VEDOLIZUMAB ON INTESTINAL AND ARTICULAR SYMPTOMS: REAL-LIFE DATA FROM THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD)


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Introduction: Vedolizumab (VDZ) is a new biologic agent approved for the treatment of adult patients with moderately to severely active ulcerative colitis (UC) and Crohn’s disease (CD).

Aims & Methods: The Sicilian Network for Inflammatory Bowel Disease (SN-IBD) was born to represent all the Sicilian centres prescribing biologics. These centres continuously enter in a web based software all real-life data about pre-scriptions and outcomes of biological therapy in patients with inflammatory bowel disease (IBD). Herein we report data on efficacy of VDZ on intestinal and articular symptoms at week 10, and week 24 of treatment. As clinical end-point, we set steroid-free remission (corresponding to a Mayo Partial Score ≤ 5 for UC, and to a Harvey-Bradshaw Index ≤ 5 for CD), and clinical response (reduction of Harvey-Bradshaw Index ≥ 3 for CD and Mayo Partial Score ≥ 5 for UC compared with baseline with a concomitant reduction of steroid dosage at week 10, and complete discontinuation at week 24).

Results: From July 2016 to April 2017, 163 patients (84 with CD and 79 with UC) were included (table 1). At week 10, a steroid-free remission was obtained in 71 patients (43.6%), while a clinical response in 37 (22.7%). Out of 71 patients reaching 24 weeks of follow-up, 29 (40.8%) were in steroid-free remission, and 10 (14.1%) had a clinical response. No significant difference in terms of clinical benefit (rate of remission plus clinical response) among patients with UC and CD was reported at week 10 (61.5% vs. 67.7%, respectively; p = 0.48) and at week 24 (54.3% vs. 55.6%, respectively; p = 0.91), and no difference was observed comparing naive and non naive patients, neither at week 10 (61.5% vs. 67.7%, respectively; p = 0.48) nor at week 24 (30.0% vs. 39.0%, respectively; p = 0.11). At multiple logistic regression analysis, a longer duration of disease (OR 0.961, p = 0.047) and presence of steroid-dependence (OR 0.189, p = 0.033) were predictors of reduced rates of clinical benefit at week 10, while a low serum level of C-reactive protein at baseline (OR 0.950, p = 0.031) was predictor of clinical benefit at week 24. An improvement of articular symptoms was reported in 39.5% of patients with active spondyloarthritides at baseline at week 10, and in 45.4% of patients at week 24. The only factor associated with articular response was the coexistence of clinical benefit on intestinal symptoms, both at week 10 (OR 3.871, p = 0.05) and week 24 (OR 3.600, p = 0.08). Three inductions or flares of spondyloarthritides during treatment with VDZ were reported.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>N = 163</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), mean ± S.D.</td>
<td>50.6 ± 16.0</td>
</tr>
<tr>
<td>Male gender, n (%)</td>
<td>94 (57.7%)</td>
</tr>
<tr>
<td>Smokers, n (%) Never Current Ex</td>
<td>134 (82.2%)</td>
</tr>
<tr>
<td>Type of Disease, n (%) Crohn’s Disease Ulcerative Colitis</td>
<td>84 (51.5%) 79 (48.5%)</td>
</tr>
<tr>
<td>Duration of disease, mean ± S.D.</td>
<td>11.4 ± 9.5</td>
</tr>
<tr>
<td>Localization of the disease, n (%) Crohn’s Disease ileal Illeocecal Colic Upper gastrointestinal tract1</td>
<td>22 (26.2%) 50 (59.5%)</td>
</tr>
<tr>
<td>P1688 EFFICACY OF VEDOLIZUMAB ON INTESTINAL AND ARTICULAR SYMPTOMS: REAL-LIFE DATA FROM THE SICILIAN NETWORK FOR INFLAMMATORY BOWEL DISEASE (SN-IBD)</td>
<td>21 (25.6%)</td>
</tr>
<tr>
<td>Disease Activity Harvey-Bradshaw Index, Crohn’s Disease - mean ± S.D. Mayo Partial score, Ulcerative Colitis - mean ± S.D. C-Resective Protein, mean ± S.D. (n.v. &lt; 5 mg/L)</td>
<td>3.9 ± 2.4 9.8 ± 15.7</td>
</tr>
<tr>
<td>Endoscopy within three months of initiation of VDZ (n=) Crohn’s Disease SES-CD, mean ± S.D. Rutgeerts score, 0/1/2/3 Ulcerative Colitis Mayo Endoscopic score, 0/1/2/3</td>
<td>7.6 ± 7.5 7(4.3%)</td>
</tr>
<tr>
<td>Extraintestinal manifestations IBD-associated SpA Past history (inactive at initiation of VDZ)</td>
<td>7 (4.3%)</td>
</tr>
<tr>
<td>Peripheral arthropathy Axial arthropathy Active Axial arthropathy Cutaneous Ocular</td>
<td>0 (0%) 15 (9.5%) 4 (2.5%) 1 (0.6%)</td>
</tr>
<tr>
<td>Previous biological treatments Yes No (naive to biologicals)</td>
<td>124 (76.1%) 39 (23.9%)</td>
</tr>
<tr>
<td>Indication for treatment with VDZ Failure of anti-TNFa therapy Contraindications to anti-TNFa therapy Steroid-dependent, n (%) Systemic steroids at baseline, n (%) Concurrent therapy with immunosuppressant, n (%)</td>
<td>109 (66.9%) 144(88.3%) 103 (63.2%) 13 (8.0%)</td>
</tr>
</tbody>
</table>

Conclusion: In this large cohort of Sicilian IBD patients, VDZ showed good efficacy after 10 and 24 weeks of treatment, particularly in those with a shorter duration of disease and a limited inflammatory burden. A subset of patients reported improvement also on articular symptoms, probably as a consequence of the concomitant control of gut inflammation.

Disclosure of Interest: F.S. Macaluso: Lecture grants from MSD and Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Zambon.

S. Renna: advisory board member for AbbVie and MSD; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals and Sofar.

A. Orlando: Advisory board member for AbbVie, MSD, Takeda Pharmaceuticals; lecture grants from AbbVie, MSD, Takeda Pharmaceuticals, Sofar, Chiesi.

All other authors have declared no conflicts of interest.
P1669 POSITIVE PHARMACOKINETIC EFFECT OF AZATHIOPRINE CO-MEDICATION ON INFlixIMAB TROUGH LEVELS IS DOSE-DEPENDENT

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Introduction: Combined immune suppression of anti-tumour necrosis factor (antiTNF) biologicals and thiopurines is superior to respective monotherapies in remission induction and maintenance of response in inflammatory bowel disease (IBD). The positive mechanistic evidence of this clinical benefit is mutually supported by a positive pharmacokinetic effect of thiopurines on antiTNF levels and vice versa. It has been suggested that for this synergistic effect, reduced dose of thiopurines might be sufficient but the data supporting this hypothesis are still limited.

Aims & Methods: The aim of the study was to assess the differences of infliximab trough levels according to the dose of concomitantly used thiopurines. All IBD patients treated with infliximab (Remicade®) in two IBD centres between November 2015 and April 2017 were eligible. Infliximab trough levels were routinely measured in all patients with maintenance infliximab therapy using commercially available ELISA kit (Ridscreen®, R-Biopharm). All patients in remission with stable dose regimen of 5mg/kg every 8 weeks at the time of the first ex vivo analysis were included. All patients were identified retrospectively from the medical records. The differences in the proportion of patients with adequate trough levels (3-12μg/mL) between patients on infliximab monotherapy, reduced (below 2mg/kg) azathioprine (AZA) dose vs. full (2 to 2.5 mg/kg) AZA dose were assessed statistically.

Results: Out of a total of 214 IBD patients treated with infliximab, there were 154 in remission at the time of the first assessment of infliximab trough levels. After excluding patients with previously intensified dose regimen, 125 patients were further evaluated. Among these 125 pts, 41 pts (33%) were on infliximab monotherapy, 58 pts (46%) were using combined immune suppression with a reduced dose of AZA and 26 (21%) were using the full AZA dose concomitantly with infliximab. Both groups, patients with infliximab monotherapy as well as patients using reduced AZA dose had significantly lower percentage of patients with therapeutic levels of infliximab compared with the group using the full dose of AZA co-medication (41% vs. 64% vs. 81%; infliximab monotherapy, reduced AZA dose and full AZA dose, respectively; p < 0.001 for both comparisons, infliximab monotherapy vs. reduced AZA dose vs. full AZA dose).

Conclusion: The proportion of patients with adequate infliximab trough levels is significantly higher in patients with full dose of concomitant azathioprine compared with the patients using a reduced dose of azathioprine. Thus, in order to maintain and sustain benefit of infliximab maintenance treatment, the combined immune suppression should comprise full dose of azathioprine.

Disclosure of Interest: Z. Zelinkova: Speaker’s fee from Abbvie, MSD, Takeda, Janssen

All other authors have declared no conflicts of interest.

References

P1670 C60 FULLERENES ATTENUATE THE INTENSITY OF COLON DAMAGE AND EXTRATESTINAL MANIFESTATIONS ON RAT ACUTE ULCERATIVE COLITIS MODEL

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Introduction: The primary drugs used for treatment of inflammatory bowel disease (IBD) treatment have some adverse effects and often are ineffective, so the need for more potent and more reliable medications is clear. A significant role at all the stages of the inflammatory process is attributed to reactive oxygen species, therefore the use of antioxidants is a promising direction of the IBD therapy.

Aims & Methods: C60 fullerene are the effective free radical scavengers [1], therefore the evaluation of possible protective properties of water-soluble pristine C60 fullerene using the simulation of acute ulcerative colitis (UC) in rats was aimed to be discovered. The pristine C60 fullerene aqueous colloid solution (C60FAS; initial concentration 0.15mg/ml) was prepared according to the protocols developed before [2]. UC was simulated by acetic acid intracolonic instillation. C60FAS was intraperitoneally or intrarectally applied at dose of 0.5mg/kg C60FAS daily for 2 times after UC induction. The colonic injury was estimated semi-quantitatively on macro- and light microscopy levels using 10- and 14-grade scale respectively, and the grade of total injury (GTI) was calculated. Permeability of colon epithelium was estimated by phenol red dye daily excretion. The states of the colon, liver, pancreas and spleen were assessed by histological (hematoxylin-eosin staining) and biochemical (plasma blood liver enzymes activity) methods. Quantitative blood indices were calculated and leukograms were analyzed.

Results: Colon wall edema, hyperemia and hemorrhage on bowel internal surface, ulcers of different size, epithelium desquamation and inflammatory features manifested by submucosa lymphoid and histiocytic infiltration and extravasation appeared under UC condition. Further UC MODIFICATION ON INFlixIMAB TROUGH LEVELS IS DOSE-DEPENDENT equal to 12 (GTI=12). Repeated oral administration of phenol red dye excretion exceeded the control one 6-6.5 times suggesting the damage of colon epithelial barrier. Degenerative features of exocrine pancreas and liver injury were also observed in UC rats. Anemia features manifested by hemoglobin concentration and red blood cell counts of patients normalized the platelet and neutrophils counts, AST and the state of spleen. In addition, C60FAS intraperitoneally restored the state of the pancreas but increased liver functional upload (as evidenced by elevated ALT activity), whereas its rectal application normalized both ALT and AST activities but didn’t affect the pancreas. Moreover, C60FAS rectally increased monocytes number, which could be explained by involving the latest in mucosa healing process.

Conclusion: C60FAS corrects local and systemic morphofunctional changes, conditioned by the induction of acute UC. The protective properties of C60 fullerene against bowel, hematopoietic system and liver due to its local application are more expressed compared to their systemic one, but their impact on pancreas is controversial. Thus, water-soluble pristine C60 fullerene could be used as efficient therapeutic agents at ulcerative colitis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
1. Zuzana Zelinkova, Radek Bozek, Stanislav Sroka, Olena Yurchenko, Ukraine
P1692 INFliximab (IFX) IN MODERATE TO SEVERE ULCERATIVE COLITIS (UC): COMPARISON BETWEEN SCHEDULED TREATMENT STRATEGY AND BRIDGE STRATEGY

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Introduction: UC is a potentially severe disease that carries an increased risk of complications and colecotomy. Immunosuppressant and biological therapies are relevant tools for complex patients. The ACCENT study showed that in Crohn’s disease (CD), scheduled IFX infusions vs. episodic are associated with greater efficacy. The historical difficulties of economic access had conditioned to our IBD center, to use IFX in moderate to severe UC to a bridge to thiopurines in pts 6mp/aza naïve. In UC, the mentioned strategy was insufficiently compared with a regimen of scheduled IFX treatment, that currently we use.

Aim: To compare (retrospectively) in moderate to severe UC the results of induction with IFX (in thiopurine naïve pts) continuing with 6mp/aza maintenance vs. similar induction followed by scheduled IFX maintenance strategy.

We included a cohort of moderate to severe UC treated with IFX in an IBD center (2006 to 2015) comparing results between IFX bridge followed by thiopurines (re-induction when available for moderate to severe relapse) vs. scheduled IFX (reinduction when available for moderate to severe relapse and need for corticosteroids maintenance). Optimization (by frequency of intervals) was allowed in both modalities.

Comparisons: Kaplan Meier/Log rank test: a) Cumulative incidence of colectomy, b) survival times relapse free, c) survival times corticosteroid free.

Results: UC patients received IFX for moderate to severe UC (M 60, F 7, Age (mean±SD) 35.9±13.2, UC duration 5.8±5.9 yrs; Extent: extensive 58.5%, Left-sided 41.5%, Activity: severe 78.5%, moderate 21.5%, mean Mayo score: 10.1±1.8. Primary no responders at week 12 (n 25: 21.5%). UC patients improvement in maintenance strategies, which were performed in 110 out of the 135 pts. (Follow-up 37.5±24.0 months) Groups: IFX bridge (n = 51) and scheduled IFX (n 59), which were different in extent, and mean age, UC duration, Mayo score. Cumulative incidence of colectomy was significantly different scheduled strategy (HR 0.8331 95% CI 1.107-0.571; p = 0.0349), survival times free of relapse (HR 3.1026, 95% CI 0.8368 to 5.2405, p < 0.0001) and free of corticosteroids (HR 2.6057, 95% CI 1.5516 to 4.3757, p = 0.0003). A proportion of UC significantly higher within the re-induced pts (HR 0.5148) requiring a shift of biological drug compared with the scheduled strategy (p = 0.016, Fisher), despite of similar rates of optimization. Infusion reactions needing definitive IFX suspension were more frequent as a trend (p < 0.06) in re-induced pts.

Conclusion: Similarly to was described for CD pts, in the CU, the scheduled IFX treatment strategy regimen, after a moderate-severe outbreak, seem to be associated with better long-term outcome regarding colecotomy requirement, relapses, and need for corticosteroids, compared with a bridge IFX strategy followed by thiopurines

Disclosure of Interest: All authors have declared no conflicts of interest.

P1693 ILLNESS PERCEPTIONS, COPING STRATEGIES, OUTCOMES AND THEIR CHANGES OVER TIME IN IBD PATIENTS WITH ARTHROPATHIES: A 12-MONTH FOLLOW-UP STUDY

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Introduction: Ulcerative colitis (UC) patients, may provide an important target for behavioural and physical interven-

Aims & Methods: The aim of this study was to evaluate the efficacy of CT-P13 therapy in maintaining mucosal healing in UC. Patients diagnosed with UC, who were administered CT-P13 from June 2014 at 4 Hungarian and one Czech IBD Centre were prospectively enrolled. Sigmodoscopy was performed at week 14 and week 54 to assess mucosal healing. Mucosal healing was defined as Mayo endoscopic subscore of 0 or 1. Complete mucosal healing was defined as Mayo endoscopic subscore of 0. CT-P13 trough levels, antibody positivity, serum inflammatory markers as CRP level, fecal calprotectin at weeks 14 and 54, concomitant steroid and azathioprine therapy at the time of endoscopic examination and at weeks 14 and 54, previous use of anti TNF drug and the drug of dose intensification as possible predictive factors for mucosal healing at week 54 were evaluated. Result: Seventy-five UC patients were included in the study of which 74 patients completed the induction therapy and 54 patients had already completed the 54 week treatment period. Mucosal healing was shown in 54.5% of the patients at week 14 and 61.7% at week 54 (p = 0.033). Complete mucosal healing was patient in 24.3% at week 14, but in 34.8% at week 54. The position values of CRP (p = 0.017), leucocytes (p < 0.001), thrombocytes (p < 0.001), and albumin (p = 0.002) showed significant difference at baseline and week 54. Mean trough level of CT-P13 was 5.02µg/ml and 4.4µg/ml at week 14 and 54. Serum antibody positivity was assessed in 7.7% and 26.2% of patients at week 14 and 54, respectively. Dose escalation was necessary in one third of patients. None of the patients need surgery who completed week 54, however 4 subjects who stopped CT-P13 therapy after induction regimen required colectomy.

Conclusion: Mucosal healing was observed in two thirds of the patients during CT-P13 maintenance therapy. Our study confirmed the long-term efficacy of CT-P13 therapy on mucosal healing in UC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1695 THE USE OF ANTI-TNFs IN INDUCING CLINICAL RESPONSE AND REMISSION IN ULCERATIVE COLITIS: A COMPARATIVE ANALYSIS IN THE REAL-LIFE EXPERIENCE OF A SINGLE REFERRAL CENTRE

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Introduction: Anti-Tumor necrosis factor (anti-TNF) agents, infliximab (IFX) and more recently adalimumab (ADA) and golimumab (GOL), have been shown effective and safe in the treatment of moderate-to-severe ulcerative colitis
Vedolizumab (VDZ), a gut-selective monoclonal anti-α4β7-integrin antibody, is used for treatment of Crohn’s disease (CD) and ulcerative colitis (UC). Lack of head-to-head RCTs makes the choice among the three anti-TNFs (IFX, ADA and GOL) challenging. Some data from real-world clinical practice are not fully elucidated in a clinical trial setting, such as the risk of serious infections, serious adverse events (SAEs) and biological discontinuations.

We performed a meta-analysis of randomised controlled trials (RCTs) comparing IFX, ADA, and GOL for induction or maintenance of clinical response and remission in CD or UC. Pooled analysis of AE rates across multiple studies support the favourable, long-term benefit–risk profile of VDZ in real-world clinical practice, with low rates of infusion-related reactions, serious infections and malignancies as a consultant for AbbVie, Janssen, UCB, Takeda, Immune Pharmaceuticals, Janssen, UCB, Takeda, Pfizer, GlaxoSmithKline, Amgen, Bristol-Myers Squibb, Genentech, Mitsubishi, Ferring, Norgine, Tillots, Vifor, Therakos, Pharmacosmos, Piéle, BMS, UCPharma, Hospira, Celltrion, Takeda, Biogaran, Boehringer Ingehelm, Lilly, Pfizer, HAC-Pharma, Index

### Results:

Among the 61 patients, 36 were males; mean age was 43.6 ± 15; no significant difference was present in baseline characteristics (extent and disease activity); 39 patients were thiopurine failure; 38 were naive to anti-TNFs, most were treated with IFX (p = 0.001). ADA and GOL were more often used as a second-line or third-line. The principal indication for steroid-resistant patients was IFX. No significant difference was observed between IFX and ADA both at week 8 (response p = 0.03; remission p = 0.07) and at week 16 (response p = 0.5; remission p = 0.97), though there was a trend towards a higher rate of response at week 8 with IFX (79% vs 64%). IFX and ADA were more effective than GOL at week 8 (response IFX vs GOL p = 0.02; remission: ADA vs GOL p = 0.027). At week 16 only IFX seems to be more effective than GOL in inducing clinical response (p = 0.048) but not remission. No significant difference among the three drugs was observed in patients naive to anti-TNFs. Treatment was discontinued in 2 patient in IFX group and in 6 patients in GOL group and in 6 patients with ADA because of persististent disease activity.

### Conclusion:

This single-center study shows that IFX is more effective than GOL both in the induction (8 weeks) and in the maintenance of response (16 weeks). ADA is more effective than GOL in inducing remission at 8 weeks but no significant difference is observed in the medium-term. However, GOL was used mainly as a second or third-line. In naïve patients, efficacy among anti-TNFs is comparable. Our results may help clinicians in the choice of an anti-TNF in UC. We believe in steroid-resistant patients to get a faster response, ADA and GOL should be the first options in steroid-dependent patients naive to anti-TNFs.

### Disclosure of Interest:

All authors have declared no conflicts of interest.

### Reference


### Table 1: Pooled real-world adverse event rates of vedolizumab in inflammatory bowel disease

<table>
<thead>
<tr>
<th>Event</th>
<th>n</th>
<th>Rate, %</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acne or acne-like lesions</td>
<td>290</td>
<td>7.2</td>
<td>4.8–10.9</td>
</tr>
<tr>
<td>Fatigue</td>
<td>569</td>
<td>6.3</td>
<td>2.6–14.6</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>1356</td>
<td>5.2</td>
<td>2.7–9.9</td>
</tr>
<tr>
<td>Exacerbation of IBD symptoms</td>
<td>674</td>
<td>4.9</td>
<td>2.1–11.1</td>
</tr>
<tr>
<td>Muscle pains</td>
<td>147</td>
<td>4.8</td>
<td>2.3–9.7</td>
</tr>
<tr>
<td>Headache</td>
<td>937</td>
<td>4.7</td>
<td>3.0–7.2</td>
</tr>
<tr>
<td>Dizziness</td>
<td>222</td>
<td>4.5</td>
<td>1.4–13.6</td>
</tr>
<tr>
<td>Cough</td>
<td>185</td>
<td>4.0</td>
<td>0.3–9.7</td>
</tr>
<tr>
<td>Other skin and subcutaneous-related</td>
<td>900</td>
<td>3.7</td>
<td>1.6–8.0</td>
</tr>
<tr>
<td>Nausea</td>
<td>623</td>
<td>3.2</td>
<td>1.2–8.5</td>
</tr>
<tr>
<td>Paresthesia</td>
<td>526</td>
<td>2.9</td>
<td>1.0–7.9</td>
</tr>
<tr>
<td>Respiratory, thoracic and mediastinal-related</td>
<td>70</td>
<td>2.9</td>
<td>0.7–10.7</td>
</tr>
<tr>
<td>Herpes</td>
<td>146</td>
<td>2.1</td>
<td>0.7–6.3</td>
</tr>
<tr>
<td>Liver-related</td>
<td>468</td>
<td>2.0</td>
<td>0.1–23.9</td>
</tr>
<tr>
<td>Memory impairment</td>
<td>136</td>
<td>2.0</td>
<td>0.4–10.2</td>
</tr>
<tr>
<td>Other musculoskeletal and connective tissue-related</td>
<td>498</td>
<td>2.0</td>
<td>0.3–12.5</td>
</tr>
<tr>
<td>Infectious adverse events (≥2% of patients)</td>
<td>960</td>
<td>6.0</td>
<td>3.2–10.8</td>
</tr>
</tbody>
</table>

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### Introduction:

Vedolizumab (VDZ), a gut-selective monoclonal anti-α4β7-integrin antagonist used for treatment of Crohn’s disease (CD) and ulcerative colitis (UC). Data from large real-world cohorts can further characterise safety events not fully elucidated in a clinical trial setting, such as the risk of serious infections, as identified with anti-tumour necrosis factor-alpha (TNFα) therapy in the TNFα-2 and ENACT-2 RCTs.

### Aims & Methods:

We conducted a systematic review and meta-analysis of real-world safety outcomes reported for VDZ in UC and CD. MEDLINE-, Cochrane-, and EMBASE-indexed publications and conference abstracts (n ≥ 10) from May 1, 2014–January 10, 2017 were searched for studies reporting real-world VDZ safety outcomes. Reports for patients < 18 years of age or for off-label VDZ use were excluded. A meta-analysis was conducted using the DerSimonian–Laird random effects method to obtain a weighted mean of adverse events (AEs).

### Results:

Two hundred and eighty studies were identified, with 33 reporting safety rates on 2857 VDZ-treated patients (CD: 1532; UC: 829); unspecified otherwise: 36, three studies [n=460] did not report individual UC/CD data) over a VDZ exposure/follow-up range lasting 0.5–18 months (20 studies). Among included studies, the mean age of patients ranged from 21 to 67 years, with mean disease duration ranging from 7 to 16 years. Most VDZ-treated patients (62–100%) had prior exposure to ≥1 anti-TNF therapy and 66–64% of VDZ-treated patients were receiving concomitant corticosteroids and immunomodulators. The most common non-infectious AEs were acne or acne-like lesions (7%; 95% confidence interval [Cl] 3–11%), fatigue (6%; 95% CI 3–15%) and arthralgia (5%; 95% CI 3–10%) (Table 1). The most common infections were upper respiratory tract infections (6%; 95% CI 3–11%) and sinustitis (4%; 95% CI 1–19%) (Table 1). Infusion-related reactions occurred in 2% (95% CI < 1–4%) of patients (n = 811), and malignancies were reported in <1% of patients (<1–4%; 2 studies). Overall, the pooled AE rate reported in VDZ-treated patients was 21% (95% CI 14–32%); 10% (95% CI 6–16%) for infections, 8% (95% CI 6–10%) for serious AEs and 7% (95% CI 3–13%) for serious infections (Table 1).

### Conclusion:

Pooled analysis of AE rates across multiple studies support the favourable, long-term benefit–risk profile of VDZ in real-world clinical practice, with low rates of infusion-related reactions, serious infections and malignancies reported, and no identification of new safety signals. These results are consistent with integrated safety data reported for VDZ in six clinical trials (>4000 patient-years), despite the selection of complex patients failing previous immunosuppressive or biologic therapies. Limitations of incident reporting in real-world studies include potential underestimates of AE rates and the reporting of AEs not regularly observed in clinical trials;

### Disclosure of Interest:

Dr Edward Loftus has received financial support for research from AbbVie, Janssen, UCB, Takeda, Glacier, SmithKline, Amgen, Brussels, Bristol-Myers Squibb, Genentech, Roberts Clinical Trials, Gilead, Receptos; and has served as a consultant for AbbVie, Janssen, UCB, Takeda, Immune Pharmaceuticals, Celgene, MedImmune, Theradiag, Genentech, Seres Health, Sun Pharmaceuticals, Bristol-Myers Squibb, S. Schreiber: S. Schreiber has received on-spot consultancy fees from AbbVie, MSD, and Takeda/Millennium for participation in expert advisory activities.

### Reference


L. Peyrin-Biroulet: Received consulting fees from Merck, Abbvie, Janssen, Genentech, Mitsubishi, Ferring, Norgine, Tillots, Vifor, Therakos, Pharmacosmos, Piéle, BMS, UCPharma, Hospira, Celltrion, Takeda, Biogaran, Boehringer Ingehelm, Lilly, Pfizer, HAC-Pharma, Index

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P1697 COST-UTILITY ANALYSES OF BIOLOGICS FOR REFRACORY ULCEERATIVE COLITIS

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Introduction: Although many biologics (Bs) have been approved for the treatment of moderate-to-severe Ulcerative Colitis (UC) in patients who have responded inadequately to conventional therapy, the selection of Bs is controversial due to the lack of head-to-head trials. Indirect economic comparisons of these costly drugs are available from National Healthcare perspectives that are not always current.

Aims & Methods: The objective is to evaluate cost-utility of Bs for the treatment of refractory moderate-to-severe UC both in Italy and in the Lombardy Region. A Markov model (considering 3 transition states: remission, clinical response, relapse) was constructed using the software R 3.3.1 markovchain-package to evaluate incremental cost-utility ratios (ICUR) of adalimumab (ADA), infliximab (IFX), infliximab biosimilar (IFX-B), golimumab (GOL) and vedolizumab (VED) treatments of patients over a 10-year time horizon from the perspective of the Italian (N) and Lombardy Region (R) healthcare system. Clinical parameters were derived from clinical trials. Costs (actualised by –1.5%) were obtained from the National database and Regional public tender. Utility was expressed as QALY (Quality Adjusted Life Years).

Results: Costs per treatment were different from a N and R perspective (ADA –55%; IFX –16.7%; IFX-B –29.6%; GOL –9.6%; VED –10%). Direct healthcare costs (treatment cost, visits, lab tests, hospital admissions) were calculated over 10 years of treatment per patient: ADA (N: €114,227; R: €86,314, –40.2%); IFX (N: €110,595; R: €103,081, –21.5%); IFX-B (N: €110,438; R: €78,852, –28.6%); GOL (N: €118,602, R: €96,922, –18.3%); VED (N: €113,852, R: €102,932, –9.6%) with associated QALY respectively of 6.68, 6.66, 6.66, 7.02. From a N perspective, IFX-B was dominating compared to all other treatments. The ICUR of VED/IFX-B was €9,483 for 10 years. From a R perspective, IFX-B was dominating compared to all other treatments. The ICUR of VED/ADA was €101,818 for 10 years.

Conclusion: National and Regional cost-utility analyses produced different results. As Regional price discounts can occur, local analysis is needed to estimate the economic impact of therapies to ensure optimal choice.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1698 ENDOSCOPIC SUBMUCOSAL DISSECTION OF ULCEERATIVE COLITIS-ASSOCIATED DYSPLASIA: A SINGLE CENTER-BASED EXPERIENCE

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Introduction: Dysplasia is considered as the precursor of colitis-associated cancer in the long standing ulcerative colitis (UC). Although endoscopic submucosal dissection (ESD) has been suggested as an endoscopic resection technique for non-polypoid dysplasia, only a few studies investigated the feasibility of ESD as a treatment option for non-polypoid dysplasia.

Aims & Methods: We aimed to investigate the feasibility of ESD for the resection of ulcerative colitis-associated dysplasia in UC. From January 2009 to January 2017, 19 UC patients with low grade dysplasia (LGD), high grade dysplasia (HGD) or early colon cancer were admitted for ESD and their medical records were retrospectively reviewed.

Results: Mean age of the 19 patients was 55.5±15.4 years and mean duration between UC diagnosis and dysplasia diagnosis was 13.7±6.5 years. Nine were male. Five of 19 patients directly underwent colectomy without ESD trial due to non-lifting sign (n = 4) or surface ulceration (n = 1). Of these, preoperative single HGD (n = 3) or ECC (n = 1) patients showing non-lifting sign were diagnosed as invasive cancer and a single preoperative LGD case with non-lifting sign had multifocal LGDs in the colectomy specimen. As a result, ESD was performed for 14 of 19 patients. Major and minor axes of the lesion was 23.4±9.0mm and 18.1±9.1 mm, respectively. The lesions were located at the rectum (n = 9), sigmoid colon (n = 2), descending colon (n = 1), and transverse colon (n = 1). The gross morphology showed Paris IIa (n = 7), IIb (n = 4), Is (n = 1), and IIb + Is (n = 2). No lesions contained ulcerations. The borders were distinct in 6 and vague but endoscopically assumable in 8 cases. Mean UC endoscopic index of severity scores of the surrounding mucosa was 0.3±0.1. Mean resection time was 54.8±25.7 minutes. En bloc resection and R0 resection rates were 92.9% and 71.4%, respectively. There was no perforation or clinically significant bleeding. Mean hospitalization period after ESD was 1.14±0.36 days. Final histology of ESD specimens revealed 1 indefinite for dysplasia (IND), 1 sessile serrated adenoma/polyp, 7 LGDs, 3 HGDs, and 1 intramuscal adenocarcinoma. Synchronous lesions were present in 5 patients. Synchronous dysplasia in 4 patients were removed endoscopically. However, colectomy was done in one patient during synchronous metachronous invasive cancer and endoscopically unresectable dysplasia diagnosed by the surveillance biopsy specimens taken during ESD. Metachronous or recurrent dysplasia was identified in 2 of 9 patients who under went follow-up colonoscopy after ESD (median follow-up period 12.3 months, range: 1.4–22.2 months). One developed metachronous LGD at 18 months after ESD and the other developed both metachronous and recurrent LGDs at 8 months after ESD.

Conclusion: According to our ESD series for dysplasia, ESD seems to be feasible for the endoscopic resection of UC-associated dysplasia. However, meticulous surveillance colonoscopy is mandatory to monitor local recurrence and metachronous dysplasia. Non-lifting sign and surface ulceration are highly suggestive of invasive colitic cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1699 EVALUATION OF ADHERENCE TO INFlixIMAB THERAPY IN IBD PATIENTS

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Introduction: Biological therapies are effective treatments for inflammatory bowel disease (IBD) but represent an important economic burden to the healthcare system. Adherence surveillance is necessary to optimize the efficacy of treatment and its costs. This issue has been evaluated just in a few studies.

Aims & Methods: We aim to describe the adherence to infliximab in patients with IBD and identify causes and factors associated with poor adherence. WE identified all IBD patients treated with infliximab in a single center since 2009. Fulfillment of the prescribed schedule was assessed for every single infliximab infusion. For every patient, we grouped infusions in “courses of treatment” defined as the administration of infliximab at the same dose and schedule for a minimum of six months. Therefore, restarting the treatment after a holiday of more than 4 months, or changing the interval of doses were considered as a new course of treatment. We defined “infusion well administered” when it was done within seven days before or after the date prescribed.

Results: We included a total of 147 courses of treatment, administered to 100 patients. Seventy-four percent of courses were Crohn disease patients, and 25% in ulcerative colitis patients. In 89% of courses combo therapy with immunosuppressants was used. The prescribed regimens were: every 8 weeks (76.2%), every 4 weeks (7.5%), every 6 weeks (8.8%), every 12 weeks (5.4%) or every 4 weeks (2%). The mean duration of the course was 23 months (range: 6–103). Only 69 out of 1714 infusions (4%), were not properly administered. The reported causes for that included: 36 “unknown” (52%), 18 “change requested by patient” (28%), 12 “due to logistic reasons” (15%) and 4 “other” (5%). In 107 courses (73%) all the infusions were well administered; in 143 (97%)>80% of infusions were well administered and only 4 courses (2.7%) had less than <80% of adherence. In more than an half of the infusions the cause could not been identified, for that reason analysis of predictive factors could not be performed.

Conclusion: The adherence to the scheduled infliximab regimen was very high and it would contribute to maintain the drug efficacy. The reasons for changing the date of administration should be indicated in the clinical history to identify associated factors and minimize the lack of adherence.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1700 TNF-EXPRESSION OF MONOCYTES IS A PREDICTIVE MARKER FOR RESPONSIVENESS TO INFlixIMAB TREATMENT IN PATIENTS WITH ULCERATIVE COLITIS AND INFLAMMATORY BOWEL DISEASE

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Introduction: One-third of all patients with inflammatory bowel diseases (IBD) do not respond to initial treatment with the anti-TNF-antibody Infliximab. Thus, predictive markers for response to anti-TNF-treatment are required.

Aims & Methods: The study was designed to investigate whether levels of TNF produced by peripheral blood mononuclear cells (PBMCs) can predict response to anti-TNF-treatment. Fourteen patients with proven Crohn’s disease (CD) or ulcerative colitis (UC) without treatment with biologicals in the past six months were included prior to first Infliximab infusion. Disease activity was measured by the use of Harvey-Bradshaw-Index (HBI) or partial Mayo Score. C-reactive protein (CRP) and ultrasound (Limberg Score). TNF-expression of LPS-stimulated PBMCs was measured by ELISA before treatment. Additionally PBMC’s...
intracellular TNF-expression was analysed by flow cytometry. According to a cut-off of 300 pg/ml, patients were divided into low- and high-producers. Primary endpoint was clinical response, secondary endpoints were decrease in CRP and Limberg Score. Clinical response was defined as a decline in Score of ≥2 (HBI) or ≥3 (partial Mayo Score). A HBI <5 or a partial Mayo-Score <2 was defined as remission. Results were analysed using the Fisher’s exact test.

Results: Nine patients reached the endpoint at week 6 and were available for further analysis (5 patients with CD, 4 patients with UC). The median TNF-expression was 653.84 pg/ml (49.53–1154.78 pg/ml). TNF was mainly produced by CD14+ monocytes. Four patients were identified as low-producers and five as high-producers. All high-producers responded well to the treatment regarding clinical scoring as compared to only half of the low-producers, but statistical significance was not reached due to the small number of patients (high: 100% vs. low: 33% clinical response, p = 0.167). However, remission rates after 6 weeks were significantly higher in high-producers compared to low-producers (high: 80% vs. low: 0% remission; p = 0.048). Secondary endpoints showed no significant difference in the two groups.

Conclusion: Quantification of TNF-expression in PBMCs and the resulting classification in low- and high-producers could be a potential predictive marker for response to anti-TNF-treatment in IBD patients.

Disclosure of Interest: D. Issesser: Donata Issesser received a research grant from Pfizer and lecture fees from Falk and Abbvie.

B. Siegmund: Britta Siegmund received a research grant from Pfizer, served as consultant for Janssen, MSD, Abbvie, Takeda, Hospira and received lecture fees from Abbvie, Falk, Ferring, MSD, Merck, Takeda; all money went to the institution.

All other authors have declared no conflicts of interest.

P1701 EVALUATION OF CONCOMITANT CORTICOSTEROID AND VEDOLIZUMAB USE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (IBD) IN REAL-LIFE CLINICAL PRACTICE

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Introduction: Corticosteroids (CS) are often used concomitantly with biologics in treatment of inflammatory bowel disease (IBD). However, their side-effect profile causes significant clinical and economic burden in long-term treatment. In this study, we investigated the impact of concomitant CS use on vedolizumab treatment persistence in patients with Crohn’s disease (CD) and ulcerative colitis (UC).

Aims & Methods: This was a nationwide (Finland), retrospective, non-interventional, multi-center chart review. From 27 centers, we included adult (≥18 years of age) IBD patients who received at least one vedolizumab infusion since 2014. Disease activity charts were standardized case report form. The key data collection points were at baseline, week 14 and month 6 of vedolizumab treatment. The main aim of the study was to analyze vedolizumab treatment persistence among IBD patients using CS in real-world clinical setting.

Results: 247 patients (CD 108, UC 139) were included. At baseline, 47 (43.5%) CD and 84 (60.4%) UC patients were using CS. Higher percentage of patients using CS at baseline discontinued vedolizumab during the 6-month follow-up compared to CS non-users (CD, 14/47 (29.8%) vs. 13/61 (21.3%); UC, 31/84 (37.3%) vs. 16/55 (29.1%). CS users had less vedolizumab discontinuations due to primary inefficacy (p = 0.04) and more discontinuations due to adverse events (p = 0.04), than CS non-users. Over half of the patients on CS at baseline and who persisted on vedolizumab were able to discontinue CS before 6 months (CD, 18/33 (54.5%); UC, 37/53 (69.8%). Among CD patients, CS users had higher baseline disease activity than non-users. Such difference was not observed in UC. CS users had shorter disease duration in both CD and UC. There was no difference in the number of prior TNF-alpha inhibitors between CS users and non-users.

Conclusion: Use of CS at the time of initiating vedolizumab treatment was more common in UC than in CD. Vedolizumab treatment persistence was lower in CS users than in non-users in both CD and UC. The data suggests that CS users have less vedolizumab discontinuations due to primary inefficacy and more discontinuations due to adverse events, than CS non-users. The majority of patients on CS at baseline who persisted on vedolizumab were steroid-free by 6 months, potentially relieving the burden of CS-induced side-effects for both patients and society.

Disclosure of Interest: T. Ylisaukko-Oja: TY is owner of MediEngine Oy and consultant for Takeda Oy.

J. Aaltonen: JA is employee of Takeda Oy.

S. Torvinen: ST is employee of Takeda Oy.

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All other authors have declared no conflicts of interest.
Results: In the context of ~77,382 patient-years of VDZ exposure and a total of 30,927 adverse events (e.g. 13 serious, one non-serious) occurred in 15 patients with pre-existing viral hepatitis B (n = 5, including 2 chronic cases) or hepatitis C (n = 10). Of the 15 patients, six had ulcerative colitis, seven had Crohn’s disease, and in two the indication was not specified (NR). Eight patients received prior/concomitant anti-TNF therapy; NR = 2. Events reported were reflective of the general VDZ safety profile in patients without viral hepatitis. Liver-related events were reported in two patients with hepatitis C—one patient who was a smoker reported hepatic neoplasms; the other reported hepatic masses (history of skin cancer, cholecystectomy, bladder tumour removal, and right radical orchidectomy). Both events resulted in VDZ discontinuation. Of events with a reported outcome, 22/26 (84.6%) were resolved or resolving at the time of reporting and 4/26 (15.4%) were unresolved; NR = 2. VDZ treatment was continued in 10/14 (71.4%) patients and discontinued in 4/14 (28.6%); NR = n.

Conclusion: In the post-marketing setting, there was no evidence of increased risk of viral reactivation in patients with hepatitis B or hepatitis C receiving VDZ. Limitations associated with post-marketing safety reporting (nature of reporting and incomplete patient medical history) and currently limited availability of VDZ in regions with endemic hepatitis B and hepatitis C infection should be considered when interpreting these results.

Disclosure of Interest: I.N. Hilmi: No conflict of interest. S. Adsal: Employee of Takeda Pharmaceuticals (Asia Pacific)
A. Blake: Employee of Takeda Development Center Europe Ltd
F. Bhayat: Employee of Takeda Development Center Europe Ltd
All other authors have declared no conflicts of interest.

References
P1706 DEVELOPMENT AND FEASIBILITY OF A WEB-BASED REGISTRY FOR MULTICENTRE SURVEILLANCE OF EFFECTIVENESS AND SAFETY OF NOVEL IBD-DRUGS IN THE NETHERLANDS

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Introduction: Randomized controlled trials provide efficacy data of novel IBD drugs. The majority of patients included in these trials however, especially for novel biologics, are highly selected patients from referral centres and are included in a variety of countries with very different health care systems. Inclusion criteria and follow-up protocols are strict and do not reflect routine care. Long-term country specific effectiveness and safety data for novel drugs are therefore warranted. Development and implementation of a novel protocol and electronic case reporting registry for every new compound is however time consuming and expensive. Therefore, the Initiative on Crohn and Colitis (ICC) aimed to develop a web-based registry suitable for capturing, managing, and reporting data for all drugs and all IBD phenotypes in everyday practice in all centres.

Aims & Methods: Here, we aim to test the feasibility of the web-based registry in patients starting vedolizumab. With a structured iterative process with IBD-specialists from the ICC, case report forms and lab-evaluation forms were developed to assess key elements of disease activity, safety and a PROM. Furthermore the ICC decided on a uniform follow-up protocol reflecting everyday practice.

A web-based registry for capturing, managing and reporting follow-up data of IBD patients starting a new drug was developed (ICC-case series). The registry automatically reminds the treating physician or nurse prior to novel follow-up visits. Feasibility of the ICC-case series was assessed in 6 centres in the Netherlands in patients who started vedolizumab. To test data extraction and reporting, the baseline characteristics of the first cases were assessed. The characteristics were compared to baseline characteristics of subjects in the vedolizumab registration studies.

Results: A total of 230 IBD (4 IBD-U) patients starting vedolizumab were included. All users found the ICC-case series easy to use and received the reminder mails for follow-up visits. Baseline characteristics were successfully extracted and are reported in table 1.

Table 1: Baseline characteristics of ICC cohort and GEMINI trials

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>ICC cohort CD (N=146)</th>
<th>GEMINI cohort CD (N=1115)</th>
<th>ICC cohort UC (N=80)</th>
<th>GEMINI cohort UC (N=895)</th>
</tr>
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<tbody>
<tr>
<td>Age - yr</td>
<td>39 ± 13.7</td>
<td>36 ± 12.1</td>
<td>43.7 ± 16.5</td>
<td>40.3 ± 13.1</td>
</tr>
<tr>
<td>Male - no. (%)</td>
<td>532 (48.6)</td>
<td>506 (62.5)</td>
<td>525 (66.4)</td>
<td>592 (66.6)</td>
</tr>
<tr>
<td>Current smoker - no. (%)</td>
<td>38 (25.9)</td>
<td>296 (26.7)</td>
<td>11 (13)</td>
<td>55 (6.1)</td>
</tr>
<tr>
<td>Disease duration-yr</td>
<td>13 ± 6.5</td>
<td>9 ± 7.8</td>
<td>8.6 ± 7.8</td>
<td>6.9 ± 6.4</td>
</tr>
<tr>
<td>Median CRP - mg/L (IQR)</td>
<td>7 (4-20)</td>
<td>11.5</td>
<td>6 (2-15)</td>
<td>-</td>
</tr>
<tr>
<td>Median fecal calprotectin - ug (IQR)</td>
<td>881 (287-1800)</td>
<td>686.0</td>
<td>1551 (441-2519)</td>
<td>899 (414-2127)</td>
</tr>
</tbody>
</table>

Conclusion: The ICC developed a uniform web-based registry to study post-marketing safety and effectiveness of novel IBD-drugs. A feasibility study with 230 patients starting vedolizumab showed successful data-capture, managing, and reporting with the ICC-case series in 6 centres. Table 1 shows clear differences between baseline characteristics of real-life Dutch patients and patients in the GEMINI studies underlining the importance of country specific post-marketing data.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1707 SIX-YEAR EFFICACY AND SAFETY OF AZATHIOPRINE TREATMENT IN THE MAINTENANCE OF STEROID-FREE REMISSION IN INFLAMMATORY BOWEL DISEASE PATIENTS

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Introduction: Azathioprine (AZA) and thiopurine are widely used for induction and maintenance of remission in patients steroid-resistant or dependent with inflammatory bowel disease (IBD). The treatment must be withdrawn in 5–30% of patients due to the occurrence of adverse events.

Aims & Methods: Aim of this study has been to investigate its efficacy and safety in maintaining steroid-free remission in steroid dependent IBD patients six year after the institution of treatment. Data from consecutive IBD outpatients referred in our Institution, between 1985–2015, were reviewed and all patients treated with AZA were included in this retrospective study. AZA was administered at the recommended dose of 2–2.5 mg/kg. Blood chemistry was analysed before administration of the drug, every 10–15 days for the first 3 months and then every 1–2 months following the institution of treatment.

Results: Out of 2722 consecutive IBD outpatients visited in the index period, AZA was prescribed to 415 patients, 227 (54.7%) were affected by Crohn’s disease (CD) and 188 (45.3%) by ulcerative colitis (UC). One hundred and fifty-eight patients with a follow-up < 72 months were excluded from the study. Two hundred and fifty-seven patients were evaluated, 143 (55.6%) with CD and 114 (44.4%) with UC. One hundred and forty-two (55.2%) were male

Table 1 Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>ICC cohort CD (N=146)</th>
<th>GEMINI cohort CD (N=1115)</th>
<th>ICC cohort UC (N=80)</th>
<th>GEMINI cohort UC (N=895)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon only</td>
<td>36 (24.7)</td>
<td>336 (28.3)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Beam and colon</td>
<td>56 (38.4)</td>
<td>618 (55.4)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Beam and upper Gl</td>
<td>11 (7.9)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Beam and colon and upper Gl</td>
<td>4 (2.7)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Disease behavior</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sterilization</td>
<td>89 (61)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Penetrating</td>
<td>35 (24)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Perianal fistula</td>
<td>13 (9.0)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Disease location UC, n (%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Proctitis</td>
<td>-</td>
<td>5 (6.3)</td>
<td>116 (13.0)</td>
<td>-</td>
</tr>
<tr>
<td>Left-sided</td>
<td>29 (20.8)</td>
<td>448 (38.0)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Perianal fistula</td>
<td>-</td>
<td>37 (46.3)</td>
<td>331 (37.0)</td>
<td>-</td>
</tr>
<tr>
<td>Concomitant medications - no. (%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Glucocorticosteroids only</td>
<td>59 (40.4)</td>
<td>383 (34.2)</td>
<td>37 (46.3)</td>
<td>332 (37.1)</td>
</tr>
<tr>
<td>Immunosuppressive agents only</td>
<td>3 (49.3)</td>
<td>645 (57.8)</td>
<td>86 (92.3)</td>
<td>357 (41.0)</td>
</tr>
<tr>
<td>Both immunosuppressive and</td>
<td>-</td>
<td>14 (17.5)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Corticosteroid</td>
<td>No glucocorticosteroids or immunosuppressive agents</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Prior TNF-antagonist therapy (%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>≥1</td>
<td>145 (99.3)</td>
<td>645 (57.8)</td>
<td>86 (92.3)</td>
<td>357 (41.0)</td>
</tr>
<tr>
<td>≥2</td>
<td>114 (78.1)</td>
<td>398 (35.7)</td>
<td>37 (46.3)</td>
<td>-</td>
</tr>
<tr>
<td>Prior IBD surgery (%)</td>
<td>72 (49.3)</td>
<td>466 (41.8)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Perianal surgery (%)</td>
<td>27 (18.5)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IPAA (%)</td>
<td>3 (3.8)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
and 115 (44.8%) female (average age of 35.68 ± 14.22 SD years, range 14–74 y.). Six years after the institution of treatment, 130 (50.6%) patients still were in steroid-free remission (85 CD vs 45 UC, 59.5% and 39.5%, respectively, p = 0.0017), 71 (27.6%) had a relapse requiring retreatment with steroids (29 CD vs 24 UC, 20.3% and 36.8%, respectively, p = 0.0048), 56 (21.8%) discontinued the treatment due to side effects (29 CD vs 27 UC, 20.2% and 23.7%, respectively). Loss of response from 1st to 6th year of follow-up was low, about 20%.

Conclusion: Six years after the onset of treatment 56% of patients did not require further steroid courses. After the first year loss of response was low in five subsequent years. In the present series the maintenance of steroid-free remission was significantly higher in CD than in UC patients. The occurrence of side effects leading to the withdrawal of AZA treatment has been low.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1708 CLINICAL EFFICACY AND SAFETY OF ANTI-TNF THERAPY IN INFLAMMATORY BOWEL DISEASE IN THE ELDERLY: A UK TERTIARY REFERRAL CENTRE EXPERIENCE

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Introduction: Many patients, especially the elderly or those with comorbidities, are excluded from clinical drug trials and little real-life data exists on the safety and efficacy of anti-TNF.

Aims & Methods: We aimed to compare the clinical efficacy and safety of anti-TNF therapy in patients over 60 years in a tertiary IBD centre in London, UK. We interrogated our IBD databases from January 2009 to November 2015 and performed retrospective data analysis until end of follow up in April 2017. Data was collected on demographics, endoscopy, calprotectin, CRP, clinical scores, serious infections, malignancy, drug levels and anti-drug antibodies. Patients with an age of ≥60 when starting anti-TNF therapy were identified and <60 comparators were selected at random in a 1:1 ratio. Primary endpoints: week 14 and week 54 steroid free clinical remission (Harvey Bradshaw Index < 5 or Simple Colitis Activity Index < 3) Secondary endpoint: proportion of patients remaining on anti-TNF at the end of follow up

Results: See table.

Conclusion: Only a small number of ≥60 years patients started anti-TNF (29 out of greater than 650). This may reflect our local population or that clinicians favour non-anti-TNF therapies in this older group. Overall there was similar clinical efficacy at weeks 14 and 54 of anti-TNF therapy between the ‘young’ and ‘old’ groups. There was a higher discontinuation rate after 1 year of therapy in the older group (p = 0.043). There were more adverse events in the older group (7/29) including 3 new cancer diagnoses compared with the younger group (3/58). 4 patients had detectable anti-drug antibodies in the older group despite 2 of them having therapeutic thiopurine suggesting that the elderly may have more immunogenicity than the young. Further studies with more patients across multiple sites are required to clarify safety and efficacy in the elderly.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1709 TACROLIMUS IN REFRACTORY ULCERATIVE COLITIS—12 MONTH OUTCOME IN A SINGLE-CENTRE UK DISTRICT HOSPITAL

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Introduction: Rescue therapy is required for patients with moderate - severe ulcerative colitis (UC) who have failed to respond to steroids and thiopurines. Anti-Tumour Necrosis Factor Agents (Anti-TNFs) are widely used before considering a colectomy. Calcineurin inhibitors such as ciclosporin and Tacrolimus may be considered as alternatives to biologics. There have been some case series in assessing the use of Tacrolimus in such patients although the United Kingdom experience is limited. (1, 2)

Aims & Methods: We aimed to review the outcome of patients who received Tacrolimus as rescue and subsequent maintenance therapy for refractory symptoms of UC. This was a retrospective single-centre case review series. All patients who were refractory to standard medical therapies and being considered for a colectomy were reviewed by a Gastroenterologist with an interest in Inflammatory Bowel Disease. Demographic data, indications for treatment, clinical course and outcomes were reviewed from Electronic Patient Records (EPR).

Results: Fourteen patients (F = 6; mean age of 54 years) received Tacrolimus. 8 patients (57%) had evidence of pancolitis and six patients (43%) had distal colitis. All patients had previously received thiopurines and 11 patients (78.6%) had also received anti-TNFs. Three patients declined Anti-TNF treatment. All patients were steroid-dependent prior to commencing Tacrolimus. One patient received ciclosporin before the switch. The remaining 13 patients were initiated on Tacrolimus in the out-patient setting at a starting dose of 0.1 mg/kg/day in 2 divided doses. Patients took Tacrolimus for a mean period of 18.8 months (range: 2 months to 49 months). Eight patients (57%) achieved a steroid-free remission within 6 months. An additional 3 patients (23%) had a clinical response within 6 months, but required one course of steroids during this time period. Three patients (23%) failed to respond to Tacrolimus; 1 patient remains steroid-dependent and does not wish to proceed to surgery, 1 patient was switched to infliximab and 1 patient proceeded at 10 months to have an elective subtotal colectomy. Tacrolimus was withdrawn in all 3 non-responders. Of the 11 (78.6%) initial responders, 12-month outcome included withdrawal of Tacrolimus in 7 patients (63.6%). Reasons for withdrawal included: n = 1 renal impairment; n = 1 started on infliximab; n = 3 referred for leucapheresis; n = 1 restarted on Azathioprine and n = 1 referred for proctocolectomy. Three patients (21.4%) remain in steroid-free clinical remission with a good quality of life and

<table>
<thead>
<tr>
<th>Abstract No: P1708</th>
<th>&lt;60 years</th>
<th>≥60 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>n = 58</td>
<td>n = 29</td>
</tr>
<tr>
<td>Week 14 steroid free remission (HBI &lt; 5, SCCAI &lt; 3)</td>
<td>28/41 (68.3%)</td>
<td>8/16 (50%)</td>
</tr>
<tr>
<td>Week 54 steroid free remission (HBI &lt; 5, SCCAI &lt; 3)</td>
<td>24/40 (60%)</td>
<td>8/15 (53.3%)</td>
</tr>
<tr>
<td>Remain on anti-TNF at week 54</td>
<td>46/58 (79.3%)</td>
<td>23/28 (82.1%)</td>
</tr>
<tr>
<td>Reasons for stopping anti-TNF before week 54</td>
<td>7 primary non-response 2 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical &amp; endoscopic remission</td>
<td>2 primary non-response 2 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction</td>
</tr>
<tr>
<td>Remain on anti-TNF at end of follow up (April 2017)</td>
<td>38/58 (65.5%)</td>
<td>12/29 (41.4%) p &lt; 0.05</td>
</tr>
<tr>
<td>Reasons for stopping biologic during study period</td>
<td>8 primary non-response 4 secondary loss of response 3 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical and endoscopic remission 2 infections (skin and respiratory) 1 stopped attending</td>
<td>4 primary non-response 2 secondary loss of response 3 secondary loss of response with detectable anti-drug antibodies 1 infusion reaction 1 clinical and endoscopic remission 1 infection (ophthalmic) 1 new diagnosis cancer (colorectal) 1 severe fatigue 1 peripheral neuropathy 1 moved away 1 stopped attending</td>
</tr>
<tr>
<td>Length of time on anti-TNF if stopped (months)</td>
<td>Range: 3–73 Median: 12</td>
<td>Range: 3–63 Median: 18</td>
</tr>
<tr>
<td>Anti-drug antibodies detectable during follow up</td>
<td>3/38 (5.2%)-3 infliximab weeks 14, 34 and 76 2 no concomitant 1 subtherapeutic TGNs 1 prior exposure to infliximab</td>
<td>4/29 (13.8%) -3 infliximab, 1 adalimumab weeks 14, 48, 52 and 54 2 concomitant with therapeutic TGNs 2 no concomitant with therapeutic TGNs</td>
</tr>
<tr>
<td>Adverse events throughout follow up</td>
<td>1 new diagnosis cancer (testicular) 1 infusion reaction 1 infection (dental abscess)</td>
<td>3 new diagnosis cancer (prostate, colorectal &amp; thyroid) 1 spontaneous ileal perforation requiring emergency surgery 1 infusion reaction 2 infections (chest infection and shingles)</td>
</tr>
</tbody>
</table>
no adverse effects on maintenance treatment with Tacrolimus. 11 patients (9.4%) reported adverse effects at any time during maintenance therapy. These were considered by the investigators as drug-related in the first 12-months of follow-up. Conclusion: Tacrolimus should be considered as an alternative therapy for patients with refractory UC in the out-patient setting. This is particularly useful if the patient is unwilling to consider a colectomy. With close monitoring and supportive care, it is safe and feasible allowing patients an alternative immunosuppressant which may either avoid the need for a colectomy or, give some time to adjust to its implications.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1710 A REAL LIFE COMPARISON OF THE EFFICACY OF ADA AND GOLIMUAB IN MODERATE-TO-SEVERE ULCERATIVE COLITIS: A MULTICENTER EXPERIENCE FROM THE SICILIAN NETWORK FOR INFILTRATIVE BOWEL DISEASE (SN-IBD)

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Aims & Methods: Aims & Methods: We reported the Sicilian Network experience on the comparability of efficacy of ADA and GOL in patients (pts) with moderate-to-severe UC. From June 2015 until April 2017, 197 consecutive pts with moderate to severe UC were treated with ADA or GOL. The efficacy was evaluated at 8 weeks and at the end of the follow-up considering "clinical response" (reduction of at least 2 points of Partial Mayo Score with concomitant steroid reduction or discontinuation) and "clinical remission" (Partial Mayo Score ≤ 2 without steroids). The presence of clinical response or clinical remission was defined as "clinical benefit". Endoscopic Mayo Score was evaluated at the end of the follow up in pts who underwent colonoscopy.

Results: 118 pts were treated with ADA and 79 with GOL for a median follow up of 40.21 [20.32, 69.14] weeks for ADA and 34.00 [17.43, 54.79] weeks for GOL (p = 0.08). Eighty-eight pts were naïve to anti-TNFα (59 ADA, 29 GOL, p = 0.09). No difference in Mayo Score value was observed between the 2 groups at the time of first drug injection (p = 0.92). After 8 weeks clinical benefit was achieved in 93/118 (78.8%) pts treated with ADA and 50/79 (63.3%) pts treated with GOL (p = 0.026). Clinical remission was achieved in 48/118 (40.7%) pts treated with ADA and 20/79 (25.3%) pts treated with GOL (p = 0.038). At the end of the follow up clinical benefit was achieved in 79/118 (66.9%) pts treated with ADA and 37/48 (76.4%) pts treated with GOL (p = 0.088). Clinical remission was achieved in 50/118 (42.4%) pts treated with ADA and 23/79 (29.1%) pts treated with GOL (p = 0.088). No difference was observed in clinical outcomes at 8 weeks and at the end of the follow up between naïve and non naïve pts (p = 0.187). At the end of the follow up the mean Endoscopic Mayo Score was 3.00 [0.00, 5.00] in pts treated with ADA and 4.00 [1.00, 7.00] in pts treated with GOL (p = 0.025). No difference was observed in clinical outcomes at 8 weeks and at the end of the follow up between ADAtreated and GOL-treated pts (p = 0.088).

Conclusion: This is the first study where the comparable efficacy of ADA and GOL was evaluated. These real life data confirmed the efficacy of subcutaneous anti-TNFα in the treatment of moderate to severe UC. ADA resulted to be more effective than GOL in inducing and maintaining clinical benefit.

Larger prospective studies with longer follow up are warranted to confirm this data.

Disclosure of Interest: S. Renna: Abbvie, MSD, Takeda. F. Moccio: Abbvie, MSD F.S. Macaluso: Abbvie, Takeda R. Orlando: Abbvie, MSD, Takeda. All other authors have declared no conflicts of interest.

References
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Introduction: The efficacy of golimumab for the induction and maintenance of clinical remission in adult subjects moderately to severely active Ulcerative Colitis (UC) has been studied in two completed clinical trials. However, patients enrolled in clinical trials are not entirely representative of those encounters in the real clinical practice. This study aims to evaluate the durability of treatment with golimumab in the context of real-life clinical practice.

Methods: An observational, multicenter, retrospective, phase IV study, enrolling all patients starting golimumab from March to December 2015, from 21 IG-IBG centers. This study consists of two different parts: 1) retrospective, regarding data until December 2016 and 2) a prospective one, still ongoing, that will be concluded at the end of 2017. The co-primary outcomes were the overall durability of treatment with golimumab, defined as persistence on golimumab therapy because of sustained clinical benefit, and safety. Results for the first 54-week period are reported.

Results: 121 patients (47.4% female) were enrolled. The mean age of 45.7 years (SD 14.3) and a median duration of disease of 8 years, (range 0–28) were included. Sixty-seven patients (55.4%) had severe endoscopic activity (Mayo 3). Clinical activity was defined as moderate (Partial Mayo Score (PMS) 5–6) in 55 patients (45.5%) and severe (PMS 7–9) in 66 patients (54.5%). Pre-treatment exposure to anti-TNFα was reported in 32% of patients (38 Infliximab, 4 Adalimumab, 21 both). Steroid-dependence and refractoriness were reported in 78.5% and 16.5% of patients, respectively. After 54 weeks, the cumulative persistence on golimumab therapy was 31%. Seventy-seven patients withdrew from treatment, without significant difference among anti-TNFα naïve vs exposed patients (55.2% vs 71.4%, p = 0.11 Chi-Square test). Among 90% of patients who completed week 8, 48% of patients were still on golimumab therapy at week 54. Thirty patients (25%) withdrew within the first 54 weeks. Among the remaining patients, at week 54 the persistence on golimumab therapy was 57.1%. Ten patients reported an adverse event, but only 6 of them withdrew from treatment. Four patients reported paradoxical skin lesions, unresponsive to topical therapy. Fifteen patients (12.4%) underwent surgery within the first 54 weeks, with a greater percentage among anti-TNFα exposed (20.6% vs 3.4%, p = 0.02 Chi-Square test).

Conclusion: This preliminary real-life data study endorses golimumab’s promising results, showing 57.1% of durability treatment at week 54 in those patients.
who completed first 14 weeks of treatment and confirming it as a safe drug. Anti TNF-α naïve patients were more likely to avoid colectomy.

Disclosure of Interest: None declared.

References

P1712 PREVALENCE OF CIPROFLOXACIN RESISTANCE IN INFECTIOUS BOWEL DISEASE PATIENTS WITH GUT COLONIZATION WITH EXTENDED SPECTRUM BETA-LACTAMASE PRODUCING ENTEROBACTERIA ACCORDING TO BACTERIAL PLASMID GENES

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1Riga Stradins University, Riga/Latvia
2Riga East Clinical University Hospital, Riga/Latvia
3Gastroenterology, Hepatology And Nutrition Clinic, Riga East Clinical University Hospital, Riga/Latvia

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Introduction: Ciprofloxacin is one of the most frequently used antibiotics in hospitalized inflammatory bowel disease (IBD) patients. Also discrepancies between clinical guidelines and real clinical situations are observed in terms of antibiotic use in patients with IBD. In the last few years an emerging resistance to ciprofloxacin, ranging from 43% to 82%, has been described in extended spectrum beta-lactamase producing bacteria (ESBL-E) colonizing the gut.1,2

Aims & Methods: The objective of this study was to evaluate the gut colonization with ESBL-E in IBD patients, determine the resistance to ciprofloxacin and bacterial plasmid genes associated with that. Rectal swabs were collected from all consecutive patients with confirmed ulcerative colitis (UC) and Crohn’s disease (CD) hospitalized in two largest tertiary medical care centres in Riga, Latvia during a 7-year period (2010–2016). Enterobacteria were cultured and identified for ESBL presence according to EUCAST guidelines, resistance to ciprofloxacin and bacterial plasmid genes CTX-M, TEM and SHV were detected.

Results: A total of 148 patients with confirmed IBD diagnosis were included in the study: 47 (32%) UC, 47 (32%) CD with CTX-M (n = 4; 80%) and TEM (n = 3; 60%). In UC 6 (50%) and in CD 1 (20%) of the isolated ESBL producing strains from CD patients included only Escherichia coli (n = 5). The isolated bacterial plasmid genes associated with ESBL production in UC included CTX-M (n = 11; 92%), TEM (n = 4; 33%), SHV (n = 1; 8%), in CD–CTX-M (n = 4; 80%) and TEM (n = 3; 60%). In UC 6 (50%) and in CD 1 (20%) of the isolated plasmid genes associated with ESBL were resistant to ciprofloxacin. In 1 case of the ciprofloxacin resistance CTX-M, TEM and SHV gene combination was observed, in 1 case CTX-M and TEM gene combination was observed, in 4 cases only CTX-M gene was present and in 1 case only TEM gene was present. Colonization rate with ESBL-E in IBD patients, mostly with E. coli, expressing CTX-M gene was found comparing with the literature. 2. Higher resistance to ciprofloxacin was found in ESBL-E isolated from UC patients, comparing to UC patients. 3. CTX-M and TEM genes are associated with resistance to ciprofloxacin.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1714 PREDICTIVE FACTORS OF RESPONSE TO ANTI-TNF A TREATMENT OF COMPLEX ANO-PERINEAL FISTULAS IN CROHN’S DISEASE

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Introduction: Anti-TNFs are well-established in therapeutic management of Crohn’s disease (CD). Real-life data on their pattern of use in a French clinical setting are, however, limited to this day.

Aims & Methods: The objective of this study was to examine for characteristics of CD patients and anti-TNF use in a real-life setting in France through the general sample of health insurance beneficiaries (EGB database) which includes reimbursement data from a sampled 1/97th of the French population. A cohort of 1280 patients with CD in the EGB database between 01/01/2010 and 31/02/2014 was retrospectively constituted, of which 189 (14.8%) initiated an anti-TNF treatment during that period and were studied for this analysis. An additional analysis was performed based on French hospital discharge data (medical information systems program [PMSI]) from 8142 CD patients to compare results from the EGB database but only support infliximab use due to its exclusive hospital availability in France (adalimumab can be prescribed in both hospital and retail markets).

Results: 47.8% of anti-TNF treated patients were male and the mean age at the initiation of an anti-TNF treatment was 38 years. The mean duration between diagnosis and first anti-TNF treatment was 3.4 (2.3–4.8) years. Concomitant treatments such as corticosteroids and immunosuppressants were prescribed at least once in 63% and 47% of patients respectively. Around 35% of patients initiated a treatment with infliximab and 43% with adalimumab. Results at 12 months after anti-TNF initiation are presented in the table below:

Table 1: Anti-TNF use in patients initiating an anti-TNF treatment with at least 12 months of follow-up at 12 months, 13.6% of patients underwent surgery. Results from the hospital discharge database confirmed some of our observations. Optimization rate for infliximab 12 months after initiation was similar (33.1% at 12 months for infliximab). Treatment discontinuation rate was also within the same range observed and stable over time, with 10% of patients discontinuing infliximab treatment each year and a discontinuation rate after 12 months of treatment of 27.2%.

Anti-TNF use at 12 months after initiation N Results
Drug survival rate for the first line anti-TNF 108 69.8% [62.3–76.1]
Survival rate for first line adalimumab 47 71.7% [59.9–80.6]
Survival rate for first line infliximab 61 66.3% [55.9–74.8]
Anti-TNF dose optimization rate 85 41.5% [34.5–49.3]
Dose optimization rate for adalimumab 53 33.6% [25.2–43.8]
Dose optimization rate for infliximab 63 38.2% [30.1–47.8]
Switch rate to another anti-TNF 126 17.5% [12.6–24.1]
Switch rate from adalimumab to infliximab 70 13.6% [8.1–22.4]
Switch rate from infliximab to adalimumab 88 14.9% [9.6–23.0]
Anti-TNF treatment discontinuation rate 108 31.4% [25.0–38.9]
Discontinuation rate for adalimumab 47 28.2% [19.4–40.0]
Discontinuation rate for infliximab 61 33.7% [25.2–44.0]

Conclusion: The general sample of health insurance beneficiaries’ database provides a unique representative sample to analyze and describe real-life usage of anti-TNF in Crohn’s disease patients in France.

Disclosure: None.

References

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Introduction: Anti-perineal fistulas (APF) are a common location of Crohn’s disease (CD). Their treatment is still disappointing. Identifying the predictive factors of response could guide the practitioner to adapt the anti-TNF α treatment of each patient.

Aims & Methods: We performed a descriptive, longitudinal and retrospective study over a period of 14 years. We included all patients with a definite diagnosis of complex APF of CD treated with anti-TNF α with a minimum follow-up of one year. Patients less than 16 years of age or over 70 years were excluded and non-observing patients were also excluded. A univariate and multivariate statistical analysis was then carried out using the SPSS software to identify the predictive factors of response to the treatment.

Results: A total of 49 patients had complex APF treated with anti-TNF α. 10% of the patients had also recto-vaginal fistulas. The mean age was 31 years. The sex ratio women/men was 1.35. All of the patients had an MRI at diagnosis. Patients had concomitant antibiotics and seton drainage in all cases. 76% of the patients received azathioprin. After the induction phase, 53% of the patients received a second line of treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

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achieved clinical remission, 31% a partial clinical response and 12% a primary failure. These were maintained a year after the anti-TNF therapy. After a mean time of 13 months, 42% of the patients had a loss of response. The analytical study found that the absence of recto-colic involvement, CRP negativity and normalization of platelet count under treatment and achievement of clinical remission after the induction phase were predictive factors of long term good response to anti-TNF therapy. Clinical remission after the induction phase was the only independent predictive factor of long-term remission under maintenance treatment after multivariate analysis. However, prospective studies assessing early therapeutic adaptative actions as well as the presence of a recto-vaginal fistula and young age at diagnosis.

Conclusion: According to our results, the type of response obtained after the induction phase seems to be closely related to the subsequent development of other drugs. Further studies assessing early therapeutic adaptative actions could better evaluate this perspective in the event of a partial clinical response. In addition, rectal involvement and recto-vaginal fistulas are factors of poor response for which aggressive and specific treatment is essential.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1715 COMPARISON OF ORIGINAL AND BIOSIMILAR INFliximab in patients with inflammatory bowel disease: A RETROSPECTIVE AND MULTICENTRIC STUDY IN SPAIN

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Introduction: The management of chronic inflammatory bowel disease (IBD) has experienced significant advance with the development of biologic therapy. Infliximab (IFX) was the first monoclonal antibody approved for IBD. The patent expiry of biologics and their relatively high costs result in a significant system burden. The demonstration of biosimilar IFX efficacy and safety equivalence was based on two pivotal clinical trials in rheumatic diseases. As a result of the extrapolation to IBD, there is growing controversy regarding the appropriate use of biosimilar IFX. The efficacy and safety of infliximab refer to inducing and maintaining remission in IBD has been extensively proven in clinical trials. However, the role of biosimilar IFX, has not been systematically investigated in clinical practice.

Aims & Methods: We aimed to compare the safety and efficacy in inducing and maintaining remission in IBD, between the reference IFX group and biosimilar IFX group. This retrospective, multicenter study was carried out on 4 tertiary hospitals in Spain from January 2013 to December 2016. The analysis included all the patients with IBD in consecutive cohorts of 48 cases. All authors have declared no conflicts of interest.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1717 BASELINE CALPROTECTIN DOES NOT PREDICT RESPONSE TO BIOLOGICAL THERAPY IN ULCERATIVE COLITIS

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Introduction: Response to biological drugs in ulcerative colitis (UC) is variable with induction response rates of 64.5% (vs 29.3% for placebo), 50.4% (vs 34.6% for placebo), 51.0% (vs 30.3% for placebo), 47.1% (vs 25.5% for placebo) for infliximab, adalimumab, golimumab and vedolizumab, respectively. Apart from prior entry into anti-tumour necrosis factor (anti-TNF) agents and concurrent immunomodulatory therapy, predictors of clinical response and remission to biological drugs have not been identified. We sought to investigate the utility of baseline faecal calprotectin (FC) and early change in FC in predicting clinical response and remission to biological therapy in UC.

Aims & Methods: Patients who were commenced on any biological therapy for UC and had a baseline FC at the time of commencement were included in this retrospective study. Disease activity was monitored serially by calculation of Simple Clinical Colitis Activity Index (SCCAI) or by Physician global assessment (PGA) or by treatment persistence. Clinical response was defined as decrease in SCCAI or PGA score of 3 or more in PGAs of 0-3 to vedolizumab with a mean age of 41.8 (SD: ±18.2). Fifty-one (72%) and 39 (55%) patients commencing anti-TNF therapy were on concurrent immunomodulators (IM) and steroids respectively. Apart from prior exposure to anti-tumour necrosis factor (anti-TNF) agents and concurrent immunomodulatory therapy, predictors of clinical response and remission to biological drug were identified. We sought to investigate the utility of baseline faecal calprotectin (FC) and early change in FC in predicting clinical response and remission to biological therapy in UC.

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Disclosure of Interest: All authors have declared no conflicts of interest.
P1718 EIGHT YEARS EXPERIENCE OF DRUG EFFICACY IN CROHN’S DISEASE PATIENTS: A PROSPECTIVE MULTICENTER REAL-LIFE STUDY


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Introduction: The prevalence of Crohn’s disease is important for planning of health care and allocation of clinical resources. In 2005, a National Patient’s Registry in Poland was established to collect demographic and clinical data. A total of 35 IBD patients (27 Crohn’s; 8 ulcerative colitis) were included from different groups (mesalamine, prednisone, azathioprine, methotrexate, anti-TNF), and medications efficacy and tolerability was assessed. The efficacy assessment was evaluated according to subjective 4-step scale. Similarly treatment tolerance was assessed according to 2-step scale.

Results: No gender effects were observed on the use or efficacy of individual drug classes, although greater tolerability of prednisone and azathioprine was observed in men (respectively 95.56 vs 93.82 and 93.94 vs. 91.65, both p = 0.05). Smoking did not affect the effectiveness and tolerability of the used medications. However surprisingly fewer smokers were treated with azathioprine, methotrexate, and anti-TNF in comparison to non-smokers (38 vs 45%, 0.5 vs 1.55%, 0.5 vs 11%, all p = 0.05) In patient’s declaring casual alcohol use, the efficacy and tolerability of prednisone was significantly better than in patients declaring abstaining (89 vs 84 and 96 vs 93%, p = 0.05). Referring to the Montreal classification, efficacy of mesalamine, prednisone and azathioprine was significantly higher in A1 group with the lowest in A2 patients (A1: 90, A2: 83, A3: 86 for prednisone, p < 0.05). Regarding relation to localization of the disease, the efficacy of treatment with immunosuppressive agents (azathioprine and methotrexate) in L3 was significantly lower compared with L1 and L2, despite of increased use of immunosuppressive drugs in L1 (76 vs 82%, p = 0.05). As predicted, the use of immunosuppressive and anti-TNF drugs was higher in complicated disease behavior (B2 and B3) than in B1, however efficacy of infliximab was similar in B1 in comparison to others (B3: 15.5% B1: 7% of infliximab use).

Conclusion: This is the first study comparing efficacy and tolerability of treatment methods used in “real-life” practice in Poland during last 8 years. Most observations are in compliance with data from clinical trials. Positive effect ofcasual alcohol consumption on efficacy of medications requires further observation. Interestingly some unexpected relationships, concerning similar efficacy of infliximab in different disease behavior was found. This effect requires also further observations in regards to more frequent use of anti-TNF drugs in last years.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1719 EFFICACY OF VEDOLIZUMAB INDUCTION THERAPY IN PATIENTS WITH SEVERE, THERAPEUTIC RESISTANT INFLAMMATORY BOWEL DISEASE


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Introduction: Vedolizumab (VDZ) is the first gut-specific monoclonal antibody alternative to anti-tumor necrosis factor alpha therapy in patients with moderate-to-severe inflammatory bowel disease (IBD). It has been registered since 2016 in Hungary, but currently the high treatment costs are considerably limiting the availability of VDZ. All newly initiated VDZ therapy is individualized, it should be approved by the steering committee of five Hungarian IBD-specialists. This results in that VDZ therapy is available exclusively for patients in whom conventional treatment was ineffective or contraindicated.

Aims & Methods: The aim of our non-interventional retrospective study was to assess the efficacy of induction VDZ therapy. 41 patients with Crohn’s disease (CD) and 25 with ulcerative colitis (UC) received VDZ induction therapy between September 2016 and April 2017 in Hungary. Efficacy of induction therapy was assessed based on the changes of activity indices on week 14.

Results: No gender effects were observed on the use or efficacy of individual drug classes, although greater tolerability of prednisone and azathioprine was observed in men (respectively 95.56 vs 93.82 and 93.94 vs. 91.65, both p = 0.05). Smoking did not affect the effectiveness and tolerability of the used medications. However surprisingly fewer smokers were treated with azathioprine, methotrexate, and anti-TNF in comparison to non-smokers (38 vs 45%, 0.5 vs 1.55%, 0.5 vs 11%, all p = 0.05). In patient’s declaring casual alcohol use, the efficacy and tolerability of prednisone was significantly better than in patients declaring abstaining (89 vs 84 and 96 vs 93%, p = 0.05). Referring to the Montreal classification, efficacy of mesalamine, prednisone and azathioprine was significantly higher in A1 group with the lowest in A2 patients (A1: 90, A2: 83, A3: 86 for prednisone, p < 0.05). Regarding relation to localization of the disease, the efficacy of treatment with immunosuppressive agents (azathioprine and methotrexate) in L3 was significantly lower compared with L1 and L2, despite of increased use of immunosuppressive drugs in L1 (76 vs 82%, p = 0.05). As predicted, the use of immunosuppressive and anti-TNF drugs was higher in complicated disease behavior (B2 and B3) than in B1, however efficacy of infliximab was similar in B1 in comparison to others (B3: 15.5% B1: 7% of infliximab use).

Conclusion: This is the first study comparing efficacy and tolerability of treatment methods used in “real-life” practice in Poland during last 8 years. Most observations are in compliance with data from clinical trials. Positive effect ofcasual alcohol consumption on efficacy of medications requires further observation. Interestingly some unexpected relationships, concerning similar efficacy of infliximab in different disease behavior was found. This effect requires also further observations in regards to more frequent use of anti-TNF drugs in last years.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1720 OUTCOMES OF TREATMENT FOR LATENT TUBERCULOSIS INFECTION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE RECEIVING BIOLOGIC THERAPY

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Introduction: Tuberculosis (TB) reactivation is of particular concern in patients with inflammatory bowel disease (IBD) treated with biologic therapies. Screening for latent tuberculosis infection (LTBI) is indicated prior to initiating treatment. Infliximab was calculated using McGill University’s ‘The Online TST/IGRA Interpreter. Results: A total of 35 IBD patients (27 Crohn’s; 8 ulcerative colitis) were included in the study. Their mean age was 38.3 ± 14.4 years and 68.6% were male (Table 1). The median time from diagnosis of IBD to LTBI was 9 years (0–48 years). Prior IBD therapies included corticosteroids (86%), aminosalicylates (83%), other immunosuppressants (69%). At least 43% of patients have been previously exposed to at least 1 biologic agent. The most common LTBI treatment regimen wasisoniazid (INH) for 9 months (n = 26, 74%). Biologic therapy used were infliximab (n = 14, 40%), adalimumab (n = 10, 29%), vedolizumab (n = 7, 20%), and certolizumab pegol (n = 4, 11%). Combination therapy with an immunomodulator and a biologic agent was administered in 57% of cases (n = 20). All patients were treated for LTBI and the majority (83%) was treated prior to
starting biologic therapy. The median time from initiation of LTBI treatment to biologic was 43 days (IQR 19–34) years. The median duration of follow-up was 2.9 ± 3.3 years. The median calculated annual risk of developing active TB without treatment was 0.52%/year (range: 0.08%–1.3%). Of the cohort studied, only one patient taking adalimumab monotherapy after completing 6 months of INH therapy developed reactivation of TB. The estimated TB reactivation rate in our cohort was 0.98 cases per 100 patient-years of follow up.

Table 1: Cohort Characteristics and Estimated Post-treatment Tuberculosis Reactivation Rate

<table>
<thead>
<tr>
<th>Type of Biologic Therapy</th>
<th>INH for 6-months (74%)</th>
<th>Retreatment (11%)</th>
<th>Vedikuzumab (20%)</th>
<th>Adalimumab (40%)</th>
<th>Infliximab (40%)</th>
<th>Certolizumab (11%)</th>
<th>Biotherapy Not Specified (29%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median time to POR</td>
<td>43 days (4–3653)</td>
<td>123 days (9–3653)</td>
<td>152 days (9–3653)</td>
<td>33 days (13–77)</td>
<td>2 months (1–6)</td>
<td>3 months (1–6)</td>
<td>1 year (1–6)</td>
</tr>
</tbody>
</table>

Conclusion: Treatment for LTBI in patients with IBD treated with biologics is effective, but does not eliminate the risk of reactivation, which occurred at a rate of 0.98 cases per 100 patient-years in our cohort. Additional studies with extended follow-up are warranted to further characterize the efficacy of LTBI treatment in these patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1722 SEVERITY OF BILE ACID MALABSORPTION CORRELATES WITH LENGTH OF ILEAL RESECTION IN CROHN’S DISEASE

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Introduction: Bile acid malabsorption (BAM) is a common cause of diarrhoea in Crohn’s disease (CD) patients with ileal resection and can lead to complications such as renal and biliary stone disease. BAM is usually diagnosed by selenium labelled homoaurocholic acid test (75SeHCAT) but its availability is limited. Thus, a large proportion of resected CD patients either remain undiagnosed or subject to empirical therapy. There is a paucity of studies examining the correlation between length of ileal resection and severity of BAM which will be of particular use to clinicians with no recourse to diagnostic testing for BAM.

Aims & Methods: We identified all CD patients with a prior surgical resection who underwent 75SeHCAT testing at our institute. Testing was based on the treating clinician’s discretion. The length of resected ileum was recorded from histopathology report. We conducted a Spearman’s correlation test to check for correlation between length of resected ileum and percentage retention on 75SeHCAT.

Response to treatment with bile salt sequestran and 75SeHCAT retention values was tested using Mann-Whitney test.

Results: A total of 97 patients were identified with a mean age of 46.4 (SD 14.5). The median length of resected ileum was 22.5 cms (range 1.5–95 cms) with a median of 1 resection (range 1–4). Overall, 90 patients (92.8%) had ≥75SeHCAT retention values of <5% and 5 (5.2%) patients between 5–10% and only 2 patients had values of >10%. There was moderate correlation between ≥75SeHCAT retention and length of ileal resection (Spearman’s rho: 0.4041, P < 0.001). Data on response to treatment was available for 60 patients, of which 41 (42%) responded and 19 (19%) failed to respond to bile salt sequestrans. The ≥75SeHCAT retention values was comparable among responders (median 0.02%, range 0.1–6.6) and non-responders (median 0.02%, range 0.1–6.6, Mann-Whitney test, P = 0.72).

Conclusion: There was moderate correlation between length of ileal resection and severity of BAM as defined by ≥75SeHCAT retention values. Response to bile salt sequestран therapy was not dependent on ≥75SeHCAT retention values.

Disclosure of Interest: S. Subramanian: Advice report member for Abbvie, Janssen and Behringer-Ingelheim On speaker bureau for Dr Falk, Abbvie and MSD.

All other authors have declared no conflicts of interest.
H. Duboc

POTENTIAL MECHANISM IN THE PROTECTION AGAINST ANTIBIOTHERAPY IN HEALTHY VOLUNTEERS: A NEW FECAL CHOLIC ACID CONCENTRATIONS DURING P1724 SACCHAROMYCES BOULARDII CNCM I-745 LOWERS

Introduction: America whether SB enhances transformation to ‘protective’ secondary BA in human. It appears to become protective against CDI. The goals of this work in healthy and lithocholic). CA loses its germinating properties after transformation and one of its primary actions is a change in the balance of microbiota. The effectiveness of SB in preventing recurrent CDI may be explained, in part, through modulation of microbiota changes that influence the balance of pro- and anti-germination BAs.

Results: Thirty-one patients (65%) showed psychological distress, 22 (31%) anxiety, and 10 depression (21%). Psychological distress was uncorrelated with IBS severity (Spearman’s ρ = 0.05, p = 0.736). Microbial beta diversity was significantly associated with distress and depression (q = 0.044 each). A random forest model using 148 microbial estimators was able to correctly classify patients regarding presence of psychological distress (AUROC = 0.98). Patients exceeding thresholds of distress, anxiety, depression and stress perception showed significantly higher abundances of Proteobacteria (LDA = 2.5). Patients with anxiety were characterized by higher abundances of Bacteroidetes (LDA = 3.0). Distinctly with Lachnospiraceae with Lachnospiraceae (ρ = 0.58, q = 0.018), anxiety positively with Alistipes (ρ = 0.65, q = 0.001). Conclusion: A microbial signature accurately predicted the presence of psychological distress. Psychological variables significantly segregated gut microbial features, underlining the role of brain-gut-microbiota axis. Previous studies have suggested a parallel segregation of microbial features with psychological burden in IBS (1,2,3). The results support a link between the abundance of F. nucleatum oral microbiota, but it is not known if F. nucleatum plays a role in other part of the digestive tract. F. nucleatum may affect metabolic pathways for the carcinogenesis1,2. We examined whether there is relationship between F. nucleatum oral cavity and CRC.

Aims & Methods: We assessed the abundance of Fusobacterium in CRC, colorectal mucosa and saliva. We extracted DNA from mucosal biopsies and measured bacterial levels by quantitative PCR of the 16S ribosomal RNA gene. We also investigated the homology of F. nucleatum in oral cavity and CRC.

Results: In 51 CRC cases, Fusobacterium positivity was significantly higher in CRC compared to controls (p < 0.005). Fusobacterium was more detected in CRC (12.9%) than in normal tissue (3.9%) selectively. The detection rate of F. nucleatum was 96% in saliva and 95% in CRC by next-generation sequencer. A total of 15 patients with CRC were included to check the homology of F. nucleatum in saliva and CRC. From the 15 patients, 9 were F. nucleatum-positive in saliva (60%) and 8 (53.3%) in CRC. From these patients who were F. nucleatum-positive in saliva and CRC, we next looked for the results of AP-PCR and 6 patients have shown common band patterns.

Conclusion: The results support a link between the abundance of F. nucleatum in oral cavity and CRC. Our data also indicate that there may be a route from the oral cavity to the CRC in F. nucleatum positive cases. We are now identifying DNA sequences, particular for the objective strains.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1725 ASSOCIATION OF FUSOBACTERIUM NUCLEATUM IN ORAL CAVITY AND COLORECTAL CARCINOMAS

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Introduction: While particular imbalances in the gut microbiota have been linked to colorectal adenomas and cancers, some specific bacterium have been identified as a related factor. Recent studies have reported a high abundance of Fusobacterium nucleatum (F. nucleatum) in colorectal cancer (CRC) subjects compared to normal subjects1,2. F. nucleatum is also known as a pathogenic species of oral microbiota, but it is not known if F. nucleatum plays a role in other part of the digestive tract. F. nucleatum may affect metabolic pathways for the carcinogenesis1,2. We examined whether there is relationship between F. nucleatum oral cavity and CRC.

Aims & Methods: We assessed the abundance of Fusobacterium in CRC, colorectal mucosa and saliva. We extracted DNA from mucosal biopsies and measured bacterial levels by quantitative PCR of the 16S ribosomal RNA gene. We also investigated the homology of F. nucleatum in oral cavity and CRC.

Results: In 51 CRC cases, Fusobacterium positivity was significantly higher in CRC compared to controls (p < 0.005). Fusobacterium was more detected in CRC (12.9%) than in normal tissue (3.9%) selectively. The detection rate of F. nucleatum was 96% in saliva and 95% in CRC by next-generation sequencer. A total of 15 patients with CRC were included to check the homology of F. nucleatum in saliva and CRC. From the 15 patients, 9 were F. nucleatum-positive in saliva (60%) and 8 (53.3%) in CRC. From these patients who were F. nucleatum-positive in saliva and CRC, we next looked for the results of AP-PCR and 6 patients have shown common band patterns.

Conclusion: The results support a link between the abundance of F. nucleatum in oral cavity and CRC. Our data also indicate that there may be a route from the oral cavity to the CRC in F. nucleatum positive cases. We are now identifying DNA sequences, particular for the objective strains.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
HUMAN MILK OLIGOSACCHARIDES: A NEW STRATEGY AGAINST POST-ANTIBIOTIC CLOSTRIDIUM DIFFICILE INFECTION?

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Introduction: Human Milk Oligosaccharides (HMOs) are a family of complex carbohydrates found in high concentrations in human milk and which are now becoming commercially available. In clinical studies, in both infants and adults, HMOs powerfully and specifically modulate the gut microbiota by increasing bifidobacteria and reducing certain pathogenic bacteria (1,2). Also, HMO bacterial consumption results in the production of beneficial metabolites such as short chain fatty acids and the lowering of pH. Hence, the selective growth of bifidobacteria on HMOs can create an ecological niche that is more colonization resistant against pathogens. Bifidobacteria may also have a direct impact on microbial toxins by reducing their level and cytotoxic effect (3). Antibiotics, especially broad-spectrum antibiotics, dramatically impact the microbiota and its balance, and have been implicated in the pathogenesis of many health conditions including gastrointestinal symptoms such as diarrhea (4). The most commonly cited mechanism for antibiotic-associated diarrhoea is intestinal overgrowth of the pathogenic bacterium, Clostridium difficile.

Aims & Methods: The aim of this study is to investigate, in *in vitro* models of *C. difficile* infection, (i) the impact of HMOs on the microbial community and activity (e.g. bacterial metabolites and pH), and (ii) the anti-pathogenic activity of HMOs against *C. difficile*, with a focus on preventing recurrence of the infection. *Two in vitro* models, each using human faecal microbiota infected with *C. difficile*, were used to examine the impact of HMOs on bacterial metabolism and *C. difficile* infection. One model is a 48 hour batch fermentation system, while the other is a simulated gut model, run for 3 weeks post infection, which simulates the infection cycle of *C. difficile* after antibiotic treatment.

**Results:** The study revealed that the HMOs increase the level of bifidobacteria, increase the concentration of beneficial metabolites such as short chain fatty acids and decrease pH compared to a control with no added HMOs. Additionally, HMOs reduced the level of *C. difficile*; in some cases completely eradicated *C. difficile* below detection limits. This antimicrobial effect of HMOs on *C. difficile* was pH-independent, hence another mechanism is causing the anti-pathogenic activity of HMOs.

**Conclusion:** Conclusively, the results show that HMOs can impact *C. difficile* infection in an *in vitro* system, which suggests HMOs as a potential approach to reduce risk of antibiotic associated diarrhoea and post-antibiotic *C. difficile* infection.


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BACTERIOCIN PRODUCTION BY MUCOSAL BACTERIA IN COLORRECTAL NEOPLASIA

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Introduction: Due to its high incidence, sporadic colorectal cancer (CRC) remains one of the leading causes of death in developed countries. The most important ones. Bacteriocins possess antibiotic, antineoplastic, pro-apoptotic and probiotic effect.

Aims & Methods: The aim of this prospective study was to evaluate bacteriocin production by mucosal large intestinal bacteria in colorectal neoplasia. We used an original methodology reported by our group (1). Mucosal biopsies were taken in the caecum, transverse colon and rectum within the colonoscopy in patients with non-advanced colorectal adenoma, non-a-A (11 men, 10 women, mean age 63 ±10), advanced colorectal adenoma, a-A (which was defined as neoplasia larger than 10 mm and/or containing villous component and/or containing high-grade dysplasia; 13 men, 7 women, mean age 66 ±6). In the controls (average risk population with normal findings on colonoscopy and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 7 men, 13 women, mean age 57 ±14). Of importance, the family members of patients suffering from colorectal cancer, CRC (12 men, 10 women, mean age 70 ±10) and in the controls (average risk population with normal findings on colonoscopy and with negative history of colorectal neoplasia and/or inflammatory bowel disease; 7 men, 13 women, mean age 57 ±14).

**Results:** A total of 229 mucosal biopsies were taken (60 controls, 63 non-a-A, 60 a-A, 66 CRC) and samples were further investigated. Colicin producing strains were isolated in 22% (13/60) controls, 59% (37/63) non-a-A, 55% (33/60) a-A and in 76% (50/66) CRC. Significantly higher production of colicins was confirmed in patients with CRC compared to patients with a-A, p < 0.001. Microcin producing strains were isolated in 23% (14/60) controls, 56% (35/63) non-a-A, 78% (47/60) a-A and in 62% (41/66) CRC. Significantly higher production of microcins was observed in patients with CRC compared to patients with a-A, p = 0.016. Microcin producing strains were isolated in 23% (14/60) controls, 56% (35/63) non-a-A, 78% (47/60) a-A and in 62% (41/66) CRC. Significantly higher production of microcins was observed in patients with CRC compared to patients with a-A, p = 0.008.

**Conclusion:** Strains isolated from large bowel mucosa in patients with colorectal neoplasia produce bacteriocins more frequently compared to those with normal findings on colonoscopy. We presume, that mucosal large intestinal microbiota with their products including bacteriocins play an important role during the development of colorectal neoplasia.

Disclosure of Interest: All authors have declared no conflicts of interest.

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CARBOXYLIC AND AMINO ACIDS MIXTURE IDENTICAL TO THE METABOLITES OF THE PROBIOTIC ESCHERICHIA COLI M7 INDUCES BACTERIOCIN SYNTHESIS IN PROBIOTIC LACTOBACILLUS HELVETICUS D75 AND D76 STRAINS AND ENHANCES THEIR ANTIMICROBIAL ACTIVITY AGAINST TEST PATHOGENS

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Introduction: The production of bacteriocins is considered as the key metabolic function of gut microbiota and as the inherent property of probiotic strains. Bacteriocins and metabolites of probiotic microorganisms (metabiotics) can optimize host-specific physiological functions related to human health.

Aims & Methods: This study aims to: (a) detect the bacteriocin genes of probiotic *Lactobacillus helveticus* D75 (NCBI Reference Sequence NC_020829.1) and *Lactobacillus helveticus* D76 (NCBI Reference Sequence NC_CP16827.1) and (b) evaluate in vitro effects of the carboxylic and amino acids mixture identical to the metabolites of the probiotic *Escherichia coli* strain M7 (components with antibiotic activity) on *Lactobacillus helveticus* D75 and *Lactobacillus helveticus* D76 strains was estimated by the deferred antagonism method. The identification of bacteriocin genes was performed by PCR using helveticin J gene primers. Amplified fragments were sequenced using ABI PRISM® 310 Genetic Analyzer and were analyzed using NCBI/BLASTX.

**Results:** The identical sequences of 537 bp homologous to gene fragment of helveticin of *Lactobacillus helveticus* DPC 4571 (hle_1632 gene) were detected.
in DNA of both probiotic strains. Sequencing of these fragments showed differ-
ces in the nucleotide sequences compared to the reference DNA of DPC 4571 strain (A instead of G at position 46, C instead of T at position 249 and A instead of T at position 537), but all these replacements do not lead to changes in the amino acid sequence of a bacteriocin. For Lactobacillus acidophilus D76 another bacteriocin gene fragment of 283 bp was identified (in addition to 537 bp fragment). The latter had 95% homology with the helveticin J gene of Lactobacillus helveticus R0052 (R0052_09025 gene). In NCBI/BLASTX database the sequences homo-
logous to the helveticin gene of Lactobacillus helveticus DPC 4571 were found in 17 different organisms related to Lactobacillus acidophilus, Lactobacillus amylovorous, Lactobacillus crispatus, Lactobacillus gallinarum, Lactobacillus helveticus and Lactobacillus kitasatonis. The addition of the carboxylic and amino acids mixture (Actoflor®-S) results in 2-2.5 fold enhanced antimicrobial activity of both tested probiotics with 48000 MU/ml against pathogens Escherichia coli O75 and Salmonella Enteritidis 209, most likely due to an increase in bacteriocin gene expression.

Conclusion: Study shows that there are at least two bacteriocins in Lactobacillus helveticus D76 and one bacteriocin in Lactobacillus helveticus D75. Carboxylic acid and amino acids mixture identical to the metabolites of the probiotic Escherichia coli strain M17 probably induces bacteriocin synthesis in probiotic strains Lactobacillus helveticus D75 and Lactobacillus helveticus D76 and enhances their antimicrobial activity against test pathogens Escherichia coli O75 and Salmonella Enteritidis 209, most likely due to an increase in bacteriocin gene expression.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1731 LONG-TERM SAFETY AND EFFECT ON GASTROINTESTINAL SYMPTOMS OF FECAL MICROBIOTA TRANSPLANTATION (FMT)

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Introduction: Fecal microbiota transplantation (FMT) has been shown to be effective in treating recurrent Clostridium difficile infection. Concern has been raised about the long-term safety of FMT.

Aims & Methods: The aim of this study was to determine the long-term safety of fecal microbiota transplantation (FMT), and its effect on gastrointestinal symptoms (GI) in Clostridium difficile (CDI) patients. We studied 84 patients of which 45 received an FMT treatment via colonoscopy and 39 served as controls receiving antibiotic treatment (AB) for the recurrent CDI and followed their recovery process for a period of 3.8 years. All together 130 patients (55 patients in the FMT group and 75 patients in the AB group were sent a 45-item questionnaire collecting information about the patient demographics, their physical and mental health, including allergies, infections, gastroenterological conditions such as IBD and IBS, diabetes, autoimmune diseases, neurological disorders, mental wellbeing and malignancies. Response rate for the questionnaire was 64.6%.

Results: There were no differences in the incidence of severe diseases between the groups including the incidence of IBD, diabetes, diseases of the nervous system, autoimmune diseases, incidence of colon polyps and cancer. Change of weight was neither different between groups (kg/SD): FMT = + 2.5 (5.6) and AB = + 1.3 (5.6), p = 0.51. The AB treated subjects recorded more frequently that their bowel function had become worse and more irregular after the treatment (40% vs 35.9%, FMT = 11.1%, p = 0.001) compared to FMT group. 77.8% of the patients treated with FMT experienced GI symptoms related to IBS whereas 92.3% of antibiotic-treated patients reported these symptoms (P = 0.006). AB patients experienced more symptoms of the upper intestinal tract than the FMT group (35% vs 15%, FMT = 51.3%, p = 0.045). In this cohort 97.6% of the FMT-treated patients and 60% of AB treated patients would prefer in the future that their initial treatment to be FMT instead of antibiotics.

Conclusion: FMT is a rational, durable, safe, and acceptable treatment option for patients with recurrent CDI. No severe diseases appeared after FMT and FMT seem to relieve GI symptoms better than antibiotic treatment. FMT and AB treated patients would prefer in the future that their initial treatment for recur-
rent CDI to be FMT instead of antibiotics.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1732 CLOSTRIDIUM DIFFICILE–ASSOCIATED DISEASE IN A PORTUGUESE HOSPITAL CENTER

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Introduction: Clostridium difficile-associated disease (CDAD) is an infection caused by Clostridium difficile, gram-positive, anaerobic, spore-forming and toxigen-producing bacteria. Infection is recognized as the leading cause of diarrhea associated with health care services in the developed countries. In Portugal epidemiological data are limited.

Aims & Methods: Characterize Clostridium difficile-associated disease episodes in a Portuguese Hospital Center. Retrospective analysis of 250 hospitalized patients with CDAD, in Centro Hospitalar do Algarve, between 2011 and 2015. The data obtained from clinical processes and statistical analysis was performed with SPSS version 23.

Results: The patients were mostly women (52%). The mean incidence of CDAD was 0.21% and the patients had an associated mortality of 28%. The year with the highest incidence was 2015 (0.53%) but with a lower associated mortality rate. CDAD was mostly acquired at the hospital level (75.6%) and the mean length of hospital stay was 33 days. About 82.4% of the cases were first occurrence and the remaining (18.6%) were recurrences of CDAD. The majority of the population under study performed Proton Pump Inhibitors (52.8%) and antibiotic therapy (74.4%) (26.8% made a single antibiotic, and 23.6% 2 or more distinct antibiotics). Penicillin antibiotic class was the most used, followed by Cephalosporins (21.5%), Fluoroquinolones (11.4%) and Macrolides (10.1%).

Conclusion: A significant increase in the incidence of CDAD was observed in this study. The increase may be related to several factors, such as the improvement of laboratory diagnostic methods, increased antibiotic prescription, hospital contamination with Clostridium difficile spores or with the appearance of new and more virulent Rybotypes.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1733 THE EFFICACY OF SELECTIVE ARTERIAL EMBOLIZATION IN THE MANAGEMENT OF DIVERTICULAR BLEEDING

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Introduction: Colonic diverticular bleeding is the most common cause of lower gastrointestinal bleeding. Persistent bleeding or acute massive bleeding of pre-
senting with hemodynamic disorders requires an interventional treatment. The question of what is the best treatment for acute diverticular bleeding remains
Aims & Methods: The aim of our study is to clarify the efficacy of TAE for colonic diverticular bleeding. 229 patients were diagnosed as diverticular bleeding from Jan 2010 to Dec 2016 in our institution. Bleeding stopped spontaneously in 126 patients. 103 patients were performed colonoscopy. Overt bleeding occurred in 8 patients after colonoscopy, and those were eligible for this study who underwent TAE. Conservative management or endoscopic procedure were not successful in all the patients. 7 patients were male and 1 was female with a median age of 62.6 years (range 39–85 years). The average opportunity for enhanced CT was 2.1, 7 patients were in shock, and all of 8 the patients were treated with blood transfusion. Those who were extravasation-positive in enhanced CT underwent angiogram from a recta near the extravasation at least 3 times. In case radiopaque clips were placed at the bleeding site via colonoscopy to mark embolization site, regardless of whether or not active extravasation was identified on angiogram, coil embolization was performed using 0.018inch coils in vasa recta. Technical success rate and complications were evaluated. Technical success was defined as immediate complete cessation of bleeding confirmed by digital subtraction angiography showing no further contrast extravasation at the end of each TAE. Clinical success was defined as no recurrent bleeding in observation period.

Results: Technical success rate was 88%(7/8), and clinical success was also 88%(7/8). 6 patients were extravasation-positive in enhanced CT, and 5 patients were extravasation-positive in angiogram. Although 3 patients were extravasation-negative in angiogram, 2 patients underwent TAE. After TAE, no recurrence of bleeding was observed. Severe adverse events such as bowel infarction did not occur in all cases.

Conclusion: As the transcatheter technique has recently improved further, adverse events are rare. Therefore superselective coil embolization could be first choice for diverticular bleeding with extravasation-positive in enhanced CT.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1734 ACCURACY OF THE NASOGASTRIC TUBE AND THE BUN/CREATININE RATIO FOR DISTINGUISHING BETWEEN UPPER AND LOWER SOURCES OF GASTROINTESTINAL BLEEDING. A SYSTEMATIC REVIEW


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Introduction: The insertion of a nasogastric tube (NGT) and assessment of the BUN/creatinine ratio were recommended as initial measures to distinguish between upper and lower gastrointestinal bleeding (American College of Gastroenterology 2016). As the nasogastric tube is one of the most bothersome interventions for the patient, we evaluated the evidence supporting these recommendations.

Aims & Methods: The aim of the study was to identify the diagnostic accuracy (sensitivity, specificity, positive predictive value, negative predictive value and likelihood ratios) of the NGT and the BUN/creatinine ratio for distinguishing between upper and lower sources of gastrointestinal (GI) bleeding. We conducted a systematic review of the literature in order to identify studies assessing the diagnostic accuracy of the NGT or BUN/creatinine in patients with melena, hematochezia or rectorrhagia without hematemesis. The search was performed in November 2016 in five data bases (Pubmed, Scopus, Web of Science, Cochrane Plus Library and OpenGrey).

Results: Four studies met the selection criteria (two evaluating the NGT, one BUN/creat and one both). The two methods had a low sensitivity for detecting upper GI bleeding source. Both a positive NGT aspiration and BUN/creatinine ratio above 30 markedly increased the probability of an upper GI source with a positive likelihood ratio ranging from 2 to 11. Unfortunately, the sensitivity of both tests for upper GI bleeding was very low (negative likelihood ratios around 0.1). Characteristics and results of the studies selected are shown in table 1.

Conclusion: For patients with gastrointestinal bleeding without hematemesis, BUN/creat ≥30 indicates a high probability of an upper GI source. Nasogastric tube aspiration provides little additional information and so is not necessary. Neither test reliably rules out an upper GI source of bleeding.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1734

Table 1: Characteristics and results of the studies

<table>
<thead>
<tr>
<th>Study (year)</th>
<th>Design/Period</th>
<th>Sample size/Testes</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Predictive positive value (%)</th>
<th>Predictive negative value (%)</th>
<th>Negative Likelihood ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richards 1990</td>
<td>Retrospective 1983–1990</td>
<td>126 BUN/creat</td>
<td>37</td>
<td>100</td>
<td>100</td>
<td>53</td>
<td>0.63</td>
</tr>
<tr>
<td>Aljebreen 2004</td>
<td>Retrospective 1999–2001</td>
<td>520 NGT</td>
<td>68</td>
<td>54</td>
<td>78</td>
<td>0.61</td>
<td>1.44</td>
</tr>
<tr>
<td>Witting 2006</td>
<td>Retrospective 1997–2002</td>
<td>325 BUN/creat</td>
<td>94</td>
<td>91</td>
<td>81</td>
<td>70</td>
<td>0.65 (0.56)</td>
</tr>
<tr>
<td>Kessel 2016</td>
<td>Retrospective 2011–2014</td>
<td>386 NGT</td>
<td>28</td>
<td>86</td>
<td>99</td>
<td>2</td>
<td>0.84</td>
</tr>
</tbody>
</table>

Score: TRF SP TRF PPV TRF PPV CI SCI SP CI PPV CI NPV
Blachford* | 80 | 78 | 61 | 90 | 89 | 50 | 91 |
Strate > 1 | 69 | 58 | 41 | 81 | 66 | 58 | 86 | 78 |
Velays > 0 | 95 | 46 | 41 | 96 | 90 | 46 | 44 | 90 |
Newman > 192 | 40 | 39 | 93 | 89 | 40 | 32 | 88 |

Conclusion: The GBS was superior to the 3 LGB risk scores for predicting the need for transfusion and clinical intervention. The GBS may be an useful tool for risk stratification in acute LGB.

Disclosure of Interest: All authors have declared no conflicts of interest.

Therefore, in cases of uncertainty, an upper GI endoscopy will be necessary to respectively rule out an upper GI source.
Aims & Methods: All patients with ALGB on anticoagulation therapy treated in our hospital during a seven year period were evaluated. Characteristics and clinical outcome were compared between patients on warfarin and patients on NOACs.

Results: Out of 587 patients with ALGB, 43 (7.3%) were on NOACs and 68 (11.6%) on warfarin with an age 75.9 ± 9.5 vs 77.1 ± 7.9. The bleeding site was in the small bowel in 2/43 and 6/68 respectively. Causes of bleeding were not different between the two groups except for polyps/neoplasia (8/43 vs 6/68, p = 0.003). Endoscopic hemostasis was more commonly needed in patients on NOACs 17/43 vs 14/68 (p = 0.049), while they required less hospitalisation days (6.1 ± 4.2 vs 4.5 ± 3.6, p = 0.04). Blood transfusions and need for other interventions (embolization and/or surgery) were not different. Also recurrence of bleeding (4/43 vs 11/68) and mortality (3/43 vs 0/68) were low and not statistically different between the two groups.

Conclusion: ALGB in patients on NOACs although presents some differences it has a similar clinical outcome to patients with ALGB on warfarin.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


P1736 ACUTE LOWER GASTROINTESTINAL BLEEDING IN PATIENTS TREATED WITH NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS COMPARED WITH WARFARIN IN CLINICAL PRACTICE: CHARACTERISTICS AND CLINICAL OUTCOME

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Introduction: Acute lower gastrointestinal bleeding (ALGB) occurs in patients taking anticoagulants either warfarin or non Vitamin K oral anticoagulants (NOACs). The use of NOACs has been increasing compared with warfarin in recent years. We investigated patients with ALGB on anticoagulation therapy and we analyzed characteristics, management and clinical outcome in patients treated with NOACs versus warfarin.

Aims & Methods: All patients with ALGB on anticoagulation therapy treated in our hospital during a seven year period were evaluated. Characteristics and clinical outcome were compared between patients on warfarin and patients on NOACs.

Results: Of 587 patients with ALGB, 43 (7.3%) were on NOACs and 68 (11.6%) on warfarin with an age 75.9 ± 9.5 vs 77.1 ± 7.9. The bleeding site was in the small bowel in 2/43 and 6/68 respectively. Causes of bleeding were not different between two groups except for polyps/neoplasia (8/43 vs 6/68, p = 0.003). Endoscopic hemostasis was more commonly needed in patients on NOACs 17/43 vs 14/68 (p = 0.049), while they required less hospitalisation days (6.1 ± 4.2 vs 4.5 ± 3.6, p = 0.04). Blood transfusions and need for other interventions (embolization and/or surgery) were not different. Also recurrence of bleeding (4/43 vs 11/68) and mortality (3/43 vs 0/68) were low and not statistically different between the two groups.

Conclusion: ALGB in patients on NOACs although presents some differences it has a similar clinical outcome to patients with ALGB on warfarin.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1739 ENDOCOPIC MUCOSAL RESECTION OF COLORECTAL POLYPS IN PATIENTS ON DIRECT ORAL ANTOGEUOLANTS (DOAC) A PROSPECTIVE NON-RANDOMISED STUDY

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Introduction: The management of antithrombotic agents during the peri-endoscopic period concerns the risks of bleeding and thromboembolism. The Japan Gastroenterological Endoscopy Sociaity (JGES) guidelines revised in 2012 emphasizes the risk of thromboembolism rather than bleeding. So heparin bridge of anticoagulants is recommended at high-bleeding-risk procedure such as endoscopic mucosal resection (EMR). However heparin bridge in colorectal EMR raises the bleeding rate to approximately 20%, that is very high-rate incident compared with the bleeding rate of 0.3-6.1% generally. It is doubtful whether heparin bridge is appropriate.

Aims & Methods: The aim of this study to clarify the safeness of colorectal EMR under taking anticoagulants without a heparin bridge in anticoagulated patients.

Method: We performed a prospective study in our hospital regarding colorectal EMR at NOBLADS centers (UMIN000021416). The subjects are colorectal polyps resectable by EMR. Inclusion criteria of patient is good performance status (ECOG) 0–1, without organ failure. Warfarin is continued as usual if PT-INR is less than 2.6, and direct oral anticoagulants (DOAC) is continued until an evening of the day before and is discontinued only on the day. Primary endpoint is post-EMR bleeding required any interventions (major bleeding). Major bleeding is defined as active bleeding or adherent clot on the resection site by emergent colonoscopy, or conservative treatment required blood transfusion. Conservative bleeding with no intervention (minor bleeding), thromboembolism, and comparison between warfarin and DOAC are clarified as secondary endpoint. The procedure-related period is defined as up to 30 days after EMR or is finished for two weeks after hemostasis.

Results: 41 patients (154 lesions) were performed EMR from February 2015 to March 2017. Patients’ characteristics were as follow, the median age was 74 years old (50–91, n = 41) and the average of polyp size was 11.6 (range 5-22) mm in diameter. Anticoagulants were divided into 19 cases of warfarin and 22 cases of DOAC. The incidence of major bleeding was none in all cases. On the other hand, minor bleeding which did not require any intervention was recognized at 14.6% (6/41), but there was no case to interrupt anticoagulants. The rate of minor bleeding is no difference between warfarin and DOAC. There was no correlation between minor bleeding and PT-INR value in three cases of warfarin. All three cases of DOAC were medicine once a day. Thromboembolism was not observed.

Conclusion: In colorectal EMR, we clarify the safeness with continuation of warfarin and short discontinuation of DOAC on that day, compared with heparin bridge. We expect to lead to reconsideration of current guideline for safer treatment.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1740 RISK OF COLORECTAL CANCER IN ASYMPTOMATIC INDIVIDUALS WHOSE FIRST DEGREE RELATIVES WERE AFFECTED BY CRC AT DIFFERENT AGES OF ONSET: A SYSTEMATIC REVIEW AND META-ANALYSIS OF 9.28 MILLION SUBJECTS

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Introduction: The current literature is mixed regarding whether first-degree relatives (FDRs) affected by colorectal cancer (CRC) at a younger age are at substantially increased risk of CRC.

Aims & Methods: The present systematic review and meta-analysis examined the CRC risk conferred by family history of CRC in FDRs according to their age of onset. We searched Ovid Medline, EMBASE and grey literature from their inception to December 2016, and included all screening studies that investigated the relationship between family history of CRC and incidence/prevalence of CRC. Two reviewers independently worked on selection, assessment and data extraction of eligible articles. A random effects meta-analysis was employed to pool relative risks (RR) and odds ratios. Subgroup analyses were performed according to the age of onset of CRC in FDRs of asymptomatic subjects (<40 vs. ≥40; ≤50 vs. >50; <60 vs. >60 years). Statistical heterogeneity was assessed by the I² statistic. Publication bias was evaluated by an inverted funnel plot analysis with Begg’s regression model.

Results: Fifty-six case-control and seven cohort studies involving 9.28 million subjects were included in the analysis. A family history of CRC in FDRs of asymptomatic subjects conferred a significantly higher risk of CRC (RR = 1.76, 95% CI = 1.57–1.97; p < .001, I² = 95.7%). Earlier age of onset of CRC in FDRs was associated with significantly higher risk of CRC in index subjects (RR = 3.29, 95% CI = 1.67–6.49 for ≤40 years vs. RR = 1.42, 95% CI = 1.24–1.62 for >40 years, p = 0.017; RR = 2.81, 95% CI = 1.94–4.07 for <50 years vs. RR = 1.47, 95% CI = 1.26–1.69 for >50 years, p = 0.001). The Begg’s test did not identify any publication bias (Kendall’s τ = 0.122, p = 0.159).

Conclusion: A family history of CRC in FDRs whose age of onset is earlier than 40 or 50 years conferred a significantly higher risk of CRC to asymptomatic individuals, implying that age of onset could potentially enhance the discrimina-
tory capability of CRC prediction scores.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1741 IS THERE ANY DIFFERENCE IN RISK OF COLORECTAL CANCER AMONG ASYMPTOMATIC SUBJECTS WHOSE SIBLINGS VS. PARENTS WERE AFFECTED? A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Few studies compared the risk of colorectal cancer (CRC) among individuals with probands who were parents, siblings, and those with two or more probands.

Aims & Methods: This systematic review and meta-analysis tested the hypothesis that the risk of CRC conferred by family history of CRC in parents vs. siblings vs. ≥2 first-degree relatives (FDRs) was similar. The Ovid Medline, EMBASE and grey literature were searched from their inception to December 2016, and all screening studies that examined the association between detection of CRC and family history of CRC in FDR were included. Two reviewers independently searched, assessed and extracted data from eligible studies. The relative risks (RR) and odds ratios were pooled based on a random effects meta-analysis. We conducted subgroup analyses according to the identity of FDRs affected (parents vs. siblings vs. ≥2 FDRs), and examined statistical heterogeneity by the I² statistic. Potential publication bias was explored by funnel plot analysis with Begg’s regression test.

Results: We identified 56 case-control and 7 cohort studies, consisting of 9.28 million subjects who were finally included in the meta-analysis. Asymptomatic individuals with siblings affected (RR = 2.44, 95% CI = 1.90–3.13); parents affected (RR = 2.18, 95% CI = 1.95–2.45) and ≥2 FDRs affected (RR = 2.68, 95% CI = 1.93–3.70) had statistically similar risk of CRC. We did not identify any publication bias based on the Begg’s regression test (p = 0.159).

Conclusion: The risk of CRC was similar among subjects whose siblings; parents or ≥2 FDRs were affected by CRC. Information on the identity of the FDRs affected does not seem to be necessary when the risk of CRC in asymptomatic individuals is predicted.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1742 GILBERT SYNDROME IS NOT THAT INNOCENT!

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Introduction: Gilbert’s syndrome is considered to be entirely benign. Some studies have shown a reduced risk for cardiovascular disease (CVD). There is conflicting data regarding cancer risk in Gilbert’s syndrome patients.

Aims & Methods: We aimed to evaluate the association of Gilbert syndrome with CVD and cancer. Clinical and epidemiological data was obtained from consecutive healthy subjects undergoing annual screening at the Integrated Cancer Prevention Center in Tel Aviv. The annual check-up includes: thorough examination by specialists in internal medicine, surgery, dermatology/plastic surgery, OB/GYN, urology, oncology, oral surgery, gastroenterology. Blood work (smac 24, blood count, TSH, CRP, PSA), vaginal, PSA and mammography (>40ys), LDCT in heavy smokers and all needed imaging when clinically indicated. Peripheral blood DNA was extracted from all subjects. Gilbert syndrome was determined by clinical criteria (normal liver function tests but to mild elevation in unconjugated bilirubin <3mg/dl without any hemolysis. In the majority of the cases the diagnosis was confirmed genetically by the homozygous mutation (TA)7TA in the promoter region of UGT1A1 enzyme. Prevalence of CVD and cancer were compared between subjects with/without Gilbert syndrome.

Mortality data was obtained from the Israeli ministry of health and cancer incidence from the Israeli registry.

Results: A total of 6258 (49%) men and 6461 (51%) women, mean age 47.0±11.5 years, were included of which 1,019 had clinical Gilbert. Gilbert was significantly more common among men (11.5% versus 4.6%; p < 0.001). The prevalence of Gilbert syndrome was equal in Sephardic and Ashkenazi Jews. Malignancy and CVD were diagnosed in 678 (5.3%) and 1,837 (14.4%) subjects respectively. The prevalence of any CVD was significantly higher in the Gilbert group (OR 1.23, 95% CI 1.04–1.46; p = 0.017), as well as coronary artery disease (OR 1.37, 95% CI 1.12–1.68; p = 0.003) and CVA (1.1% versus 0.6%; p = 0.06). Higher rate of kidney and bladder cancers (OR 2.64, 1.22–5.70, p = 0.019) was also observed in the Gilbert group. In contrast, the prevalence of breast cancer was much lower among Gilbert patients (OR 0.36, 0.13–0.97, P = 0.034).

Conclusion: In Israel Gilbert syndrome is not that innocent. In a large cohort it seems to be associated with increased risk of hypertension, CVD and CVA. Bladder cancer is higher but females are protected from breast cancer. Further studies are mandated in order to better understand these findings and determine proper screening and surveillance practices in Gilbert disease.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medie Check-up
All other authors have declared no conflicts of interest.

P1743 CHARACTERISTICS AND PREDICTORS OF INTERVAL CANCER: A CASE-CONTROL STUDY

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Introduction: Interval colorectal cancer is largely related to a poor endoscopic performance (missed lesions, incomplete resection or different polypectomy technique). Significant factors like technical issues and biological factors may contribute to the development of the polyed (accelerated growth). Thus, quality endoscopic measures and Lynch syndrome were highly investigated for their association with interval cancer. However, most reports came from the Western world and not the Middle East, and differences in ethnicity or environmental factors might potentially have impact on the biology of tumor progression. In addition, patient-related factors were less investigated for their association with interval cancer. The aim of this study was thus to assess tumor and patient characteristics and predictors of interval cancer in a population from Israel.

Aims & Methods: This retrospective cohort study included all patients that were diagnosed with colon cancer in our institution between 2005–2014. Cases included patients with a previous colonoscopy within 1–10 years before the diagnosis of cancer, with either negative or indented or benign polyps. Only full colonoscopies with at fair or good preparation were included. Interval cancer was defined on an individual basis, when cancer occurred within the recommended surveillance interval according to accepted guidelines. Cases were further stratified according to time since index colonoscopy (<3 years, 3–10 years).

Positive controls were cancer patients without previous colonoscopy, and "negative" controls were sex- and age-matched patients with two negative colonoscopies within the study period who were randomly selected on a 1:5 ratio. Tumor characteristics (location, staging) and patient-related features (age, gender, positive family history of colon cancer, aspirin use, diabetes, diverticulosis) were compared between cases and control groups.
P1744 THE RELATIONSHIP BETWEEN QUANTITATIVE FIT RESULTS AND NEOPLASTIC FINDINGS

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Introduction: Fecal Immunochemical Testing (FIT) is currently used in most Canadian provinces to screen for colorectal cancer. Newfoundland and Labrador is one of the provinces in which colorectal cancer screening program over the past five years. Newfoundland and Labrador selects patients for colonoscopy if one of two FIT values ≥100 nm/g. Aim(s) & Methods: The goal of this study is to assess the effectiveness of different FIT cut-offs and number of FIT tests for detecting adenomas and colorectal cancer.

Results: Data for this study were obtained in a prospective fashion using the Newfoundland and Labrador Colon Cancer Screening Program. 21,371 patients underwent between the ages of 50-74 and at average risk for colorectal cancer between July 1, 2012 and June 30, 2016. 16,152 participants returned their FIT tests. 1500 individuals were enrolled; 726 persons (494 men, 68%) and the target group (metabolic syndrome) and 774 persons (253 men, 46%) in the control group (without metabolic syndrome). The significantly higher prevalence of advanced adenomas was observed in the target group (18%; 95% CI 15–21%) compared to the control group (9%; 95% CI 7–11%); OR 1.8; p=0.002. Similarly, the prevalence of all adenomas was higher in the target group (48%; 95% CI 44–51%) than in the control group (35%, 95% CI 32–38%); however, the difference was not statistically significant (p=0.179). Individuals with isolated high cardiovascular risk (SCORE ≥10%) had higher prevalence of both, non-advanced adenomas (51%, 95% CI 46–56% ; p=0.327) and advanced adenomas (22%, 95% CI 18–26%; p=0.049) comparing to the individuals with isolated DM2. Advanced adenomas were more likely in patients aged 65–75 years.

Conclusion: Colon cancer is positively associated with metabolic syndrome. Cardiovascular risk factors (SCORE ≥10%) is a stronger risk factor than the presence of diabetes mellitus type 2. Individuals with SCORE ≥10% should be considered as a high-risk group and targeted colorectal cancer screening. SPs are classified into hyperplastic polyps (HPs), sessile serrated polyps (SSPs) with or without dysplasia and traditional serrated adenomas (TSAs). The serrated polyposis syndrome (SPS) is characterised by multiple SPs throughout the colon. 0.2% of all individuals with detected SPs none fullfilled the diagnostic criteria for SPS. Hence, we determined a prevalence of SPS of 0% in our cohort. 0.2%. Of all individuals with detected SPs none fulfills the diagnostic criteria for SPS. Hence, we determined a prevalence of SPS of 0% in our cohort.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1745 METABOLIC RISK FACTORS AND THEIR IMPACT ON CANCER SCREENING: A MULTICENTER PROSPECTIVE STUDY

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Introduction: The prevalence of colorectal cancer (CRC) and related risk factors such as diabetes mellitus type 2 (DM2) and/or dyslipidemia was up to 30%. Our aim was to determine the prevalence of SPS in average-risk individuals participating in the German CRC screening programme. We retrospectively analyzed screening colonoscopies performed by gastroenterologists in 4 medical practices and 1 tertiary academic hospital between 01/01/2011 and 14/12/2016. Individuals <50 years, with an increased risk for CRC (i.e. a family history of CRC, cancer, adenoma, or colorectal cancer, colorectal polyps, and colorectal cancer, colorectal polyps, and colorectal cancer, colorectal polyps), and colorectal cancer, colorectal polyps, and colorectal cancer, colorectal polyps).

Results: A total of 3089 individuals were analyzed. 47.5% were male, median age was 62 years (interquartile range 57, 68). 33.9%. Detection rates for SPs, HPs, SSSs and TSSs were 21%, 14%, 4%, and 0.2%. Of all individuals with detected SPs none fulfills the diagnostic criteria for SPS. Hence, we determined a prevalence of SPS of 0% in our cohort.

Conclusion: In our study, the prevalence of SPs in average-risk individuals undergoing screening colonoscopy was 0%. Because overall ADR was above the recommended values for screening colonoscopies, we conclude that this low prevalence might be attributed to a lack of awareness for SPS rather than to low quality of screening procedures. However, we were not able to determine detailed information about first-degree relatives of SPS from medical records of individuals with SPS to check the second diagnostic criterion for SPS. We also included only one colorectal polyp per individual. It has been shown that prevalence increases when follow-up colonoscopies are included. SPS may have caused an underestimation of the true prevalence of SPS in our cohort.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Boparai KS, Mathus-Vliegen EMH, Koornstra JJ, et al. Increased colorectal cancer risk during follow-up in patients with hyperplastic polyposis syn-

A761
Disclosure of interest:...tumor volume, tumor volume resulting in Lynch Syndrome even when family history is not suggestive of hereditary cancer. We reliably infer the determinant role of genetics, even when the family history does not support the hypothesis. Elsewhere, our results suggest that neutrophils are one of the immune cells implicated in this process. This work shows a link between immune microenvironment, pathogenic E. coli infection and tumor development. Disclosure of interest: All authors have declared no conflicts of interest.

P1747 CONTRIBUTION OF GERMLINE MUTATIONS TO NON FAMILIAL EARLY ONSET CANCERS

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Introduction: Early onset colorectal cancers lacking a positive family history are an increasingly worrisome entity. One on hand, early onset is the cornerstone of genetically determined oncological problems, but on the other negative family history does not support the suspicion of familial syndromes.

Aims & Methods: We addressed the contribution of germline mutations to non familial early onset cancers. Patients with pancreatic, gastric, esophageal, duodenal and colorectal cancers were enrolled from 2015 to 2017 at the Gastrointestinal Personalized Medicine unit. Eligibility criteria were the juvenile onset and the negativity for clinical criteria of hereditary cancer syndromes. Early onset colorectal cancer was defined as <45 yrs. For the other cancers, the threshold was defined as 50. Eligible patients provided informed consent. Genes were sequenced by means of a validated Next Generation Sequencing panel of oncological susceptibility genes and confirmed by means of Sanger sequencing.

Results: Among 12 colorectal cancer patients (7F, 5M), NGS analysis showed: 2 mutations of MSH2 (clone 4) and MSH6 (clone 17) occurring de novo, given the absence of family history; 3 variants of unknown significance (VUS) (2 MSH2 and 1 MLH1); and 7 were negative. Age-stratification revealed that, among those <35 years (n = 4), 1 had MSH2 gene mutation and 3 were negative. In the 36-40 age group (n = 3), 1 had MSH2 gene mutation and 2 were negative. In the age group 41-45 (n = 5), 1 MSH6 mutation and 2 VUS were found, alongside 2 negative results. Among the colorectal cancers, 17% of patients had a de novo mutation of Lynch Syndrome, 25% had a VUS, and 58% were negative.

Conclusion: A significant percentage (17%) of early onset colorectal cancers resulted in Lynch Syndrome even when family history is not suggestive of hereditary cancer. We reliably infer the determinant role of genetics, even when the family history does not support the hypothesis. Elsewhere, our results suggest that the already known susceptibility genes seldom contribute to sporadic early onset cancers. Other genes and mechanisms may explain the early onset phenotype. Our data show that NGS is often non conclusive in early onset GI cancers, and further development is needed to better classify VUS (25%).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1748 IMPACT OF COLIBACTIN-PRODUCING ESCHERICHIA COLI ON IMMUNE MICROENVIRONMENT IN PRECLINICAL COLORECTAL CANCER MODELS

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Introduction: Evidence links the immune microenvironment, microbiome and colorectal cancer (CRC). Colibactin-producing E. coli are more frequently detected on mucosa CRC patients and exhibit prooncogenic properties on CRC murine models. Aim of this work was to evaluate the impact of colorectal cancer by colibactin-producing E. coli on immune cells in preclinical models.

Aims & Methods: Min mice were per os inoculated with a CRC-colibactin-producing E. coli strain (11G5), non pathogenic E. coli (K-12 MG1655) or PBS. Using optical in vivo imaging (IVIS spectral), we evaluated oxidative stress induction with a bioluminescent inflammation probe in Min mice chronically infected. After 7 weeks, number and volume of polyps were evaluated and colonic samples were histologically analysed. Detection of immune cells was quantified by immunofluorescent labelling using a specific and innovative algorithm created with Tissue Studio software. Then, the density and localization of immune cells were performed in the three colon regions of interest: lymphoid follicle, mucosa and tumor.

Results: Using optical imaging, we detected a significant increase of luminescent signal and tumor volume at the site of infection suggesting an increase of oxidative stress and inflammation. Histological analyses showed no difference about intra-tumoral immune infiltrate density on 11G5 and K12-infected mice. However, using our specific algorithm, we observed a significant increase of lymphoid follicle size in the gut of mice infected with the 11G5 strain compared to mice feeding with non-pathogenic K12 strain. Interestingly, follicle size was positively correlated with tumor volume, on the 11G5 infected group suggesting an association between pro-carcinogenic properties of this strain and gut immune response. In addition, we observed an increase of neutrophils (Ly6G+ cells) on mucosa and lymphoid follicle of mice infected with 11G5 compared to K12 and non-infected mice. These results can be linked with our in vivo optical imaging observations and our results about the increase of neutrophils in chemo-attractants CXCL1 and CCL20 measured by qRT-PCR after infection. Analyses of T cells, macrophages, B cells and myeloid suppressive cells are in progress.

Conclusion: Here we can observe an increase of lymphoid follicle associated with tumor volume after colibactin-producing E. coli infection. Our first results suggest that neutrophils can be one of the immune cells implicated in this process. This work shows a link between immune microenvironment, pathogenic E. coli and tumor development.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1749 INVESTIGATING THE DIRECT INTERACTION BETWEEN CD24 AND B-Catenin IN INTESTINAL TUMORIGENESIS

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Introduction: CD24 is a glycosylphosphatidylinositol-linked protein that functions as an adhesion molecule and is overexpressed at an early stage of CRC (Sagiv et al., 2006). The Wnt/b-catenin signaling pathway plays an important role in the CRC carcinogenesis process. C57BL6/J mice carrying the ApcMin mutation developed ~24.3 ± 3.7 adenomas and several carcinomas in the small intestine by the age of 16 weeks compared to the ~7 ± 1.7 polyps that ApcMin/CD24−/− (double KO) mice developed. Mice colonscopy showed a significant reduction in the number and size of polyps upon depletion of CD24 alleles. The ApcMin mice displayed severe splenomegaly (355 ± 68 mg) compared (141 ± 49 mg) in double KO mice similar to WT mice. Hb level in the ApcMin was 5.8 ± 2.5, significantly lower than in the double KO mice (8.2 ± 0.9) and their WT littermate.

Aims & Methods: We aimed to study the cellular interactions between CD24 and b-catenin, and effects of their interaction on intestinal tumorigenesis. CD24-inducible 293T-Rex cells previously developed in our lab (Shapira et al., 2011) and SW480 CRC cells stably transfected with CD24 (Naumov et al., 2014) were used to study this interaction in vitro. Co-immunoprecipitation and immunofluorescent staining were used to investigate the interaction between the two proteins. Far western blotting (WB) analysis was used to confirm this direct interaction by probing the standard WB membrane with the purified CD24 protein.

Results: In vitro: Western blotting analyses showed that expression of CD24 in 293T-Rex cells induced the activation of b-catenin, while down-regulation of CD24 in SW480 cells caused a decrease in the level of active b-catenin. Cytoplasmic/nuclear fractionation showed that more active b-catenin entered the nucleus in cells that expressed compared to control cells (clone 4). In addition, in both cell lines, TOP/FOP luciferase reporter assay showed a significant increase in Luciferase activity upon CD24 expression induction. Co-immunoprecipitation studies of CD24 and b-catenin indicated that these two proteins might be interacting. In addition, in HEK-293T cells and SW480 cells, immunofluorescent staining of CD24 and b-catenin showed that these two proteins co-localize on the cellular membrane. Furthermore, far western blotting analysis suggests that a direct interaction between the proteins exist.

Conclusion: 1. CD24 plays a major role in intestinal tumorigenesis. 2. CD24 interacts with the Wnt pathway by activating b-catenin. 3. CD24 interacts directly with b-catenin. 4. Down-regulation of CD24 may be an important aim in the therapy of CRC.


All other authors have declared no conflicts of interest.

P1750 YM155 AS AN INHIBITOR OF CANCER STEMNESS SIMULTANEOUSLY INHIBITS AUTO磷PHOSPHORYLATION OF EGFR AND G9A-MEDIATED STEMMNESS IN ENS-POSITIVE CANCER CELLS
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Introduction: Cancer stem cells survive as the leading reason to tumor recurrence after tumor repressive treatments. Therefore, it is worth discovering specific and efficient inhibitors against cancer stemness for applications in reducing tumor recurrence. Previously, literature has indicated that YM155 can significantly reduce the number of tumorspheres in vitro. The aim of this study attempted to investigate the potential mechanism of YM155 against cancer stemness in ENS-positive cancers.
Aims & Methods: The aim of this study attempted to investigate the potential mechanism of YM155 against cancer stemness in ENS-positive cancers. The tumorspheres derived from EGFR-mutant HCC827 and EGFR-wild-type HCT116 and A549 cells expressing higher cancer stemness markers, CD133, were used as cancer stemness models.
Results: We found that higher EGFR auto phosphorylation (Y1068) in HCC827,- A549, and HCT116- derived tumorspheres compared to the parental cells, which induced tumorsphere formation through activating G9A-mediated stemness property. YM155 was demonstrated to inhibit the tumorsphere formation by unexpectedly blocking the autophosphorylation of EGFR and G9A-mediated stemness pathway. The chemical and genetic inhibitions of EGFR and G9a revealed the significant role of GFR-G9a pathway in maintaining the cancer stemness property.
Conclusion: In conclusion, this study not only revealed that EGFR triggered the formation of tumorspheres through elevating G9A-mediated stemness, but also demonstrated that YM155 inhibited the formation of tumorspheres by simultaneously blocking auto phosphorylation of EGFR and activity of G9a as a potent anti-stemness agent against EGFR-positive cancers.
Disclosure of Interest: All authors have declared no conflicts of interest.
References

P1754 FGF4 IS A FUNCTIONAL TUMOR SUPPRESSOR THROUGH INHIBITING AMPK/MTOR PATHWAY IN COLORECTAL CANCER
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Introduction: Promoter hypermethylation-induced epigenetic silencing of tumor related genes played a key role in the initiation and development of colorectal cancer (CRC). Using Methylated DNA Immunoprecipitation (MeDIP), we identified that Fibroblast Growth Factor 14 (FGF14) was preferentially methylated in CRC.
Aims & Methods: We aimed to investigate the epigenetic regulation and biological function of FGF14 in CRC. The expression of FGF14 in 10 CRC cell lines and 24 pairs of CRC tissues and paired adjacent normal tissues by real-time PCR. CRC cells were treated with DNA demethylating agent 5-aza-2'-deoxycytidine (5-Aza). The methylations of FGF14 in CRC cell lines and CRC were determined by real-time MSP. The biological function of FGF14 in CRC was interrogated by cell viability assay, colony formation, immunofluorescence and flow cytometry, as well as in vivo study.
Results: FGF14 was downregulated or silence in all (10/10) CRC cell lines, while it was readily expressed in normal colonic tissues. The expression of FGF14 was significantly lower in primary CRCs as compared to their adjacent normal tissues (P < 0.01). The loss of FGF14 gene expression was restored by treatment with DNA demethylating agent 5-Aza. Re-expression of FGF14 in CRC cell lines inhibited colony formation, suppressed cell viability, and induced cell apoptosis via AMPK/mTOR pathway, accompanied with enhanced protein expression of cleaved caspase-3, cleaved caspase-7, cleaved caspase-9 and PARP. In xenograft mouse model, overexpression of FGF14 significantly reduced tumor growth (P < 0.001).
Conclusion: FGF14, which induces cell apoptosis via AMPK/mTOR pathway, is a novel tumor suppressor down-regulated by epigenetic inactivation.
Disclosure of Interest: All authors have declared no conflicts of interest.
References
P1755 CHARACTERS OF HYPERMUTATOR IN DIGESTIVE SYSTEM CANCERS


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Introduction: A cancer with a number of somatic mutations is defined as “hypermutator”, and shows therapeutic features, such as high sensitivity to immune checkpoint inhibitor. However, to date, analyses of hypermutator have not been done with a large number of cases.

Aims & Methods: The aim of this study is to analyze the incidences and characteristics of hypermutator in digestive system cancers. We analyzed somatic mutation in digestive system cancers in 1145 cases (age: 67.4±11.3 yrs, M:F=755:390), those underwent surgery after full informed consent during 2014 to 2015. Genewide sequencing was performed on 47 inherited cancer-associated genes and 411 cancer-associated genes using next generation sequencing (Illuma Torrent Proton) and Exome RDY kit, Thermo Fisher Scientific. Hypermutator was defined when a tumor having >500 mutations in the somatic DNA.

Results: The 1145 subjects included 583 colorectal cancers (CRC), 229 gastric cancers (GC), 103 metastatic liver tumors, 100 hepatocellular carcinomas (HCC), 45 pancreatic cancer, 23 GISTs, 15 esophageal cancers and 14 neuroendocrine tumors, etc. Hypermutator was recognized in 66 cases (5.8%). Age and gender were not associated with hypermutation. Hypermutator was recognized in 6.2% (36 cases) of CRCs, 11.8% (27 cases) of gastric cancers, 2% (2 cases) of HCCs, and one case of small intestinal cancer. Within the hypermutator group, multiple cancers developed in 13.9% of CRC patients and 25.9% of GC patients. Mutations were restricted to 33.3% (22 cases), that of mismatch repair genes (either of MLH1, MSH2, MSH6, PMS2) in 13.6%, POLE in 9.1%, and POLD1 in 4.5%, respectively, in the hypermutator group.

Conclusion: Hypermutator was recognized in 5–10% of digestive system cancers, particularly CRCs and GCs. Cases of hypermutator sometimes develops multiple cancers, associated with a somatic mutation of mismatch repair genes. Further research must be needed to clarify the characteristic of hypermutator of the digestive organs in the therapeutic aspects.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1756 UNBIASED ANALYSIS OF REGULATION OF TRANSCRIPTION FACTORS UPON ER STRESS IN THE LS174T COLORECTAL CANCER CELL LINE EXPLORES CTBP2 AS A POTENTIAL REGULATOR OF STEMNESS

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Introduction: In the intestinal epithelium, stem cells are located at the bottom of the crypt and maintain the structure and differentiation is essential for sufficient organ function. Accumulation of mis- or unfolded proteins in the endoplasmatic reticulum, so-called ER-stress, leads to an unfolded protein response (UPR) which sustains epithelial stem cells (iESC) into differentiation. However, the molecular mechanism of this differentiation process upon ER stress is largely unknown. A prominent feature of the UPR is translation inhibition which can force an intestinal epithelial stem cell (iESC) into differentiation. We identified tran-

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P1757 MICROBIOTA A NEW INDICATOR OF COLORECTAL CANCER (CRC) HETEROGENEITY

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Introduction: Location and somatic gene signature of CRCs may impact prognosis strongly. A specific CRC-related dysbiosis has been characterized.

Aims & Methods: The aim was to characterize colon microbiota in CRC patients regarding location, gene markers and outcome. Patients (N=173) signed consent form. DNA was extracted and sequenced using Illumina HiSeq2000 analysis of stool DNA: 72 CRC (53 sporadic-S, 19 Lynch-L), 87 asymptomatic subjects (normal colonoscopy), 14 first degree healthy relatives from Lynch families. 3MOCA1 pipeline was used, library sorted (Piped quality score 20) and filtered (FDR < 0.05). Classification was done with a large number of cases.

Results: There was no difference for gender, age (p = 0.08) and BMI (p = 0.187) in the L and S CRCs. Significant differences were observed between Normal and CRCs, C-CRC and L-CRC, L-CRC and first degree relatives based on the common component (similarity of sequences): 13 species differentiated Normal and C-CRCs, two were more prevalent in L-CRCs. The analysis of related bacteria linked with location, MSI, Ras mutations, methylation phenotypes and survival were identified. No significant link was observed with TNM Staging (I=17, 2L and 15S), II (N = 12, 5L and 7S), III (N = 20, 10L, 10S), IV (N = 22, 11L, 21S). DFS might be dysbiotic dependent.

Conclusion: CRC dysbiosis is location-dependent. Several bacteria are associated with Ras mutation, MSI, and methylation status. They may directly or through their metabolites impact the prognosis. Microbiota signature should be taken in consideration in trials.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference


P1758 EPIGENETIC SILENCING OF SMOC1 IS ASSOCIATED WITH DEVELOPMENT OF COLORECTAL TRADITIONAL SERRATED ADENOMAS

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Introduction: Colorectal serrated lesions (Sls) include hyperplastic poly (HP), traditional serrated adenoma (TSA) and sessile serrated adenoma (SSA/P). SSA/Ps are well-known precursors of colorectal cancer (CRC) characterized by BRAF mutation and microsatellite instability (MSI), whereas the molecular characteristics of TSAs are not fully understood.

Conclusion: Using an unbiased transcriptional approach we identified transcription factors that are lost on protein level upon ER stress. Furthermore, our data suggests that the significant loss of the transcriptional regulator CtBP2 contributes to intestinal epithelial stem cell differentiation.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

Aims & Methods: We aimed to improve simple, noninvasive blood test that could predict the risk of colorectal cancer. Blood was taken from patients with various malignancies (CRC, Pancreatic Cancer (PC), gastric cancer (GC), sarcoma and HM), that was confirmed by histology. Age, gender and ethnic matched healthy individuals served as controls. Hemoglobin level were very healthy. They underwent an extensive workout at the Integrated cancer prevention center at Tel Aviv Medical Center (Eur J Intern Med. 2013) All samples were collected and processed identically. For each sample, 20,000 leukocytes were analyzed by flow cytometry for the expression of CD24. An initial template data has been generated using gates within the software to create a hierarchical population tree at the beginning of the screen. All additional analyses were accomplished after data acquisition have been completed. The template file include compensation adjustment, which is uniformly applied to all the data collected in order to minimize fluorescence overlap between detection channels.

Results: The novel assay was improved significantly, distinguished healthy from CRC (Fig (1a) (P < 0.013), PC (Fig (1b) (P < 0.018), biliary tract (P < 6.45E-12), MDS (P < 0.003) and haemophagocytosis, MDS (P < 0.01), and Lymphoma (P < 2.1E-07) patients. CD24 expression levels were higher by up to 25% in cancer cases as compared to normal subjects. The sensitivity and specificity for CRC were 79.2% and 74.7%, and for PC 70.0% and 75.9%, respectively.

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Conclusion: Diabetics require a more intense bowel preparation aided by bowel cleaning agents to help others. They tolerated both doses of LCI and 8 hours and preparation should end no later than 8 hours prior to colonoscopy. Patients should be instructed to drink a minimum of 8 glasses of water with each dose of policol.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1762 IMPROVED ADENOMA DETECTION WITH ELUXEO LINKED COLOR IMAGING (LCI) AS COMPARED TO CONVENTIONAL WHITE-LIGHT HIGH-DEFINITION COLONOSCOPY–A RANDOMIZED CONTROLLED TRIAL

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Introduction: Colonoscopy is the gold standard method of colorectal cancer screening. However, polyp detection during a colonoscopic examination at a rate that varies from 6% to 27%. Improved adenoma detection rates can be achieved by optimizing endoscopic visualization techniques. A recently developed new Fujinon endoscopic system, Eluxeo carries a new function of electronic chromoendoscopy, Linked Color Imaging (LCI), that enhances the coloring and contrast of mucous membranes and blood vessels which are difficult to see with the conventional endoscopes. In our prospective randomized study, we evaluated the effectiveness of LCI, a new endoscopic visualization technique that may enhance image quality to improve colon adenoma detection.

Aims & Methods: Up till now 247 eligible patients, older than 45 years, admitted for screening outpatient colonoscopy were randomly enrolled to undergo high-definition white-light colonoscopy (WLC) or LCI colonoscopy during instrument withdrawal. The colonoscopic procedures were performed by three experienced endoscopists on 7000 patients. Colonoscopy access was either the conventional high-definition Fujinon EC 590Z or a new EC 760Z VS Eluxeo colonoscope. All of the colonoscopic procedures were made under Propofol deep sedation guided by an anesthesiologist team. The minimum withdrawal time was defined as more than 6 minutes. All colonoscopies were routinely assisted with pure CO2 insufflation. The primary outcome parameter of our study was to assess and compare the polyp and adenoma detection rate with the two endoscopic techniques.

Results: A total of 247 patients were randomized (mean age 58.7 years), 101 patients enrolled in the WLC group and 146 patients in the LCI group. No significant differences have been observed in the patient demographics and colonoscopy withdrawal time between the two groups. Patients having both colorectal polyps and adenomas were detected more frequently in the LCI group than in the control group: 69.9% and 43.8% versus 55.4% and 33.6% respectively, however, this was not statistically significant (p = 0.32 and 0.16). In contrast, the total number of adenomas relative to the total number of polyps detected with LCI withdrawal were significantly higher than with conventional WLC: 105 vs. 67, respectively (p < 0.0498).

Conclusion: The LCI enhancement of the Fujinon Eluxeo colonoscopy system was superior to the conventional HD-WLC in detecting patients with colorectal adenomas, which was mainly due to the ability of the more sensitive detection of minute (less than 5 mm) adenomas. The study was supported by ECT grant GINOP-2.1.1.1-15-2015-00128.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1764 AI-ANTITRYPSIN (SERPIN-A1) AS A POTENTIAL BIOMARKER FOR COLORECTAL CANCER

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Introduction: Serine protease inhibitors (Serpins) play an important role in the regulation of enzymes involved in proteolytic cascades. Members of the family are: alpha-1-antitrypsin, alpha-antichymotrypsin, C1 inhibitor, antithrombin and neuroserpin. Kalikrein-related peptides (KLKs) are involved in proteolytic cascades of different tissues. KLK14, acting via PAR-2, represents an autocrine/paracrine regulator of colon tumorigenesis and alpha-1-antitrypsin is a natural inhibitor of KLK14. Therefore its role in regulating the proteolytic cascade in colorectal tumorigenesis is of great importance.

Aims & Methods: The aim of this study was to analyze A1-antitrypsin (AAT) expression in tissue samples at different stages in the process of colorectal cancer development. We examined a total of 245 colon samples. Of those, there were 101 colorectal carcinoma tissues, for 70 of which paired normal mucosa was also examined. A total of 74 colorectal adenomas were examined. Quantitative real time PCR was used to measure AAT expression. Clinical evaluation of AAT levels was demonstrated in terms of disease-free survival (DFS) and overall survival (OS).

Results: Alpha-1-antitrypsin expression was found to be significantly associated with tumor stage (p = 0.028). A significant proporitional hazard regression model using univariate analysis revealed that high status alpha-1-antitrypsin expression is a significant factor for disease-free survival (DFS) (p = 0.002) and overall survival (OS) (p = 0.026) in patients with colorectal cancer. Kaplan-Meier survival curves demonstrated that low alpha-1-antitrypsin expression is significantly associated with longer DFS (p = 0.001) as well as OS (p = 0.021).

Conclusion: Our data suggests that alpha-1-antitrypsin expression could be considered as a potential biomarker of unfavorable prognosis for colorectal cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1765 DIFFERENTIATION BETWEEN NEoplastIC AND NON-neplastic Diminutive colorectal Polyps with FUJinON ELuxeo-BLI Versus FICE ELECTRONIC ColonOSCOPy–A RANDOMIZED CONTROLLED TRIAL

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Introduction: Real-time differentiation between neoplastic and non-neoplastic colorectal lesions may be crucial during colonoscopy. While adenomas are
neoplastic, and therefore should be resected, hyperplastic polyps never turn malignant and do not require specific endoscopic therapy. The aim of our prospective, randomized study was to distinguish subcentimetric hyperplastic and adenomatous polyps based on Fujinon FICE versus Eluexo BLI electronic chromoendoscopic technology with high-definition colonoscopy with and without optical magnification.

Aims & Methods: In order to create a video and digital picture library of polyps, patients undergoing screening or diagnostic colonoscopy were considered for inclusion. Patients with at least one histologically verified <10mm polyp were included. Short (20sec) video-clips and at least the still picture of each polyp without and with 50x optical zoom at standard white-light (WLI), and with FICE-light or BLI-light were recorded with Fujinon EC 590Z and EC760Z endoscopes and stored in an anonymized database. Once the video-library was complete, each of our 5 colonoscopic experts (ML, SZM, OL, DZS, and SZA) independently and randomly reviewed all of the cases with a standardized electronic questionnaire. In each case, all of the observers had to assess the color, the vascularization and the surface of the polyps, and the pit pattern was also assessed. Kudo classification was then carried out, independently, with the definition of confidence (low/medium/high on VAS), the histological prediction and the final decision which was clarified on each lesion as neoplastic or non-neoplastic (hyperplastic).

Results: Up till now 115 polyps were enrolled and recorded into our digital web-based library, 59 were assigned into the FICE and 56 into the BLI group. All of the detected 115 polyps were endoscopically removed and histologically analyzed and this was regarded as gold standard. The overall accuracy with WLI versus FICE versus BLI technology of the 5 experts without zoom and with 50x magnification to differentiate between hyperplastic and adenomatous lesions were 77.62% and 84.31%, vs. 74.58% and 83.90%, vs. 83.93%, and 88.84%, respectively. There was an excellent correlation between the histopathological results and our KUDO classification with both FICE and BLI technology. Both 50x times optical zoom and BLI technology were independently and significantly improved our confidence rate that was associated with a more precise histologic prediction as compared to non-zoom, WLI or FICE endoscopic polyp assessment. Conclusion: The new electronic chromoendoscopic technology with Eluexo BLI significantly improved the reliability of the histology prediction as compared to FICE technology of Fujinon and high-confidence predictions for the differentiation of neoplastic and non-neoplastic polyps with Eluexo BLI electronic chromoendoscopy provide a potential for real-time endoscopic diagnosis of hyperplastic polyps to support resect and discharge strategy. (Study was supported by ECT grant GB/15-5/00128)

Disclosure of Interest: All authors have declared no conflicts of interest.

References
3. References
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Introduction: We examined the macroscopic features, pathological features, treatment methods, and prognosis of 22 patients diagnosed as having a rectal NET and treated at our hospital between 2007 and May 2016.

Results: The mean age of the patients was 65.2 years (range, 49–88 years); male-to-female ratio, 15:7; diagnosis opportunity, 21 asymptomatic cases and 1

P1767 ENDOCYTOSCOPIC VASCULAR PATTERN FOR COLORECTAL LESION IS HELPFUL IN PREDICTING PATHOLOGICAL DIAGNOSIS
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Introduction: Till now, narrow-band imaging (NBI) could make it possible to analyze the surface microvessels of colorectal lesions for differentiating neoplasms from non-neoplasms and for predicting the histopathological diagnosis. Narrow-band imaging (NBI) or electronic chromoendoscopy (EC) is the next generation of ultramagnification endoscopy that allow visualization of the glandular structure and cellular atypia. EC has visualized living tumor cells in vivo and obtained a ultra-magnification pathological image simply by applying the scope to the target mucosa during an endoscopic examination. However, in colorectal lesion visualization, the low-magnification system (i.e., methylene blue) is always required. Since dye staining complicates the procedure, new observation method without use of dye has been strongly desired. On the other hand, EC with NBI (EC-NBI) allows ultra-magnified microvesSEL observation without using any dye solution.

Aims & Methods: The aim of this study was to validate the evidence whether the observation of surface microvessels using EC-NBI was useful in predicting the histopathology of colorectal lesions. The study included 438 patients who underwent complete colonoscopy and endoscopic or surgical treatment between April 2006 and June 2015. A total of 576 lesions (45 Non-neoplastic polyps, 304 adenomas, 71 intramucosal cancer, 21 slightly invasive submucosal cancer (SMs) and 135 massively invasive submucosal cancer) were retrospectively evaluated. We used the Kudo classification for the diagnosis of submucosal invasion and classified cancers accordingly. SMs cancer without vessel perforation does not metastasize. In contrast, SMm lesions show a substantial proportion (~10%) of lymph node metastasis. We named the ultra-magnified microvesSEL findings as endoscopic vascular pattern (ECV) pattern and classified into the following 3 groups; ECV, the surface microvessels were very fine obscure; EC-V2, the surface microvessels were more clearly seen and showed a regular vessel network, and their caliber and arrangement were uniform; and EC-V3, the surface microvessels were thick, and their caliber and arrangement were early wavy and homogeneous.

Results: The sensitivity, specificity and accuracy of ECV-V1 for diagnosis of hyperplastic polyp were 86.89%, 98.5% and 97.7%, respectively. As regards the sensitivity, specificity and accuracy of ECV-V3 for diagnosis of SMm were 82.2%, 98.0% and 94.3%, respectively.

Conclusion: Endoscopic vascular pattern was helpful in predicting the histopathology of colorectal lesions.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
symptomatic condition (lumbago); lesion site (Rs/Ra/Rb), 1/2/1 cases; mean tumor diameter, 8.2 mm; presence of biopsy, 14/8 cases; biopsy diagnosis rate, 40%, pancreatic (PC) 7.5 ± 0.8 mm; presence of angiography, 1/2 cases; angiography diagnosis rate, 50%.

Introduction: The use of IN derived peptides together with the CD24-targeted antitoxin (RGC-MazE-GFP) were designed under the regulation of RAS bacterial toxin can improve the efficacy of this system (Shapira et al, 2015). Furthermore, we showed a protective effect of the RAS pathway in combination with the antitoxin (RGC-MazE-GFP) was engineered and fused to the lentivirus vector. Cell death was measured qualitatively using fluorescein diacetate and was quantified by the enzymatic MTT assay. Human colorectal, pancreatic, lung and triple negative breast cancer cells were used for testing the potency of the lentiviral-based system.

Disclosure of Interest: All authors have declared no conflicts of interest.

Aims & Methods: We aimed to develop and specifically direct lentiviruses (Cervical, Bladder, Esophageal squamous cell carcinoma, Glioma, Breast etc.). The use of IN derived peptides together with the CD24-targeted antitoxin indeed actively protects cells with WT p53. Similar results were obtained in a colony formation assay using fluorescent microscopy and was quantified by the enzymatic MTT assay. Human colorectal, pancreatic, lung and triple negative breast cancer cells were used for testing the potency of the lentiviral-based system.

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References

P1769  SELECTIVE ERADICATION OF K-RAS MUTATED CANCER CELLS BY DELIVERY OF BACTERIAL TOXINS
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Introduction: Inactivation of TP53 is the most frequent genetic damage in human cancer. In addition, hyperactivation of the RAS pathway is common in many human malignancies (Lung (LC)–40%, pancreatic (PC)–95%) and colorectal cancer (CRC)–50%). Despite multiple attempts, targeting these pathways for the treatment of cancer, for example through the development of RAS pathway inhibitors has not proven to be effective thus far. Herein, we propose to exploit the hyperactive RAS pathway and TP53 mutation status of human cancer to deliver targeted antitumor therapy. We had previously reported that a recombinant adenovirus, carrying a pro-apoptotic gene (PUMA) under the regulation of RAS responsive elements (PY4) effectively suppressed the growth of human cancer cells harboring hyperactive RAS (Giladi et al, 2007). Furthermore, we had shown, both in vitro and in vivo, that replacing the pro-apoptotic gene with a bacterial toxin can improve the efficacy of this system (Shapira et al, 2015).

Aims & Methods: We aimed to establish a tight regulated dual system by expressing a toxin under a PY4 element in cancer cells, while sparing normal cells by expressing the anti-toxin under a p53 responsive elements (RGK) specifically in non-malignant cells. Adenoviral vectors carrying the toxin (PY1-MaxF-echerry) and the anti-toxin (RGK) were used, either alone or in combination (GFPI) were used. The toxin and anti-toxin were quantified by the Endo Point Dissolution Assay and their potency was tested in vitro. Cell death was measured qualitatively using immunofluorescence microscopy and was quantified by the enzymatic MTT assay.

Results: In vivo, the combination of the two toxins was more effective than either toxin alone. In vitro, the combination of the two toxins was more effective than either toxin alone.

Conclusion: The combination of two toxins was more effective than either toxin alone.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1771 ILF3 STABILIZES AND ACTIVATES EGFR-MEDIATED G9A PATHWAY FOR MAINTAINING CANCER STEMNESS PROPERTY IN EGFR-POSITIVE CANCERS
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Introduction: A specific inhibitor of interleukin enhancer binding factor 3 (ILF3), Y15515, suppresses EGFR phosphorylation and significantly reduces the expression of cancer stemness tumourspheres in vitro, suggesting that ILF3 as an oncogene participates in the maintaining of cancer stem cell property through stabilizes EGFR-mediated stemness pathway. Since cancer stemness cell is the leading reason for tumor recurrence in the tumor repressive treatments, and ILF3 activates the formation of cancer stemness, it is worthy of investigating the role of ILF3 for maintaining the cancer stemness property in the EGFR pathway.

Aims & Methods: The tumourspheres derived from EGFR-wild-type and KRAS-mutant colorectal HCT116 and lung A549 cells expressing higher cancer stemness markers, CD133, were used as cancer stemness models in this study. Y15515 was utilized to select the putative growth in vivo, involving the formation of tumourspheres as the cancer stemness markers. Meanwhile, the differentiating stemness markers were also compared between ILF3-knockdowned and the control shLuc cells. Then, the protein level and phosphorylation of EGFR were investigated in the Y15515-treated and ILF3-knockdowned cells, that was also transplanted into SCID mice for evaluating the function of ILF3 in vivo.

Results: We found that higher EGFR autoposphorylation (Y1068) in HCT116- and A549-derived tumourspheres compared to the parental cells. The results of RNAseq evaluated that CD133 was a positive stemness marker, whereas MARCH4 as a negative marker. Knockdown of ILF3 reduced the protein level and expression of EGFR, which was activated in cancer cell survival. Moreover, inhibition of ILF3 by Y15515 blocked the autoposphorylation of EGFR and inhibited the EGFR-downstream G9a activation, leading to a reduction of stemness property. Moreover, Knockdown of G9a reduced the ILF3 expression and increased MARCH4 expression, revealing that G9a was essential for maintaining for cancer stemness property in the ILF3-positive cancers.

Conclusion: In conclusion, this study demonstrated that ILF3 played an important role in maintaining the EGFR-mediated stemness pathway in HCT116 and A549 EGFR-positive cancer cells. We demonstrated that ILF3 stabilized and phosphorylated EGFR to enhance the activation of G9a, leading to increasing CD133 and decrease MARCH4 expressions. Therefore, we suggested that the ILF3 inhibitor, Y15515, was potential for utilization in cancer therapy against the EGFR-positive cancers.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1770 USE OF A COMBINATION OF LENTIVIRUS PARTICLES AND A SPECIFIC PEPTIDE FOR ERADICATION OF CD24- EXPRESSING
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Introduction: Lentiviral replication is driven by a molecular motor consisting of transcription/endoogenous nucleocapsid and viral enzymes: the reverse transcriptase, protease and integrase (IN). The genomic RNA of the virus is used to produce a copy of viral DNA by reverse transcription, and the integrase catalyses the covalent insertion of this DNA into the chromosomes of the infected cells. Integration of the viral DNA—which is driven by 12 bp palindromic LTR sequences—leads through a combination of cleavage and ligation resulting in the appearance of double-stranded breaks in the host genome that eventually leads to apoptosis. CD24 is a heavily glycosylated cell-surface GPI-anchored protein. We have previously shown that CD24 is an important player in the multistep process of GI carcinogenesis (Gastro 2006, Clin Can Res 2007, Can Res 2008) as well as in many other human malignancies (Cervical, Bladder, Esophageal squamous cell carcinoma, Gioma, Breast etc.).

Aims & Methods: We aimed to develop and specifically direct lentiviruses (Cervical, Bladder, Esophageal squamous cell carcinoma, Glioma, Breast etc.). The use of IN derived peptides together with the CD24-targeted antitoxin indeed actively protects cells with WT p53. Similar results were obtained in a colony formation assay using fluorescent microscopy and was quantified by the enzymatic MTT assay. Human colorectal, pancreatic, lung and triple negative breast cancer cells were used for testing the potency of the lentiviral-based system.

Disclosure of Interest: All authors have declared no conflicts of interest.

Results: INS was able to stimulate the viral Integrase enzyme in test tubes and in viral infected cells. The antitoxin, RGS and specific peptide to CD24, allowing targeted precision of viral transduction (Figure 1). These Lentiviruses particles contain DNA molecules with flanked LTRs, allowing their integration into the CD24-expressing target cells DNA and formation of double-stranded breaks to the disease at the site of the integrase particles whose activity was stimulated by the IN derived peptides. Massive cell death was induced upon exposure of the infected cells to the INS peptide compared to the control mock peptide. The use of IN derived peptides together with the CD24-targeted lententherapy approach suggest a novel strategy to specifically promote death of CD24-expressing cancer cells.

Disclosure of Interest: N. Arber: Bayer Bio-view Gi-View Micro-medio Check-
card

All other authors have declared no conflicts of interest.
P1772 Efficacy and Safety of Twelve Chemopreventive Regimens for the Recurrence of Colorectal Adenomas: A Network Meta-Analysis

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Introduction: Although various pharmacological agents have been trialed for recurrent colorectal adenomas, their comparative effectiveness remains unknown. We conducted both direct and indirect comparisons of twelve chemopreventive agents for recurrent colorectal adenomas.

Aims & Methods: MEDLINE, EMBASE, Scopus, Web of Science, and Cochrane Central Register of Controlled Trials, and ClinicalTrials.gov were searched up to May 1, 2016.RCTs were assessed by a random-effects model within a Bayesian framework. Agents for each outcomes were ranked by surface under the cumulative ranking area (SUCRA). This study is registered with PROSPERO, number CRD42016041923.

Results: 33 RCTs were eligible, enrolling 44,647 participants treated by twelve regimens: 9 aspirin and other NSAIDs, 11 antioxidants, 4 dietary supplements, and 1 calcium, 4 folate acid, 2 calcium plus antioxidants, 2 aspirin plus folic acid and 1 vitamin C. The pooled estimate showed that aspirin was more effective than placebo in both pairwise (OR, 0.73 [95%CI, 0.59 to 0.90]) and NMA (OR, 0.75 [95%CrI, 0.57 to 0.98]). Subgroup analysis showed the highest increase in sensitivity to EPA. Whilst the response of MC38 cells to EPA was increased 2-fold [IC50 (EPA + aspirin) = 19 ± 1 μM], MC38 cell response was increased 3.8-fold [IC50 (EPA + aspirin) = 42 ± 1 μM]. Aspirin increased IC50 of MC38 cells treated with both EPA and aspirin compared to EPA alone. A similar pattern of response was measured in vivo. EPA administration exerted anti-tumour activity in MC38 subcutaneous tumour-bearing CD1-nude mice (n = 14, 37% decrease in mean tumour volumes, p = 0.02), but not in CT26 mice treated with both EPA and aspirin compared to EPA alone.

Conclusion: Human and mouse CRC cell lines display differential sensitivity to EPA in vitro. Our data indicate that COX2 mediates resistance to EPA in CRC cells by downregulating the expression of a COX2 substrate, thereby suppressing the synthesis of EPA in vivo. Aspirin sensitisation CRC cells to EPA in vitro and in vivo may be a clinically relevant candidate for prevention and treatment of CRC in combination therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1774 Prognostic Role of Glasgow Prognostic Score in Patients with Colorectal Cancer: Evidence from Randomization Studies

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Introduction: Colorectal cancer (CRC) is the third most common cancer worldwide. The management of CRC has been undergoing change as investigations of risk factors and its genetic predisposition have dramatically developed, the long-term survival rate of patients with CRC remains low. In recent years, great efforts have been made to identify inflammation-related factors for precise prediction of disease prognosis. Glasgow Prognostic Score (GPS) is a simple and useful tool that is based on the combination of the level of serum C-reactive protein (CRP) and albumin, which are indicators of systematic inflammatory response and nutritional status respectively. Growing evidence suggested that GPS was served as an independent prognostic index in a variety of malignan cancers. For patients with CRC, the GPS system was also widely studied, but the results were controversial.

Aims & Methods: To investigate the correlation between GPS and prognosis of patients with CRC to further clarify its clinical significance. A comprehensive search of PubMed, Embase, Cochrane central register of controlled trials, and Chinese National Knowledge Infrastructure was performed to identify eligible studies, from which the risk of overall survival (OS) and cancer-specific survival (CSS) were extracted. A random-effect model was adopted to combine hazard ratios (HR) and 95% confidence interval (CI). Heterogeneity and publication bias among studies were assessed.

Results: 25 articles with a total of 5660 participants were included. The pooled results indicated that elevated GPS was associated with poor OS (HR = 2.83, 95%CI: 2.00–4.00, P < 0.01) and CSS (HR = 1.94, 95% CI: 1.51–2.49, P < 0.01). This correlation was confirmed both in primary operable and advanced inoperable patients. Increased GPS was also closely related to advanced tumour-node-metastasis (TNM) stage (odds ratio [OR] = 1.44, 95%
Disclosure of Interest: All authors have declared no conflicts of interest.

References
10. Rocks, D. et al. Population participation at 33.1%. This has influenced the increase of number of colorectal cancer screening program in the Czech Republic from year 2000. In January 2014, the transition to population based setting has been implemented. From January 2014, the annual immunochromatographic FOBT (FIT) is offered at the age 50-54, followed by FIT+ colonoscopy, if positive. In age of 55, there is a choice of either FIT biannually or screening colonoscopy in 10 years’ interval. In other age groups, the annual immunochromatographic FOBT (FIT) is offered at the age 50-54, followed by FIT+ colonoscopy, if positive. In age of 55, there is a choice of either FIT biannually or screening colonoscopy in 10 years’ interval. Aims & Methods: We aimed to assess the impact of the first 30 months of the colorectal cancer screening program in the Czech Republic. The study demonstrates favorable technical and short-term clinical outcome of colorectal ESD, but further studies are needed to confirm the long-term efficacy. Disclosure of Interest: All authors have declared no conflicts of interest.
P1778 LONG-TERM OUTCOMES OF ENDOSCOPIC SUBMUCOUS DISSECTION FOR EARLY CANCER AND HIGH GRADE DYSPLASIA IN COLORECTUM

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Introduction: Although endoscopic submucosal dissection (ESD) is a widely accepted treatment for colorectal neoplasia, little is known about large consecutive studies evaluating long-term outcomes of early cancer and high grade dysplasia. We assessed the efficacy and safety of ESD for early cancer and high grade dysplasia in colorectum and evaluated the long-term outcomes, including local recurrence and metastasis.

Aims & Methods: We performed a retrospective analysis of data collected from 5 consecutive years of patients with 520 colorectal early cancer and high-grade dysplasia treated with ESD between January 2007 and December 2013. Histology and patient data were collected during an average follow-up time of more than 5 years to determine tumor stage and type, resection status, complications, tumor recurrence, and distant metastasis.

Results: The overall rates of en bloc resection, complete resection, R0 resection, major complications were 94.4%, 91.3%, 89.2% and 2.1%, respectively. Large tumors and snare-assisted ESD were independent factors of piecemeal resection. ESD of colon tumors increased the risk for complications. During the follow-up period, all patients remained free from metastasis. However, local recurrence occurred in 4 patients (0.8%); large tumors and piecemeal resection were risk factors.

Conclusion: ESD is effective and safe for resection of early cancer and high grade dysplasia in colorectum and long-term outcomes are favorable. ESD is indicated for the treatment of colorectal early cancer and high grade dysplasia to obtain curative resection and prevent the local recurrence.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1779 LOW UPTAKE OF PSYCHOLOGICAL THERAPIES AMONG PATIENTS WITH IRRITABLE BOWEL SYNDROME IN SECONDARY CARE

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Introduction: Patients with irritable bowel syndrome (IBS) often have co-existent mood disorder and psychological illness. Meta-analyses of randomised controlled trials consistently demonstrate that psychological therapies, such as cognitive behavioural therapy (CBT) and hypnotherapy, are effective treatments for IBS. In the UK the National Institute for Health and Care Excellence (NICE) recommends considering the use of these in patients with no response to pharmacological therapies, and for refractory symptoms.

Aims & Methods: We performed a cross-sectional survey to examine willingness of patients with IBS to engage with psychological therapies. We collected complete symptom data from consecutive, unselected referrals to secondary care seen in a specialist IBS clinic. All participants completed the validated Rome IV questionnaire for IBS, the IBS severity scoring system (IBS-SSS), the hospital anxiety and depression scale (HADS) to assess mood, and the patient health questionnaire-12 (PHQ-12) to examine somatoform-type behaviour. They also provided their opinion on possible treatment options, and were asked to rank medical therapies, dietitian input, psychological therapies, including CBT and hypnotherapy, and explanation of the condition and/or reassurance in order of preference.

Results: Among 93 adults with confirmed IBS (74.7% female), median age 36.0 years (range 16 to 77 years), 35 (37.6%) had high levels of anxiety, 22 (23.7%) had high levels of depression, and 23 (24.7%) had severe levels of somatoform-type behaviour. Despite this, only 10 (10.8%) of 93 patients ranked psychological therapies as their first-choice treatment option. In total, 88% of patients with high levels of anxiety ranked psychological therapies as their first-choice treatment option, versus 13.2% without (P = 0.64), 9.5% of those with high levels of depression, versus 12.1% of those without (P = 0.91), and 17.4% of patients with severe somatoform behaviour, versus 9.2% of those without (P = 0.26). Those with severe symptoms according to the IBS-SSS were no more likely to select psychological therapies as their first-choice treatment option than those with mild or moderate symptoms (7.7% versus 21.7%, P = 0.10).

Conclusion: Despite high levels of psychological morbidity and NICE recommendations, patients with IBS in a specialist clinic were generally reluctant to consider psychological therapies such as CBT or hypnotherapy. Those with anxiety, depression, somatoform-type behaviour, or severe symptoms were no more willing to consider these therapies than those without.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1780 GUT SYMPTOMS AND TRANSIT DISTURBANCE IN PARKINSON’S DISEASE ARE PAN-ENTERIC BUT NOT UBQUITOUS: A WIRELESS MOTILITY CAPSULE STUDY

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Introduction: Symptoms of gastrointestinal dysfunction are among the most common non-motor complaints in Parkinson’s patients. These may involve muscles from the oropharynx to the anorectum, and the autonomic and enteric nervous system are often involved, resulting in secondary bowel dysmotility.

Aims & Methods: The objectives of this study were to evaluate a technology measuring the spectrum of gut dysfunction, the Wireless Motility Capsule (WMC), in Parkinson’s disease. We also wanted to correlate transit measures with gastrointestinal symptoms. Fifteen PD patients and 7 controls (table1) were included. PD severity were scored with the modified Hoehn and Yahr (H&Y) staging scale. GI symptoms were assessed using the Wexner constipation score and Gastropareasis Cardinal Symptom Index (GCSI). Acidity, motility and transit data were obtained, as standard, by WMC. All medications affecting pH and motility, including L-dopa, were discontinued for 5 days before and for the duration of the study. Data were analyzed using a chi-square test (GET), small bowel transit time (SBTT), colonic transit time (CIT) and whole gut transit time (WGTT).

Results: One patient could not swallow the capsule, and of the 14 patients completing the study, 8 reported GI symptoms. Compared to non-symptomatic patients, those with GI symptoms showed significant delayed transit in the stomach, colon and whole gut (table 1). However, small bowel transit did not significantly differ. GI dysfunction was not correlated with H&Y score in this small sample, used the risk factor constipation scores were correlated, suggesting a pan-enteric problem in symptomatic individuals. There was a significant correlation between the Wexner constipation score and CIT in all patients (p < 0.01) but not GCSI and GET (p > 0.10). The results of Wireless Motility Capsule did not differ between non-symptomatic PD and controls.

<table>
<thead>
<tr>
<th>Non-symptomatic PD (n = 6)</th>
<th>Symptomatic PD (n = 8) [p value vs Non-symptomatic PD]</th>
<th>Controls (n = 7) [p value vs Non-symptomatic PD]</th>
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<tbody>
<tr>
<td>Sex (M:F)</td>
<td>5:1</td>
<td>5:2</td>
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<tr>
<td>Age</td>
<td>61.2 ± 10.9</td>
<td>69.6 ± 13.4 [0.2744]</td>
</tr>
<tr>
<td>GCSI</td>
<td>3.3 ± 1.5</td>
<td>22.6 ± 9.6 [0.0017]</td>
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<tr>
<td>Wexner</td>
<td>2.2 ± 0.0</td>
<td>14.3 ± 3.2 [0.0003]</td>
</tr>
<tr>
<td>GET</td>
<td>2.74 ± 1.05</td>
<td>5.18 ± 0.58 [0.0007]</td>
</tr>
<tr>
<td>SBTT</td>
<td>4.08 ± 0.71</td>
<td>4.17 ± 0.34 [0.7193]</td>
</tr>
<tr>
<td>CTT</td>
<td>27.44 ± 7.89</td>
<td>57.82 ± 30.61 [0.0426]</td>
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Conclusion: We have shown that Parkinson’s patients with gut symptoms have both upper and lower complaints. Symptomatic PD patients also have markedly delayed transit times throughout the whole gut compared to asymptomatic PD patients and controls. Whilst severity of constipation is related to delayed colonic transit no such relationship is present between gastroparesis symptoms and gastric emptying. The implication is that treating symptomatic Parkinson’s patients should address the whole gut, whether with prokinetics or dual therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1781 OUTLET DYSFUNCTION IS PREVALENT IN SEVERE FUNCTIONAL BLOATING: PRELIMINARY REPORT FROM A MULTICENTER ITALIAN STUDY

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Introduction: Bloating and abdominal distension are common and bothersome symptoms and a frequent complaint of patients affected by functional gastrointestinal disorders (FGID). Recent studies demonstrated that an impairment in

<table>
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the handling of gas is a relevant underlying mechanism in FGID patients with bowel dysfunction. In these patients, there are no manometric alterations, but there are abnormal anal sphincter function. Aims & Methods: Our aim is to study the relationship between the defecation pattern, the severity of bleeding and the abdominal girth measurements in FGID patients consulting for bleeding as primary complaint with/without visible abdominal distension unresponsive to diet advice. We performed a prospective, multi-center study of patients with severe abdominal bloating (VAS score ≥ 24 on a 100-mm scale) as primary complain with/without visible abdominal distension. Patients were recruited at 4 gastroenterology outpatient clinics in Italy. Concomitant proctological examination and Rome III criteria. All patients were prescribed a lactose-free diet supplemented by dietary advice according to the NICE guidelines for two weeks. A belt around the abdomen at standardized sites provided assessment of abdominal girth measurements. During the 2-week run-in period patients completed a daily diary log including abdominal bloating and pain/discomfort scores (100-mm VAS), Bristol Stool Form and stool frequency. At randomization visit, all patients filled in a questionnaire on adequate bowel retraining as potential treatment option for functional bloating.

Results: 76 patients (66 female, 39.5±12.2 mean age, 6 IBS-D, 6 IBS-M, 30 IBS-C, 9 IBS-U, 6 FC, 16 FB, 3 FD) completed the 2-week run-in period. A significant negative correlation was found between adequate relief and both bloating and abdominal girth changes (r = -0.53 and -0.52, p < 0.001, respectively). 53.76 (70%) patients reported inadequate relief (worse or no improvement). Among the non-responders the vast majority (68%) failed the BET. Multiple regression analysis demonstrated that BET (successful or failed) as a dependent variable, was significantly related to bloating severity. No relationship was demonstrated for abdominal girth changes, FGID diagnosis and straining questionnaire. Conclusion: In this prospective, multicenter trial simple diet advise was of benefit in approximately 30% of FGID patients consulting for severe bloating. In the non-responders outcome disability was prevalent and related with subjective bloating perception. The study is ongoing, but our data may support bowel retraining as potential treatment option for functional bloating.

Disclosure of interest: All authors have declared no conflicts of interest.

References

P1782 PATHOPHYSIOLOGY ASSESSMENT OF FECAL INCONTINENCE AND RISK FACTORS ASSOCIATED. RESULTS OF A TEN YEARS RETROSPECTIVE STUDY

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Introduction: Faecal Incontinence (FI) is a common and socially disabling condition, more prevalent among females over 50 years old. Detailed anatomical and physiological assessment of each patient is important to determine the correct cause of FI and selection the most appropriate therapy. Conventional and High Resolution (HR) Anorectal Manometry (ARM) is a useful tool to categorize anal and/or rectal dysfunction in addition to provide physiological assessment of both anal sphincters and rectum.

Aims & Methods: To evaluate symptoms and anorectal function of patients affected by FI, we included 358 patients with FI (77% female (F) and 23% male (M), mean age 63 range 22–92 year) referring to the outpatient unit of Institute of Digestive Pathophysiology of S. Giovanni-Addolorata Hospital, Rome, Italy from January 2006 to December 2016. Clinical presentation (history, symptom profile and severity) and anorectal physiological evaluation (digital examination, manometry, rectal sensory testing, bulbom evacuation test) were analyzed. The manometric parameters obtained with conventional ARM and HR-ARM were: resting pressure, squeeze pressure, rectal compliance, rectal sensation and the anorectal pattern during the defecatory maneuvers.

Results: 114 out of 358 patients (32%) reported both FI and difficulty evacuating stool. Additionally, 77% with anorectal incontinence UI (47%). Proctological surgery (n 122, 34%), pelvic surgery (n 77, 21%) and traumatic anal or vaginal history (n 114, 40%) were statistically associated with FI (p < 0.05). Normal manometric parameters were found in 16 patients (4%). Manometric alterations observed were: internal anal sphincter (IAS) dysfunction: 228 (64%); isolated external anal sphincter (EAS) dysfunction: 274 (76%); combined sphincter dysfunction IAS and EAS: 198 (55%); isolated dysdynergic defecation: 100 (28%); rectal hypersensitivity: 130 (36%).

Conclusion: In our study, in accordance with the literature, we observed a female prevalence in FI. FI is significantly associated with previous proctological/pelvic surgery and traumatic anal/vaginal delivery. Furthermore, patients with FI referred difficulty evacuating stools, too. In fact in patients with dysdynergic-type constipation, the FI may be confused with an encopresis. Finally we observed these prevalent manometric alterations: combined dysfuction IAS and EAS, and rectal hypersensitivity. Manometric findings could help physicians to identify appropriated patients for a biofeedback therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1783 RETROSPECTIVE STUDY: ROLE OF SEHCAT TEST IN THE DIAGNOSIS OF BILE ACID MALABSORPTION AS A CAUSE OF CHRONIC DIARRHEA AND POTENTIAL RISK FACTORS ASSOCIATED

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2Neuro-immuno-gastroenterology, Research Unit Gastroenterology Department., Hospital General Vall d’Hebron, Vall d’Hebron Research Institute, CIBERebd, Barcelona/Spain
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Introduction: Bile acid malabsorption (BMA) is a common and frequently under-investigated cause of chronic diarrhea. Most of the cases of chronic diarrhea after excluding organic disorders are labelled as functional diarrhea or irritable bowel syndrome (IBS). The most commonly used diagnostic test is Selenium homocholic acid taurose (SeHCAT) scan due to its sensitivity, specificity, safety and low cost. However this test is not frequently used in the algorithm for the diagnosis of chronic diarrhea.

Aims & Methods: We aimed to evaluate the usefulness of SeHCAT scan in evaluating patients with chronic diarrhea and identify potential risk factors associated to BMA. We retrospectively reviewed all patients who had SeHCAT scan between June 2014 and October 2016 in a University Hospital. BMA was defined as SeHCAT retraction of less than 15%. We collected the following variables: demographic characteristics, IBS-D Rome III criteria, duration of diarrhea (months), stool culture, parasite investigation of stool specimens, background of comorbid gastrointestinal and other comorbid conditions, positive HLA-DQ2 and DQ8 haplotype.

Results: 137 patients referred to clinic for chronic diarrhea underwent SeHCAT testing over the reviewed period. 42M; 95F, median age 46 y (95% C.I 44.0–50.1), median BMI 25.34kg/m2 (95% CI 24.0–27.00), 70.4% of patients met IBS-D Rome III criteria, median duration of diarrhea 48 months (95% CI 43.0–59.24). Background of co-morbid gastrointestinal conditions 45.3% (62/136), other co morbid conditions 55.3% (75/136). History of previous positive stool culture for parasites and parasitic-association of stool specimens, percentage of positive HLA-DQ2 and DQ8 haplotypes were 27.8% (35/126) and 10.2% (13/127), respectively. SeHCAT test was positive for BMA in 48.9% (67/137); 25.4% (mild 10–15%); 31.3% (moderate 5–10%), and 43.3% (severe ≤ 5%). Patient characteristics between positive and negative SeHCAT test were similar (Table 1). Interestingly, patients with SeHCAT test exhibited in approximately 30% of FGID patients consulting for severe bloating. In the non-responders the vast majority (68%) failed the BET. Multiple regression analysis demonstrated that BET (successful or failed) as a dependent variable, was significantly related to bloating severity. No relationship was demonstrated for abdominal girth changes, FGID diagnosis and straining questionnaire. Conclusion: In this prospective, multicenter trial simple diet advise was of benefit in approximately 30% of FGID patients consulting for severe bloating. In the non-responders outcome disability was prevalent and related with subjective bloating perception. The study is ongoing, but our data may support bowel retraining as potential treatment option for functional bloating.

Disclosure of interest: All authors have declared no conflicts of interest.

References

Table 1

<table>
<thead>
<tr>
<th>Sex (M:F)</th>
<th>30:57</th>
<th>12.58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median; 95% C.I)</td>
<td>48.00 (44.52–53.34)</td>
<td>40.50 (46.99–49.49)</td>
</tr>
<tr>
<td>BMI (median; 95% C.I)</td>
<td>26.84(25.56–28.78)</td>
<td>23.64(23.31–25.98)</td>
</tr>
<tr>
<td>Duration of diarrhea (months; median; 95% C.I)</td>
<td>60.00 (43.51–66.95)</td>
<td>24.00 (55.35–58.34)</td>
</tr>
<tr>
<td>IBS-D Rome III criteria (%)</td>
<td>67.2% (45/67)</td>
<td>71.4% (50/70)</td>
</tr>
<tr>
<td>(Abdominal surgery (%)</td>
<td>34.3% (23/67)</td>
<td>14.3% (10/70)</td>
</tr>
<tr>
<td>Cholecystectomy (%)</td>
<td>14.9% (10/67)</td>
<td>0</td>
</tr>
<tr>
<td>Gastrointestinal conditions (%)</td>
<td>41.8% (28/67)</td>
<td>48.6% (34/70)</td>
</tr>
<tr>
<td>Other co morbid conditions (%)</td>
<td>57.1% (36/63)</td>
<td>53.6% (37/69)</td>
</tr>
</tbody>
</table>

(continued)
Table 1 Continued

<table>
<thead>
<tr>
<th>Positive SeHCAT test</th>
<th>Negative SeHCAT test</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLA-DQ8 Haplotype (%)</td>
<td>23.8%(15/63)</td>
</tr>
<tr>
<td>HLA-DQ8 Haplotype (%)</td>
<td>14.1%(9/64)</td>
</tr>
</tbody>
</table>

Patients who exhibited MAB (confirmed by SeHCAT test) were treated with colectomy, 23.1% (23/63) exhibited partial response, 33.9% (21/63) exhibited total response, 3.2% (2/67) exhibited no good tolerance, we had no information in 21%(13/67).

Conclusion: SeHCAT scanning must be considered as a diagnostic tool for the diagnosis of chronic diarrhoea, especially in those patients with long-standing diarrhoea.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1784 INTAKE OF FERMENTABLE Oligo-, Di- and Mono-Saccharides and Polyols (FODMAPs) INCREASES THE RISK OF IRITABLE BOWEL SYNDROME (IBS) IN INDIVIDUALS EXPOSED TO PSYCHOSOCIAL STRESS IN THE COMMUNITY: RESULTS OF A LARGE, PROSPECTIVE, POPULATION BASED STUDY

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Introduction: The cause of IBS is uncertain; however, food intake shares many features with this condition. Consumption of FODMAPs has been shown to induce IBS-type symptoms (Shephard 2008) and clinical trials have shown that a low FODMAP diet can improve symptoms in IBS patients (Harms 2014). However, FODMAP intake is not higher in IBS than in health (Bohn 2013) and it is not proven that the outcome of low FODMAP diet is better than standard dietary advice in this condition (Bohn 2015). Recent, experimental research has shown that psychological factors are associated with increased postprandial symptoms in IBS patients (Zhu 2013, Van Oudenhove 2016). This study was designed to assess the relative importance of, and interaction between, psychiatric disease, social stress and diet in the aetiology of IBS in the general community.

Aims & Methods: This population-based study tested the hypothesis that high FODMAP intake increases the risk of IBS more in individuals with psychiatric disease and/or life event stress than other members of the community. Subjects aged 16–74 were randomly selected from five South-Chinese communities. All subjects completed questionnaires by face-to-face inquiry with investigators including demographic information, gastrointestinal symptoms (Rome III), dietary intake (food frequency chart validated in Chinese community), psychiatric disease (HADS), life event stress (LES) and quality of life (SF-8).

Results: From 1999/211/5 (94.7%) members of the community who completed study questionnaires, 117 (5.3%) had IBS by Rome III criteria. The IBS group ingested less lactose than the "No-IBS" group (P = 0.024). Intake of other FODMAPs was similar in both groups (P = 0.346). Compared to the "No-IBS" group, individuals with IBS had a greater likelihood of depression (OR 1.5 (0.97–2.32); p = 0.05), anxiety (2.84(1.64–4.39), p < 0.001), recent life event stress (1.5(1.03–2.20); P = 0.03) and medical and/or surgical co-morbidity (OR 2.9(1.30–5.45), P < 0.001). The IBS group also had lower quality of life (P < 0.001). Joint risk analysis identified high intake of total FODMAP intake as a risk factors for IBS only in subjects with psychiatric disease and/or life event stress (table). Similar effects were seen for individual symptoms, in particular stress (table). Similar effects were seen for individual symptoms, in particular stress (table).

Conclusion: FODMAP intake was similar in IBS and No-IBS groups in the community (lactose intake was lower in IBS subjects, likely due to avoidance of dairy products (Long 2017)). However, as expected, IBS patients in the community had a greater likelihood of psychiatric disease, life event stress and clinical co-morbidity. Joint effects analysis demonstrated that high FODMAP intake alone was not associated with abdominal symptoms; however, IBS was more common in those with a high FODMAP intake and concomitant psychosocial factors known to increase visceral sensitivity to digestive Znu (Zhu 2013). Clinical Trials: NCT0268597

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1785 CHARACTERIZING IBS PATIENTS WITH ANXIETY OR DEPRESSION

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Introduction: A large proportion of patients with irritable bowel syndrome (IBS) suffer from anxiety or depression, but the associations with pathophysiological findings and overall symptom reporting are not clear.

Aims & Methods: We included 772 patients with IBS (Rome III criteria) who attended a university hospital-based outpatient clinic specialized in functional GI disorders between 2005 and 2015. The patients underwent examinations to investigate ooro-anal transit time (OATT) and visceral sensitivity (rectal balloon distension and a lactulose challenge test), and they also completed questionnaires to assess anxiety and depression (HAD), overall IBS symptoms (IBS-SRS), bowel habits (BSF), quality of life (IBS-QOL), extraintestinal somatic symptoms (PHQ-12), sense of coherence (SOC), fatigue (MFI), GI-specific anxiety (VSI) and physical and sexual abuse.

Results: Based on validated HAD cut-off levels (≥8), anxiety and depression were present in 55% and 26% of the IBS patients, respectively. More women were anxious (p = 0.001), but for depression no gender differences were detected (p = 0.76). IBS patients with anxiety or depression were younger (p < 0.001), and more commonly reported sexual and/or physical abuse (p < 0.001) than IBS patients without anxiety or depression. The presence of anxiety or depression did not differ between IBS subgroups based on the predominant bowel habit (p = 0.41, p = 0.18). For an overview of comparisons of data from questionnaires and pathophysiological examinations, see table 1. Both the presence of anxiety and of depression were associated with reports of more severe GI and extraintestinal symptoms, GI-specific anxiety, fatigue, and lower sense of coherence. Regarding pathophysiological examinations, the findings were more inconsistent. OATT was similar between groups, as was stool form and frequency. Visceral sensitivity tended to be higher in patients with anxiety, and depressed patients reported more severe pain during the lactulose challenge.
Conclusion: The presence of anxiety and depression seems to clearly potentiate the already substantial disease burden in IBS patients. However, the association with other pathophysiologically findings is less distinct. This group of patients with complex and severe symptoms will benefit from a holistic management approach.

Disclosure of Interest: M. Simrèn: Magnus Simrèn has received unrestricted research grants from Danone and Ferring Pharmaceuticals, and served as a Consultant/Advisory Board member for AstraZeneca, Danone, Nestlé, Menarini, Almirall, Allergan, Alibero, Gilcom and Shire, and as. All other authors have declared no conflicts of interest.

H. Törnblom: Hans Törnblom has served as Consultant/Advisory Board member for Almirall and Allergan as a speaker for Tiliotts, Takena, Shire and Alimmal.

P1786 THE ASSOCIATION BETWEEN IRRITABLE BOWEL SYNDROME AND LACTOSE INTOLERANCE
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Introduction: Irritable bowel syndrome (IBS) and lactose intolerance may co-exist and readily cause diagnostic confusion due to similar symptomatology (1,2).

Aims & Methods: This study aim to examine the incidence of lactose intolerance in healthy controls and in subjects diagnosed with IBS based on Roma III criteria, as an effort to investigate the association between IBS and lactose intolerance. The patient population consisted of individuals between 18 and 80 years of age who attended between June-December 2013. Patients diagnosed with IBS based on Roma III criteria comprised the IBS group, and subtypes of IBS. Control subjects were healthy volunteers over 18 years of age with no IBS-like symptoms. All participants ingested 25 g of lactose dissolved in 250 ml of water within 5 minutes after 8 hours of fasting, in order to evaluate the lactose intolerance via hydrogen breath test (0, 15, 30, 60, 90, and 120 minutes). Additionally, symptoms arising during the test were assessed.

Results: Of the total 200 participants, 100 (50%) were in IBS and 100 (50.0%) were in control group. There were 133 females (66.5%), and the mean age was 40.5±12.3 years. Of the total 70 patients (35.0%) with lactose intolerance, 47 (47.0%) were in IBS and 23 (23.0%) were in control groups (p = 0.001). Symptoms related to IBS were more common in participants with lactose intolerance in both groups (p = 0.001, p = 0.001 respectively). A comparison of the two groups with regard to symptomatology after the test showed the presence of complaints in 35 (35.0%) patients in IBS group as compared to 24 (24.0%) subjects among controls (p = 0.092). The incidence of lactose intolerance in patients with IBS subtypes of diarrhea-predominant IBS, constipation-predominant IBS, mixed IBS, and unspecified IBS were 27 (57.4%), 7 (4.9%), 10 (21.3%), and 6 (4.4%), respectively, with no significant differences (p = 0.161, p = 0.124, p = 1.000, and p = 0.661 respectively).

Conclusion: A significantly increased frequency of lactose intolerance was found among IBS patients than in controls. In additional, symptoms associated with lactose intake occurred at a higher frequency in IBS patient, although the difference was insignificant.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

While the above text provides a comprehensive account of the study's findings and methodologies, it is important to consider the implications of these results for both clinical practice and future research. The identification of lactose intolerance as a contributing factor in IBS highlights the need for personalized dietary interventions in managing symptoms. Furthermore, the study's findings underscore the importance of comprehensive symptom assessment in diagnosing and treating IBS patients. The use of hydrogen breath tests as a diagnostic tool for lactose intolerance can aid in identifying individuals who may benefit from lactose-restricted diets. This approach not only improves symptom management but also reduces the overall disease burden in IBS patients. However, the effectiveness of such interventions requires further investigation to establish their long-term efficacy and patient satisfaction.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1790 WITHIN-PERSON CORRELATIONS BETWEEN GASTROINTESTINAL AND PSYCHOLOGICAL FEATURES OF THE IRRITABLE BOWEL SYNDROME
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Introduction: The population prevalence of Rome IV functional gastrointestinal disorders (FGIDs) and their cumulative effect on health impairment is unknown. We sought to address this issue.

Aims & Methods: An Internet-based health survey was completed by 5931 of 6300 general population adults from three English-speaking countries (2100 each from US, Canada, and UK). The survey included questions on demographics, medication, surgical history, somatisation, quality of life, doctor-diagnosed organic GI disease, and criteria for the Rome IV FGIDs. Comparisons were made between those with Rome IV FGIDs against non-GI and organic GI disease controls.

Results: The number of subjects having symptoms compatible with a FGID was 2083 (35%) compared to 3421 (57.7%) non-GI and 427 (7.2%) organic GI disease controls. The most frequently met diagnostic criteria for FGIDs was bowel disorders (n = 1665, 28.1%), followed by gastroduodenal (n = 627, 10.6%), anorectal (n = 440, 7.4%), oesophageal (n = 414, 7%), and gallbladder disorders (n = 10, 0.2%). On average, the 2083 individuals who met FGID criteria qualified for 1.5 FGID diagnoses, and 742 of them (36%) qualified for FGID diagnoses in more than one anatomic region. The presence of FGIDs in multiple regions was associated with increasing somatisation, worse mental and physical quality of life, greater use of medical therapies, and a higher prevalence of abdominal surgeries; all p < 0.001, see table. Notably, individuals with FGIDs in multiple regions had worse somatisation and quality of life scores than organic GI disease controls.

Conclusion: Roughly a third of the general adult population fulfils diagnostic criteria for a Rome IV FGID. Bowel disorders are the predominant FGID in this population. FGID diagnoses in multiple regions are involved and this overlap is associated with increased health impairment. Study Support: The Rome Foundation

Disclosure of Interest: All authors have declared no conflicts of interest.

While the study provides valuable insights into the prevalence and cumulative effect of FGIDs on health impairment, the findings highlight the complexity of managing FGID patients. The identification of FGID overlap in multiple anatomic regions underscores the need for comprehensive care strategies that address both gastrointestinal and psychological symptoms. The study’s results also emphasize the importance of considering individual variability in symptom expression and the potential for tailored therapeutic interventions. However, further research is required to validate these findings and to explore the role of psychological factors in the development and management of FGIDs.
Introduction: Although correlations between features of irritable bowel syndrome (IBS) have been reported, these were based on between-person rather than within-person variation. We investigated the longitudinal within-person correlations between features of IBS.

Aims & Methods: We used a longitudinal cohort of 276 IBS patients, who filled out questionnaires annually over five years on the following features: gastrointestinal (GI) symptom severity (GSS), quality of life (QOL), GI specific anxiety (VSI), general anxiety and depression (HADS), coping resources (CRI), and sense of coherence (KASAM). For each participant, scores were centered on their own mean, and within-person correlations were computed for all pairs of features.

Results: Aggregate within-person correlations are shown in figure 1. Within-person correlations were strong for the triad GI symptom severity, GI specific anxiety, and QOL (r = 0.47 to 0.64). Another set of features was comprised of general anxiety, depression, coping resources, and sense of coherence (r: 0.39 to 0.57). Within-person correlations between the two sets were weak (r: 0.00 to 0.37). However, within-person correlations tended towards bimodal distributions across the population, especially for GI symptom severity and depression (r = 0.6 for half of participants, and r = 0.4 for the other half).

Conclusion: Here we show that, within individual IBS patients, GI symptom severity is strongly associated with GI specific anxiety and QOL, but not with the other four psychological features. The presence of negative within-person correlations in some individuals may imply a lack of relation, but could also signal long-term causative processes.


H. Törnblom: Hans Törnblom has served as Consultant/Advisory Board member for Almirall and Allergan as a speaker for Tillotts, Takeda, Shire and Almirall.

L. Van Oudenhove: Lukas Van Oudenhove has received grant support from Abide Therapeutics and Nestle and has given scientific advice to Genfit.

M. Simren: Magnus Simren has received unrestricted research grants from Danone and Ferring Pharmaceuticals, and served as a Consultant/Advisory Board member for AstraZeneca, Danone, Nestlé, Menarini, Allergan, Almirall, Albino, Glycom and Shire, and as a.

All other authors have declared no conflicts of interest.

Conclusion: Among this patient population, IBS-C patients with higher symptom severity reported greater impairments in HRQoL. These results indicate that symptom severity may be an important consideration for disease management and emphasise the need for IBS-C treatments that improve both symptom burden and quality of life.

Disclosure of Interest: A. Marciniak: Anne Marciniak is an employee of Allergan plc and shareholder in Pfizer, Amgen, and Allergan plc.

Y. Mo: Yifan Mo is an employee of Allergan plc.

J. Ma: Julia Ma is an employee of Allergan plc.

J.L. Abel: Jessica L. Abel is an employee of Allergan plc and shareholder in Allergan plc.

R.T. Carson: Robyn T. Carson is an employee of Allergan plc and shareholder in Allergan plc.

Table

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Sex</th>
<th>Age</th>
<th>GSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS-QOL n</td>
<td>Total</td>
<td>F M</td>
<td>&lt;65</td>
</tr>
<tr>
<td>1595</td>
<td>1437</td>
<td>158</td>
<td>1511</td>
</tr>
<tr>
<td>60.8</td>
<td>63.9</td>
<td>60.9</td>
<td>65.0</td>
</tr>
<tr>
<td>62.3</td>
<td>62.2</td>
<td>62.8</td>
<td>62.2</td>
</tr>
<tr>
<td>68.0</td>
<td>68.2</td>
<td>66.4</td>
<td>68.1</td>
</tr>
<tr>
<td>48.2</td>
<td>46.8</td>
<td>61.0</td>
<td>47.8</td>
</tr>
<tr>
<td>49.4</td>
<td>44.4</td>
<td>49.3</td>
<td>44.7</td>
</tr>
<tr>
<td>50.1</td>
<td>49.7</td>
<td>54.1</td>
<td>49.6</td>
</tr>
<tr>
<td>67.1</td>
<td>67.5</td>
<td>70.0</td>
<td>67.2</td>
</tr>
<tr>
<td>73.4</td>
<td>73.6</td>
<td>71.6</td>
<td>73.3</td>
</tr>
<tr>
<td>1598</td>
<td>1440</td>
<td>158</td>
<td>1513</td>
</tr>
<tr>
<td>0.68</td>
<td>0.68</td>
<td>0.67</td>
<td>0.68</td>
</tr>
</tbody>
</table>

Results: From the 6300 individuals who completed the survey, 369 were excluded due to inconsistent responses, leaving 5931 (49.2% female; mean age 47.4 ± 14.5 years) to be included for analysis (1949 US, 1994 UK, 1998 Canada). 305 (5.1%) of these fulfilled Rome IV diagnostic criteria for IBS, after 36 individuals were excluded due to organic disease with GSS ≥3. Compared to the non-IBS population, the IBS population was younger (mean age 44.7 ± 14.5 years; p = 0.004) and predominantly female (66%; p < 0.001). Apart from reporting more frequent GI point difference) subscales (Table). Patients with GSS ≥3 also had a lower EQ-5D index score compared to those with GSS <3 (0.67 vs 0.72) (Table). Women reported a slightly lower mean total IBS-QOL score compared to men, but had a notably lower score (14-point difference) on the body image subscale (Table). No difference in mean EQ-5D score was observed between sexes. IBS-QOL total and EQ-5D index scores were similar between patients aged <65 and ≥65 years, though the younger subgroup generally had lower scores on the IBS-QOL, including on the food avoidance and sexual subscales (Table).

Conclusion: Among this patient population, IBS-C patients with higher symptom severity reported greater impairments in HRQoL. These results indicate that symptom severity may be an important consideration for disease management and emphasise the need for IBS-C treatments that improve both symptom burden and quality of life.

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symptoms, IBS subjects also reported more somatic symptoms; 103 (34%) had abdominal pain at least 3 times/week, 232 (76%) subjects reported sensation of bloating at least 3 times/month, and 232 (76%) scored > 7 on PHQ-12, indicating high somatic symptom burden (p < 0.001 for all). They also had poorer self-rated overall health, more general body pain, and more health-related impairment of social activities (p < 0.001 for all). See table 1 for details. IBS subjects also reported more frequent visits to the doctor compared to the non-IBS population, both for non-GI and GI related problems; 241 (79%) vs. 3133 (56%) reported more frequent visits to the doctor compared to the non-IBS population, (p < 0.001 for all). IBS subjects also reported higher frequency of visits to gastroenterologists, gynaecologists and surgeons in secondary care; p < 0.001 for all. The use of medication for pain (both subscribed and over the counter), GI related symptoms, depression and anxiety was increased amongst subjects with IBS, as was the rate of abdominal surgery (p < 0.001 for all), appendectomy excluded. See table 1 for details.

GI symptoms

<table>
<thead>
<tr>
<th>Symptom</th>
<th>IBS, n=305</th>
<th>Not IBS, n=5590</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain &gt;3times/week</td>
<td>103 (33.8)</td>
<td>88 (1.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Bloating &gt;3 times a month</td>
<td>232 (76.1)</td>
<td>849 (15.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Somatization PHQ-score 7 or above</td>
<td>323 (76.1)</td>
<td>1381 (24.7)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Quality Of Life

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Not IBS</th>
<th>IBS</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall estimation of health past 4 weeks (SF-8)</td>
<td>90 (29.5)</td>
<td>273 (4.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Fair/good</td>
<td>Very poor/poor</td>
<td>182 (59.7)</td>
<td>3026 (54.1)</td>
</tr>
<tr>
<td>Bodily pain past 4 weeks (SF-8)</td>
<td>33 (10.8)</td>
<td>2291 (41.0)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>None/very mild</td>
<td>Mild/moderate/severe</td>
<td>168 (55.1)</td>
<td>1707 (30.5)</td>
</tr>
<tr>
<td>Limitation in social activities due to physical or emotional problems past 4 weeks (SF-8)</td>
<td>53 (17.4)</td>
<td>3084 (55.2)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Frequency of doctor visits At least once/year

<table>
<thead>
<tr>
<th>Frequency</th>
<th>IBS</th>
<th>Not IBS</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication use</td>
<td>241 (79)</td>
<td>3133 (56)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Conclusions: Individuals fulfilling the Rome IV criteria for IBS in the general population have increased GI and non-GI healthcare utilization in primary and secondary care, excess non-GI symptom burden and impaired QOL.

Disclosure of Interest: All authors have declared no conflicts of interest.
Introduction: Although most cases of colon ischemia (IC) are mild and self-limiting, when severe it implies high mortality rates. We aimed to evaluate the risk prediction and clinical classification of disease severity proposed by American College of Gastroenterology (ACG) guidelines (2015), to provide a management algorithm for these patients and select the level of care.

Aims & Methods: A retrospective multicenter study was conducted on adult patients with definite IC (clinical, colonoscopic, pathologic and culture criteria), between 2013 and 2016. Data was collected on clinical presentation, comorbidities, organ failure, management and outcome. Each case was classified according to ACG guidelines after assessment of the number of risk factors (gender, systolic blood pressure <90 mmHg, heart rate >100 beats per min, abdominal pain without rectal bleeding, BUN >20 mg/dl, Hgb <12 g/dl, LDH >350 U/l, serum sodium <136 mEq/l (mmol/l), WBC >15 x10^9/cmm). Patients were then classified as mild (0 risk factors (RF)); moderate (1–3 RF), and severe (≥3 RF) risk factors or any of the following: peritoneal signs, pneumatosis or portal venous gas, gangrene on colonoscopic examination and pan-colonic or isolated right-colon ischemia involving on imaging by coloscopy or computed tomography.

Results: 349 cases with the clinical diagnosis of IC were analyzed. 193 patients met the inclusion criteria of definitive diagnosis of IC (62.7% females; mean age 72 years ±13). ACG classification of mild, moderate and severe disease was attributed respectively to 21% of patients (0 intra-hospital deaths), 45% (2 deaths) and 34% (12 deaths). The number of ACG RF was: 40% with 0 RF, 8% with 1, 9% with 2, 15% with 3, 16% with 4, 8% with 5, 4% with 6 and 1% with 7. No patient with 0 or 1 RF died. Only patient with 2 RF died. The remaining 13 deaths were verified by expert label 3 RF. The univariate analysis revealed a statistical correlation between RF and intra-hospital or 30-day mortality as well as the need for surgery (mean = 4.06, sd = 1.85). ACG classification presented high predictive accuracy for in-hospital and 1-month mortality with an AUROC of 0.86 (p<0.001), respectively. For a cutoff of 2 ACG RF, the sensitivity (SE) for death was 100%, specificity (SP) 52%, with a positive predictive value (PPV) of 14% and negative predictive value (NPV) of 100%. For 3 ACG RF the results were: SE 93%, SP 61%, PPV 16% and NPV 99%, 3 or more risk factors had an odds ratio of 20.2 (confidence interval (CI) 2.59–158) for intra-hospital mortality and 18.42 for 1-month mortality (CI 2.34–144).

Conclusion: No patient in this cohort with less than 2 ACG RF died, suggesting that the ACG classification as mild disease may include 0 and 1 risk factor without changing the prognosis. Short-term mortality risk increases significantly in patients with at least 3 ACG RF.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
EXPERIENCE WITH A NOVEL CLINICAL PATHWAY FOR FUNCTIONAL GASTROINTESTINAL DISORDERS

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Introduction: Despite diagnostic criteria and effective management options for functional gastrointestinal disorders (FGID), confidence in managing these disorders in primary care is low, and long waiting lists for specialist care are common. New models which efficiently transfer specialist-held expertise to primary care practitioners is needed.

Aims & Methods: We aimed to explore and describe the patient and primary healthcare provider (PHCP) experience of a novel non-specialist-dependent algorithm-based approach to the diagnosis and management of FGID (ADAM-FGID). Consecutive patients triaged to the ‘routine waitlist’ of an Australian public hospital Gastroenterology Department over 2 years, with non-specific gastrointestinal symptoms (no alarms) were randomised to waitlist control or the ADAM-FGID algorithm (2:1). Algorithm patients were screened for organic disease with an alarms-based questionnaire and panel of routine blood/stool tests. When patients had clinical alarms or abnormal tests, data were reviewed by a gastroenterologist and, if appropriate, prompt gastroenterologist appointment offered. All others were classified using Rome III criteria. and received a letter explaining their FGID diagnosis and dietary/psychological management options. Waitlist control patients were not screened.

Results: 89 patients were participated. 35 had clinical alarms warranting gastroenterologist review and 45 were diagnosed with FGID (9 excluded). At 6 week follow up: 35/36 FGID respondents had read the feedback survey at study completion. A larger scale randomised controlled trial of this new clinical pathway for FGID (ADAM-FGID) (9 excluded). At 6 week follow up: 35/36 FGID respondents had read the feedback survey at study completion.

Conclusion: In colonoscopy-associated perforation, immediate endoscopic clipping decreases the possibility of operation and shows better clinical outcomes, and early surgical approach decreases complex operation rate. Especially, early operation need be considered in diagnostic perforation regardless of endoscopic clipping.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1798 PATIENTS’ AND CLINICIANS’ VIEWS OF AND EXPERIENCE WITH A NOVEL CLINICAL PATHWAY FOR FUNCTIONAL GASTROINTESTINAL DISORDERS

Table 1: Comparative cost-effectiveness of treatment approaches with and without rifaximin in irritable bowel syndrome with diarrhea (IBS-D)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Total cost (USD/yr)</th>
<th>Total effectiveness (QALY gained)</th>
<th>Incremental cost (USD)</th>
<th>Incremental effectiveness (QALY)</th>
<th>ICER (USD/QALY gain)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Societal perspective</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>TCA only</td>
<td>$4,355</td>
<td>0.017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rifaximin as first-line for IBS-D</td>
<td>$7,608</td>
<td>0.020</td>
<td>$428</td>
<td>+0.0029</td>
<td>$1,138,254 (dominateda)</td>
</tr>
<tr>
<td>Rifaximin as second-line for IBS-D</td>
<td>$4,783</td>
<td>0.022</td>
<td>$3,252</td>
<td>+0.0052</td>
<td>$82,375</td>
</tr>
<tr>
<td>Gastroenterologist</td>
<td>$728</td>
<td>0.017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rifaximin as first-line for IBS-D</td>
<td>$4,177</td>
<td>0.020</td>
<td>$894</td>
<td>+0.0029</td>
<td>$1,207,136 (dominateda)</td>
</tr>
<tr>
<td>Rifaximin as second-line for IBS-D</td>
<td>$1,622</td>
<td>0.022</td>
<td>$3,449</td>
<td>+0.0052</td>
<td>$171,850</td>
</tr>
</tbody>
</table>

aFirst-line rifaximin strategy was dominated (less effective and more expensive) than a second-line rifaximin strategy at all price points. ICER = incremental cost effectiveness ratio; QALY = quality adjusted life year; TCA = tricyclic antidepressant; IBS-D = irritable bowel syndrome with diarrhea; USD = US dollar.

Conclusion: In colonoscopy-associated perforation, immediate endoscopic clipping decreases the possibility of operation and shows better clinical outcomes, and early surgical approach decreases complex operation rate. Especially, early operation need be considered in diagnostic perforation regardless of endoscopic clipping.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1799 ANNUAL FECAL IMMUNOLOGICAL TESTING IS LESS COSTLY THAN COLONOSCOPY EVERY 5 YEARS AND REDUCES MORTALITY IN FAMILIAL COLORECTAL CANCER SCREENING


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15Hospital Universitario Donostia, Donostia/Spain
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19Dept. Medicine & Gastroenterology, University of Zaragoza University Hospital Dept. of Medicine-Gastroenterology, Zaragoza/Spain
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Abstract No: P1796

Aims & Methods: We aimed to compare the cost-effectiveness of annual FIT and colonoscopy every 5 years, to reduce CRC mortality, in FDR with colorectal cancer CRC, as these individuals are considered at higher risk of developing CRC than average-risk individuals. However, this practice has a low adherence and remains opportunistic. Recently, it has been suggested that annual fecal immunocological testing (FIT) might be a valid alternative to colonoscopy in this setting. However, there are scarce data regarding cost-effectiveness of these strategies from the perspective of healthcare services.

Aims & Methods: This study was aimed to compare the cost-effectiveness of annual FIT and colonoscopy every 5 years of patients with CRC. A Markov model was constructed to simulate the efficacy and cost of annual FIT (cut-off 10 µg Hgb/g feces) or colonoscopy every 5 years of patients with CRC.
previously unscreened FDR, starting at age 40 years and ending at age 75. A g/g for FCP respectively. The model was adjusted to the incidence of CRC in Spain and real prevalence of advanced adenoma and CRC in the familial-risk population (http://dx.doi.org/10.1371/journal.pmed.1002080.g001). The main outcomes were quality-of-life (QALY) gained compared with no screening, lifetime burden of colonoscopy, lifetime incidence of colonoscopy complications, and the incremental cost-effectiveness ratio (ICER). We applied a willingness-to-pay threshold of €25,000 per QALY gained. Data from a prospective EuroQol survey carried out on 920 Spanish patients at different disease stages were used for QALY measurement. Sensitivity analysis was performed to evaluate the robustness of the model.

**Results:** In a hypothetical cohort of 10,000 asymptomatic FDR, annual FIT and colonoscopy every 5 years cost-effectiveness over no screening. Taking no screening as either FIT or colonoscopy every 5 years was 1989 and 4472 euros/QALY, respectively. Compared to no screening, annual FIT and colonoscopy every 5 years reduced CRC mortality by 59% and 81%, respectively. The annual FIT strategy saved 33% of colonoscopies and was associated with a lower number of complications compared to colonoscopy every 5 years. The results were robust in sensitivity analyses.

**Conclusion:** Assuming a 50% adherence, annual FIT is less costly than colonoscopy every 5 years for CRC screening and reduces mortality in the familial-risk population. These data suggest that FDR of patients with CRC could be included in organized statewide FIT-based screening programs.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P1801 COMBINATION OF FOBT AND Fecal CALPROTECTIN MAY BE USEFUL FOR REDUCING UNNECESSARY COLONOSCOPY IN SYMPTOMATIC PATIENTS**

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**Introduction:** Fecal occult blood test (FOBT) is a non-invasive and easily performed test which has demonstrated to reduce CRC incidence and mortality in colonoscopy (Thermo Fisher Scientific, Waltham, United States). Reference cut-off and included in the final analysis. FOBT was performed by SENTi FIT 270 test (Sentinel Diagnostics, Milan, Italy) and FCP by the ElA Calprotectin immunoassay (Thermo Fisher Scientific, Waltham, United States). Reference cut-off levels for FIT were 117 ng/ml for fecal FIT and 90 ng/g for FCP respectively. The diagnostic accuracy of FIT and FCP were evaluated by a logistic regression model. CRC, advanced adenoma, IBDA and angiodysplasia were considered as relevant pathology. Positive and negative predictive values, sensitivity and specificity were calculated. MedCalc 19.5.3 (MedCalc Software, Belgium) was used for the ROC curve analysis.

**Results:** 171 patients (42.7% female; median age 62 years, IQR: 51–68) were included. 37 (21.6%) had relevant colonc pathology. The most frequent indications for colonoscopy were previous episode of rectal bleeding in 71 (42%) patients, change of bowel habits in 28 (16%) and anaemia in 22 (13%). The diagnostic accuracy of FIT, FCP and combination of both are summarized in table 1.

<table>
<thead>
<tr>
<th>Test</th>
<th>Normal Test</th>
<th>Abnormal Test</th>
<th>PPV</th>
<th>NPV</th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOBT</td>
<td>131</td>
<td>40</td>
<td>55%</td>
<td>89%</td>
<td>59%</td>
<td>89%</td>
</tr>
<tr>
<td>FCP</td>
<td>81</td>
<td>90</td>
<td>30%</td>
<td>88%</td>
<td>73%</td>
<td>53%</td>
</tr>
</tbody>
</table>

**Combination**

114 57 56% 96% 86% 81%

**AuROC curves for relevant colonc pathology were 0.777 (95% CI: 0.708–0.837; P < 0.0001) for FOBT, 0.692 (95% CI: 0.617–0.760; P = 0.0005) for FCP and 0.548 (95% CI: 0.478–0.619; P < 0.0001) for combination of both tests respectively.**

**Conclusion:** Our model based on combination of FIT and FCP has a better diagnostic accuracy compared to either test alone (P = 0.043 vs FOBT and P = 0.002 vs FCP) with a higher NPV. No significant difference was observed between FIT and FCP in these results.

**Disclosure of Interest:** A. Lanas: Angel Lanas is a sysepms in Spain. All other authors have declared no conflicts of interest.

**References**


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**Introduction:** Procedural sedation is considered an integral part of gastrointestinal endoscopy in many countries. The use of sedation does, however, vary internationally and can present patient safety concerns. It has been questioned whether trials assessing patient safety in endoscopy can be generalized worldwide and how differences in sedation practices and adverse events might impact outcomes. It has been questioned whether trials assessing patient safety in endoscopy can be generalized worldwide and how differences in sedation practices and adverse events might impact outcomes.

**Aims & Methods:** We conducted an international survey to examine procedural sedation practices and the incidence of adverse events (AEs) during procedural sedation in France, Germany, Italy, UK, and USA. Data collection from providers (nurses, physicians, and anesthesiologists) was via online surveys.

Respondents were screened to assure that they had the expertise and experience to complete the survey. The survey covered topics such as guidelines, sedation agents, monitoring, patient throughput, and AE incidence, treatment, and outcomes as defined by World SIVA. Data analysis took a global approach with subgroup analysis by location.

**Results:** 101 providers completed the survey, with 20 responses per country, excepting the USA with 21. More than 62% of respondents were gastroenterologists, and 14% were anesthesiologists. The main sedation agents used were midazolam (93 respondents), propofol (90), fentanyl (75), ketamine (57), and meperidine (15). Respondents from France reported higher ketamine and lower fentanyl use than other countries (p < 0.003). Standard of care monitoring was generally reported to be comprised of pulse oximetry plus blood pressure and/or heart rate. Capngrophy use varied by country, and was standard of care for 46% of respondents (ranging from 15% in Italy to 67% in the US). The most desired property of a monitoring modality across all countries was one that “provides an early warning of patient compromise”.

**Conclusion:** Sedation practices are relatively consistent across countries, as are the occurrence of adverse events. Pulse oximetry monitoring is almost universally used during sedation, while capngrophy use is more variable. Said severe oxygen desaturation events were 63, 63, 52, 67, and 0 of 9 who routinely use it (p < 0.005). Providers also differed in their reported adverse event incidence. Gastroenterologists most commonly reported mild oxygen desaturation to occur, while anaesthesiologists and nurses reported hypotension to be the most common AE experienced during procedural sedation (Table).
Results:
 Thirty-two subjects (41% males), aged 31–74 years and with a mean BMI of 26, were included in the analysis. Indications for colonoscopy included family history of CRC (55%) and polyp surveillance (44%). No serious adverse events were reported. The Pure-Vu System was found to be safe and effective in cleaning inadequately prepared colon which may help to improve the overall quality of colonoscopy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
1. J.R. Lightdale: Jenifer Lightdale did not receive any remuneration for participation in this research project. She has previously consulted for Medtronic and other medical device companies.
2. Whitaker: David Whitaker has consulted for Medtronic and Covidien. He did not receive any remuneration for participation in this research project.

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Introduction: The success of colonoscopy depends on the quality of the bowel preparation, which is estimated to occur in as many as 25% of colonoscopy procedures. The MOTUS GI Pure-Vu™ System (Tirat Carmel, Israel) is an FDA cleared device designed to improve visualization in an inadequately prepared colon which may help to improve the overall quality of colonoscopy.

Aims & Methods: This study aims to evaluate the performance of the Pure-Vu System in cleaning a poorly prepared colon, assess the system’s usability, patient satisfaction and safety. Forty-seven cases were planned to be enrolled at three clinical sites, of which 32 had completed the study so far. Pure-Vu was used in subjects with a partially prepped colon after 2x10 mg Bisacodyl, diet restrictions (no dried fruit, seeds or nuts) starting 2 days before the procedure and a 24-hour clear liquid diet prior to the colonoscopy. Study endpoints were: (1) Safety, 2) Improvement of colon cleaning level as per the Boston Bowel Preparation Scale, whereas data on patient experience with the validated Gastronet questionnaire (2). Data on complication rates were collected from the National Health Fund database and Personal Identification Number Registry.

Results: Overall, on the program level, all minimum standards for colonoscopy key performance measures were met. Rate of adequate bowel preparation was 92.1% for the whole program, ranging 80.9–99.2% per individual center, with 7 centers (29.2%) not reaching minimum standard of 90% and 9 centers (37.5%) reaching the target standard of 95%. Cecal intubation rate was 97.4% (range 93.4–99.4%), with all centers reaching minimum standard of 90% and only one center not reaching target standard of 95%. Adenoma detection rate was 29.9% (range 19.1–39.1%), with 7 centers (29.2%) not reaching minimum standard of 25%. Appropriate polypectomy technique was applied in case of 90.9% 6 to 9 mm polyps (range 64.3–100%) with only 2 centers not reaching minimum standard of 80% and 48.2% of 4 to 5 mm polyps (range 0–100%) with only 6 centers reaching minimum standard of 80%. Target standard of 90% was reached in 15 centers for polyps 6 to 9 mm in diameter and only 2 centers for polyps 4 to 5 mm in diameter. For the whole program, 7-day hospitalization rate after screening colonoscopy was 0.3% (122 cases) and 30-day all-cause mortality was 0.02% (9 cases). Gastronet questionnaire coverage is assumed to be 100%, however the response rate was 65.3% (range 5.6%-81.8%), with painful colonoscopy rate of 19.2%. No minimum standard is set, however target standard of 90% of procedures with measured patient’s experience was not met. Appropriately post-polypectomy surveillance, based on the European guidelines, was proposed in 95.4% of cases (range 84.9-99.7%). Target standard of 95% was met in 15 centers, the minimum standard is not set.

Conclusion: Monitoring ESGE performance measures for colonoscopy is feasible in colonoscopy programmatic screening setting. 6 of 7 performance measures were easy to monitor with PCSP database, however monitoring complications needs further development to avoid extracting data from external registries. PCSP meets proposed minimum standards on program level, however some centers need additional interventions to meet the quality standards. Applying appropriate polypectomy technique for polyps ranging 4 to 5 mm in diameter with an inadequately prepared colon may help to improve the overall quality of colonoscopy.
is currently the biggest issue in PCSP and further training is needed to reach minimum standards for this performance goal.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1805 VALIDATION OF THE “FAILURE TO PROVIDE ADEQUATE RELIEF” (F-PAR) SCALE IN A SPECIALIST CLINIC SETTING

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Introduction: Treatment of chronic idiopathic constipation is somewhat empiric, but based on step-wise approach[1]. If first-line conservative treatment (lifestyle advice and laxatives) do not relieve symptoms sufficiently, secondary approaches with prokinetic or secretagogue drugs are used before considering hospital-based care (biofeedback, psychosocial support, transanal irrigation (TAI), surgery). Nevertheless, patients are often dissatisfied with care[2] and fail to progress to adequate levels of therapy. The 5-point Failure to Provide Adequate Relief (F-PAR) scale[3] was developed to facilitate the recognition of when to move from one step to the next.

Aims & Methods: The aim of this study was to validate F-PAR in a tertiary clinic setting. We studied 403 consecutive consultations of 331 patients (262 women, mean age 41) in our specialist clinic. All fulfilled Rome III/IV diagnostic criteria for chronic constipation. Immediately prior to each face-to-face clinical assessment by one of 2 experienced physicians, participants completed the F-PAR scale; patients were seen blind to the F-PAR result. Standard clinic assessment was undertaken to identify efficacy of the current management as the gold standard.

Results: The 403 consultations, clinical assessment identified inadequate relief with current therapy was identified in 200. Neither duration nor type of treatment were correlated with relief. The table stratifies, by clinical gold standard, each item of the F-PAR and in the lower panel the total number of F-PAR items replied to positively.

<table>
<thead>
<tr>
<th>Adequate relief (Clinical)</th>
<th>Inadequate relief (Clinical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowel frequency inadequate</td>
<td>5 71</td>
</tr>
<tr>
<td>Strain most occasions</td>
<td>6 89</td>
</tr>
<tr>
<td>Stool hardness</td>
<td>3 21</td>
</tr>
<tr>
<td>Onset other symptom</td>
<td>2 57</td>
</tr>
<tr>
<td>Current therapy poor tolerable</td>
<td>8 80</td>
</tr>
<tr>
<td>0 FPAR replies</td>
<td>187 1</td>
</tr>
<tr>
<td>1 FPAR replies</td>
<td>10 41</td>
</tr>
<tr>
<td>2 FPAR replies</td>
<td>4 67</td>
</tr>
<tr>
<td>3 FPAR replies</td>
<td>2 22</td>
</tr>
<tr>
<td>4 FPAR replies</td>
<td>0 8</td>
</tr>
<tr>
<td>5 FPAR replies</td>
<td>0 9</td>
</tr>
</tbody>
</table>

Conclusion: Our findings showed that the F-PAR with only five questions can be considered sufficient to provide clinical evidence of treatment failure. The use of standardized process to investigate the efficacy of treatment may reduce the time and improve the quality of managing for the chronic constipation patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

WEDNESDAY, NOVEMBER 01, 201709:00-14:00
OESOPHAGEAL, GASTRIC AND DUODENAL DISORDERS III - HALL 7...

P1807 THE DUODENAL MUCOSA retaining a DIVERSE MICROBIOTA FOLLOWING BOWEL PREPARATION

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Introduction: The microbiota inhabiting the gastrointestinal (GI) tract plays an essential role in gut health. Although mucosal biopsies are increasingly used for microbiota studies, these are subject to variations introduced through sampling technique and patient preparation. The impact of bowel preparation on the mucosa-associated microbiota (MAM) is of particular interest given it results in complete emptying of bowel contents via laxative ingestion. Although bowel preparation does not appear to induce long term changes to stool microbiota [1], it can induce short-term changes to the colonic MAM [2]. While improvements in clarity of the small intestine after bowel preparation have been reported [3], the impact on the upper GI microbiota is currently unknown. Given patients may undergo both upper GI endoscopy and colonoscopy consecutively, a subset of endoscopy patients will have consumed bowel preparation prior to their procedure, representing a potential bias in MAM analyses. Therefore, this study aimed to assess the impact of bowel preparation on the duodenal MAM.

Aims & Methods: Individuals undergoing upper GI endoscopy, with or without concurrent colonoscopy, were recruited consecutively with ethical approval. Individuals underwent upper GI endoscopy following overnight fast (n = 58), or both upper endoscopy and colonoscopy following polyethylene glycol bowel preparation (n = 48). Participants were undergoing screening for iron deficiency anaemia or GI symptoms with no evidence of mucosal disease/inflammation (n = 58), or with diagnosed Crohn’s disease (n = 18). Duodenal biopsies were obtained and gDNA extracted. Amplicon libraries of the 16s rRNA gene were sequenced (Illumina MiSeq). Sequencing of reagent controls enabled exclusion of
non-duodenal sequences. Bioinformatics and statistics were performed in qiime and Calypso.

Results: A diverse microbiota was observed in duodenal mucus samples from all subjects, following overnight fasting or bowel preparation. Overall the duodenal microbiota was dominated by the genus Streptococcus, followed by Prevotella, Veillonella and Neisseria. Microbial diversity within samples was not significantly different with and without bowel preparation (Chao1 metric). Principal coordinates analysis (weighted UniFrac) revealed substantial overlap between the two groups, and no significant clustering was observed (ADONIS) based on whether patients had undergone overnight fasting or bowel preparation. Similar findings were obtained when these analyses were repeated with exclusion of the Crohn’s disease population.

Conclusion: This study reveals a diverse duodenal MAM is retained following bowel preparation. The comparison of overnight fasting and bowel preparation indicates these differences in patient preparation do not substantially alter the duodenal MAM. Thus patients undergoing concurrent upper GI endoscopy and colonoscopy can be included in study cohorts investigating the upper GI MAM without risk of a substantial confounding effect.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1808 PERFORMANCE OF GLASGOW-BLACKFORD, ROCKALL, AND AIMS65 SCORES TO PREDICT OUTCOMES AND TO IDENTIFY THE LOW-RISK GROUP AFTER UPPER GI BLEEDING IN PATIENTS WITH CANCER

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Introduction: Upper gastrointestinal bleeding (UGIB) in patients with cancer presents a unique and difficult challenge as these patients are at higher risk for rebleeding and mortality. Currently available prognostic scoring systems for UGIB for the general population have produced variable accuracy in their validation studies. An effective method of stratification for cancer patients to identify the high-risk group for early hospital-based intervention and death could enhance the outcomes of this specific population.

Aims & Methods: The primary aim of this study was to compare the Glasgow-Blatchford score (GBS), Rockall score (RS) and AIMS65 score for predicting ICU admission, blood transfusion, hemostatic therapy, rebleeding, and in-hospital mortality in cancer patients with UGIB. The secondary aim was to assess the above cited scores in correctly identifying low-risk patients that can be effectively managed as an outpatient. An IRB-approved prospective study was conducted at the Cancer Institute of Sao Paulo, Brazil. Consecutive patients with known cancer admitted with UGIB were enrolled. Pre-endoscopic clinical parameters pertinent to the scoring systems, hemostasis techniques, and outcomes were collected into a prospective registry. Patients were followed for at least 30 days or until the day of discharge, whichever was longer. The low-risk group was defined as those without blood transfusion, hemostatic therapy (by endoscopy, radiotherapy, angiographic or surgical intervention), rebleeding or mortality in 30 days. Multiple logistic regression with receiver operating characteristics analysis was done to assess the predictive ability of each scoring system for the above outcomes.

Results: From April 2015 to May 2016, 394 consecutive patients were screened, while 259 patients met the inclusion criteria. A total of 243 patients were considered for the final analysis, after excluding 16 patients due to missing data or lost to follow up (Table 1). Predicting outcomes: The AIMS65 score (area under curve (AUC) 0.79; p = 0.04) was significantly better than GBS (AUC 0.79; p = 0.04), both the total and clinical RS (AUC 0.71 and 0.66; p < 0.001 for both). The GBS best predicted the need for blood transfusion (AUC 0.82, sensitivity 71% and specificity 80% for GBS ≥ 12) compared with the other prognostic scores. All scores performed poorly in predicting the need for hemostatic therapy and risk of rebleeding. The AIMS65 score best predicted in-hospital mortality (AUC 0.84) compared to the GBS (AUC 0.75; p = 0.004), both the total and clinical RS (AUC 0.70 and 0.69; p < 0.001 for both). Among patients rebleeding at EGD, there was no difference in 30-day mortality if the etiology of bleeding was tumoral or non-tumoral disease (38.1% vs 31.9%; p = 0.46). Identifying low-risk group: With GBS score of 0 as the cut-off value, its specificity was 100% with sensitivity of 5.8%. When GBS was ≥ 2, its specificity was maintained at 100%, while sensitivity was increased to 23.5%. This change increased the proportion of the patients from 1% to 5% without erroneously discharging high-risk patients. In comparison, when an AIMS65 value of 0 was chosen as definition of low-risk, this tool misclassified 20 patients who needed hospital interventions (specificity of 53% and sensitivity of 89.5%). Finally, head-to-head comparison between GBS vs. RS, and GBS vs. AIMS65 scoring system revealed GBS to be superior to both the clinical RS (p < 0.001) and AIMS65 (p = 0.001) in correctly identifying low-risk patients.

Table 1: Demographic and Clinical Characteristics

<table>
<thead>
<tr>
<th>Factor</th>
<th>Total (n = 243)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>60.6 ± 13.6</td>
</tr>
<tr>
<td>Female/Male</td>
<td>71 (29.2%)/172 (70.8%)</td>
</tr>
<tr>
<td>Outpatient/Inpatient</td>
<td>178 (73.3%)/65 (26.7%)</td>
</tr>
<tr>
<td>Cancer in the Upper GI Tract</td>
<td>74 (30.5%)</td>
</tr>
<tr>
<td>Cancer Stage: I or II</td>
<td>17 (7.0%)</td>
</tr>
<tr>
<td>III</td>
<td>48 (19.8%)</td>
</tr>
<tr>
<td>IV</td>
<td>177 (73.1%)</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>8.1 ± 2.9</td>
</tr>
<tr>
<td>Albumin</td>
<td>2.8 ± 0.75</td>
</tr>
<tr>
<td>Rebleeding</td>
<td>24 (9.9%)</td>
</tr>
<tr>
<td>RBC Transfusion</td>
<td>147 (60.5%)</td>
</tr>
<tr>
<td>ICU</td>
<td>107 (44.0%)</td>
</tr>
<tr>
<td>Hemostatic Therapy</td>
<td>104 (42.8%)</td>
</tr>
<tr>
<td>30-day Mortality</td>
<td>66 (27.2%)</td>
</tr>
<tr>
<td>Follow-up time (days)</td>
<td>30.0 ± [22.30,0]</td>
</tr>
<tr>
<td>Clinical Rockall</td>
<td>4.6 ± 1.2</td>
</tr>
<tr>
<td>Total Rockall</td>
<td>7.0 ± 2.0</td>
</tr>
</tbody>
</table>

Aims65 1.7 ± 1.2

Glasgow-Blatchford 10.8 ± 4.2

Conclusion: The AIMS65 score was superior to other scoring systems in predicting in-hospital mortality and ICU admission in patients with cancer and UGIB, whereas the GBS was superior for predicting the need for blood transfusion. All scores performed poorly in prediction of hemostatic therapy and rebleeding. The GBS was superior in accurately identifying low-risk patients. Furthermore, the cut-off ≤ 2 in GBS score displays increased sensitivity without compromising specificity, effectively increasing the number of patients who can be safely managed as an outpatient.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1809 THE EFFECTS OF ANTICOAGULANTS ON THE CLINICAL OUTCOME OF ENDOSCOPIC TREATMENT

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Introduction: Endoscopists are more frequently performing endoscopic resection (ER) in patients on antiplatelet or anticoagulant therapy and nowadays patients have increasingly started taking direct oral anticoagulant (DOAC) therapies, including direct anti-Xa and thrombin inhibitors. Major guidelines recommend the cessation of anticoagulants before ER and heparin bridging therapy (HBT) for high thrombotic risk cases, although these are still controversial. A recent study has suggested that HBT may be associated with a higher post-endoscopic resection bleeding (PEB) rate in patients on anticoagulants.

Aims & Methods: This study aimed to evaluate the effect of anticoagulants on PEB rate. This was a retrospective study based on medical records from three hospitals. PEB was defined as bleeding that occurred 6 h to 10 days after ER, which required endoscopic hemostasis. We reviewed 108 gastric tumors including adenoma and early cancer in 97 patients on anticoagulant therapy who underwent endoscopic submucosal dissection (ESD) in our hospitals between June 2008 and February 2016. Further, we reviewed 69 colorectal polyps including adenoma and early cancer in 69 patients on anticoagulant therapy who underwent ER in our hospitals between October 2013 and September 2016. ER included polypectomy, endoscopic mucosal resection (EMR), and ESD. Patients were divided into two groups: those prescribed warfarin and patients prescribed DOAC. The management of antithrombotics was based on the Japanese Gastroenterological Endoscopy Society guidelines published in 2005 and 2012. The anticoagulants used during the study period were warfarin, dabigatran, rivarxaban, apixaban, and edoxaban. Warfarin was discontinued 4–5 days before ER, whereas the others were stopped 24–48 h prior to the procedure. For patients at a high thrombotic risk, intravenous unfractionated heparin was administered after ceasing anticoagulants.

Results: Warfarin and DOAC were prescribed to 73 (75%) and 24 (25%) patients, respectively. Apixaban was administered to 1 (1%), dabigatran to 12 (12%), rivarxaban to 11 (11%) patients. There were no significant differences between the DOAC and warfarin groups in terms of clinical characteristics or
Although endoscopic hemostasis is usually effective in controlling gastrointestinal (GI) hemorrhage, some have difficulty in achieving successful hemostasis depending on the location and severity of hemorrhage. NEXPOWDER® (Next Biomedical, Incheon, South Korea) is a biocompatible hemostatic powder designed for controlling hemorrhage in patients with post-endoscopic resection ulcers (41 ESD induced ulcers and 5 EMR induced ulcers), 2 patients with peptic ulcers and 5 EMR induced ulcers, 8 patients with peptic ulcers and 3 patients with other causes. 1. Success rates of hemostasis in acute bleeding were 96.6% (55/57) of NEXPOWDER® group, 2. Re-bleeding rate on second-look endoscopy at 1 or 3 days after the procedure, 3. Persistent rate of hydrogel on ulcer base at follow-up endoscopy, and 4. Clogging rate of catheter during spraying powder. The NEXPOWDER® was delivered by newly developed spraying device through a catheter clogging during endoscopic application. The endoscopic application of NEXPODWER® is effective for the several types of acute GI bleeding. This effective hemostatic action of NEXPODWER® might be achieved by physical barrier of mucodhesive and persistent hydrogel on ulcer base. And new powder delivering device shows low rate of catheter clogging. In addition, a newly developed powder delivering device shows low scattering and targeted spraying properties onto bleeding site.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1811 CLINICAL FEATURES OF DELAYED BLEEDING AFTER ENDOSCOPIC SUBMUCOSAL DISSECTION FOR GASTRIC NEOPLASMS IN HIGH-RISK AND LOW-RISK PATIENTS
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Introduction: Antithrombotic drugs are administered to patients undergoing endoscopic treatment at high risk for thromboembolism. However, antithrombotic drugs have been also known as a cause of delayed bleeding associated with endoscopic treatment, including endoscopic submucosal dissection (ESD). We previously reported the clinical features of postpolypectomy bleeding associated with heparin bridge therapy (1), and then various risk factors of delayed bleeding after endoscopic treatment have been reported.

Aims & Methods: The aims of the present study are to investigate the risk factors of delayed bleeding after gastric ESD and to clarify the clinical features of delayed bleeding in high-risk and low-risk patients. The endoscopic treatment of consecutive patients who underwent ESD for gastric neoplasms in Osaka General Medical Center between January 2009 and December 2016 were retrospectively investigated. Independent risk factors of delayed bleeding were analyzed by using a multivariate analysis by logistic regression model, and three predictors of delayed bleeding were selected. Patients were categorized into a high-risk group or low-risk group for bleeding, and the clinical features of post-procedural bleeding in each group were investigated.

Results: A total of 717 patients with 781 gastric neoplasms were identified. Mean age was 74.6, and 71.6% was male. With regard to comorbidity, the proportion of hypertension, diabetes, chronic liver disease, and hemodialysis was 50.2%, 19.2%, 2.7%, and 6.1%, respectively. Total 188 patients have taken oral anticoagulants, and of them, 50 patients treated by gastric ESD under heparin bridge therapy. Two-thirds lesions were located in gastric body and median tumor size (range) was 15 (3–80) mm. En-bloc resection was achieved in 751 lesions (96%), and no uncontrollable bleeding occurred. Forty-nine patients (6.8%) experienced delayed bleeding after gastric ESD. Hospital stay was significantly longer in bleeding cases than in non-bleeding cases [median hospital stay (range) 11 (3–25) vs. 9 (9–25), p = 0.007]. A univariate and multivariate analysis showed heparin bridge therapy, antiplatelet therapy, and hemodialysis as independent risk factors for delayed bleeding. We defined patients with heparin bridge therapy, antiplatelet therapy, and hemodialysis as a high-risk group for bleeding, and the remainder as a low-risk group. The incidence of delayed bleeding was significantly higher in the high-risk group than in the low-risk group (14.3% vs. 3.6%, p < 0.001). Severe bleeding requiring transfusion and recurrent bleeding were more often in the high-risk group than in the low-risk group. Median onset (range of delayed bleeding was PODI (0–16) in the high-risk group and POD6 (0–15) in high-risk group. No thromboembolism occurred in each group.

Conclusion: Bleeding high-risk patients with heparin bridge therapy, antiplatelet therapy, and hemodialysis should be carefully observed after gastric ESD while early hospital discharge is acceptable for bleeding low-risk patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1812 EFFICACY AND SAFETY OF FERRIC CARBOXYMALTOSE TREATMENT IN PATIENTS HOSPITALIZED FOR ACUTE GASTROINTESTINAL BLEEDING NOT ASSOCIATED WITH PORTAL HYPERTENSION
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2Hospital Universitari Arnau de Vilanova de Lleida. Institut de Recerca Biomèdica de Lleida, Lleida/Spain
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Introduction: There are few studies of the efficacy of parenteral ferric carboxymaltose (FCM) treatment in acute gastrointestinal bleeding (GIB) of different origins. Few data are available on its use to treat anaemia post-acute haemorrhage.

Aims & Methods: To determine the efficacy and safety of FCM treatment in patients with acute GIB not associated with portal hypertension. A retrospective descriptive 3-year study of patients with acute GIB (anaemia with evident bleeding and/or hemodynamic instability) treated with FCM as part of our hospital’s habitual clinical practice.

Results: Analysis of 84 patients admitted with acute GIB (69.0% male, mean age 68.0 years [SD 6.9]), with a Charlson index ≥3 in 67.1% of cases (≥5 in 31.6%). 15.5% had previously suffered acute GIB due to peptic ulcer. There were 86 hospital admissions for acute GIB; 93.8% were upper GIB (above the angle of Treitz). The most frequent clinical presentation was melena, in 76.7% of cases. 25.6% presented hemodynamic instability at admission. The mean Glasgow-Blatchford index score was 16.1 (SD 2.7) and the mean Rockall score post-endoscopy was 4.2 (SD 1.7). The most common causes of bleeding were: 36.0% duodenal ulcer, 29% gastric ulcer, 9.3% gastritis/errosions, and 7.3% angiodysplasia of the colon. The mean Hb at admission was 9.0 g/dL (SD 2.2)
and the mean of the lowest Hb during admission was 7.6 g/dL (SD 1.3). The most common total dose of FCM administered was 1000 mg. During admission, a mean Hb increase of 0.8 g/dL (SD 2.3) was observed in a mean period of 5.7 days (median: 4.0) after treatment with FCM, with an increase of 4.2 g/dL (SD 2.6) 30 days after acute GIB. After FCM administration, the mean Hb increased significantly (p < 0.0001) in patients >75 years (2.1 g/dL [SD 1.7]), in patients with Charlson index ≥ 3 (1.9 g/dL [SD 1.6]), and when Hb level during admission was <10 g/dL (2.0 g/dL [SD 1.7]). No adverse reactions were observed.

Conclusion: In patients with acute GI bleeding the administration of ferric carboxymaltose improves Hb levels promptly and safely, especially in patients of advanced age and with associated comorbidities. Disclosure of Interest: All authors have declared no conflicts of interest.

Results: 431 patients have been included in this study. 24.8% of patients were >75 years old. The following differences have been observed by comparing the two groups of patients (over and below 75 years old): female 47.7% vs 25.3% (p < 0.001); antplatelet use 40.2% vs 20.1% (p < 0.001); oral anticoagulants use 20.6% vs 7.7% (p < 0.001); NSAIDs use 22.5% vs 33.6% (p = 0.133); smoke- smoking 25.1% vs 35.2% (p < 0.001); alcohol consumption 17.8% vs 45.3% (p < 0.001); one or more comorbidities 77.6% vs 62% (p = 0.005); high risk endoscopic stigmata 61.7% vs 64.4% (p = 0.724); multiple ulcers 41.1% vs 31.8% (p = 0.099); need for blood transfused 39.5% vs 58% (p = 0.832); hospitalization duration 8.4 ±1.6 vs 7.8 ±6.0 days (p = 0.382); rebleeding 10.3% vs 11.4% (p = 0.745); need for surgery 2.8% vs 4.6% (p = 0.589) and in-hospital mortality 13.1% vs 6.2% (p = 0.021). In most of the cases (88.2%), the cause of death was other than hemorrhagic shock (92.9% vs 85.0%, p = 0.484). Using multivariate analysis, three out of these factors were identified as representing independent factors significantly associated with the age over 75 years old: oral anticoagulants use (OR = 2.40, 95%CI:1.24–4.62, p = 0.009), antplatelet use (OR = 2.33, 95%CI:1.43–3.81, p = 0.001) and in-hospital mortality (OR = 2.09, 95%CI: 1.72–4.47, p = 0.048).

Conclusion: The use of oral anticoagulants and antplatelet was significantly higher in older patients, compared to the younger group. Elderly patients with peptic ulcer bleeding do not have a different rebleeding, need for surgery, need of transfusion or hospitalization mortality. Conclusion: The increase in life expectancy and the increased use of antiplatelet and anticoagulants use, smoking, alcohol consumption, presence of comorbidities.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1815 PREDICTIVE FACTORS FOR IN-HOSPITAL MORTALITY IN PATIENTS WITH PEPTIC ULCER BLEEDING

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Introduction: Peptic ulcers are the most frequent cause of upper gastrointestinal bleeding. In different population based surveys regarding all-cause UGIB, mortality ranges between 3% and 14%.

Aims & Methods: The aim of this study was to assess in-hospital mortality in patients with peptic ulcer bleeding and to evaluate the risk factors associated with mortality. In this prospective study we enrolled all patients diagnosed with peptic ulcer bleeding and treated in a medical center over a period of 24 months (January 2015–December 2016). Patients were divided into two groups - those who died and those who survived - and the following parameters were compared: age, signs of hemodynamic instability (hypotension, tachycardia, presence of comorbidity) and Charlson index. The mortality of patients with a single ulcer (Forrest IA, IB, IIA, IIB) was quantified as high risk endoscopic stigmata, while Forrest IIC and III were considered as low risk endoscopic stigmata).

Results: The study included 431 patients. In-hospital mortality rate was 7.9%. The following differences have been observed by comparing patients who died and those who survived: age >75 years 41.2% vs 23.4% (p = 0.036); hypotension 17.6% vs 2.3% (p < 0.001); tachycardia47.1% vs 21.4% (p = 0.001); one or more comorbidities 94.1% vs 63.5% (p = 0.001); high risk endoscopic stigmata 79.4% vs 62.2% (p = 0.070); multiple ulcers 41.2% vs 33.5% (p = 0.473); Rockall score ≥ 5 points 94.1% vs 46.9% (p < 0.001); Blatchford score ≥ 10 points 91.2% vs 66.2% (p = 0.005); hemoglobin < 9.5 g/dL 70.6% vs 41.1% (p = 0.002); INR ≥ 2.5 17.6% vs 5.8% (p = 0.022); creatinine ≥ 1.5 mg/dL 38.2% vs 10.8% (p = 0.001); rebleeding 20.6% vs 10.3% (p = 0.123); need for blood transfusion 82.4% vs 56.4% (p = 0.006); need for surgery 11.8% vs 3.5% (p = 0.063). In most cases (88.2%), the cause of death was other than hemorrhagic shock. Using multivariate analysis, three out of these factors were identified as representing independent factors significantly associated with in-hospital mortality: tachycardia (OR = 2.83, 95%CI:1.21–6.58, p = 0.016), Rockall score ≥ 5 (OR = 6.65, 95%CI:1.46–30.16, p = 0.014) and creatinine ≥ 1.5 mg/dL (OR = 1.25, 95%CI:1.25–7.73, p = 0.014).

Conclusion: The in-hospital mortality rates in patients with peptic ulcer bleeding was 7.9%. Tachycardia, Rockall score ≥ 5 and creatinine ≥ 1.5 mg/dL were the independent risk factors significantly associated with in-hospital mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
Aims & Methods: Blood transfusions at our trust which consists of two District General Hospitals. Transfusions in upper GI bleeding (UGIB) [1] with recent evidence advocating a...delayed gastric emptying leading upper gastrointestinal symptoms.

Introduction: There has been significant research recently on the use of blood transfusions in patients with delayed gastric emptying. As ghrelin and motilin are putative nerve dysfunction is detected in patients with autoimmune gastritis. This may be a cause of the stomach marked by autoantibodies directed to hydrogen/potassium-ATPase and intrinsic factor. Gastric emptying of solids is delayed and autonomic nerve dysfunction is detected in patients with autoimmune gastritis. This may be a cause of symptoms and also there is a close relationship between autonomic nerve dysfunction and delayed gastric emptying. As ghrelin and motilin are putative regulators of gastric emptying and, some autoimmune gastritis patients may have delayed gastric emptying... 

P1817 THE RELATIONS AMONG SERUM GHE LIN, MOTILIN, CIRCULATING ANTIMYENTERIC ANTIBODIES AND GASTRIC AUTONOMIC NERVOUS SYSTEM FUNCTION IN PATIENTS WITH AUTOIMMUNE GASTRITIS C. Kalkan, F. Karakaya, I. Soykan Gastroenterology, Ankara University, Ankara/Turkey

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Introduction: Autoimmune gastritis (AG) is an organ-specific autoimmune disease of the stomach marked by autoantibodies directed to hydrogen/potassium-ATPase and intrinsic factor. Gastric emptying of solids is delayed and autonomic nerve dysfunction is detected in patients with autoimmune gastritis. This may be a cause of symptoms and also there is a close relationship between autonomic nerve dysfunction and delayed gastric emptying. As ghrelin and motilin are putative regulators of gastric emptying and, some autoimmune gastritis patients may have delayed gastric emptying... 

P1818 EFFECTS OF FAECAL MICROBIOTA TRANSPLANTATION (FMT) ON THE DYNAMICS OF THE STEM CELLS INTO ENDOCRINE CELLS IN THE DUODENUM OF PATIENTS WITH IRITABLE BOWEL SYNDROME T. Mazzawi1, M. El-Salhy2, G.A. Lied1, T. Hausken3 1Gastroenterology-medicine, Haukeland University Hospital, Bergen/Norway 2Gastroenterology-medicine, Stord Hospital Helse-Fonna, Stord/Norway 3Centre for Nutrition, Clinical Medicine, University of Bergen, Bergen/Norway 4Haukeland University Hospital, National Centre for Functional Gastrointestinal Disorders, Bergen/Norway

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Introduction: The interaction between gut microbiota and enteroendocrine cells alterations is believed to play an important role in the pathophysiology of irritable bowel syndrome (IBS). The densities of the duodenal enteroendocrine cells are abnormal in IBS patients, which appears to be caused by a reduced stem cell density and their differentiation into endocrine cells (1). Aims & Methods: The aim is to investigate the effects of faecal microbiota transplantation (FMT) on the differentiation of the stem cells into endocrine cells as detected by neurogenin 3, the stem cells as detected by Musashi 1 and the enteroendocrine cells in the duodenum of patients with IBS. The study included 16 IBS patients according to Rome III criteria and four patients were excluded. The remaining patients (n = 12, 4 females and 8 males, age range 20–44 years) were divided according to the cause of IBS into PI-IBS patients (n = 6) and idiopathic IBS (n = 6) and received FMT donated from their relatives. The patients completed the IBS-symptom severity scoring system (IBS-SSS) before and 3 weeks after FMT. The patients underwent pastascopes with biopsies taken from the descending part of the duodenum at baseline and 3 weeks after FMT. The biopsies were immunostained for neurogenin 3, Musashi 1 and all types of duodenal enteroendocrine cells, and quantified by computerized image analysis.

Results: The score of IBS symptoms as assessed by IBS-SSS was significantly reduced 3 weeks after (240.2 ± 33.6) compared to before (326.6 ± 22.3) receiving FMT, P = 0.009. The scores of IBS-SSS before and 3 weeks after FMT for PI-IBS patients were 286.8 ± 27.8 and 210.4 ± 41, respectively (P = 0.052), and for idiopathic IBS are 352 ± 34 and 270.3 ± 54, respectively (P = 0.034). The densities of neurogenin 3, Musashi 1 and endoenterocrine cells in the duodenum of IBS patients before and 3 weeks after receiving FMT are presented in Table 1. Conclusion: Faecal microbiota transplantation improved the symptoms in IBS patients, both PI and idiopathic. This improvement was associated with a change in the enteroendocrine cell density. The changes in the enteroendocrine cell density does not appear to be caused by changes in the stem cells or their early progenitors, but rather by changes in the differentiation progeny as detected by changes in neurogenin 3.

Disclosure of Interest: All authors have declared no conflicts of interest.
P8190 1.8. UPPER GI NERVE- GUT AND MOTILITY: TRANSMITTERS/SIGNALS/RECEPTORS/ENTERIC NERVOUS SYSTEM

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Introduction: Globus pharyngeus, a sensation of a lump or tightness in the throat, is a well-defined clinical symptom that is usually long-lasting, difficult to treat, and has a tendency to recur. More than half of globus patients suffered from probable psychological disorders, such as anxiety and depression 1. Antidepressants are used in the treatment of functional gastrointestinal disorders (FGIDs) and showed a promising efficacy. Our study manifested that low-dose amitriptyline is well tolerated and effective for general globus pharyngeus patients 2. Our anterior study had ever speculated that AMT could modify brain-gut axis function, up-regulating brain-gut peptides, reducing the visceral sensitivity and regulating the secretory and motory functions of the gastrointestinal tract 3, so that gastrointestinal symptoms as well as emotional well-being could be significantly improved. As we known, serotonin (5-hydroxytryptamine, 5-HT) is an important factor in gut function, playing key role in intestinal peri-stalsis, secretion, and sensory signaling in the brain-gut axis 4. Several studies have investigated the association between SLC6A4 and functional gastrointestinal disorders, including IBS and FD. Besides, the association between various complex behavioral traits and disorders were also studied, including anxiety, major depression, suicide, smoking behavior, alcohol dependence. A single gene (SLC6A4), located on the human chromosome 17q11.2, 17q12, is coded by serotonin transporter (5-HTT). The polymorphism of this gene is characterized by the insertion or deletion of the 44-bp sequence and this is related to the different transcriptional activity of the gene. Allele with 44-bp insertion (short allele) is characterized by a three times lower transcriptional activity than allele with 44-bp insertion (long allele). Compared to other FGIDs, the researches about globus are rare. The pathogenesis of globus pharyngeus is still unknown.

Abstract No: P1818
Table 1: Densities of stem cells and enteroendocrine cells in the duodenum of total IBS group, PI-IBS and idiopathic IBS patients before and after receiving FMT

<table>
<thead>
<tr>
<th>Immunoreactive cell densities</th>
<th>Markers/Hormones</th>
<th>Total IBS, before</th>
<th>Total IBS, after</th>
<th>PI-IBS, before</th>
<th>PI-IBS, after</th>
<th>Idiopathic IBS, before</th>
<th>Idiopathic IBS, after</th>
<th>*P-value</th>
<th>**P-value</th>
<th>***P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurogenin 3</td>
<td>222.3 ± 13.8</td>
<td>394.3 ± 30.7</td>
<td>214.2 ± 18.5</td>
<td>430.5 ± 28.9</td>
<td>230.5 ± 21.5</td>
<td>358.2 ± 52.9</td>
<td>0.0006</td>
<td>0.0007</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Musashi 1</td>
<td>5.7 ± 0.4</td>
<td>5 ± 0.5</td>
<td>5 ± 0.7</td>
<td>5 ± 0.8</td>
<td>4.8 ± 0.7</td>
<td>6 ± 0.4</td>
<td>0.7</td>
<td>0.42</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Chromogranin A</td>
<td>370.3 ± 21</td>
<td>269.8 ± 22</td>
<td>340.8 ± 34</td>
<td>422.7 ± 31</td>
<td>399.8 ± 20.9</td>
<td>316.8 ± 10.2</td>
<td>0.9</td>
<td>0.0006</td>
<td>0.0065</td>
<td></td>
</tr>
<tr>
<td>Serotonin</td>
<td>135.1 ± 14.7</td>
<td>142 ± 12.8</td>
<td>100.5 ± 7.1</td>
<td>160.7 ± 16.6</td>
<td>169.7 ± 20.6</td>
<td>123.3 ± 17.3</td>
<td>0.7</td>
<td>0.012</td>
<td>0.034</td>
<td></td>
</tr>
<tr>
<td>Somatostatin</td>
<td>58.6 ± 4</td>
<td>66.2 ± 6.3</td>
<td>53.2 ± 2.7</td>
<td>78.5 ± 8.1</td>
<td>64.8 ± 7</td>
<td>53.8 ± 6.8</td>
<td>0.3</td>
<td>0.011</td>
<td>0.017</td>
<td></td>
</tr>
<tr>
<td>Cholecystokinin</td>
<td>122.8 ± 6.7</td>
<td>110.7 ± 8.1</td>
<td>113 ± 10.4</td>
<td>126.5 ± 0.5</td>
<td>132.5 ± 7.2</td>
<td>94.8 ± 9.2</td>
<td>0.2</td>
<td>0.052</td>
<td>0.0006</td>
<td></td>
</tr>
<tr>
<td>Secretin</td>
<td>83.8 ± 4.9</td>
<td>86.7 ± 5.9</td>
<td>80.5 ± 8.8</td>
<td>89.7 ± 10.7</td>
<td>87.2 ± 4.8</td>
<td>83.7 ± 5.9</td>
<td>0.5</td>
<td>0.009</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Gastric inhibitory peptide</td>
<td>65.1 ± 3.8</td>
<td>70.3 ± 6.2</td>
<td>60.3 ± 3.7</td>
<td>84.7 ± 7.1</td>
<td>69.8 ± 6.3</td>
<td>57.2 ± 7</td>
<td>0.5</td>
<td>0.014</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

Reference
To the best of our knowledge, our findings are the first to establish an association between SLC6A4 gene polymorphism and globus pharyngeus. Aims & Methods: 84 patients diagnosed with globus according to Rome III and 160 healthy controls were genotyped for 5-HTTLPR polymorphism by PCR amplification and agarose gel electrophoresis. All globus patients were studied with high-resolution esophageal manometry pre-therapy. Globus patients were randomized into paroxetine group; amitriptyline group for 6-week treatment, and were asked to complete the following questionnaires pre- and post-therapy: Glouce Edinburgh Throat Scale (GETS), Pittsburgh Sleep Quality Index, Hamilton Rating Scale Anxiety, Depression. Treatment response was defined as ≥ 50% reduction in GETS scores. Results: The significant difference was shown in globus performed S/S genotype by anxiety with compared to without (X2 = 14.579, P = 0.006). The L-S genotype had higher frequency between high upper esophageal sphincter pressure (≥104 mmHg) and non-high upper esophageal sphincter pressure patients (X2 = 14.433, P = 0.006). There was significant association between the S/S genotype and the response to antidepressants treatment, while patients with sleep disorders or depression not. Conclusion: A significant association was observed between S/S genotype of SLC6A4 polymorphism and globus pharyngeus, suggesting that SLC6A4 is a potential candidate gene involved in the pathogenesis of globus pharyngeus. Disclosure of Interest: All authors have declared no conflicts of interest. References 1. Tang B, Jia L, Liu J, et al. Clinical-psychological characteristics of refractory globus pharyngeus in China. Dig Liver Dis. 2016; 48(4):381-4. 2. You LQ, Liu J, Jia L, et al. Effect of low-dose amitriptyline on Globus pharyngeus and its side effects. World J Gastroenterol. 2013; 19(42):7545-60. 3. 2013;19(26):4214-20. 4. Khan WI, Ghia JE. Gut hormones: emerging role in immune activation and ESOPHAGEAL HIGH RESOLUTION MANOMETRY (HRM) 5. Kim DY, Camilleri M. Serotonin: a mediator of the brain-gut connection. Aims & Methods: Consecutive patients presenting for esophageal HRM in a 2-month period underwent provocative testing with MRS and RDC in addition to the standard manometric protocol. Integrated relaxation pressure with 5mL water swallows was noted in 16 (9.8%) on MRS, 8 (4.9%) on RDC (p = 0.006). Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Of these, 91 (61%) had peristaltic reserve on outflow obstruction on HRM. Conclusion: MRS identifies peristaltic reserve better than RDC and has higher diagnostic value of esophageal HRM. Aims & Methods: Hospital Episode Statistics (HES) includes demographic and diagnostic data for all English hospital admissions. The Health Improvement Network (THIN) database includes primary care records of 7% of the UK population, representative of national demographics. Both were searched for incident cases and THIN for prevalent cases of achalasia. Results: There were 10,509 and 711 new achalasia subjects in HES and THIN respectively. The incidence per 100,000 person years in THIN was 1.99 (95% CI 1.87-2.11) and 1.53 (1.42-1.64) per 100,000 person years in THIN. The prevalence measured in THIN was 27.1 (25.4-28.9) per 100,000 population. Table 1: Annual incidence and prevalence of achalasia

<table>
<thead>
<tr>
<th>Year</th>
<th>Incidence rate HES per 100,000 population</th>
<th>Incidence rate THIN per 100,000 person years</th>
<th>Prevalence THIN per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1.733</td>
<td>1.62-1.85</td>
<td>1.409</td>
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<td>2007</td>
<td>1.798</td>
<td>1.69-1.92</td>
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<td>2008</td>
<td>1.789</td>
<td>1.68-1.91</td>
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<td>2009</td>
<td>1.853</td>
<td>1.74-1.97</td>
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<td>2010</td>
<td>2.015</td>
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<td>2012</td>
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<td>2014</td>
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<td>2.29-2.56</td>
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<tr>
<td>2015</td>
<td>2.236</td>
<td>2.11-2.36</td>
<td>1.342</td>
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</table>

Conclusion: The incidence of oesophageal achalasia was approximately 15 to 20 per 1 million population. There were approximately 17,500 patients with achalasia in UK. In 2015 the above data represents the largest published epidemiological investigation of achalasia. The variation of findings between the databases likely results from differences in coding practice and marginally different population structures.

Disclosure of Interest: All authors have declared no conflicts of interest. References

Results: 14 patients (9 male) fulfilled inclusion criteria. 7 were treatment-naïve and 7 had undergone prior esophageal myotomy (3 myotomy, 4 dilatation). Mean resting LES pressure was 14.6 ± 7.4 mmHg. In all patients, and mean and median IRP values for ten 5 mL water swallows were non-raised (mean 9.1 ± 4.3 and 8.7 ± 4.5 mmHg respectively). Of the 7 treatment-naïve patients, 5 demonstrated PEP on MWS, 3 on solid swallows and 6 had a positive TBE at 5 minutes. In treatment-experi- enced patients, 5 had PEP on MWS, 1 on solid swallows and all had a positive TBE. Of the 13 who had resistance to flow on TBE, 10 (77%) also had resistance demonstrated during MWS and/or solid swallows. Mean height of the 5-minute column of barium at baseline was 16.5 ± 8.9 cm. Patients have (so far) under- gone therapy based on these findings; one per oral endoscopic myotomy and 7 pneumatic dilatations. The median baseline ES was 7.5 (IQR: 5–8). The median ES at minimum 3 months (range 3–15 months) following treatment was 1 (IQR 0–4) (P < 0.001 cf. baseline). Similarly, there was significant improvement in TBE findings post-therapy (mean 5-minute column height 3.5 ± 4.1 cm; P = 0.04 cf. baseline).

Conclusion: A normal IRP for water swallows does not preclude a diagnosis of achalasia. The addition of free drinking/solids during HRM or the TBE can identify pathology that might have been missed with standard 5 mL water swal- lows alone as normal, clinically relevant swallowing behavior is reproduced. Patients treated based on this algorithm exhibit excellent treatment outcomes, validating this approach. Further, the close correlation of HRM adjunctive test- ing with TBE supports its routine inclusion in clinical practice.

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: The timed barium esophagram (TBE) is an objective measurement of esophageal (3 myotomy, 4 dilatation) and symptomatic relief used in the assessment of achalasia. Post-therapy corre- lation of the maximum height of the residual barium column has been found to correlate imperfectly with short-term symptomatic outcomes, but carries long- term prognostic implications. We hypothesize that the size of the barium column may be more accurate than height, firstly, by demonstrating improvement in esophageal width that often occurs post-therapy, but also by correcting for artificially higher height values due to esophageal (longitudinal) contraction occurring during a single image. We aimed to compare the correla- tion of TBE outcome measures of height and SA with symptom improvement post-therapy.

Aims & Methods: Inclusion criteria were achalasia patients who underwent ther- apy between August 2015–5 and had TBE and Eckardi score (ES) performed at baseline and post-therapy. With TBE upright single images were acquired at 1.2 and 5 minutes following ingestion of 100–200 mL of low- density barium sulfate. Barium height was measured between the gastro-esopha- geal junction and the superior extent of any residual barium column. After manually defining the column boundaries, software was used to calculate SA (AGFA IMPAX surface area tool (Figure)). Adequate symptom relief was defined as reduction in ES ≤ 3. On TBE, metrics of adequate emptying evaluated were i) post-therapy column height < 5 cm, ii) > 50% reduction in column height from pre to post-therapy and iii) > 50% reduction in column SA from pre to post-therapy. Associations between symptom improvement and TBE measures of emptying were assessed using Pearson’s correlation (R). Paired t-tests com- pared TBE measures before and after therapy.

Results: 18 patients (9 male; 6 Type I, 11 Type II, 1 Type III) were included. 11 had dilatation and 7 endoscopic myotomy. Reductions with therapy of both mean 5-minute barium column height (14.7 ± 8.7 to 7.9 ± 6.0 cm; P = 0.01) and mean 50% reduction in column height (4.2 ± 3.5 to 2.4 ± 2.6 cm; P = 0.02) were noted. Symptoms also improved with treatment; median baseline ES of 7 (IQR 5.25–8) improved to 0 (IQR 0–1) post-therapy. Only 2 patients had inadequate symptom relief and are awaiting further treatment. However there was poor concordance between post- therapy barium column height and symptomatic relief (i.e. post-therapy column > 5 cm despite ES ≤ 3 or vice versa), and the correlation (R) between these two variables was poor (Table). Similar poor concordance was seen when adequate emptying was defined by > 50% reduction in column height, but > 50% reduc- tion in SA correlated significantly with R = 0.42, p = 0.01). No standard HRM parameters or TBO findings correlated with Eckardt score.

Conclusion: In TBE performed on achalasia patients post-therapy, reduction in SA of the residual barium column compared with baseline values parallels symptomatic relief more closely than reduction of column height.

Disclosure of Interest: All authors have declared no conflicts of interest.

Introduction: Nutrients present in the gastrointestinal tract can alter the initiation and progression of gas movement and are the subject of some debate. The current study was designed to explore the effect of gastric nutrients on gas transport and symptoms.

Aims & Methods: We aimed to determine the effect of gastric nutrients on trans- port of gastric gas, and its relationship with abdominal symptoms. In 7 healthy volunteers without gastrointestinal symptoms (4 women and 3 men, age-range 21–25 yrs), a mixture of non-absorbable gases was infused into the stomach, 5 cm caudal to the lower margin of the LES, at 25 mL/min during 60 min (Total gas infused: 1500 mL). In each subject two gas infusion tests were performed on separate days, with simultaneous infusion of nutrients (Nutriderm 1.5 Kcal/ml, total 315 Kcal) or saline. Belching, by an esophageal multilumen impedance manometry catheter, rectal gas evacuation, via a rectal tube connected to a manometer, and symptoms. Nutrients have several effects on gastric and intestinal motor function that could modulate gas transport and symptoms.

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stop. Gastric nutrients reduced significantly rectal gas evacuation (56 resp. 62 mm, p = 0.02), increased the number of defecated stools (3.3 ± 1.3 vs. 3.4 ± 1.5, p = 0.018 vs saline), and increased gastric emptying clearance (score 2.7 ± 0.6, p = 0.030) that decreased during the 30 min following infusion stop (score 1.6 ± 0.7, p = 0.042 vs infusion stop). By contrast to epigastric perception, abdominal perception was only somewhat higher during gas infusion versus nutrients (score 2.6 ± 0.5) than during saline (score 2.1 ± 0.5; p = 0.100 vs nutrients).

Conclusion: Gastric nutrients modulate transit of gastric gas, by reducing gas propulsion to the distal gut, and enhancing retrograde gas evacuation via belching.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1827 MODIFICATIONS OF THE ECKARDT SCORE PARAMETERS AFTER PERORAL ENDOSCOPIC MYOTOMY

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1Gastroenterology, Cochin Hospital, Paris/France
2Radiology, Cochin Hospital, Paris/ France

Aims & Methods:
Currently, the Eckardt score is the clinical score that is the most widely used to assess the treatment of achalasia, clinical success being defined by a score below 4. However, POEM might not equally improve all four parameters of the Eckardt score.

Results:
Between March 2013 and July 2016, 62 POEM procedures were performed on 59 patients (Male/female 33/26; Median age ± SD 47 ± 17, range 15–77). Median (IQR) follow-up time was 8 (3–13) months. Achalasia was diagnosed for a median (IQR) of 24 (13–62) months, and 42% of the patients had received a previous treatment, by botulinum toxin injection (8%), pneumatic dilatation (32%), or Heller myotomy (7%). Achalasia subtype types I/II/III in 37%/47%/15% of cases. Median Eckardt score and integrated resting pressure were 7 (6–8) and 21 (18–23) mmHg, respectively. An anterior myotomy was done in 60% of cases, and a posterior myotomy in 40% of cases. Median myotomy length was 70 (50–110) cm, and hospital stay was 3 (2–4) days. Severe complications occurred in 5% of cases (1 pleural effusion requiring drainage, 2 pneumonias with more than 10 days of hospital stay). Success rates were similar between patients treated by anterior or posterior myotomy (92% vs 93%, p = 1), or between treatments of naïve or pretreated patients (88% vs 96%, p = 0.32). Six patients treatment failures were treated by redo POEM in 3 cases, pneumodilatation in 2 cases, and esophagectomy in one case. Median Eckardt score varied from 7 (6–8) to 1 (0–2) at 3 months and 2 (0–3) at 12 months (p < 0.0001). Dysphagia score varied from 3 (1–4) to 0 (0–1) and 1 (0–3) (p < 0.0001), while regurgitation score varied from 2 (1–3) to 0 (0–1) and 0 (0–1) (p < 0.0001), chest pain varied from 1 (0–2) to 0 (0–1) and 0 (0–1) (p = 0.006), and weight loss from 2 (1–3) to 0 (0–0) and 0 (0–0) (p < 0.0001). At three months, median (range) drop of the integrated dysphagia score was 1 (0–2) to 0 (0–0) and 0 (0–0) (p = 0.0001), while regurgitation data, STW 5 is well suitable also in self-medication. Additional insights can be expected from additional sub group analyses, as the evaluation of sub groups with specific predominant symptoms.

Disclosure of Interest: J. Müller: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
O. Kelber: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
B. Trautner: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
C. Fink: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
S. Rabini: Employee, Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
K. Kraft: Travel grants and honoraria from Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany
M.A. Storr: Travel grants and honoraria from Steigerwald Arzneimittelwerk GmbH, Darmstadt, Germany

Reference

P1829 THE TREATMENT OF ACHALASIA IN PATIENTS WITH GASTROESOPHAGEAL VARICES: AN INTERNATIONAL CASE SERIES

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1University College London Hospitals, London/United Kingdom
2Royal Adelaide Hospital, Adelaide/Australia
3Washington University in St. Louis, St. Louis/United States of America/ MO
4Digestive Physiology, Hospital Edouard Herriot, Lyon/France
5Gastroenterology, Hôpital Edouard Herriot, LYPON/France
6Uo Gastroenterology Department Of Surgical, Oncological And Gastroenterological Sciences, University Of Padova, Padova/Italy
7Gi Physiology Unit, University College London Hospital, London/United Kingdom
8Dept. Of Gastroenterology, Academisch Med. Centrum Amsterdam, Amsterdam/Netherlands

Aims & Methods: Experience from physicians/surgeons treating these disorders was sought through the International Manometry Working Group.

Results: 13 patients with portal hypertension from 6 international centres have been collected; mean age 61 ± 9 years. The median pre- therapy Eckardt score was 7 (IQR 6–9), 9/13 (69%) patients had a barium swallow and 12/13 (92%) had oesophageal physiology studies performed. There were 3 Type I, 6 Type II, 2 Type III achalasia and 2 with oesophageal-gastric outflow obstruction. Varices were identified endoscopically in 7 patients, radiologically in 5 and in 1 patient varices were first noted during surgical myotomy. 2 patients had grade 3 varices, 3 had grade 2 and 3 had grade 1 varices (grading not provided for the rest). Cirrhosis was due to alcohol in 7 patients, non-alcoholic steatohepatitis in 3, cryptogenic in 2 and 1 had hepatitis C cirrhosis. 75% were Child-Pugh A and 25% were Child-Pugh B. Patients had diverse treatments for their achalasia.

Achalasia is a chronic condition presenting with dysphagia, regurgitation, chest pain and/or weight loss. Management options include Heller’s myotomy, Botox, pneumatic dilatation and Per-Oral Endoscopic Myotomy (POEM). Treatments carry risks of bleeding and perforation. Concomitant portal hypertension with varices is very rare and achalasia treatment in this context has only been described in single case reports.

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Conclusion: These meta-analyses therefore clearly show the efficacy of STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also its good tolerability and low incidence of adverse events, STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also its good tolerability and low incidence of adverse events, STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also its good tolerability and low incidence of adverse events, STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also its good tolerability and low incidence of adverse events, STW 5 (Iberogast) and its therapeutic usefulness irrespective of age and gender. Given also its good tolerability and low incidence of adverse events,
PI830  THE NATURAL HISTORY OF ACHALASIA: EVIDENCE OF A CONTINUUM–THE PATTERN–EVOLUTIVE STAGING THEORY
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Introduction: Esophageal achalasia is classified into three clinically relevant patterns at High Resolution Manometry (HRM) and according to Chicago Classification. Currently, it is unclear whether they represent distinct entities or are part of a disease continuum.

Aims & Methods: The aims of this study were: a) to test the hypothesis that the three manometric patterns represent different stages in the evolution of esophageal achalasia and b) to investigate whether manometric patterns change after Laparoscopic Heller-Dor (LHD). We evaluated the patients who had a diagnosis of achalasia and underwent LHD as first treatment from 1992 to May 2016. Symptoms were scored using a detailed questionnaire for dysphagia, food-regurgitation, and chest pain; barium swallow, endoscopy, and esophageal manometry (conventional or High Resolution technique) were performed, before and 6 months after surgical treatment. All conventional manometric tracings, before 2010, were reviewed and re-classified according to the manometric-pattern classification, whereas after 2010 the HRM data were prospectively collected.

Results: Five-hundred and eleven consecutive achalasia patients (M:F = 239:272) were classified as having pattern I, 241 (47.2%) had pattern II, and 39 (7.6%) had pattern III. Demographic and clinical data showed that pattern III cases had a shorter duration of symptoms, a more incidence of chest pain, and a less dilated gullet (p < 0.001). Further, all patients with a sigmoid-shaped mega-esophagus (radiological grade IV) had pattern I achalasia. One patient with diagnosis of pattern III achalasia, who refused any treatment evolved to pattern II at a follow-up manometry performed for a progressive worsening dysphagia after 36 months. At a median follow-up of 30 months (IQR 12–56), the outcome of surgery was positive in 479 patients (91.7%).

Conclusion: Healthy stomach was found in 21.2% patients. Prevalence of CAG increased with patient’s age in both sexes as well as the use of PPIs (p = 0.0001). Table 1 shows the serum biomarkers values divided according to five categories: healthy stomach (H), GER, HP, CAG, and PPIs therapy.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Changing manometric patterns after LHD. *5 patients had a recovery of peristalsis (all patients had a pattern II before LHD).

<table>
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<th>Pattern 1 post</th>
<th>Pattern 2 post</th>
<th>Pattern 3 post</th>
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<tr>
<td>Pattern 1 pre</td>
<td>159(100%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pattern 2 pre*</td>
<td>65 (29.5%)</td>
<td>149 (67.7%)</td>
<td>0</td>
</tr>
<tr>
<td>Pattern 3 pre</td>
<td>7 (24.1%)</td>
<td>8 (27.6%)</td>
<td>8 (48.3%)</td>
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</table>

Conclusion: The data of this study strongly support the hypothesis/theory that the different manometric patterns of achalasia could represent different evolutive stages of the disease - where pattern III is the earlier stage, pattern II an intermediate, stage and pattern I the end stage.

Disclosure of Interest: All authors have declared no conflicts of interest.

PI831  ROLE OF A SERUM BIOMARKERS PANEL (GASTROPEAN) IN NON-INVASIVE DIAGNOSIS OF UPPER GI DISEASE: A PRIMARY CARE POPULATION OF NORTH-EAST ITALY
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Introduction: The development of non-invasive methods to detect the presence of H. pylori, and to estimate the extent and severity of gastritis, have reduced the need for diagnostic endoscopy in asymptomatic individuals. However, it is not known whether the use of non-invasive diagnostic methods is effective in dyspeptic patients.

Aims & Methods: To use a non-invasive blood test with four stomach-specific biomarkers to assess the prevalence of different stomach conditions: gastrosophageal reflux disease (GERD), H. pylori (HP) infection, chronic atrophic gastritis (CAG), and the efficacy of proton pump inhibitor (PPI) therapy in a primary care population. A cohort of 2583 dyspeptic patients (male 36%, mean age 44.0 yrs, range 6-95) was selected in a primary care population and examined with a panel of biomarkers [Pepsinogen-I (PG-I) and -II (PG-II), amidated gastrin-17 (G-17), and HP IgG (Biohit, Finland)]. A standard questionnaire, including upper gastrointestinal symptoms and PPI use, was administered. Exclusion criteria were dysphagia, anemia, weight loss and vomiting. CAG patients underwent to endoscopy and histological examination.

Results: Healthy stomach was found in 21.2% patients. Prevalence of CAG increased with patient’s age in both sexes as well as the use of PPIs (p = 0.0001). Table 1 shows the serum biomarkers values divided according to five categories: healthy stomach (H), GER, HP, CAG, and PPIs therapy.

Conclusion: The combination of data on the levels of PG-I, PG-II, G-17 and HP IgG allow to diagnose different pathological conditions such as HP, and non HP-related gastritis, the appropriateness of PPI administration, GERD and CAG, a precancerous condition.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1: Serum biomarkers values divided according to five categories: healthy stomach (H), GER, HP, CAG, and PPIs therapy.

<table>
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<th>H vs GER</th>
<th>H vs PPI</th>
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<td>H</td>
<td>0.001</td>
<td>0.0001</td>
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Aims & Methods: The aim of the additional data analysis of a previous randomised placebo-controlled trial was to explore post-treatment effects that occurred after continuation of therapy after a 4-week randomised placebo controlled treatment with Menhacarin® with regard to disease-specific symptoms and QoL in FD patients. After the 4-week randomised placebo-controlled treatment period, patients were allowed to continue the treatment. The treatment was given in a double-blind fashion and allocation of treatment followed the initial randomisation. 114 adult FD outpatients were initially treated and received twice a day one enteric-coated Menhacarin capsule or a matched placebo capsule for 4 weeks. Fifty-four of them participated in the optional follow-up phase and received Menhacarin (34) or placebo (20) for further 8 weeks according to their original randomization. The results of these 54 patients are reported here. Outcomes were assessed utilising the validated self-rating Nepean Dyspepsia Index (NDI). Intra-individual differences between baseline and week 4/week 12 for NDI sub-scores for pain (sum of the NDI items ‘pain or ache in upper

Disclosure of Interest: All authors have declared no conflicts of interest.
abdomen, 'discomfort in upper abdomen', 'cramps in upper abdomen' and 'bloating in upper abdomen') and discomfort in 30% of the NDI items 'pressure in upper abdomen' and 'fullness after eating or slow digestion') and for QoL by NDI total score were compared and descriptively tested by means of Wilcoxon-Mann-Whitney U-tests.

Results: After the initial 4 weeks, 54/114 patients opted for an extension of the treatment. Interestingly, 34 out of 52 patients had been on active therapy while only 20 had received placebo. Until week 4, the NDI sub-score for pain had decreased by 7.5 ± 3.9 points during Menthacarin treatment as compared to 5.1 ± 4.9 points during placebo (p = 0.0371). After the follow-up, overall reduction for Menthacarin (8.7 ± 4.9 points) was also significantly better as compared to placebo (5.1 ± 4.9 points, p = 0.005). The NDI sub-score for discomfort had decreased for week 4 by 5.3 ± 2.1 points during active therapy as compared to 1.2 ± 2.1 points during placebo treatment (p = 0.0003). For the 12-week therapy, the score had declined by 3.7 ± 2.5 points and 1.3 ± 2.6 for Menthacarin and placebo, respectively (p = 0.0014). Overall QoL improvement was better for active medication for 4 and 12 weeks as compared to placebo.

Conclusion: After 4 weeks of randomised double-blind, placebo-controlled treatment with either Menthacarin or placebo, patients who received active medication are more likely to opt for a continuation of therapy as compared to patients on placebo. The gain over placebo remained significant even after 12 weeks of treatment. Menthacarin is a proprietary combination of essential oils of specified quality from Mentha × piperita L. (90 mg Peppermint oil WS® 1340) and Carum carvi (50 mg Caraway oil WS® 1520).

Disclosure of Interest: G.J. Hollmann: Financial support for research and lecture fees from Dr. Willmar Schwabe GmbH & Co. KG. B. Stracke: Employee of Dr. Willmar Schwabe GmbH & Co. KG.

**P1833 IMPROVEMENT OF APPROPRIATENESS OF PROTON PUMP INHIBITOR (PPI)-THERAPY PRESCRIPTION WITH USE OF SEROLOGICAL MARKERS (GASTROPENL) IN A PRIMARY CARE POPULATION**

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Introduction: The introduction of proton pump inhibitors (PPIs) into clinical practice has revolutionized the management of acid-related diseases. Studies in primary care and emergency settings suggest that PPIs are frequently inappropriately prescribed or used in clinical conditions with little benefit.

Aims & Methods: To evaluate the role of Gastropanel in relation to the appropriateness of PPI-therapy prescription. 2833 dyspeptic patients (male 36%, mean age of 44.0 yrs, range 6–95) with no alarm symptom (i.e., dysphagia, anemia, weight loss and vomiting) from a primary care population were included in the study. For each patient a blood sample was collected for serum Pepsinogen I (PG-I) and G-17 values according to the response to PPI therapy.

Results: Among 1015 patients under PPI therapy up to three months before the values of PG-I and G-17 values according to the response to PPI therapy.

Conclusion: An appropriate prescription of PPI should be preceded by the assessment of gastric functional status. In particular, patients with HP infection should be eradicated before PPI therapy, while CAG patients should not receive PPI therapy because they are no responders. Patients who do not respond to PPI therapy should be further investigated (compliance, diagnosis).

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1834 DUODENAL ACID PERFORATION INCREASES DUODENAL PERMEABILITY AND ACTIVATES DUODENOGASTRIC REFLEX, INDEPENDENTLY FROM MAST CELL ACTIVATION**

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Introduction: We recently reported that functional dyspepsia patients show impaired duodenal integrity, associated with low-grade inflammation (Vanheel, Gut 2014). A potential cause underlying this phenomenon may be the increased duodenal acid exposure that has been demonstrated in some of these patients.

Aims & Methods: Our aim was to evaluate the effect of duodenal acid perfusion on duodenal permeability in healthy volunteers and to investigate whether mast cell activation is required for acid-induced impairment of mucosal integrity. As it has already been shown that duodenal acid activates duodenogastriic reflex pathways, we also assessed intragastric pressure (IGP). This study consisted of 2 parts, each including 10 healthy volunteers. 1) An infusion tube was positioned in the second part of the duodenum and a high resolution manometry probe was positioned in the stomach to measure IGP. HCl 0.1N or saline was infused in the duodenum during 30 min (5mL/min) in a randomized, double-blind manner. Duodenal biopsy specimens were obtained after infusion to measure transepithelial electrical resistance (TEER) and paracellular passage (fluorescein-labeled dextran, 4kDa) in Ussing chambers. Expression of cell-to-cell adhesion proteins (claudin 1–4, occludin, zonula occludens 1–3, β-catenin, E-cadherin, desmocollin-2, desmoglein-2) in biopsies was evaluated by PCR, western blot and/or immunofluorescence. The number of mast cells and eosinophils was counted using immunohistochemistry for tryptase and eosinophil major basic protein respectively, and by evaluating the expression of these proteins using PCR and expression of the expression of these proteins using PCR and expression of the expression of these proteins using PCR and expression of the expression of these proteins using PCR.

Results: IGP was significantly lower during acid perfusion compared with saline perfusion (p = 0.003). Acidification also resulted in decreased TEER (p = 0.005), increased passage (p = 0.007) and lower protein expression of claudin 3 (p = 0.0006). No difference in mast cell (p = 0.34) and eosinophils (p = 0.34) counts were detected, but an increased protein expression of tryptase (p = 0.0008) was found after acid perfusion. In the placebo and the DSCG group, acidification induced a similar drop in IGP (p = 0.68). There was also no difference in TEER (p = 0.70) and passage (p = 0.21) after acid perfusion between both pretreatments.

Conclusion: Duodenal acid perfusion in healthy volunteers disrupts epithelial integrity and activates an inhibitory duodenogastric reflex. Although this effect seems to be independent from mast cell activation, increased duodenal acid exposure in functional dyspepsia is a potential pathophysiological mechanism contributing to abnormalities in duodenal and gastric structure and function observed in patients with functional dyspepsia.

Disclosure of Interest: All authors have declared no conflicts of interest.

**P1835 APPROPRIATE USE OF PPI IN THE ELDERLY: EVALUATION OF ACID SECRETION AND ATROPHIC GASTRITIS ON DUODENAL BIOPSY SPECIMENS OF A NON-INVASIVE TEST**

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⁶Pathology, Medical School of the Padova University, Padova/Italy
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Introduction: Gastric acid secretion is believed to decrease in the aging stomach, but the number of elderly patients on proton pump inhibitor (PPI) therapy is significantly increased. Aims & Methods: Our aim was to evaluate the effect of acid secretion and atrophic gastritis on duodenal biopsies from elderly patients and to investigate whether the number of elderly patients on proton pump inhibitor (PPI) therapy is significantly increased.

Abstract No: P1833

<table>
<thead>
<tr>
<th>N</th>
<th>Therapy</th>
<th>Partial PPI n,%</th>
<th>Full PPI n,%</th>
<th>Excess PPI n,%</th>
<th>Gastric Function status PG-I (μg/L) means±/DS</th>
<th>Gastric Function status G-17 (pmol/L) means±/DS</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>1015</td>
<td>294</td>
<td>709</td>
<td>12</td>
<td>137.0+/−84.7</td>
<td>11.7+/−21.1</td>
</tr>
<tr>
<td>Good response G-17&gt; 7</td>
<td>351</td>
<td>83 (23.6)</td>
<td>293 (78.8)</td>
<td>9 (2.6)</td>
<td>194.5+/−121.1</td>
<td>22.1+/−17.9</td>
</tr>
<tr>
<td>Low response G-17 1–7</td>
<td>421</td>
<td>141 (33.5)</td>
<td>279 (66.3)</td>
<td>1 (0.2)</td>
<td>127.1+/−8.3</td>
<td>3.1+/−1.76</td>
</tr>
<tr>
<td>No response G17&lt; 1</td>
<td>205</td>
<td>64 (31.2)</td>
<td>140 (68.3)</td>
<td>1 (0.5)</td>
<td>91.7+/−40.9</td>
<td>0.38+/−0.28</td>
</tr>
<tr>
<td>CAG</td>
<td>38</td>
<td>6 (15.8)</td>
<td>31 (84.2)</td>
<td>1 (2.6)</td>
<td>16.6+/−14.8</td>
<td>70.3+/−55.2</td>
</tr>
</tbody>
</table>
increasing. Pepsinogen I (PGI) <30 ng/mL; PGI/PGII <3 and gastrin-17 (G17) >10 pmol/L are non-invasive serological markers to surmount to explore gastric function, with a negative predictive value for chronic atrophic gastritis (CAG) of 96%.

Aims & Methods: Aim of the study was to evaluate gastric function by means of serology (PGI, PGII, G17 and IgG-antibodies against Helicobacter pylori) in very elderly patients, including centenarians. A total of 379 patients were prospectively enrolled (M = 126, F = 253, mean age = 83.6 ± 8.7, range: 70–106). They were divided into four groups: 132 subjects with an age between 70 and 79 years old (first group), 111 subjects between 80 and 89 (second group), 76 subjects between 90 and 99 (third group) and 25 subjects between 100 and 106 (fourth group). Demographics and drug intake, particularly the PPI intake, were collected. For all patients, serological markers were determined in fasting blood samples using Medtronic (Minneapolis, MN, USA) and Unisensor (Attikon, Switzerland) catheter. Normal values for both systems were: PGI: 30–120 μg/L; PGII: 2–15 μg/L; PGI/PGII ratio: >3; G17: >1–9 pmol/L; H.p.-IgG: <30 EU).

Results: In the first group (age 70–79), 18.2% of the subjects showed H. pylori infection (PGI >80 μg/L, IgG against H.p. >30 EU), 22.7% had CAG (PGI <30 μg/L and PGII <3) and 53.8% were under PPI therapy. 16.9% of the patients on PPI therapy had CAG. In the second group (age 80–89), 32.9% of the subjects showed H. pylori infection, 8.9% had CAG and 48.6% were under PPI therapy. 8.5% of the patients on PPI therapy had CAG. In the third group (age 90–99), 22.4% of the subjects showed H. pylori infection, 10.5% had CAG and 48.7% were under PPI therapy. 8.1% of the patients on PPI therapy had CAG. In the fourth group (age 100–106), 44.0% of the subjects showed H. pylori infection, 16.0% had CAG and 72.0% were under PPI therapy. 16.7% of the patients on PPI therapy had CAG.

Conclusion: Acid secretion is preserved in most of the elderly and very elderly subjects, even in centenarians. Serological markers may be helpful to identify patients affected by CAG in which the administration of PPI is inappropriate, especially in the elderly.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1836 THE PSYCHOLOGICAL CHARACTERISTICS OF REFLUX HYPERSONSITIVITY-A PILOT STUDY BASED ON SCL-90 QUESTIONNAIRE AND 24 HOUR PH-IMPEDEANCE MONITORING

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Introduction: Reflux hypersensitivity (RHV) was lately defined as a functional esophageal disorder by the Rome IV workshop. The clinical and psychological characteristics are still unknown.

Aims & Methods: The aim of this study was to assess the reflux and psychological characteristics of RHV. Patients who underwent 24 h pH-impedance monitoring were screened from Jan 1st 2011 to Nov 31st 2015. The patients with heartburn or chest pain ≥2 days/week for more than 6 months were enrolled. Healthy volunteers (HV) were enrolled too. All subjects fulfilled the SCL-90 questionnaire, underwent gastroscopy to exclude upper gastrointestinal diseases and underwent HRM test to exclude main motility disorders. The patients for normal esophageal mucosal but overload acid, weakly acid or non-acid reflux were diagnosed as non-erosive reflux disease (NERD). The patients with normal esophageal mucosal but overload acid, weakly acid or non-acid reflux were diagnosed as functional heartburn (FH). The reflux and psychological characteristics are compared among NERD, RHV and FH.

Results: Total 231 patients were enrolled. 107 were NERD (48.25 ± 1.18 yrs, M:F = 55:52), 92 were FH (48.30 ± 1.27yrs, M:F = 98:83), 32 were RHV (48.41 ± 2.36yrs, M:F = 48:28). 28 HVs (47.21 ± 2.27, M:F = 8:20) were enrolled as normal control. NED’s depressive, anxiety, Reactive facets, impulsivity and senseless thought were all higher than FH, NERD and HVs (p < 0.05). The acid reflux and weak acid reflux are both higher in NERD than that in FH, RH and HV (p < 0.01). The total scores of SCL-90 of the first group of patients were significantly higher than NERD/HV (n=120), 133.15 ± 3.68 vs. 108.61 ± 4.51, p = 0.004. SF(HV, 133.15 ± 3.68 vs. 108.61 ± 4.51, p = 0.003; RHV/HV, 142.67 ± 8.91 vs. 108.61 ± 4.51, p = 0.002).

Conclusion: All authors have declared no conflicts of interest.

P1837 HIGH-RESOLUTION ESOPHAGEAL MANOMETRY: EVALUATION OF NEW SYSTEMS FOR THE ACQUISITION AND ANALYSIS

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Introduction: High-Resolution Manometry (HRM) has recently became the gold standard for the evaluation of esophageal motility. A new classification of esophageal motility disorders (Chicago Classification, v. 3.0) has been developed, based on the findings from a given hardware and software. Different systems for HRM and new features of the existing ones have recently been developed.

Aims & Methods: In this study we aimed to evaluate a new solid-state HRM system and a new 3-D catheter and system for the study of lower esophageal sphincter (LES). Fifteen healthy volunteers (7 m, 8 f, median age 27) underwent two consecutive Esophageal HRM studies by using two different solid state systems (ManoScan, Medtronic, Minneapolis, USA and Medica SpA, Italy with Unisensor AG, Atikon, Switzerland catheter). The studies were performed in a random order using the standard protocol. Furthermore, a new 3-D catheter for the study of sphincters was evaluated in 12/15 volunteers.

Results: Table 1 reports the findings obtained with the Medica system compared to the consolidated Medtronsic system. The data of the 3-D evaluation are also reported. The data are expressed as medians (and 5th-95th percentiles).

Conclusion: Significant differences were recorded in most of the considered parameters obtained by the two HRM systems. This is particularly relevant in the evaluation of the LES relaxation, the cardinal point in the hierarchical approach of the Chicago Classification, probably due to different analysis used by the two systems (the lowest residual pressure vs IRP). Furthermore, the differences found in the measurement of the LES resting pressure and abdominal length may rely either on the different technology (3-D vs linear transducers) or on the different algorithms and thresholds used. The latter may probably also apply to the differences found with the two systems in the duration of the esophageal contractions and in the new contractile parameters (i.e.: DCl and DL) introduced by the Chicago Classification. This study emphasizes the need for a careful validation of any new system for motility disorders manometry. The acquisition of new sets of normal values, to be used to compare the data measured in patients, is therefore mandatory. The conclusions of our study may represent the reference normal values for other esophageal laboratories that are using the HRM systems and devices we tested here.

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1837

<table>
<thead>
<tr>
<th>LES Resting pressure (mmHg)</th>
<th>LES Overall length (cm)</th>
<th>LES Abdominal length (cm)</th>
<th>LES Residual pressure/IRP (mmHg)</th>
<th>Amplitude 3-cm</th>
<th>Amplitude 7-cm</th>
<th>Amplitude 11-cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Medica/Unisensor</td>
<td>17.5 (6.5–31.5)</td>
<td>3.7 (2.8–5.3)</td>
<td>1.0 (0–2.3)</td>
<td>0 (–0.7–4.5)</td>
<td>111 (56–224)</td>
<td>74 (37–134)</td>
</tr>
<tr>
<td>B. Medtronsic</td>
<td>33.1 (16–56)</td>
<td>4.1 (2.0–5.0)</td>
<td>1.9 (0.1–2.8)</td>
<td>14.1 (3.8–15.9)</td>
<td>94 (61–155)</td>
<td>80.5 (60–154)</td>
</tr>
<tr>
<td>C. 3-D Medtronsic</td>
<td>39.3 (26–60)</td>
<td>4.0 (2.9–5.6)</td>
<td>2.35 (0.6–3.8)</td>
<td>14.2 (1.4–25)</td>
<td>0.15</td>
<td>0.17</td>
</tr>
<tr>
<td>A p vs B p vs B vs C</td>
<td>&lt;0.01 &lt;0.01 &lt;0.04</td>
<td>0.04 0.08</td>
<td>0.01 0.06</td>
<td>&lt;0.001 0.46</td>
<td>0.97</td>
<td>0.17</td>
</tr>
<tr>
<td>Duration 3–5 cm (sec)</td>
<td>Duration 7 cm (sec)</td>
<td>Duration 11 cm (sec)</td>
<td>Distal Contractile Index (DCI) (mmHg/cm^2)</td>
<td>Distal Latency (DL) (sec)</td>
<td>IntraBolus Pressure (IBP) (mmHg)</td>
<td></td>
</tr>
<tr>
<td>A. Medica/Unisensor</td>
<td>3.1 (1.7–4.6)</td>
<td>1.7 (1–3.1)</td>
<td>2.4 (1.4–3.3)</td>
<td>3000 (1167–6200)</td>
<td>8.8 (7.45–12.5)</td>
<td>7.1 (0.2–19)</td>
</tr>
<tr>
<td>B. Medtronsic</td>
<td>3.7 (2.8–5.1)</td>
<td>3.2 (2.4–4.3)</td>
<td>3.0 (2.4–4.2)</td>
<td>1583 (650–2760)</td>
<td>6.4 (4.7–8.9)</td>
<td>10.4 (8.7–14.95)</td>
</tr>
</tbody>
</table>
**P1838 PROTON PUMP INHIBITOR THERAPY IMPROVES ESOPHAGEAL SYMPTOMS BY RESTORING A NORMAL ESOPHAGEAL PERISTALSIS IN PATIENTS WITH PROTON PUMP INHIBITOR-RESPONSE ESOPHAGEAL EOSINOPHILIA**

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**Introduction:** Proton Pump Inhibition-response esophageal eosinophilia (PPI-REE) is a condition characterised by symptoms of esophageal dysfunction in the setting of eosinophilic inflammation on esophageal biopsies responding to a course of 5 weeks of PPI therapy. Recent data collected by using esophageal high resolution manometry (HRM) documented that patients with PPI-REE present frequently motility abnormalities, mostly weak peristalsis and hypotensive esopahgogastric junction (EUGJ). Data on the effect of PPIs in improving these motor abnormalities are lacking.

**Aims & Methods:** We aimed to prospectively compare HRM features of patients with PPI-REE before and after a course of PPI therapy. Consecutive patients with symptoms suggestive of EoE underwent upper endoscopy to assess the presence of at least 15 eos/hpf on esophageal biopsies at mid/proximal esophagus and, thereafter, patients with symptoms suggestive of EoE were treated with twice-daily PPIs for at least 8 weeks. Thereafter, patients repeated upper endoscopy and PPI-REE was identified in case of less than 15 eos/hpf and a 50% decrease from baseline. Patients with PPI-REE underwent HRM at the time of diagnosis (off-PPI) and after the course of PPIs (on-PPI). Patients with achalasia and absent peristalsis were excluded (Chicago Classification v.3).

**Results:** Twenty-eight patients [23M:5F; mean age 33] reporting dysphagia (93%), bolus impaction (68%) and chest pain (25%) were diagnosed with PPI-REE. After the diagnosis and secretory therapy, most of the patients reported complete resolution of esophageal symptoms directly linked to esophageal infiltration (p < 0.001), namely dysphagia, bolus impaction and chest pain. Compared to HRM features at baseline, HRM after PPI therapy showed that patients with PPI-REE had higher median EUGJ resting pressure [baseline 11 (3–34) vs. post-PPI 17 (3–13); p < 0.05], greater mean distal contraction integral [1094 (483–5281) vs. 2634 (495–6450); p < 0.01], and less frequent panesophageal pressurization [6 (21%) vs. 0 (0%); p < 0.02]. No differences were observed in terms of distal latency and rate of different EUGJ subtypes (p > 0.05). As to the manometric diagnoses, after PPI therapy patients with PPI-REE showed a reduced rate of ineffective motility or fragmented peristalsis [16 (57%) vs. 7 (25%); p = 0.02] and increased frequency of normal peristalsis [9 (32%) vs. 18 (64%); p = 0.03]. No differences were observed in terms of frequency of distal esophageal spasm and outflow obstruction diagnoses (p > 0.5).

**Conclusion:** In most PPI-REE patients, PPI therapy restores the impairment of esophageal function assessed by ineffective and fragmented peristalsis, thus favouring the return to a normal motility pattern. This finding, paralleled with symptoms improvement in the same subjects, seems to emphasize the important role of inflammation linked to the eosinophilic infiltration of the esophageal wall in inducing motor dysfunction and related symptoms.

**Disclosure of Interest:** V. Savarino: Consulting fee from Malesci, Reckitt, AlfaWasserman, Abbvie
E. Savarino: Consulting fee from Medtronic, Sofar, Takeda, Abbvie, MSD
All other authors have declared no conflicts of interest.

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**References**


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**P1840 IGG4 EXPRESSION IS ELEVATED IN PATIENTS WITH EOSINOPHILIC ESOPHAGITIS COMPARED TO PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE**

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**Introduction:** Eosinophilic Esophagitis (EoE) is a chronic immune disease of the esophagus, which is characterized by a predominant eosinophilic inflammation. EoE is mainly found in children and adolescents. Recent data from different centers have established that eosinophilic esophagitis (EoE) is an increasing diagnosis in adults. It is characterized by esophageal symptoms and histologically characterized by a predominant eosinophilic inflammation. EoE has been found in patients with atopic conditions. However, recently an association with IgG4 but not with IgE has been reported. Gastroesophageal reflux disease (GERD) is the most important diagnostic differential diagnosis of EoE. In this study we measured systemic serum IgG4 and IgE levels of EoE patients before and after a topic steroid therapy, correlated them to esophageal IgG4-positive plasma cells and compared them to GERD patients.

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**Initial treatment after diagnosis EoE**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total, n (%)</th>
<th>AC 1, n (%)</th>
<th>AC 2, n (%)</th>
<th>Non AC 1, n (%)</th>
<th>Non AC 2, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCS</td>
<td>36 (30.3)</td>
<td>17 (34.7)</td>
<td>5 (18.5)</td>
<td>11 (44.0)</td>
<td>4 (16.0)</td>
</tr>
<tr>
<td>PPI</td>
<td>35 (29.4)</td>
<td>16 (32.7)</td>
<td>8 (29.6)</td>
<td>4 (16.0)</td>
<td>7 (28.9)</td>
</tr>
<tr>
<td>PPI + TCS</td>
<td>12 (10.1)</td>
<td>5 (10.2)</td>
<td>3 (37.5)</td>
<td>4 (16.0)</td>
<td>2 (11.1)</td>
</tr>
<tr>
<td>Diatation</td>
<td>3 (2.5)</td>
<td>0</td>
<td>2 (7.4)</td>
<td>0</td>
<td>1 (5.6)</td>
</tr>
<tr>
<td>Prednisone</td>
<td>2 (1.7)</td>
<td>1 (1.7)</td>
<td>1 (3.7)</td>
<td>1 (4.0)</td>
<td>0</td>
</tr>
<tr>
<td>TCS + diat</td>
<td>1 (0.8)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diet</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>None</td>
<td>24 (20.2)</td>
<td>9 (18.4)</td>
<td>8 (29.6)</td>
<td>4 (16.0)</td>
<td>3 (16.7)</td>
</tr>
<tr>
<td>Missing</td>
<td>6 (5.0)</td>
<td>1 (2.0)</td>
<td>2 (7.4)</td>
<td>1 (4.0)</td>
<td>2 (11.1)</td>
</tr>
</tbody>
</table>

**Results:** In total, 119 patients were diagnosed with EoE and included in this study. The median age at onset of symptoms was 29 years (IQR 9, 15-42) and the median age at diagnosis was 38 years (IQR 23, 51 years), leading to a median diagnostic delay of 6.5 years (IQR 2-14 years). The median delay in diagnosis between first contact in the hospital and diagnosis was 1 year 3 months (IQR 2-14 years). The incidence of patients newly diagnosed with EoE increased steadily over a period of 11 years. Criteria for the microscopic diagnosis of EoE varied between pathologists in each hospital. Initial treatment included topical corticosteroids (30.3%), proton pump inhibitors (PPIS) (29.4%) or a combination of both (10.1%). A follow-up treatment included PPIs (76.0%), topical corticosteroids (59.6%) or a combination of both (45.4%).

**Conclusion:** Diagnostic and therapeutic discrepancies between daily clinical practice and recommendations for diagnosis and management of esophageal eosinophilia and eosinophilic esophagitis. Moreover, therapeutic strategies were utilized in the participating centers. Our results show that apart from developing guidelines, efforts should be undertaken to implement them in daily clinical practice.

**Disclosure of Interest:** All authors have declared no conflicts of interest.
Aims & Methods: Serum levels of IgG4 and IgE of 19 EoE patients were measured before and after 8 weeks of therapy with budesonide (1 mg twice a day). Biopsies were taken from the esophagus before and after therapy for histological and immunohistochemical evaluation. 14 patients with GERD without histological proof of eosinophilic granulocyte infiltration were taken as a control group. Serum levels of IgG4 of 19 EoE patients were measured before and after eight weeks of therapy with budesonide (1 mg twice a day). Biopsies were taken from the esophagus before and after therapy for histological and immunohistochemical evaluation. 14 patients with GERD without histological proof of eosinophilic granulocyte infiltration were taken as a control group.

Results: Serum IgG4 levels of EoE patients were significantly higher than in GERD patients (mean: 121.0 mg/dL vs. 71.2 mg/dL, p = 0.034). In contrast, no significant difference of IgE levels in EoE and GERD patients was observed. In EoE patients, the percentage of eosinophils in histology was decreased at a significant level after topical steroid therapy (mean: 51.9 eosinophils/high power field [hpf] vs. 6.4 eosinophils/hpf p < 0.001). After lower therapy levels of IgG4-serum-levels could be measured (mean: 121.0 mg/dL vs. 104.2 mg/dL p = 0.034). In the control group we did not show a significant difference. The eosinophilic biopsies of EoE patients showed a high number of IgG4-positive plasma cells (mean expression of 27.4 IgG4-positive plasma cells of 46.3 stromal plasma cells hpf).

Conclusion: EoE patients show higher systemic IgG4- but not IgE-serum levels compared to GERD-patients. These elevated levels normalize under effective topical steroid therapy. Additionally high local expression of IgG4-positive plasma cells can be seen in EoE patients. These findings might be further evidence for a possible IgG4-association of EoE.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1841 SYSTEMATIC REVIEW: HEALTH-RELATED QUALITY OF LIFE IN CHILDREN AND ADULTS WITH EOSINOPHILIC ESOPHAGITIS: MEASURE INSTRUMENTS AND DETERMINANT FACTORS

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Introduction: Measurement of Health-related quality of life (HRQoL) with generic or specific instruments has been increasingly used in patients suffering from EoE to support both research and clinical care. Generic instruments aim at measuring the overall HRQoL of patients across several conditions, being useful when comparing across different conditions and economic health outcomes. Disease-specific instruments assess domains specific to a given disease and are considered more sensitive to changes in the patient’s health state. An up-to-date systematic review will provide a useful resource for researchers and EoE specialists to ensure they can select an appropriate HRQoL measure for patients in their practice in order to identify correctable factors determining an impaired perception and to improve treatment outcomes.

Aims & Methods: We aim to systematically review the current HRQoL measures for patients with EoE and to appraise their measurement properties using a robust evaluation methodology checklist. We also sought to identify disease-specific determinant factors for HRQoL in children and adults with EoE, and the effect of investigations and interventions on HRQoL. A search strategy was designed to identify and retrieve all documents dealing with the effect of investigations and interventions for EoE on HRQoL. A search was designed to identify and retrieve all documents dealing with the effect of investigations and interventions for EoE on HRQoL.

Results: Of the 596 references identified, data was collected from 34 studies including a total of 1,842 individual patients. Three disease-specific HRQoL measures in EoE covered different aspects of patients’ lives and developed in EoE-specific patient samples. Details of the measurement properties, respectively, are shown in the Table. The PedsQL inventory (including parent and child report forms) and the Peds-QoL module were the generic and specific instruments respectively used in children, while the SF-36 and EoE-QoL-A were the most used questionnaires in adults. The effect of EoE on HRQoL of affected children and adolescents, which manifest in the normal development of their daily activities, their physical health and their mental status, with parents generally underestimating the impact of the disease regarding children declared HRQoL. Regarding determinant factors, age was not associated with HRQoL. Number and severity of symptoms negatively correlated with child-reported and Parent proxy-reported PedsQoL score and family impact score. Disease duration was identified as a risk factor for a low SF-36 score. EoE impacts on a number of domains including frustration, anxiety and the effect of treatment on symptoms and esophageal inflammation, the effect of treatment on the symptoms, the effect of treatment on esophageal inflammation, compatibility of therapy with lifestyle, possible side effect, and recommendation therapy. Additionally high local expression of IgG4-positive plasma cells can be seen in EoE patients. These findings might be further evidence for a possible IgG4-association of EoE.

Conclusion: Adult EoE patients consider both effect of medication on symptoms as well as inflammation as most important criteria, when choosing EoE therapy. EoE patients appear to be ‘satisfied’ with PPI, STC, and dietary therapy and ‘very satisfied’ with STC, if diet therapy is taken twice daily.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1842 TREATMENT SATISFACTION OF ADULT EOSINOPHILIC ESOPHAGITIS PATIENTS

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Introduction: Available treatment options for adult EoE patients include drugs (proton-pump inhibitors [PPI], swallowed topical corticosteroids [STC]), food elimination diets, and esophageal dilation. Knowledge about patients’ view regarding the different therapeutic options is very limited.

Aims & Methods: We aimed to systematically assess adult EoE patients’ satisfaction with different EoE-specific treatment modalities. We first created a questionnaire that included items that queried general demographic characteristics (7 items), EoE-specific patient history and presence of atopic disease (8 items), past and present EoE-specific therapy (9 items), concomitant medication use (7 items), important considerations for choice of therapy (2 items), as well as treatment satisfaction with various therapies recalled over a period of 12 months (assessed using the validated “Treatment Satisfaction Questionnaire for Medication” [TSQM], 52 items). The TSQM consists of 14 items falling into 4 scales: effectiveness (3 items), side effects (5 items), convenience (3 items), and overall satisfaction (5 items). The score for each TSQM scale ranges from 0 (dissatisfied) to 100 (satisfied). In analogy with other conditions, a score above 66.6 and 83.3 identifies patients that are ‘satisfied’ and ‘very satisfied’ with therapy, respectively.

Results: Patient response rate was 73.5% (108/147). Mean patient age at inclusion was 48.8 years, 73.8% of patients were male, and mean disease duration (from the time of diagnosis to the time of enrollment) was 6.8±5.1 years. In the last 12 months, 11.1%, 48.1%, 10.2%, and 28.7% of patients reported to have suffered from symptoms of asthma, rhinoconstrictivity, eczema, and food allergy, respectively. In the last 12 months, 25.0%, 2.7%, 77.8%, 1.9%, 19.4%, and 13.0% were treated with PPI, STC in the form of a spray, STC in the form of a powder, STC in the form of a spray, diet, and esophageal dilation, respectively (37.0% patients received more than one treatment). ‘Satisfied’ and ‘very satisfied’ patients receive any treatment. We identified the following considerations as important for the choice of therapy: the effect of the treatment on the symptoms (88.9%), the effect of treatment on esophageal inflammation (75.9%), possible side effects (69.4%), ease of therapy use (90.5%), and recommendation of therapy (89.0%) (patients could choose more than one). Patient treatment satisfaction, respectively, with lifestyle, possible side effect, and recommendation therapy (46.3%). When asked about single most important criterion for the choice of therapy, 48.5%, 33.7%, 11.9%, 3.0% and 2.0% of patients chose the effect of treatment on symptoms and esophageal inflammation, the effect of treatment on the symptoms, the effect of treatment on esophageal inflammation, compatibility of therapy with lifestyle, possible side effect, and recommendation of the physician, respectively. The TSQM scales scores as well as average TSQM values for patients on PPI, STC, and diet are shown in Table 1.

Conclusion: Adult EoE patients consider both effect of medication on symptoms as well as inflammation as most important criteria, when choosing EoE therapy. EoE patients appear to be ‘satisfied’ with PPI, STC, and dietary therapy and ‘very satisfied’ with STC, if diet therapy is taken twice daily.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1843 SYSTEMATIC ANALYSIS OF SUBEPITHELIAL EOSINOPHIL COUNTS IN EOSINOPHILIC YIELD IN ADULTS WITH EOSINOPHILIC ESOPHAGITIS

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Introduction: Measurement of Health-related quality of life (HRQoL) with generic or specific instruments has been increasingly used in patients suffering from EoE to support both research and clinical care. Generic instruments aim at measuring the overall HRQoL of patients across several conditions, being useful when comparing across different conditions and economic health outcomes. Disease-specific instruments assess domains specific to a given disease and are considered more sensitive to changes in the patient’s health state. An up-to-date systematic review will provide a useful resource for researchers and EoE specialists to ensure they can select an appropriate HRQoL measure for patients in their practice in order to identify correctable factors determining an impaired perception and to improve treatment outcomes.

Emotional impact was the only dimension with a significantly worse score in patients under dietary restrictions.

Conclusion: HRQoL is a relevant outcome that should be considered in clinical practice and research of EoE. Further validation studies in several languages and populations are required to support the use of disease-specific HRQoL measures.

Disclosure of Interest: All authors have declared no conflicts of interest.
Aims & Methods: In this study, we aimed to systematically assess the nature of subepithelial histologic alterations, analyze their relationship with epithelial histologic findings, adverse features, and symptoms, and evaluate the diagnostic impact of subepithelial eosinophil counts in patients with an epithelial peak eosinophil count of <15/hpf. We prospectively included in this cohort study adult EoE patients who underwent assessment of clinical, endoscopic, and histologic disease activity using scores.

Results: We included 200 EoE patients (mean age 43.5±15.7 years, 74% males) with a median peak count of 36 intraepithelial eosinophils/hpf [IQR 14-84]. The following histologic features were identified in the subepithelial layer: eosinophilic infiltration (median peak count of 20 eosinophils/hpf [IQR 10–51]), eosinophil degranulation (43%), fibrin (82%), and lymphoid follicles (56%). Peak intraepithelial eosinophil counts were higher, identical, and lower when compared to the subepithelial layer in 62%, 5%, and 33% of patients, respectively.

Subepithelial histologic activity correlated with epithelial histologic activity (rho 0.331, p < 0.001), endoscopic severity (rho 0.208, p = 0.003), and symptom severity (rho 0.179, p = 0.011). Forty percent (21/52) of patients with <15 intraepithelial eosinophils/hpf had subepithelial peak counts of <15/hpf.

Conclusion: In one-third of patients subepithelial peak eosinophil counts are higher than epithelial eosinophil counts. Systematic assessment of subepithelial eosinophil counts can aid in diagnosing EoE in additional 40% of all patients with epithelial eosinophils <15/hpf.

Disclosure of Interest: All authors have declared no conflicts of interest.
PI846 BELCHING PATTERNS IN PATIENTS WITH ISOLATED PATHOLOGICAL UPRIGHT REFLUX AND PATHOLOGICAL BIPOSITTIONAL REFLUX
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Introduction: Belching is a commonly occurring symptom in patients with gastro- esophageal reflux disease (GERD). Belching may also reflect reflux. It is unknown whether GERD patients with isolated pathological upright reflux (UP) have belching patterns that are different from GERD patients with pathological bipo- sittonal reflux (BIP).
Aims & Methods: Aim of this study was therefore to evaluate the belching pat- terns of UP reflux patients as compared with BIP reflux patients. We included 50 consecutive patients with pathological reflux and typical symptoms who under- went 24-h-pH-impedance monitoring at the Maastricht University Medical Centre from 2015 to 2017. Patients referred for excessive belching were excluded. A group of 25 UP reflux patients (10 male, mean age 52.9 years (range 22-77)) and 25 BIP reflux patients (11 male, mean age 47.9 years (range 18-77)) were evaluated. All pH-impedance tracings were analysed manually. We classified belches according to: a) physiological mechanism: supragastric vs. gastric; and b) their temporal relationship with a liquid reflux episode: isolated belch, preceding or during a liquid reflux episode. Symptom-assessment analysis was performed to assess a relationship between reported symptoms and reflux episodes.
Results: BIP patients showed higher acid reflux time (17.8±2.4% vs. 7.3±0.6%, p<0.001) and higher number of total reflux episodes (121±9 vs. 97±8, p=0.05) than UP patients. Notably, both the proportion of reflux episodes with belches of any type and the proportion of belches preceding liquid reflux were higher in UP patients than in BIP patients (51.7±3.6% vs. 32.1±3.7%, p<0.001 and 27.3±3.1% vs. 17.8±2.9%, p=0.03, respectively). No difference was found in the proportion of both supragastric and gastric belches between groups. During 24-h pH-impedance monitoring UP patients reported more symptoms (21±6 vs. 12±3, p=0.16) and had more positive symptoms with belches (60.2±7.1% vs. 39.0±6.6%, p=0.03) than BIP patients. Of the total number of belches that were detected using 24-h pH-impedance, more belches were experienced in UP patients than in BIP patients (24.8±6.4% vs. 11.1±2.5%, p=0.06).
Conclusion: In our study, GERD patients with isolated pathological upright reflux had more often (symptomatic) belches than GERD patients with pathological biposittional reflux. Therefore, examination of belching patterns can assist diagnostic and therapeutic strategic planning in GERD patients who are refrac- tor to medical therapy.
Disclosure of Interest: All authors have declared no conflicts of interest.

PI847 IS REFLUX DURING NAPS WORSE THAN DURING NIGHT-TIME SLEEP?
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Introduction: Gastroesophageal reflux in the recumbent period is related to a higher risk of developing oesophageal lesions (severe esophagitis or Barrett oes-ophageus). The only study to date that analysed reflux during daytime naps sug-gests that it is worse than that which occurs during the night-time sleep. Our objective was to determine if reflux during naps is more severe than during night-time sleep.
Aims & Methods: Between February 2015 and November 2016 patients that underwent ambulatory 24-hour oesophageal pH monitoring at our motility unit were screened. Those who slept an afternoon nap in the recumbent position in the 45 to 60 min of night-time sleep, with pathological acid exposure (deMeester score >14.72) were included. We excluded those patients with pre- vious foregut surgery or sleep apnea, those taking sleeping medication and those who were in recumbent position more than twice during the study. All studies were reviewed by the same investigator. Number of refluxes, number of refluxes per hour, reflux duration and oesophageal acid exposure (AET) time were compared between the two recumbent periods. Correlation between AET and meal-to-bed time was analysed, both for naps and night-time sleep.
Results: A total of 32 patients were selected (59.4% women, mean age 51.31±14.59, median BMI 26.48 (range 21.63-38.71)). Indication was typical GERD symptoms in 68.8% and atypical symptoms in 32.3%. Oesophageal manometry revealed normal oesophageal body motility in 65.6%, inefficient peristalsis in 28.1%, and a median lower oesophageal sphincter pressure of 8 mmHg (range 1–24). Median nap duration was shorter than that of the night-time sleep: 108 mins (range 30-375) vs 454 mins (range 240-593) (p=0.00). Median meal-to-bed time was also shorter for naps: 30.5 mins (range 4-185) vs 110.5 mins (range 9-247) (p=0.00). Median number of refluxes per hour and median recumbent AET were similar in both periods: 1.71 (range 0–26.5) vs 1.85 (range 0–12.8) (p=0.45) and 1.55 (range 0-61) vs 5.9 (range 0-36.1) (p=0.57), respectively. 87% of total reflux event took place during the

References

PI848 TREATMENT WITH PROTON PUMP INHIBITORS (PPI) DOES NOT REDUCE ACIDIC LARYNGOPHARYNGEAL REFLUX (LPR) DESPITE REDUCING DISTAL ACIDIC GASTROESOPHAGEAL REFLUX AND IMPROVING SYMPTOMS IN PATIENTS WITH LPR
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Introduction: PPI improve LPR symptoms in many patients. It is implicitly assumed that this effect is due to reduction of acidic LPR by PPI. Here we tested this assumption. We evaluated LPR and distal gastroesophageal reflux by using simultaneous pH/impedance monitoring in laryngopharyngeal segment and in distal esophagus before and after PPI treatment.
Aims & Methods: Patients referred for suspected LPR were screened and those with positive reflux finding score (RFS > 7, determined by ENT physician) and/or positive reflux symptom index (RSI ≥13) and at least one acidic LPR episode during 24h-pH-impedance study were enrolled. The RSI, RFS and dual pH/impedance study of LPR and distal reflux were performed before and after 3 months therapy with PPI twice a day. Appropriate distance between pH sensors was chosen based on manometrically determined LES and UES so that the proximal pH sensor was positioned 1 cm above UES and distal sensor was posi- tioned 4-6 cm above LES. By definition each LPR event was preceded by reflux detection in the distal esophagus.
Results: 18 patients (11M/7F, 31 ±10yrs) completed the study. In this group the PPI treatment substantially reduced the symptoms of LPR. Reflux finding score (RFS) was decreased by 40% from 9±1 to 5±1 (P<0.01). The number of distal acidic reflux episodes was reduced from 17±2 to 3±1 (P<0.01). Surprisingly, acidic LPR was not decreased by PPI treatment. The number of LPR with pH < 5.0 was 2±0.5 vs 3±1, P=NS, and the number of LPR episodes with pH < 4.0 was 0.7±0.1 vs 0.6±0.2, P=NS. Surprisingly, the number of acidic LPR episodes with pH = 5.0–6.0 was even increased (14±2 vs 21±3, P<0.05) leading to an increase in the overall number of LPR episodes by approximately 50% from 16±2 to 24±3 (p<0.05). PPI treatment did not decrease laryngopharyngeal time the pH was less than 4.0 (p=NS) and did not alter the composition of laryngopharyngeal reflux (P=NS).
Conclusion: Proton pump inhibitor treatment does not reduce acidic laryngo- pharyngeal reflux despite substantially improving symptoms in patients with objectively established LPR. This suggests that PPI treatment influences some aspects of pathogenesis of LPR symptoms that are not readily detected by laryngopharyngeal pH/impedance monitoring.
Disclosure of Interest: All authors have declared no conflicts of interest.

P1849 EFFECT OF L-MENTHOL ON ESOPHAGEAL PERISTALIS AND LOWER ESOPHAGEAL SPHINCTER IN HEALTHY VOLUNTEERS

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Introduction: Menthol is widely used as a food flavourant. In general, it is considered as a trigger of gastroesophageal reflux symptoms. It has been assumed that menthol reduces the tone of the lower esophageal sphincter (LES) as a consequence of direct effect on the smooth muscle of the LES. Evidence has provided that menthol sprayed on the gastric mucosa significantly suppresses gastric acid secretion and motility. However, there is no evidence of the impact of menthol on the esophageal peristalsis and LES tone.

Aims & Methods: The aim of the study was to evaluate the effect of the menthol infusion into the esophagus on the esophageal peristalsis and lower esophageal sphincter pressure in healthy volunteers. High-resolution manometry and the parameters of esophageal pressure topography were used to quantitatively evaluate the certain components of esophageal motility. 13 healthy volunteers without out esophageal symptoms were enrolled. High-resolution manometry with a thin silicon tube attached were placed transnasally so that the distal end of the tube was 5 cm above the LES. After a 5 min. adaptation period the measurement was performed in the supine position according to the protocol as follows: in 10 volunteers recording 10 water swallows of 5 ml and 3 x 3 water swallows of 10 and 15 ml after that a 20 min. infusion challenge with 3 mM menthol 8 ml/min. was carried out and subsequently the water swallows in order described above were repeated. HRM tracings were manually analyzed using Medical software and Parameters used in this study in the Chicago classification (v3.0) were evaluated. Integrated relaxation pressure (IRP), nadir LES pressure and distal contractile integral (DCI) values from 5 ml, 10 ml and 15 ml swallows before and after menthol infusion were used for statistical analysis. Statistical analysis:

Results: None of the subjects had any motility disorder defined by the Chicago Classification v3.0. Few volunteers reported only mild cold sensation during the infusion challenge. None of the subjects had any motility disorder defined by the Chicago Classification v3.0. 

Paired parametric tests were used for statistical analysis. distal contractile integral (DCI) values from 5 ml, 10 ml and 15 ml swallows before and after menthol infusion was not significant (p > 0.05). However, difference of IRP in 10 ml and 15 ml swallows was not significant (p > 0.1, p > 0.5, respectively). Average DCI pressure (5 ml swallows) was 737.8 ± 116.2 mmHg before and after menthol infusion, respectively (p > 0.5). We found no difference in DCI in 10 ml and 15 ml swallows before and after menthol infusion. Menthol seemed to have had only a marginal insignificant effect on IRP and DCI in rapid swallow test.

Conclusion: We quantified the effect of menthol on the esophageal function and LES pressure in healthy volunteers using high resolution manometry. The analysis of HRM tracings revealed that menthol has no effect on particular parameters of the esophageal motility and esophageal peristalsis.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1851 GASTRIN-17 AS A NON-INVASIVE MARKER FOR GERD: A PROSPECTIVE STUDY ON SAMPLE OF 777 CONSECUTIVE PATIENTS

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Introduction: Due to a negative feed-back mechanism, gastrin-17 (G17) can be considered a mirror of acid secretion: the lower G17 values, the higher gastric acid secretion. Some studies suggest serum G17 low levels as a marker of acid-related conditions, like Gastroesophageal Reflux Disease (GERD). Aim of the study was to evaluate the property of low levels of G17 in GERD diagnosis, compared in clinical and concomitant clinical GERD gold-standards (typical symptoms, esophagitis at endoscopy, a positive DeMeester score at pH-metry).

Aims & Methods: We evaluated 777 consecutive patients (518 males and 259 females), aged 36-99 years, referred for gastroesophageal reflux disease suspicion. We collected all clinical data and non-invasive tests. All patients underwent upper GI endoscopy and esophagitis was classified according with Los Angeles score. One hundred and seventy-out 221 patients which underwent 24h pH-metry showed a positive DeMeester score for acid gastroesophageal reflux. Summarizing, 700 out of the 777 subjects included in the study showed at least one of the criteria (clinical, endoscopic or functional) accepted to support the diagnosis of symptomatic gastroesophageal reflux disease (GERD).

Conclusion: By using low levels of G17 as a non-invasive marker of GERD, in more than 90% (700 out of 777 pts) the diagnosis of reflux disease was confirmed, according with the current clinical or instrumental gold standard criteria, supporting the use of this simple method to identify subjects with suspected GERD almost when typical symptoms are lacking or a NERD picture is find.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
P1852 HIGH RESOLUTION MANOMETRY CAN BE PREDICTIVE OF GERD AS CONFIRMED BY IMPEDANCE-PH MONITORING: DEVELOPMENT AND INTERNAL VALIDATION OF A PREDICTIVE MODEL

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Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: HRM barium x-ray showed similar diagnostic accuracy to detect HH. Thus, HRM might be considered the test of choice during pre-surgical evaluation for laparoscopic antireflux surgery.

P1853 HIGH RESOLUTION MANOMETRY CAN BE PREDICTIVE OF GERD AS CONFIRMED BY IMPEDANCE-PH MONITORING: DEVELOPMENT AND INTERNAL VALIDATION OF A PREDICTIVE MODEL

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Disclosure of Interest: All authors have declared no conflicts of interest.

Conclusion: Our data indicate that HRM can be useful in detecting GERD, with our predictive model allowing a high level of suspicion for reflux disease. In particular the role of the EGJ-CI in GERD pathophysiology has been
P1854 GORD Patients are frequently Dissatisfied on Long-term PPI Therapy (Aiming at the reasons) and Management in Routine Clinical Care (Lopa II Study)

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Aims & Methods: The LOPA II study is a prospective, multicenter, observational study conducted in 17 general practice clinics. Patients with chronic GORD, taking PPI therapy for at least 1 year, and not satisfied with their treatment were asked to complete a questionnaire. Patients were asked about the reasons for their PPI therapy satisfaction, as well as the frequency of symptoms at least twice per week despite PPI. A total of 20% were dissatisfied with their treatment. Few patients had received specific GORD diagnostics or recommended other options (<10%).

Results: 510 consecutive patient responses were collected within one year. Patients suffered from GORD an average of 9.6 years and prescribed PPI therapy for an average duration of 7.9 years. 70% were dissatisfied or very dissatisfied with their PPI therapy (GerdQ score of 1 or 2). 83% reported heartburn or regurgitation at least 2 days in the prior week (53% 4–7 days). 49% reported using additional medication other than their prescribed PPI at least 2 days per week (34% 4–7 days). In patients dissatisfied on PPI, most cited insufficient symptom control (87%) for dissatisfaction. In addition, 31% cited concerns with long-term use of drugs and 27% the need for daily medication. 92% of patients satisfied with their current condition, frequency of symptoms in the last week, whether they had previously received diagnostic evaluation or surgical consultant related to GORD, whether they plan to consult a reflux specialist for further diagnostics, and reason for dissatisfaction with their current medication treatment. “Lost Patients” were defined as those with a satisfaction score of 1 or 2 on a 5-point Likert scale (1: very dissatisfied; 2: dissatisfied; 3: somewhat dissatisfied; 4: somewhat satisfied; 5: very satisfied). GerdQ score at least 8, and have not previously received specialized GORD diagnostics.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1855 Prevalence and Pathophysiology of Gastroesophageal Reflux Disease in Patients with Autoimmune Gastroitis

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Aims & Methods: The study was aimed to define the prevalence of reflux symptoms in AIG patients, to evaluate the serological, histological and clinical differences in AIG patients with or without reflux symptoms and to investigate the pathophysiology behind these symptoms. One hundred and fifty AIG patients were enrolled and 87 were included in the study: 29 AIG patients with reflux symptoms (AIG-R) and 58 without (controls), selected with similar age and sex distribution. AIG-R underwent pH-impedance (pH/I) and high resolution manometry (HRM). Serum biomarkers, EGDS, histology and anamnestic data were evaluated in both groups. Statistics was performed as indicated.

Results: AIG-R were 19% overall and 28% of them showed endoscopic esophageal lesions, with more frequent hiatal hernia than in controls (p < 0.02). pH/I diagnosed acid reflux, esophageal hypersensitivity and a normal pattern in 7%, 28% and 66% respectively. The number of non-acid reflux (NAR) was higher when compared with acid ones (p < 0.0001), moreover NAR and NAR proximal extension were associated with endoscopic lesions (p < 0.03 and p < 0.05, respectively). HRM revealed normal pattern in 62% of patients, minor peritardis disorders in 24%, and outflow obstruction in 14%. According to the new Rome IV criteria, 55% of patients presented “functional esophageal disorders” (Rome IV-IN). No differences were detected in serological marker and clinical presentation. AIG-R presented lower antrum gastritis (p < 0.001) and a trend towards lower corpus gastritis (p = 0.07) when compared with controls. The two patient with acid GERD were an OLGA 0 with mild gastrin increase and an OLGA I with short segment Barrett’s esophagus. Lower OLGA stages, lower corpus atrophy (p < 0.02) and more frequent response to PPI (p < 0.05) were associated with Rome IV-OUT status.

Conclusion: AIG-R patients are not uncommon despite the hypo-achlorhydria. Acid reflux is rare in AIG, while motility and “functional” disorders are frequent. Lower corpus atrophy and OLGA stage in Rome IV-OUT patients, with an at least partly preserved fundic gland, is likely related to lower prevalence of symptoms. Treatment should consider use of proton pump inhibitor drugs only in specific patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1856 Diet is more effective than Antacids in Relieving Reflux Symptoms in Mild GERD

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Aims & Methods: To firm these preliminary data.

Results: After investigations 261 patients out of 500 (52.2%) were excluded because of IBS (140), colic disease (6), nickel atopy (25), lactose intolerance (60), SIBO (10), and allergy to other foods (20). The remaining 239 patients were diagnosed as affected by mild GERD (median age 47; BMI 24; 132F/107M; no erosive reflux disease) and were included in our interventional prospective study. Among them, 101 (42%) patients were assigned to the intervention group (dietary therapy), and 138 (58%) were assigned to the control group (medical therapy). Diet for patients was carefully designed following a structured diet regimen, tailored on the metabolic need of the patient. In patients with mild GERD, diet completely prevented reflux symptoms (p<0.01) and was effective in 94.9% of them. No differences were noted between responders and not responders in terms of BMI, age and gender. Diet was more effective than antacids treatment in reducing reflux symptoms in mild GERD patients (p<0.01).

Conclusion: A structured diet regimen, tailored on the metabolic need of the patient, appear more effective than antacids alone in relieving reflux symptoms in patients with mild GERD. Further controlled studies are mandatory to confirm these preliminary data.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1857 Interim Results of a Prospective Multicenter Registry of Lower oesophageal sphincter (Los) Function in Patients with Gastro-oesophageal Reflux Disease

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The LOPA II study is a prospective, multicenter, observational study conducted in 17 general practice clinics. Patients with chronic GORD, taking PPI therapy for at least 1 year, and not satisfied with their treatment were asked to complete a questionnaire. Patients were asked about the reasons for their PPI therapy satisfaction, as well as the frequency of symptoms at least twice per week despite PPI. A total of 20% were dissatisfied with their treatment. Few patients had received specific GORD diagnostics or recommended other options (<10%).

Aims & Methods: Our study was aimed to define the prevalence of reflux symptoms in AIG patients, to evaluate the serological, histological and clinical differences in AIG patients with or without reflux symptoms and to investigate the pathophysiology behind these symptoms. One hundred and fifty AIG patients were evaluated and 87 were included in the study: 29 AIG patients with reflux symptoms (AIG-R) and 58 without (controls), selected with similar age and sex distribution. AIG-R underwent pH-impedance (pH/I) and high resolution manometry (HRM). Serum biomarkers, EGDS, histology and anamnestic data were evaluated in both groups. Statistics was performed as indicated.

Results: AIG-R were 19% overall and 28% of them showed endoscopic esophageal lesions, with more frequent hiatal hernia than in controls (p < 0.02). pH/I diagnosed acid reflux, esophageal hypersensitivity and a normal pattern in 7%, 28% and 66% respectively. The number of non-acid reflux (NAR) was higher when compared with acid ones (p < 0.0001), moreover NAR and NAR proximal extension were associated with endoscopic lesions (p < 0.03 and p < 0.05, respectively). HRM revealed normal pattern in 62% of patients, minor peritardis disorders in 24%, and outflow obstruction in 14%. According to the new Rome IV criteria, 55% of patients presented “functional esophageal disorders” (Rome IV-IN). No differences were detected in serological marker and clinical presentation. AIG-R presented lower antrum gastritis (p < 0.001) and a trend towards lower corpus gastritis (p = 0.07) when compared with controls. The two patient with acid GERD were an OLGA 0 with mild gastrin increase and an OLGA I with short segment Barrett’s esophagus. Lower OLGA stages, lower corpus atrophy (p < 0.02) and more frequent response to PPI (p < 0.05) were associated with Rome IV-OUT status.

Conclusion: AIG-R patients are not uncommon despite the hypo-achlorhydria. Acid reflux is rare in AIG, while motility and “functional” disorders are frequent. Lower corpus atrophy and OLGA stage in Rome IV-OUT patients, with an at least partly preserved fundic gland, is likely related to lower prevalence of symptoms. Treatment should consider use of proton pump inhibitor drugs only in specific patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
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Introduction: Safety and efficacy of electrical stimulation of the lower esophageal sphincter (LES) using the EndoStim® LOS Stimulation System (Nijmegen, The Netherlands) has been demonstrated in clinical trials up to > 5 years. Data on outcomes in routine clinical practice is growing.

Aims & Methods: An ongoing, prospective international multicenter web-based registry collecting data in patients with refractory GERD symptoms, treated with ES-LOS in clinical practice. Data is collected at baseline and at routine follow-ups for 5 years. Demographics, adverse events, GERD symptoms, GORD health related quality of life (GORD-HRQL) scores, use of proton pump inhibitors (PPI) and physiological data (oesophageal pH, manometry) are collected when available.

Results: 180 patients at 13 sites in Europe and Latin America have been enrolled. Follow-up data up to 2 years is available. Median (IQR) age at the time of implant was 51 (41–60), 57% were male. All patients were taking prescription PPI at baseline. At their last follow-up between 6 and 24 months post op, 70% (84/121) were completely off PPI (p < 0.001). Median (IQR) composite GORD-HRQL score improved from 23 (17–29) preoperatively to 3 (4–15) at 6 months, 7 (2–12) at 12 months, and 5 (4–15) at 24 months (p < 0.001 at all time points, n = 154, 121, 66, 33 at baseline, M6, M12, M24, respectively). Oesophageal pH testing post-op was performed by a few sites either as standard of care or in protocol-specified subgroups. Median (IQR) 24-hour oesophageal acid exposure improved from 8.2% (4.6–18.4) at baseline to 4.7% (1.4–14.5) at 6 months (p = 0.26) and 3.6% (1.0–5.8) at 12 months (p = 0.04) (n = 120, 39, 10 at baseline, M6, M12, respectively). The proportion of patients with moderate to severe regurgitation decreased from 64% at baseline to 22.5% after 6 and 13.4% after 12 months. Extra-oesophageal symptoms (recurrent cough, pneumonitis, shortness of breath) and sleep disturbances also decreased substantially. Overall, dysphagia and gas were less common at 12 months than preoperatively. Four serious adverse events were reported in one patient. One myocardial infarction related sudden death at 11-month post-op, not related to the device or procedure; 1 event of asymptomatic electrode erosion into the oesophagus detected during routine endoscopy and the device safely removed during laparoscopic fundoplication; and 2 events of gastrointestinal perforations in 1 patient requiring hospitalization, possibly related to the device, were reported.

Conclusion: ES-LOS is safe and effective in treating patients with refractory GERD symptoms despite PPI in routine clinical practice. ES-LOS should be considered as initial treatment option for refractory GERD patients.

Disclosure of Interest: J. Labenz. Consulting fees - EndoStim BV
All other authors have declared no conflicts of interest.
P1861 LONG-TERM RESULTS OF RADIOFREQUENCY ABLATION (RFA) IN PATIENTS WITH BARRETT’S ESOPHAGUS RELATED NEOPLASIA

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Introduction: Radiofrequency ablation (RFA) with or without endoscopic resection (ER) is an established endoscopic treatment of early Barrett’s esophagus (BE) related neoplasia (BORN). After successful treatment, follow-up is still required as recurrences may occur. The aim of this prospective single-center case series was to assess the long-term efficacy of endoscopic treatment (RFA with or without ER) for BORN. Main outcomes were complete remission of neoplasia (CR-N) and intestinal metaplasia (CR-IM) and recurrence of IM (R-IM) and neoplasia (R-N).

Aims & Methods: A total of 99 consecutive patients with BORN have been treated from 2009 to 2019, 82 patients (75 men, mean age 64, range 22–91) completed the treatment and were included in this analysis. The patients had been followed up during 296 patient-years (mean 3.4 years, range 0.5–6). Thirty-three patients were diagnosed with adenocarcinoma (35%), 24 patients with high-grade dysplasia (26%) and 30 patients with low-grade dysplasia (34%). Prior to RFA, ER for visible lesions was performed in 57 patients (60%). Mean length of the Barrett’s esophagus (BE) was 4.6 cm (range 1–13 cm). After treatment, the patients have undergone regular endoscopic surveillance with multiple biopsies. Remission was defined as complete remission of IM (CR-IM) and complete remission of neoplasia (CR-N) and intestinal metaplasia (CR-IM) and recurrence of IM (R-IM) and neoplasia (R-N).

Results: We included 92 patients with BE (at least CM1), who had a baseline VLE scan, followed by RFA and had no prior ablative therapy. These patients were divided in three patient groups: without prior EMR and treated with only RFA, with prior EMR and treated with only RFA and with combined RFA and EMR. All patients who had any ablative therapy prior to baseline VLE. The primary outcome was the percentage reduction of Prague length after the first treatment. Secondary outcomes were: 1. complete remission of intestinal metaplasia (CRIM) during 12 months after baseline procedure, 2. complete remission of dysplasia (CRD) during 12 months after baseline procedure, and 3. number of RFA treatments necessary for complete response of intestinal metaplasia. We estimated the thickness of BE mucosal layers, by measuring the distance between the esophageal surface to the deepest edge of the lamina propria. In order to do so, we developed an algorithm (ImageJ software; imagej.nih.gov/ij/) that automatically adjusts every clockwise image into a high-resolution vertical scan with enhanced contrast. We used two measurement protocols: subjective, by drawing a line from the surface to the edge of the lamina propria (LP) and by plotting a grayscale density plot at the same location, using the sharp drop off in density to measure the thickness of the tissue.

Conclusion: We included 92 patients with BE at least CM1, who had a baseline VLE scan, followed by RFA, and had no prior ablative therapy. These patients were divided in three patient groups: without prior EMR and treated with only RFA, with prior EMR and treated with only RFA and with combined RFA and EMR. All patients who had any ablative therapy prior to baseline VLE. The primary outcome was the percentage reduction of Prague length after the first treatment. Secondary outcomes were: 1. complete remission of intestinal metaplasia (CRIM) during 12 months after baseline procedure, 2. complete remission of dysplasia (CRD) during 12 months after baseline procedure, and 3. number of RFA treatments necessary for complete response of intestinal metaplasia. We estimated the thickness of BE mucosal layers, by measuring the distance between the esophageal surface to the deepest edge of the lamina propria. In order to do so, we developed an algorithm (ImageJ software; imagej.nih.gov/ij/) that automatically adjusts every clockwise image into a high-resolution vertical scan with enhanced contrast. We used two measurement protocols: subjective, by drawing a line from the surface to the edge of the lamina propria (LP) and by plotting a grayscale density plot at the same location, using the sharp drop off in density to measure the thickness of the tissue.

References

Disclosure of Interest: All authors have declared no conflicts of interest.

Abstract No: P1862

Table 1: The measurements of Barrett’s thickness in one patient, using the two different measurement protocols.

<table>
<thead>
<tr>
<th>Pt.</th>
<th>Age (years)</th>
<th>SEX</th>
<th>BMI</th>
<th>Highest grade prior biopsy</th>
<th>Prior Treatment</th>
<th>Prague Length, circumferential and maximum extend in cm</th>
<th>Thickness subjective measured, pixels [SEM, number of measurements]</th>
<th>Thickness objective measured, pixels [SEM, number of measurements]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>85</td>
<td>Male</td>
<td>25.8</td>
<td>High grade dysplasia</td>
<td>None</td>
<td>C16M16</td>
<td>317.38 [9.96, 65]</td>
<td>286.85 [8.96, 65]</td>
</tr>
</tbody>
</table>
After a median of 20 months: small Barrett island (n = 3), HGD (n = 22), EC (n = 27). Worst pathology pre-RFA (after any ER) was: non-dysplastic IM (n = 9), LGD (n = 27), HGD (n = 32). Median FU was 85 months (IQR 58–96) with a median of 7 FU endoscopies per patient. Recurrence of long-term follow-up (FU). Primary outcome: recurrence of HGD-EC; recurrence of endoscopically visible Barrett’s mucosa. Secondary outcomes: Buried Barrett’s glands; IM in biopsies obtained distal to a normal appearing neo squamocolumnar junction (neo-SCJ); need for retreatment; sustained CE-IM and CE-NEO at last FU.

Results: 68 patients were included (55 men, median 64 yrs, median BE C5M6). In 53/68 patients ER was performed (worst pathology: low-grade dysplasia (LGD) (n = 40), LGD-HGD (n = 13), HGD (n = 23)). Worst pathology pre-RFA (after any ER) was: non-dysplastic IM (n = 9), LGD (n = 27), HGD (n = 32). Median FU was 85 months (IQR 58–96) with a median of 7 FU endoscopies per patient. Recurrence of HGd-EC was found in 3 patients (2%): one patient with a T1mE2 AEC 3 cm away from the neo-SCJ 10 months and one patient had a visible lesion at the neo-SCJ with HGD after 22 months, both were treated successfully with ER. Recurrence of endoscopically visible Barrett’s mucosa was seen in 22 patients (32%) after a median of 20 months: small Barrett island (n = 10), BE tongue (n = 9), ec-SCJ (n = 2), Broad (n = 2). In patients Buried Barrett’s glands were detected (overall 34/48 FU endoscopies, 0.7%). IM in a normal appearing neo-SCJ was found in 19 patients (28%), and this was not reproduced in 84%. In 2 patients LGD without IM was found in the neo-SCJ. Eleven patients had a local recurrence of Barrett’s mucosa (n = 5), six patients had additional ER (1x T1m2, 1x HGD, 2x LGD, 2x visible Barrett’s islands), RFA for LGD without IM in the neo-SCJ (n = 1). CE-NEO and CE-IM (excluding IM in the neo-z-line) at the last FU endoscopy was seen in 100% and 96% respectively.

Conclusion: With 7-years of follow-up, this study presents the longest published follow-up data on RFA for BE with HGD/Ec to date. Our long-term outcomes show that after successful RFA recurrence of HGd-EC is rare (3%). Recurrence of endoscopically visible BE was found in 32% of patients, however it was confined to small islands or tongues <1 cm in the vast majority of patients.

Disclosure of Interest: All authors have declared no conflicts of interest.
for lepin. The association did not differ according to subgroups defined by BMI (p-interaction for leptin=0.82). We also observed that adiponectin was not associated with BE. However, we observed an OR of 0.41; 95%CI 0.17, 0.99 comparing extreme quintiles of IGFBP-3 (p-interaction=0.11). Among both women and men, we did not observe any other significant associations between inflammatory or metabolic biomarkers and adenocarcinoma of the esophagus.

Conclusion: There was little evidence that pre-diagnostic inflammatory or metabolic biomarkers are associated with risk of BE.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1866 OUTCOMES OF TREATMENT OF PATIENTS WITH EARLY-STAGE ADENOCARCINOMA OF THE ESOPHAGUS WITH INCipient SUBMUCOSAL INVASION, RETROSPECTIVE ANALYSIS OF 19 CASES FROM A TERTIARY REFERRAL CENTER IN THE UK
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Introduction: Endoscopy mucosal resection (EMR) is an established diagnostic and treatment tool in the management of Barrett’s oesophagus (BO) with early neoplasia, however it is not enough evidence on the outcomes of the patients, in whom the EMR’s histologic assessment identifies early-stage adenocarcinoma of the esophagus with incipient submucosal invasion (pT1b sm1).

Aims & Methods: We have conducted a retrospective analysis using our electronic database for endoscopic procedures for patients with BE, who underwent EMR from October 2010 to December 2016. We investigated the size of the EMRs, the complication rates of the EMRs, the histological features and the resection margins of the EMR specimens and also the outcomes with the mortality.

Results: A total of 99 patients underwent 134 EMR procedures, and the histology identified early adenocarcinoma with incipient invasion of the submucosa in 25 patients. 23 (92%) were male, the mean age at the EMR was 71 years (SD: 8.1). In all 25 EMR 9 (36%) patients had a single piece, 7 (28%) patients 3 piece and 4 (16%) patients 4 piece EMR. The median length of the circumferential and maximum extent of the BO segments were 2 and 5 cm respectively (interquartile range (IQR) 2–4). We observed 6 (24%) intra-procedural bleedings and 2 (8%) patient needed admissions with post procedural bleeding and 1 (4%) of them required transfusion. Stricture was endoscopically detectable but not causing any symptoms in 1 (4%) patient and another patient (4%) had slight dysphagia post EMR, but did not need dilatation. Histology showed lymphovascular invasion in 6 (25%) patients and vascular invasion in 1 (4%) patient. Of all 25 early adenocarcinomas 7 (28%) were reported as poorly differentiated, 11 (44%) as moderately differentiated and 3 (12%) as well differentiated. In 4 (16%) cases differentiation was not reported. All resection margins were reported as being clear from dysplasia or cancer. There were 10 (60%) patients with clear radial and or deep margin of the EMR specimen, of these 9 (60%) had oesophagectomy and in the histologic assessment of these specimens, lymph node involvement was observed in 2 cases (22.2% of all oesophagectomies and 9.5% of all surviving and currently cancer-free patients). There was no residual cancer in 3 (33.3%) of the surgical specimens. Radical radio-chemotherapy was given in 1 (6.7%) patient and 3 (33.3%) patients did not have radical treatment for clinical reasons. There were 10 (40%) patients without cancer invasion of the EMR resection margins, of these 4 (40%) had oesophagectomy and 1 (10%) radical radio-chemotherapy. The histologic assessment of these surgical specimens showed residual cancer in 3 (30%) cases and high-grade dysplasia in 1 (10%) case. Of the 25 patients 5 (20%) met the criteria and had radio frequency ablation of the residual Barrett’s oesophagus. Of the 13 (52%) patients who had had oesophagectomy 1 (7.7%) patient died of the deterioration precipitated by the oesophagectomy, and sadly in this case the oesophagectomy specimen did not show residual cancer. Of the 12 (48%) patients who had not had oesophagectomy 3 (25%) died since their EMR, 1 (8.3%) of cardiac arrest, 1 (8.3%) of chronic obstructive pulmonary disease and 1 (8.3%) of advanced oesophageal cancer, 18 months after the EMR, and the 9 (75%) surviving patient are all doing well. We diagnosed 9 (75%) patients with cancer invasion of the submucosa. Of the median survival of all 21 (84%) patients currently alive is 25 months (range: 2–68 months; SD: 22.2).

Conclusion: Early detection of esophageal cancers can significantly reduce the years of potential suffering for patients with BE. A new prototype endoscopic method incorporating the endoscopyduce function into a magnifying endoscope has been designed. Previously, Inoue et al have published a pilot trial on evaluating the use of this endoscopyctoscope in various types of benign and malignant pathologies. We designed a study that evaluated the potential of this new endoscope. A new endoscopic method incorporating the endoscopyduce function into a magnifying endoscope has been designed. Previously, Inoue et al have published a pilot trial on evaluating the use of this endoscopyctoscope in various types of benign and malignant pathologies. We designed a study that evaluated the potential of this new endoscope.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1867 THE USE OF ENDOSCOPYCTOSCOPY FOR THE EARLY DETECTION OF ESOPHAGEAL NEOPLASM
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Results: From July 2015 to March 2017, forty-four patients were included in the study. Seventeen of the forty-four (38.6%) patients had histological confirmed cancer of the esophagus. There were sixteen patients who had normal finding and nine patients with esophagitis. The positive predictive value for malignancy (ECA 4 and 5) was 89.5%; the negative predictive value was 100%. Sensitivity was 100% and specificity was 92.6%. Similar findings were noted with IPCL on malignancy. The positive predictive value for malignancy (IPCL 4 and 5) was 100%; the negative predictive value was 100%. Sensitivity was also similar at 100% and specificity 92.6% respectively. To compare the diagnostic accuracy of endoscopyctoscopy and magnifying NBI, the McNemar test was performed. The McNemar chi-squared statistic is NaN, and the McNemar chi-squared statistic was 0.5, meaning that the two tests have the same diagnostic accuracy.

Conclusion: Endoscopyctoscopy had a high positive predictive value and sensitivity for esophageal malignancy. Its diagnostic accuracy was comparable to magnifying NBI. It may be helpful as an adjunct for better characterization of esophageal lesions. However, further studies on interobserver variability is required.

Disclosure of Interest: All authors have declared no conflicts of interest.

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Introduction: Endoscopic resection for early esophageal cancer is considered to be a high-risk factor for superficial esophageal cancer. But there are few reports of endoscopic resection for this cancer, and the outcome is unclear. In our hospital, we have performed over 1300 Per-Oral Endoscopic Myotomy procedures for esophageal achalasia and related esophageal diseases. In this process, we diagnosed 10 superficial esophageal cancers in patients with achalasia. We performed endoscopic resection for all cases and report relatively long-term outcome.

Aims & Methods: We aimed to evaluate clinicopathological findings and outcomes of endoscopic resection for 10 achalasia-associated superficial esophageal cancer. This is a case series study at our hospital. Between August 2010 and February 2017, 10 achalasia patients with superficial esophageal cancer underwent endoscopic resection. We performed in all cases upper gastrointestinal endoscopy, using lugo’s solution and narrow band imaging, and we included all patients that had early cancers that were eligible for endoscopic resection in this series. At 2 and 12 months after treatment, we performed follow-up endoscopy in all cases. After this, we performed long-term endoscopic follow-up every year. In the case that the tumor invasion depth is to the muscularis mucosa (MM) on histopathology, we performed endoscopic follow-up every 6 months and CT scan.

Results: There were 6 men and 4 women and their average age was 61.7 years. 8 patients were diagnosed with lesions before POEM. We performed endoscopic resection (ESD/EMR,9/1) in all cases after POEM. None of the patients had a severe adverse event. The mean tumor diameter was 30mm (range: 5–80mm). The pathological diagnosis was 8 SCC, 2 high grade intraepithelial neoplasia. Out of the SCC cases, 7 were found with superficial lesion with depth of Tis-EP to T1a-LPM, and 1 with depth of T1a-MM, without lymphatic invasion(0) or venous invasion(v0). Follow-up surveillance mean was 32 months (range: 1–
Venous involvement of EP and SEP were 0% and 2.9% (1/35), respectively. The LNM was found in one of two patients who had SEP SCC without an additional therapy. 6. Local recurrent rate was 0%. 7. LNM rate of EP and SEP was 0% and 5.7% (2/35), respectively. One of two patients who had LNM was a 76-year-old male. He had SEP SCC without lymph duct involve- ment. A cervical LNM was diagnosed 6 months after ESD. Lymph node dissec- tion (CRT) was performed for the patient. The patient died of other disease without recurrence of pharyngeal SCC. The other patient also had a cervical LNM and treated by lymph node dissection + CRT. The patient is alive without recurrence for 10 years after ESD. 8. Prognosis No patients died of pharyngeal SCC or ESD.

Conclusion: ESD is a safe and useful treatment for superficial esophageal SCC. However, surveillance of LNM is important for the patients who had SEP SCC.

Discourse of Interest: All authors have declared no conflicts of interest.

P1870 OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR SUPERFICIAL PHARYNGEAL SQUAMOUS CELL CARCINOMA
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Introduction: Superficial pharyngeal squamous cell carcinoma (SCC) has been increasing in Japan. And, such SCC could be treated by endoscopic submucosal dissection (ESD). However, the outcome of pharyngeal ESD is unknown. Aims & Methods: The aim of this study is to clarify the outcome and prognosis of pharyngeal SCC treated by ESD. 89 pharyngeal SCC in 68 patients treated by ESD from Jan. 2006 to 2014 in Saku Central Hospital Advanced Care Center were enrolled in this retrospective study. The patients treated from 2004 to 2009 were followed up without TA injection (Non-TA), and the follow-up period of TA injection was performed for the patients after 2009 (TA group). The number of patient in Non-TA and TA group was 16 and 28, respectively. Age of both groups was 65 (30-83) and 61 (42-82) years old. The length of circumferential resection was 75 (50-10) and 76 (55-111) mm, respectively. There was no significant difference in the background of both groups. Fifity mg TA was injected into submucosal layer just after ESD, and TA injection was repeated in two-weeks interval. Fifteen mm endoscopic balloon dilatation (EBD) was performed when the scope couldn’t pass the ESD ulcer. The primary endpoint was the number of balloon dilatation. The secondary endpoints were duration from ESD to ulcer healing, and the difference between Barrett’s esophagus adenocarcinoma (EAC) and squamous cell carcinoma (SCC).

Results: 1. Number of EBD in Non-TA and TA group were 20 (13-33) and 5.1 (0-23), respectively (p = 0.01).2. Duration from ESD to ulcer healing were 10 (3-25) and 7.3 (4-32) weeks, respectively. (p = 0.47) 3. Complications; Perforation rate due to ESD was 6.3% (1/16) and 3.6% (1/28). Both patients were treated by conservative therapy.

Conclusion: Three factors were significantly associated with longer hemostatic time. The difference between Barrett’s esophagus adenocarcinoma (EAC) and squamous cell carcinoma (SCC). All authors have declared no conflicts of interest.

P1872 EXPLORATORY STUDY OF PREDICTIVE BIOMARKER FOR INFECTIVE CHEMORADIOTHERAPY FAILURE: IDENTIFICATION OF SPECIMENS OF PATIENTS WITH ESOPHAGEAL SQUAMOUS CELL CARCINOMA
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Introduction: Superficial esophageal squamous cell carcinoma (ESCC) is a common disease in Japan. However, the treatment is quite controversial. Our institutional guidelines recommend the endoscopic resection for ESCC. However, only 30% of ESCC cases are eligible for endoscopic resection. The long term outcomes of patients who underwent ESD from 2004 to 2016 in Saku Central Hospital Advanced Care Center were recommended to perform as surveillance after ESD, and these examinations were recommended for patients with lymph node metastasis (LNM). However, surveillance of LNM is important for the patients who had SEP SCC. All authors have declared no conflicts of interest.

Reference
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Introduction: While definitive chemoradiotherapy (CRT) showed high efficacy for esophageal squamous cell carcinoma (ESCC), approximately 40% of patients develop local failure, resulting in poor long-term survival. However, there is no definitive biomarker which is useful to predict survival outcome after CRT for ESCC. Several studies have investigated the correlation of expression of CD24, cytoplasmatic podoplanin (PDpn), and cytokeratin 4 (CK4) with prognosis of patients with various malignant tumors who underwent surgical resection. However, it remains unclear whether the expression of these proteins can predict the outcome of CRT for patients with ESCC.

Aims & Methods: The aim of this study was to clarify the predictive values of expression of CD24, CK4, and PDpn for ESCC patients who received CRT. Among patients with ESCC who received CRT or curative esophagectomy with extended lymph node dissection (OPe) as an initial treatment between 2005 and 2016 at our institution, patients were selected on the following criteria: clinical stage II, III (UICC-TNM classification 6th edition), age of 75 years old or younger, ECOG Performance Status 0–1, and no prior or concurrent other cancers. The method of immunohistochemistry (IHC) was utilized to examine the protein expression of CD24, CK4, and PDpn in pretreatment biopsy specimens of ESCC. The cut-off values for CD24, CK4, and PDpn expression were used hazard ratio for overall survival (OS). The prognostic factor of CD24, CK4, and PDpn expression were statistically analyzed. OS was calculated from the date of CRT or OPe to the date of death or last follow-up, using the Kaplan-Meier method. The survival predictors identified by univariate analysis was assessed by multivariate analysis using a Cox’s proportional hazards model. Results: 148 ESCC patients (CRT group, n = 83; OPe group, n = 65) were analyzed. In the CRT group, 40 patients had stage II and 45 patients had stage III, and the 5-year OS was 52%. In the OPe group, 32 patients had stage II and 33 patients had stage III, and the 5-year OS was 66%. By univariate analysis, there were no statistically significant differences for OS in differences between the CRT and OPe group. The cut off value for CD24, CK4, and PDpn expression were 20%, 10%, and 20%, respectively. While the expression equal to the cut off value or more was defined as strong, the expression less than the cut off value was defined as weak. The frequency of strong protein expression was 50% for CD24, 12% for CK4, 65% for PDpn, respectively. In the CRT group, the OS of patients with strong CD24 expression was significantly better than that of patients with weak CD24 expression (P = 0.015; strong/weak 5-year OS: 65%/43%). On the other hand, for patients with strong CD24 expression was poorer OS comparing with patients with weak expression in the OPe group, however there was no significant difference (P = 0.286; strong/weak 5-year OS: 57%/74%). As for patients with strong CK4 expression, there was no significant difference between CRT group and OPe group (P = 0.446). However, there was significant difference between CRT and OPe group in patients with weak CD 24 expression (p = 0.009). There were also no significant differences of the OS based on expression of CK4 or PDpn between the CRT and OPe group, respectively. Multivariate analysis of the strong CD24 expression in ESMGDI (P = 0.012; HR = 2.787; 95% CI: 1.253–6.200) as an independent variable for favorable outcome. Conclusion: CD24 expression was significantly associated with the survival outcome in ESCC patients after CRT or OPe when they were treated CRT. In conclusion, weak CD24 expression might be a useful predictive biomarker of poor outcome for CRT in ESCC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1873 ENDOSCOPIC TREATMENT OF PATIENTS WITH HIGH-RISK EARLY ESOPHAGEAL CANCER
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Introduction: Endoscopic treatment is a standard therapeutic approach for patients with T1a early esophageal cancer (EEC). In patients with ‘high-risk’ T1a early esophageal cancer, with cancer grading or invasion to submucosal tissue (T1b), endoscopic treatment might be curative in selected patients with ‘high-risk’ EEC.

Aims & Methods: The aim of this study was to assess outcomes of endoscopic treatment in patients with ‘high-risk’ EEC. ‘High-risk’ cancer was defined as any cancer with sm invasion or mucosal cancer with at least one of following: poor differentiation (G3/G4), invasion to blood (A+) or lymphatic vessels (L+) and high tumor cell dissociation (TCD3). The main outcome measurement was tumor-free survival. A single-center, retrospective analysis of prospectively collected data. Patients with EEC underwent endoscopic resection (ER) or endoscopic submucosal dissection (ESD). Based on histopathological staging, patients with ‘high-risk’ features were referred for surgery (ER). Patients who underwent endoscopic treatment consisted of continued sessions of ER and/or radiofrequency ablation if necessary. The patients have been followed up for a median of 39 months (range 2–156).

Results: A total of 56 patients with ‘high-risk’ EEC underwent endoscopic treatment: 21 patients (41%) had T1a cancer with ‘high-risk’ features and 35 patients (59%) had T1b cancer with sm invasion (sm1: 15, sm2: 9, sm3: 11). 45 patients had adenocarcinoma (EAC), 11 patients had squamous carcinoma (SCC); 19 (41%) were referred for curative endoscopic treatment (both patients had sm3 invasion, A+, L+) and these patients are undergoing oncological treatment. All remaining patients with CLR (n = 33) have experienced neither local relapse nor generalization. One patient had to undergo surgery due to esophageal perforation. Tumor-free survival was 89% (CI 79–99%) in patients treated endoscopically and esophageal related mortality was 0% (0/37). Among 19 patients who were referred for esophagectomy, one patient presented with tumor generalization revealed during the operation. The remaining 18 patients underwent esophagectomy; local residual of malignancy were present in 5/18 patients (28%). Lymph node (LN) metastases have not been detected in any patient among the 337 examined LNs. Surgery related mortality was 6% (1/18).

Conclusion: Endoscopic treatment provides long-term remission or cure in a considerable number of patients with ‘high-risk’ EEC and it may thus represent a valid alternative to surgery. Broadening of indications for radical endoscopic treatment of early EEC should be reconsidered.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
3. V globally, there is no convincing evidence whether the expression of these proteins can predict the outcome of CRT for patients with ESCC.

Aims & Methods: The objective of this study was to determine the predictive value of the expression of CD24, CK4, and PDpn using multivariate analysis using a Cox’s proportional hazards model. Results: Among patients with ESCC who received CRT or curative esophagectomy with extended lymph node dissection (OPe) as an initial treatment between 2005 and 2016 at our institution, patients were selected on the following criteria: clinical stage II, III (UICC-TNM classification 6th edition), age of 75 years old or younger, ECOG Performance Status 0–1, and no prior or concurrent other cancers. The method of immunohistochemistry (IHC) was utilized to examine the protein expression of CD24, CK4, and PDpn in pretreatment biopsy specimens of ESCC. The cut-off values for CD24, CK4, and PDpn expression were used hazard ratio for overall survival (OS). The prognostic factor of CD24, CK4, and PDpn expression were statistically analyzed. OS was calculated from the date of CRT or OPe to the date of death or last follow-up, using the Kaplan-Meier method. The survival predictors identified by univariate analysis was assessed by multivariate analysis using a Cox’s proportional hazards model. Results: 148 ESCC patients (CRT group, n = 83; OPe group, n = 65) were analyzed. In the CRT group, 40 patients had stage II and 45 patients had stage III, and the 5-year OS was 52%. In the OPe group, 32 patients had stage II and 33 patients had stage III, and the 5-year OS was 66%. By univariate analysis, there were no statistically significant differences for OS in differences between the CRT and OPe group. The cut off value for CD24, CK4, and PDpn expression were 20%, 10%, and 20%, respectively. While the expression equal to the cut off value or more was defined as strong, the expression less than the cut off value was defined as weak. The frequency of strong protein expression was 50% for CD24, 12% for CK4, 65% for PDpn, respectively. In the CRT group, the OS of patients with strong CD24 expression was significantly better than that of patients with weak CD24 expression (P = 0.015; strong/weak 5-year OS: 65%/43%). On the other hand, for patients with strong CD24 expression, there was no significant difference between CRT group and OPe group (P = 0.446). However, there was significant difference between CRT and OPe group in patients with weak CD 24 expression (p = 0.009). There were also no significant differences of the OS based on expression of CK4 or PDpn between the CRT and OPe group, respectively. Multivariate analysis of the strong CD24 expression in ESMGDI (P = 0.012; HR = 2.787; 95% CI: 1.253–6.200) as an independent variable for favorable outcome. Conclusion: CD24 expression was significantly associated with the survival outcome in ESCC patients after CRT or OPe when they were treated CRT. In conclusion, weak CD24 expression might be a useful predictive biomarker of poor outcome for CRT in ESCC patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1875 PRETREATMENT NEUTROPHIL TO LYMPHOCYTE RATIO IS NOT A PREDICTOR OF RESPONSE TO NEOADJUVANT THERAPY IN ESOPHAGEAL CANCER

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Introduction: Preoperative Neutrophil to Lymphocyte Ratio (NLR) has been proposed as a prognostic marker in several solid tumors (Templeton 2014). A retrospective prospective study of 60 patients showed the prognostic relevance of NLR as a predictor of response in esophageal cancer patients treated with chemoradiotherapy. The aim of this study is to assess the NLR prognostic strength in a retrospective series of two high-volume centers.

Aims & Methods: A retrospective review of two prospective esophageal cancer database was conducted. Neutrophil to lymphocyte ratio was defined as the prechemoradiotherapy serum neutrophil count divided by lymphocyte count. We dichotomized the NLR data using as cut-off values 2.5 and 3 respectively. Univariable logistic regressions were performed to determine the effect of NLR on response after neoadjuvant treatment. Survival curves were constructed with Kaplan Meier method and compared with the long rank test.

Results: We included 280 patients. The analysis of NLR as predictor of pathology-complete response (pCR) showed a OR of 0.93 (95% CI 0.51–1.746, p = 0.901) and 1.161 (95% CI 0.647–2.081, p = 0.617) considering as cut-off values 2.5 and 3 respectively. In our large series, NLR did not result as a predictive marker neither in terms of Overall Survival nor in terms of Disease Free Survival (p = 0.997 and p = 0.672 respectively).

Conclusion: Our results did not confirm NLR as a significant marker of pCR. Moreover, the survival analysis did not reveal significant differences using NLR as pre-treatment prognostic marker. The heterogeneity of treatments, the com-

Disclosure of Interest: All authors have declared no conflicts of interest.

References
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P1876 CAN THE USE OF A COMPUTER DECISION SUPPORT SYSTEM PREVENT COMPLICATED ULCER AMONG PATIENTS TREATED WITH NSAID OR ASPIRIN? A RANDOMISED SYSTEM PREVENT COMPLICATED ULCER AMONG PATIENTS TREATED WITH NSAID OR ASPIRIN? A RANDOMISED

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ory drugs and ulcer complications: a risk factor analysis for clinical decision-

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3. Hansen JM, Hallas J, Lauritsen JM, Bytzer P. Non-steroidal anti-inflamma-

Aims & Methods: We determined the effect of daily treatment with vehicle or CORM-2, on healing of preexisting gastric ulcers by carbon monoxide releasing molecule -2 (CORM-2), on healing of preexisting gastric ulcers by carbon monoxide releasing molecule -2.

PMF-4 and PMF-5 present a lower acid secretion and increase the secretion of bicarbonate and mucus production in the gastric parietal and chief cells, respectively. PMF-6 present a lower acid secretion and increase the secretion of bicarbonate and mucus production in the gastric parietal and chief cells, respectively.

References

PMF-4 and PMF-5 present a lower acid secretion and increase the secretion of bicarbonate and mucus production in the gastric parietal and chief cells, respectively. PMF-6 present a lower acid secretion and increase the secretion of bicarbonate and mucus production in the gastric parietal and chief cells, respectively.

References
CORM-2 was accompanied by a significant decrease in plasma levels of IL-1ß and TNF-α, when comparing to vehicle-control group. The expression of IL-1ß, TNF-α, and HO-2 was detected in vehicle control group and these effects were ameliorated by treatment with CORM-2. The gastric mucosal MPO activity and themucosal content of MDA + 4HNE in gastric mucosa were elevated in vehicle-control group and these effects were significantly inhibited by CORM-2. CORM-2 in subchronically administered CO decreases the length of pre-existing gastric ulcerations by the mechanism involving an increase in gastric microcirculation at ulcer margin, the inhibition of inflammatory response as manifested by the attenuation of enhancing synthesis of the proinflammatory markers IL-1ß, TNF-α, COX-2 and iNOS as well as by antiangiogenesis properties of CORM-2 releasing CO limiting lipid peroxidation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1878 PROTON PUMP INHIBITORS INAPPROPRIATE USE IN PATIENTS ADMITTED IN A TERTIARY GREEK HOSPITAL CREATES SIGNIFICANT DIRECT COSTS BURDEN AND EXPOSURE OF PATIENTS TO THE RISK OF UPPER GASTROINTESTINAL COMPLICATIONS

Introduction: There is evidence of proton pump inhibitors (PPIs) misuse in the community and in the hospitals causing significant direct and indirect costs burden for the health care system.

Aims & Methods: We aimed to evaluate the frequency of inappropriate PPIs administration in hospitalized patients, to measure the direct in-hospital costs of PPIs inappropriate use and to calculate the number of patients exposed to the risk of upper gastrointestinal (UGI) complications due to medication underuse. This was a prospective, cross-sectional, prescription-indication drug-utilization, chart-review study in hospitalized patients with follow-up until discharge, in a tertiary hospital in Athens, Greece. We recorded data of all patients admitted (intensive care, cardiac, psychiatric, pediatrics and obstetrics day clinic admission were excluded) during three consecutive on-call days of the hospital in March 2017 regarding PPIs utilization before admission, during hospitalization and at discharge. PPIs cost was calculated for intravenous use and the number of patients at risk of UGI complications due to PPIs underuse for 1 year period, using a simulation model.

Results: We included data from 470 patients admitted age 67 ± 19 yrs; 32.5% were pre-senile, 67.5% were registered as inpatients and 69.5% were discharged. PPIs overutilization was detected in 15.7%, 41.3% and 12.6% of the patients before admission, during and after the admission, while medications underutilization was detected in 10.2%, 8.1% and 9.5% of them, respectively. Admission at internal medicine and orthopedics clinics was associated with the highest unadjusted ORs (1.68 [95%CI 1.63–1.72] and 1.68 [1.59–1.78]) for PPIs misuse, 0.80 of the 193 over treated patients received PPIs (80% of them od, 20% bid) while the rest were treated with PPIs per os (90% of them od, 10% bid) during discharge. PPIs overutilization length of hospitalization. This accounts for 1460 PPI iv and 344 PPI per os doses inappropriately given during the observation period. Taking into account in our simulation model that there are 90 on-call days of our hospital per year, we calculated the number of hospital costs of PPIs overuse for 1 year period, using a simulation model.

Conclusion: Hospitalization does not represent an opportunity for optimization of PPIs utilization. On the contrary, the frequency of PPIs inappropriate use during hospitalization is higher than that observed during admission, causing significant direct costs for the hospital and exposing patients to the risks of UGI complications.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1879 CONTINUOUS INCREASE IN PREVALENCE OF FUNDIC GLAND POLYPS WITH THE LENGTH OF PROTON PUMP INHIBITORS USE. IS THERE ANY CLINICAL CONSEQUENCE? R. Kroupa1, M. Dastych1, S. Koncny2, J. Dolins3 1Department Of Internal Medicine and Gastroenterology, University Hospital and Faculty of Medicine Masaryk’s University, Brno/Czech Republic

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Introduction: PPIs are becoming increasingly used in a large proportion of the outpatients population. The trend of change in the prevalence with increasing length of PPI exposure over 5 years is not known. Theoritical risk of FGP seems to be very low but not HO-2 was detected in vehicle control group and these effects were ameliorated by treatment with CORM-2. The gastric mucosal MPO activity and the mucosal content of MDA + 4HNE in gastric mucosa were elevated in vehicle-control group and these effects were significantly inhibited by CORM-2. CORM-2 in subchronically administered CO decreases the length of pre-existing gastric ulcerations by the mechanism involving an increase in gastric microcirculation at ulcer margin, the inhibition of inflammatory response as manifested by the attenuation of enhancing synthesis of the proinflammatory markers IL-1ß, TNF-α, COX-2 and iNOS as well as by antiangiogenesis properties of CORM-2 releasing CO limiting lipid peroxidation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1880 ENDOCUTLSE RESECTION OF ADVANCED AMPULLARY ADENOMAS: A SINGLE-CENTER 14-YEAR RETROSPECTIVE COHORT STUDY S. E. Van Der Wiel, J.W. Poley, M.J. Bruno, A.D. Koch

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Introduction: Adenomas of the ampulla of Vater are rare. Endoscopic ampullectomy has been recognized as a safe and reliable treatment of selectve tumors of the ampulla of Vater and is associated with lower morbidity and mortality rates than surgical resection. However, the success rates for endoscopic ampullectomy are limited. Aims & Methods: The aim of our study was to evaluate the technical success, complications and recurrence of endoscopic resection for treating patients with ampullary adenomas with intraductal extension (AIE), and patients with lateral spreading adenomas (LSA). Results: During study period 1525 patients (mean age 59.2 years, 53% male) were admitted at our tertiary 500 beds hospital in Athens, Greece. We recorded data of all patients referred to the Erasmus Medical Center, Rotterdam, for endoscopic resection of the more advanced ampullary tumors were retrospectively identified. Cases were selected by using ENDOBASE and we provided a search in the our local PALCA database. We included patients with a histological diagnosis of adenoma. Endoscopic resection was performed by 5 experienced endoscopists. Endoscopic success was defined as complete excision of the adenoma, irrespective of the number of attempts, and in the absence of recurrence. All patients underwent endoscopic follow-up. Early and late complications were registered.

Conclusion: We included 84 patients, 56 patients (67%) had an adenoma confined to the ampulla (ACA), 17 patients (20%) had a LSA and 11 patients (13%) were treated for adenomas that demonstrated growth pattern with intraductal extension. Fifty-five percent of the patients were men and the median age was 65.4 years (range 32–89). The median lesion size was 24.6mm (range 5–80) for patients with ACA, 34.8 mm (range 23–50) for LSA and 16.3 mm (range 10–20) for patients with an AIE (P = 0.039). Complications occurred in 26 patients (30.9%), of which hemorrhage was most seen in 17.9%, followed by perforation in 5.9% of the patients. Complications were equally divided over these three groups (P = 0.775). The mean follow-up duration was 31.1 months (range 0–129) for ACA, 23.1 months (range 0–127) for LSA and 11.9 months (range 0–37) for IEA (P = 0.136). Endoscopic resection was curative in 87.5% of patients with a localized adenoma, 82.3% in patients with a lateral spreading adenoma and in only 9.1% of patients with an intraductal extended tumor (P < 0.000). Recurrence occurred in 9 patients (10.7%), 5 of them had a localized adenoma, 3 patients had a lateral spreading adenoma and 1 patient with an intraductal extended adenoma (P = 0.875).

Conclusion: Endoscopic ampullectomy is a safe and successful treatment in patients with adenomas with or without a lateral spreading growth pattern. Incidence of an intraductal extended adenoma endoscopic success rates are significantly lower.

Disclosure of Interest: All authors have declared no conflicts of interest.
Lesion larger than 3 cm without finding of ulcer, U of stomach, and age negative and UL negative. And, 152 of 263 UL negative lesions were 3 cm or less in size, and 207 lesions were judged as UL positive whereas the other 263 were assessed as negative and UL negative. 

Aims & Methods: The aim of this study was to evaluate the factors associated with the technical difficulty of ESD for early gastric cancer (GC) which met expanded indication criteria using data from JCOG0607. The major inclusion criteria of JCOG0607 were as follows: 1) histopathologically proven intestinal adenocarcinoma; 2) cT1aN0M0; 3) lesion without finding of ulcer (UL negative) and >2 cm in size, or UL positive and ≤3 cm in size; 4) age >75. ESD were performed by certified endoscopists or under the supervision of certified endoscopists. Multivariable analysis was performed to investigate the clinical factors associated with technical difficulty of ESD.

Results: From November 2014 to October 2015, a total of 470 patients (pts) (male/female: 385/85, median age 65-y (range: 40–75)) were enrolled from 29 institutions. Tumor location was upper (U) of stomach in 71, middle in 255, and lower in 144 pts, respectively. The median tumor size was 2.5 cm (range: 0.5–13), and 207 lesions were judged as UL positive whereas the other 263 were assessed as UL negative. And, 152 of 263 UL negative lesions were 3 cm or less in size, and the other 111 of them were larger than 3 cm. Median procedure time was 79 min (range: 14–462), and it took 120 min or longer in 127 pts. 12 pts developed perforation and the procedure took 120 min or longer in 31 of them. Therefore, 130 pts (27%) were classified in difficult case group. The proportion of difficult case was 23.2% (48/207) in UL positive and ≤3 cm cases, 18.4% (28/152) in UL negative and ≤3 cm, and 48.6% (54/111) in UL negative and >3 cm, respectively. Multivariable showed UL negative and >3 cm (vs. UL negative and ≤3 cm, odds ratio, 4.66; 95% confidence interval, 2.59–8.37, p < 0.0001) was the most significant factor associated with technical difficulty, and U of stomach, and age ≤60 were also associated with difficulty.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference
Hasuike N, et al. A non-randomized confirmatory trial of an expanded indication criteria for endoscopic submucosal dissection (ESD) which were investigated through the prospective trial.

Aims & Methods: The aim of this study was to evaluate the factors associated with the technical difficulty of ESD for early gastric cancer (GC) which met expanded indication criteria using data from JCOG0607. The major inclusion criteria of JCOG0607 were as follows: 1) histopathologically proven intestinal adenocarcinoma; 2) cT1aN0M0; 3) lesion without finding of ulcer (UL negative) and >2 cm in size, or UL positive and ≤3 cm in size; 4) age >75. ESD were performed by certified endoscopists or under the supervision of certified endoscopists. Multivariable analysis was performed to investigate the clinical factors associated with technical difficulty of ESD.

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Comparison of clinical characteristics and therapeutic outcomes between STOP and EFTR

STER (n = 15)  EFTR (n = 28)

No. of clips for suture 5.8±1.4 7.6±1.6 0.001
Complications, % 6.7% (1/15) 14.3% (4/28) 0.643
En bloc resection, % 6.7% (1/15) 3.6 % (1/28) 1.000
GIST/Liomyoma/Schwannoma 11/4/0 25/2/1 0.173
Length of stay, d 6.1±1.5 6.2±2.0 0.856
Cost, USD 3269.0±618.3 3237.5±615.8 0.906
Follow-up time, mon 12.1±12.2 22.8±18.4 0.052

Conclusion: The treatment efficacy between submucosal tunneling endoscopic resection and endoscopic full-thickness resection for treating gastric fundus submucosal tumors was comparable, but submucosal tunneling endoscopic resection offers advantages over endoscopic full-thickness resection in terms of shorter surgery time and smaller number of clips needed to close the gastric wall defect.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1885 SHORT-TERM OUTCOME OF ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GASTRIC CANCER IN ELDERLY PATIENTS AND LONG-TERM OUTCOME AFTER NON-CURATIVE RESECTION

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Introduction: Endoscopic submucosal dissection (ESD) is widely used as a standard treatment for superficial tumors in the GI tract and its safety has been established. Opportunities for elderly patients to undergo ESD for gastric cancer is increasing due to the continued improvement in life expectancy. However, short-term and long-term outcome of ESD for elderly patients is still uncertain due to the high risk of complications and possible increased risk of complications related to ESD in this population.

Aims & Methods: Therefore, we investigated the safety, efficacy and short-term outcome of gastric ESD for patients over 80 years old. Additionally, we evaluated the long-term outcome of non-curative resections according to both age groups. 1056 lesions in 886 patients treated with ESD between January 2011 and December 2015 in our hospital were retrospectively reviewed. They were classified into two groups; elderly group >80 years old (246 lesions in 201 patients) and non-elderly group >79 years old and younger (810 lesions in 685 patients). The patient demographics, lesion characteristics, short-term ESD outcome, complications (perforation, postoperative bleeding, postoperative delirium, pneumonia), were evaluated and compared between the two groups. Concerning the long-term outcome of non-curative ESD, cases performed between 2011 and 2013 were assessed.

Results: The median age was 83 years old (range: 80-92) in the elderly group and 70 years old (range: 36-78) in the non-elderly group. The mean number of patients in the non-elderly group was significantly higher in the elderly group (30.9% vs. 17.0%: p < 0.0001). Comorbidities were significantly higher in the elderly group including heart disease (24.8% vs. 10.5%: p < 0.0001), lung disease (13.6% vs. 7.4%: p = 0.002) and diabetes (3.3% vs. 1.0%: p = 0.05). Tumor location was not significantly different between the two groups. Median specimen and tumor size were the same in both groups with no significant difference: 43 mm and 15 mm, respectively. The en bloc resection rates (96.3% and 97.8%) and the curative resection rates (82.5% and 84.6%) were not significantly different. The perforation rates were not statistically different (2.44% and 3.21%). However, the postoperative bleeding rate (5.28% vs. 2.72%: p = 0.05), postoperative delirium (2.0% vs. 0.25%: p = 0.009) and pneumonia (2.0% vs. 0.25%: p = 0.009) were significantly higher in the elderly group. In multivariate analysis, age over 80 was not an independent risk factor for postoperative bleeding, however it was the independent risk factor for postoperative delirium and postoperative pneumonia. Nineteen elderly patients and 54 non-elderly patients with non-curative resections were followed-up for 3 years after ESD for the long-term outcome analysis. The percentage of patients who underwent additional surgery after ESD was 26.3% (5/19) and 51.8% (28/54) respectively (p = 0.05). Neither disease specific death nor progression to advanced gastric cancer was found in each age group. Overall survival rate 3 years after ESD was 94.4% and 87.2% respectively (p = 0.11).

Conclusion: ESD is a safe and effective treatment for early gastric neoplasia even in patients over 80 years old. However, because postoperative delirium and postoperative pneumonia were observed more often in the elderly patients, more careful attention to these conditions during perioperative care may be necessary. Elderly patients over 80 years, with non-curative resections, underwent less frequent additional surgery without any impact on the disease specific death and global mortality.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1886 GASTRIC INTESTINAL METAPLASIA OUTCOMES: RESULTS FROM A 17 YEAR TERTIARY CENTRE UPPER GI SURVEILLANCE PROGRAMME IN IRELAND

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Introduction: Adenocarcinoma of the stomach is the second leading cause of cancer related death in the world. Gastric intestinal metaplasia (GIM) is an important intermediate stage in the gastric cancer cascade through a series of well-defined precursor lesions including nonatrophic gastritis, multifocal atrophic gastritis, intestinal metaplasia, and dysplasia. The prevalence of GIM is unclear in many parts of the world and few studies have evaluated the rate of progression to gastric cancer in patients with GIM. There is a lack of clarity in
published guidelines regarding appropriate surveillance of patients with GIM and have widely disparate management in the context of this premalignant condition.

**Aims & Methods:** This study aimed to analyze surveillance practice and characterize the natural history of this premalignant condition by identifying all patients with GIM on an upper GI surveillance programme and reviewing follow up data. This is a retrospective study of patients with GIM who are currently enrolled in an upper GI surveillance programme. Patients with a history of GIM identified at any time during an 18-year surveillance period (from 1998 to 2016) were included in the study. Patient characteristics, endoscopic data including biopsy and follow-up histology, rates of Helicobacter pylori infection, Barrett’s oesophagus association and outcomes were reviewed.

**Results:** 160 patients (including those with Barrett’s oesophagus, GIM and family history of gastric cancer) were enrolled on the surveillance programme. 42 patients with GIM were identified—20 females (47.6%) and 22 males (52.3%). The mean age at which GIM was first diagnosed was 60.6 years (range from 17.9 to 71.5 years). 15/42 patients (35.7%) had co-existent Barrett’s oesophagus and Helicobacter pylori was identified in 6/42 (14.3%). The follow-up period ranged from 1.2 to 17.3 years. 27 patients had repeat gastroscopies following initial diagnosis. 15 patients are still awaiting a repeat gastroscopy. A large degree of variability in the number and frequency of follow-up gastroscopies was observed. The average interval of follow-up gastroscopies was 3.3 years per person. 14/27 patients (51.8%) had no evidence of GIM on most recent gastroscopy, 7/27 patients (26%) had repeat findings of persistent focal GIM, 5/27 patients (18.5%) progressed to extensive GIM. No cases of dysplasia were recorded but 1 patient (3.7%) developed gastric cancer.

**Conclusion:** This study suggests a low apparent risk of progression of gastric intestinal metaplasia in a small western cohort. Further studies may be necessary to address if the applicability of published surveillance guidelines can be generalized to regions with low gastric cancer prevalence.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


**P1888 DIFFERENT RELATIONSHIP BETWEEN STAGE OF GASTRIC CANCER AND GENOTYPE OF TGFBI BASED ON FIRST-DEGREE RELATIVE OF GASTRIC CANCER**

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**Introduction:** Previously we reported that direct family history of gastric cancer (GC) as a risk factor of gastric cancer and genotypic polymorphism of TGFBI (transforming growth factor-B1) was associated with the development of GC in the first-degree relative of GC. The aim of this study is to investigate relationship between stage of gastric cancer and genetic polymorphism of TGFBI regarding first-degree relative of GC.

**Aims & Methods:** From January 2006 to March 2017, 1090 gastric cancer patients were enrolled at Seoul National University Bundang Hospital in whom stage of GC was obtained from surgery, endoscopic submucosal dissection (ESD), endoscopic mucosal resection (EMR), and computed tomography (CT). Patients were divided according to presence of GC and PET-CT images. 203 patients (18.6%) had direct family history of GC and 887 (81.4%) did not have. Genotype of TGFBI-509 was measured by the polymerase chain reaction restriction fragment length polymorphism. Relationship between TGFBI polymorphism and stage or GC tissue issue type was analyzed.

**Results:** Proportion of stage I & 2 was statistically higher in the group with direct family history of GC (170, 83.7%) than without direct family history (600, 74.4%). (P=0.005). When GC stage was analyzed regarding direct family history and TGFBI genetic polymorphism the ratio of gastric cancer stage I to TGFBI-509 T carrier was significantly higher than that of stage II or higher (P=0.008), only in male. However, this difference was not found in female. In addition no significant difference was found in GC patients without direct family history. Lauren classification and TGFBI genotype did not show any statistically significant results even in the group with direct family history.

**Conclusion:** Family history of GC affects the stage of GC and the genotype of TGFBI-509 could be underlying mechanism in case of male. Survival analysis is undergoing.

**Table:** Differences of gastric cancer stage according to TGFBI-509 polymorphism and family history (Hx) of gastric cancer

<table>
<thead>
<tr>
<th>Stage</th>
<th>TGFBI-509</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%)</td>
<td>P-value</td>
<td></td>
</tr>
<tr>
<td>Family Hx. (+)</td>
<td>Female C/C</td>
<td>T carrier</td>
</tr>
<tr>
<td></td>
<td>Male C/C</td>
<td>T carrier</td>
</tr>
<tr>
<td>Family Hx. (-)</td>
<td>Female C/C</td>
<td>T carrier</td>
</tr>
<tr>
<td></td>
<td>Male C/C</td>
<td>T carrier</td>
</tr>
</tbody>
</table>

**Disclosure of Interest:** All authors have declared no conflicts of interest.
References

P1889 ENDOSCOPIC TREATMENT FOR LATERAL SPREADING SUPERFICIAL ESOPHAGEAL SQUAMOUS CELL CARCINOMA
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Introduction: ESD is the one of the options of treatment even for lateral spreading (LS) esophageal squamous cell carcinoma that the ESMGD has special features under the endoscopic ultrasonography (EUS). The typical ultrasonic images of EUS could help diagnosis ESMGD.

Aims & Methods: In order to investigate the clinical value of EUS for diagnosing Gastrointestinal stromal tumors (GIST) accompanied by early esophageal cancer, which were suggested by conventional endoscopy or biopsy, this study retrospectively analyzed the consecutive patients with early esophageal cancer diagnosed in the Endoscopy Center at the Affiliated Drum Tower Hospital, Nanjing, China from September 2009 to November 2019. The clinical data of 519 patients were included in this study, and all of them had already underwent EUS combined with Endoscopic Submucosal Dissection (ESD). The EUS preoperative examinations were compared with the results of postoperative pathology from ESD.

Results: According to the pathologic results of ESD, 371 (72.1%) patients (319 males and 148 females, with a mean age of 67.5±4.5years) had been diagnosed with early esophageal cancer with different invasive depth. Out of 519 patients, about 478 patients were not found ESMGD by both examinations. Besides, postoperative pathology confirmed that 40 patients were identified with ESMGD, 34 patients of which were completely consistent with the preoperative diagnosis of EUS. Approximately 98.7% (512/519) of ESMGD were diagnosed exactly by EUS. Another six patients were estimated as false negative inaccurately, including two squamous cell carcinoma and four high-grade intrapithelial neoplasia. One case was regarded as ESMGD by EUS while confirmed not by pathology. Therefore, the EUS values for sensitivity and specificity for the diagnosis of ESMGD were 85.0% (34/40) and 99.8% (474/476) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (478/484).

Conclusion: The esophageal submucosal gland duct involvement is a kind of lateral spreading superficial esophageal histologic pattern located in the thickened mucosa. EUS has a satisfactory diagnostic accuracy for ESMGD as well as good sensitivity and specificity.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1890 PEPSEPINOGENS AND GASTRIN-17 FOR IDENTIFICATION OF GASTRIC CANCER PRECURSOR LESIONS: THE RESULTS FROM THE GISTAR PILOT STUDY
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Introduction: Few major international guidelines consider pepsinogen tests as the best available non-invasive tests to detect precancerous lesions (in particular, - corpus atrophy) in the stomach mucosa. Gastrin-17 (G-17) has been suggested as an alternative marker for antrectomy and different tests are used in Europe and Asia.

Recommendations from the European Commission expert group consider the need for additional studies before any screening with biomarkers can be recommended for implementation.

Aims & Methods: Generally healthy 40–65 years aged participants of the GISTAR pilot study referred for upper endoscopy according to the pilot study protocol were enrolled. Pepsinogen (Pg) I and II were assessed from plasma samples by two methods-ELISA (Biohit Plc.) and latex-agglutination (Eiken Chemical Co.) test systems. G-17 and IgG group antibodies to H.pylori infection were assessed by Biohit Plc. ELISA test systems. The following cutoff values were considered characteristic for atrophy: Pg I-II < 3 for ELISA, Pg I-II < 3 and PgI < 70 mg/ml for latex-agglutination, and G-17 >1 pmol/l (in a plasma sample obtained in fasting condition). Biopsies were sampled and read by two independent pathologists according to the updated Sydney system. OLG and OLGIM scoring systems were also applied. Cancer, dysplasia, OLGIM III-IV taken together were considered high-risk lesions.

Results: Altogether 1044 subjects (55% females, mean age =52, 67.7% with positive H. pylori antibodies) were included to the study. The sensitivity and specificity for detecting moderate to severe atrophy in the corpus for Biohit ELISA test was 47.2% and 92.3%, but for Eiken latex-agglutination test 81.1% and 62.1%, respectively. The corresponding values for G-17 to detect atrophy in the antrum were 29.2% and 58.9%. High-risk lesions were detected by Biohit ELISA pepsinogen test system with 22.8% sensitivity and 91.6% specificity. Recommendations from the European Commission expert group consider the need for additional studies before any screening with biomarkers can be recommended for implementation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1891 DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASONOGRAPHY FOR ESOPHAGEAL SUBMUCOSAL GLAND DUCT INVOLVEMENT ACCOMPANIED BY EARLY ESOPHAGEAL CANCER
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Introduction: Normally, resided within the submucosal layer of esophagus, each esophageal submucosal gland will culminate in a single duct. The esophageal submucosal gland ducts (ESMGD) can traverse the subepithelial connective tissue and access to the mucosa, and deliver the mucus secretions to the esophageal lumen. However, the clinicopathological features of the esophageal submucosal gland duct involvement (ESMGD) and its precursor lesion have not been comprehensively evaluated so far, and the series study focusing on endoscopic features of this lesion has not been reported widely. While since the 1990s, the esophageal lesions presumed to originate from ESMGDs had been described constantly in various case reports. Currently, in addition to the gold standard of histopathology, almost no more useful modality could be applied to this lesion. In our study, we considered that the ESMGD had a correlation with esophageal gland cancer, and we suspected that the ESMGD had special features under the endoscopic ultrasonography (EUS). The typical ultrasonic images of EUS could help diagnose ESMGD.

Aims & Methods: In order to investigate the clinical value of EUS for diagnosing Gastrointestinal stromal tumors (GIST) accompanied by early esophageal cancer, which were suggested by conventional endoscopy or biopsy, this study retrospectively analyzed the consecutive patients with early esophageal cancer diagnosed in the Endoscopy Center at the Affiliated Drum Tower Hospital, Nanjing, China from September 2009 to November 2019. The clinical data of 519 patients were included in this study, and all of them had already underwent EUS combined with Endoscopic Submucosal Dissection (ESD). The EUS preoperative examinations were compared with the results of postoperative pathology from ESD.

Results: According to the pathologic results of ESD, 371 (72.1%) patients (319 males and 148 females, with a mean age of 67.5±4.5years) had been diagnosed with early esophageal cancer with different invasive depth. Out of 519 patients, about 478 patients were not found ESMGD by both examinations. Besides, postoperative pathology confirmed that 40 patients were identified with ESMGD, 34 patients of which were completely consistent with the preoperative diagnosis of EUS. Approximately 98.7% (512/519) of ESMGD were diagnosed exactly by EUS. Another six patients were estimated as false negative inaccurately, including two squamous cell carcinoma and four high-grade intrapithelial neoplasia. One case was regarded as ESMGD by EUS while confirmed not by pathology. Therefore, the EUS values for sensitivity and specificity for the diagnosis of ESMGD were 85.0% (34/40) and 99.8% (474/476) respectively. Furthermore, the positive predictive value was 97.1% (34/35), and the negative predictive value was 98.8% (478/484).

Conclusion: The esophageal submucosal gland duct involvement is a kind of lateral spreading superficial esophageal histologic pattern located in the thickened mucosa. EUS has a satisfactory diagnostic accuracy for ESMGD as well as good sensitivity and specificity.

Disclosure of Interest: All authors have declared no conflicts of interest.
The expression levels of miR-211-5p were significantly decreased in vitro. miR-211-5p in proliferation, apoptosis, migration of gastric cancer cell lines gastric mucosa by RT-PCR. Furthermore, we investigate the biological role of miR-211-5p was measured in paired primary gastric cancer with corresponding adjacent tissues in non-small cell lung cancer by targeting SRCIN [5]. Therefore, the functional role of miR-211-5p in the development of gastric cancer. The expression level of miR-211-5p was still unclear. We hypothesized that miR-211-5p in proliferation, apoptosis, migration of gastric cancer cell lines in vitro.

Results: The expression levels of miR-211-5p were significantly decreased in gastric cancer and low expression of miR-211-5p correlates with poor prognosis in gastric cancer patients. Ectopic expression of miR-211-5p suppressed proliferation, migration and induced apoptosis in gastric cancer cells in vitro. Bioinformatics and quantitative analysis revealed that FoxC1 might be a target of miR-211-5p. Downregulation of FoxC1 inhibited proliferation and migration of gastric cancer cells and Overexpression of FoxC1 partly abrogated the inhibitory effects of miR-211-5p on gastric cancer cell proliferation and motility.

Conclusion: We hypothesize that miR-211-5p acted as a tumor suppressor by targeting FoxC1 in gastric cancer and miR-211-5p might be a potential target for the treatment of gastric cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
2. Chandrasoma PT, Der R, et al. Histological features of gastric cancer. Aims & Methods: We aimed to investigate and characterize the biological roles of miR-211 in the development of gastric cancer. The expression level of miR-211-5p was measured in paired primary gastric cancer with corresponding adjacent tissues in non-small cell lung cancer by targeting SRCIN [5]. Therefore, the functional role of miR-211-5p in the development of gastric cancer. The expression level of miR-211-5p was still unclear. We hypothesized that miR-211-5p in proliferation, apoptosis, migration of gastric cancer cell lines in vitro.

Results: The expression levels of miR-211-5p were significantly decreased in gastric cancer and low expression of miR-211-5p correlates with poor prognosis in gastric cancer patients. Ectopic expression of miR-211-5p suppressed proliferation, migration and induced apoptosis in gastric cancer cells in vitro. Bioinformatics and quantitative analysis revealed that FoxC1 might be a target of miR-211-5p. Downregulation of FoxC1 inhibited proliferation and migration of gastric cancer cells and Overexpression of FoxC1 partly abrogated the inhibitory effects of miR-211-5p on gastric cancer cell proliferation and motility.

Conclusion: We hypothesize that miR-211-5p acted as a tumor suppressor by targeting FoxC1 in gastric cancer and miR-211-5p might be a potential target for the treatment of gastric cancer.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
associated, in our series, with a higher incidence of residual/recurrent adenoma, when compared to other recurrent cancers but these results are similar to those reported in the literature. Residual and recurrent duodenal adenomas were successfully treated by EMR in all of them but one. Mortality related to NASDA was absent in our series after a median follow-up of 59 months (range 1–147). Management of severe events after EMR for NASDA requires the availability of interventional radiologists and surgeons with experience in retroperitoneal surgery. In our experience colorectal adenomas was correlated to NASDA (33.3%), colonooscopy is considered part of the pre-EMR assessment when NASDA is diagnosed. A recall system and patient’s compliance to endoscopic follow-up are mandatory to detect recurrences and their prompt treatment.

Disclosure of Interest: G. Costamagna: Grant/research support from Olympus Japan Member of advisory committees or review panels for Cook, Inc., Boston Scientific Corp., and Given Imaging.

All other authors have declared no conflicts of interest.

Introduction: Obestatin is a bioactive peptide with a well-defined function on cell proliferation mediated by the GPR39 receptor. Our data involve this system in several processes located in the stomach: from pepsonogen secretion in healthy stomach to malignant proliferation in gastric adenocarcinomas (1). A key step in obestatin signaling is the transactivation process GPR39-RTK through MMPs activation. This step could imply a key mechanism by which MMPs regulate these diseases. Numerous studies have shown that alterations in the expression or/mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression and/or mutations in members of the family of receptors EGFR/ErbB are present in these diseases. Numerous studies have shown that alterations in the expression of interventional radiologists and surgeons with experience in retroperitoneal surgery. In our experience colorectal adenomas was correlated to NASDA (33.3%), colonooscopy is considered part of the pre-EMR assessment when NASDA is diagnosed. A recall system and patient’s compliance to endoscopic follow-up are mandatory to detect recurrences and their prompt treatment.

Disclosure of Interest: G. Costamagna: Grant/research support from Olympus Japan Member of advisory committees or review panels for Cook, Inc., Boston Scientific Corp., and Given Imaging.

All other authors have declared no conflicts of interest.

Aims & Methods: The aim of this study is to analyze whether indomethacin modulates lysosomal function and oxalipatin-induced cell death in these cells. Gastric AGS cells were treated with increasing concentrations of indomethacin for 2, 6 and 20 hours. Lysosomal pH was assessed by using Lysotrack Red and Acidine orange fluorescent probes (static cytomtery). Cathepsin activity was determined by using Omnicathepsin fluorescence substrate. In cells treated with indomethacin for 2 hours LAMP2 immunostaining was also carried out. In another set of experiments AGS cells were treated with increasing doses of the antiinflamatory drug oxaplatin and combined with indomethacin. Cell viability was measured by an MITT assay, the rate of apoptosis/necrosis was analyzed by means of the Apotosis Detection Kit, and autophagy by p62 immoblotting.

Results: Treatment of AGS cells with indomethacin decreased Lysotracker fluorescence in AGS cells after 2, 6 and 20 hours. Indomethacin also produces an acute reduction in lysosome-derived fluorescence of acidrine orange after 2 and 6 hours of treatment. In addition, we observed a significant reduction of cathepsin enzymatic activity in cells treated with indomethacin for 6 or 20 hours. Furthermore, there was an altered distribution of LAMP2-positive dots from the perinuclear position observed in control cells to a peripheral position in cells treated with indomethacin. Taken together, these data suggest that indomethacin inhibits the activity of lysosomal acid hydrolases by increasing lysosomal pH. On the other hand, oxaplatin decreased cell viability in a dose-dependent manner after 48 hours of treatment, and treatment of cells with indomethacin during the last 24 hours further decreased cell viability. In addition, indomethacin also increased the rate of apoptosis and necrosis in AGS cells treated with oxaplatin. Finally, indomethacin blocked the autophagic degradation of p62 protein induced by oxaplatin.

Conclusion: Indomethacin inhibits lysosomal function in gastric cancer cells. This could affect the inhibitory action on autophagy and the resultant increase in susceptibility to cytotoxic drugs.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1898  ACETYLCHOLINE INDUCES CANCER STEM CELL PHENOTYPE IN GASTRIC CANCER CELLS OF DIFFUSE TYPE.

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Introduction: The mechanisms of gastric carcinogenesis, especially of diffuse type of gastric carcinoma (GC) are poorly understood. The cancer stem cells (CSC) represent a particular fraction of cancer cells, considered at the origin of cancer and responsible for its development. The enteric nervous system (ENS) is a newly recognized component of tumor microenvironment and its role in carcinogenesis has been recently suggested. In particular, the role of acetylcholine (ACh), a major neuromediator released by enteric nerves, has been suggested in gastric carcinogenesis but its effect on gastric CSC remains to be established.

Aims & Methods: Our aim was to study the effect of ACh on gastric cancer cells, and in particular its capacity to induce the stem cell phenotype, and to study the mechanisms involved. Adenocarcinoma gastric epithelial cells MKN-45 were first cultured in adherent conditions in the presence of ACh (0.1-10-5M), before being cultured in non-adherent condition in order to favour expansion of CSC and formation of tumorspheres (T). The effect of ACh on T formation was evaluated under microscope by quantifying the number and size of T. ACh was applied to the System snapshot file in INCell analyzer 2200/6000. The involvement of different cholineergic (muscarinic and nicotinic) receptors in ACh-induced responses was studied by pharmacological approach using selective agonists and antagonists. The expression of CSC markers (CD44, ALDH) and EMT markers (Snail, Zeb1) was measured by flow cytometry, RT-qPCR and immunofluorescence. Statistical analysis was performed using two-way ANOVA test, Kruskal-Wallis test, or two-way non-parametric ANOVA test using SPSS16.0 software.

Results: ACh at concentrations of 0.1 and 1mM significantly increased the number and size of T as compared to control conditions (p < 0.001).

Conclusion: This study shows that ACh induces CSC properties of gastric cancer cells of diffuse type via activation of muscarinic and nicotinic pathways. It also suggests that ENS may be a new actor in gastric carcinogenesis.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1899  SYSTEMATIC REVIEW AND META-ANALYSIS OF THE PROGNOSTIC SIGNIFICANCE OF CPG ISLAND METHYLATED PHENOTYPE IN GASTRIC CANCER

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Introduction: CpG Island Methylation Phenotype (CIMP) has been identified as a distinct molecular subtype of gastric cancer, yet associations with survival are conflicting. A meta-analysis was performed to estimate its potential prognostic significance.

Aims & Methods: A systematic review of Embase, Medline, PubMed, PubMed Central and Cochrane databases related to CIMP in gastric was performed and the primary outcome measure was cumulative 5-year survival.

Results: A total of 967 patients from 10 studies were included, and the median rate of tumour CIMP-H was 40.9% (range 53.6-62.7%). Pooled analysis suggested that specimens exhibiting CIMP-H were associated with poorer 5-year survival (OR 1.49, 95% CI 1.11-2.10, p < 0.005).

Conclusion: There was significant heterogeneity in the gene panels used to identify CIMP which may explain the survival differences. Consensus regarding CIMP methodology would be welcome to better facilitate the assessment of its prognostic validity.

Disclosure of Interest: All authors have declared no conflicts of interest.

WEDNESDAY, NOVEMBER 01, 201709:00-14:00

H. PYLORI III - HALL 7_

P1900  THE VALIDITY OF BREATH COLLECTION BAGS USING THE NOVEL BREATHDx/H PBP LAB SYSTEM: A MULTICENTER CLINICAL STUDY IN 257 SUBJECTS

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Introduction: The BreathDx/Hp lab breath test (UBT) system provides several advantages over other 13C breath analyzers for the detection of Helicobacter pylori (H. pylori), including: higher accuracy, operator independence and immediate results. However, there are occasions when mailing or transporting saved breath samples may be preferable to real time analysis, especially in centers requiring a large quantity of automated analyses where continuous sampling from a single patient can provide a bottle neck preventing multiple other users from accessing the device.

Aims & Methods: To evaluate the sensitivity and specificity of a new BreathDx/Hp Lab System (Exalenz Bioscience Ltd, Modin, Israel), a 13C-UUBT system using breath sampling bags, for the diagnosis of H. pylori in a multi-center international clinical study. A total of 257 subjects with evaluable results for UBT and biopsy [rapid urease testing (RUT) and histology] were enrolled into two study groups: 189 native subjects with unknown H. pylori status were included in the pre-therapy group, and 68 subjects who had completed pre-therapy therapy and post-therapy sample. The post-therapy group was assessed for the stability of the breath samples in the breath sample bags, each pair of breath sample bags was analyzed at a different time point up to 14 days after collection. Analytical studies were conducted to evaluate the reproducibility and repeatability of the 13C-UBT results using a cut-off of 5 Delta Over Baseline (DOB).

Results: Among the pre-therapy subjects evaluated with the composite results from the two biopsy based methods (RUT and histology)/immunohistochemistry (IHC), 86 results (37 positive, 49 negative) matched those of the UBT resulting in an overall agreement of 98.3% (95% CI: 95.2%; 99.7%) with a sensitivity of 100% (95% CI: 90.6%; 100.00%) and specificity of 97.9% (95% CI: 94.0%; 99.3%). The overall agreement between the UBT and the biopsy diagnosis in the post-eradication therapy cohort (55 negative, 13 positive) was 98.5% (95% CI: 92.1%; 100.00%). The sensitivity of the UBT in this cohort was 92.3% (95% CI: 66.7%; 98.6%) and its specificity was 100.0% (95% CI: 93.3%; 100.00%). The overall validity evaluated in sample size of 191 (45 positive, 146 negative) subjects from the pre-therapy cohort was excellent, with positive agreement in 97.8% (95% CI: 88.43, 99.61)) and negative agreement in 100.0% (95% CI (97.44, 100.0)). Similarly there was uniformly high overall reproducibility of the test results over different batches, when analyzed on different days and under different storage conditions.

Conclusion: The validation studies of the BreathDx/Hp Lab System described above show it is a highly accurate and dependable method for the diagnosis of H. pylori infection. Based on the current study, BreathDx/Hp Lab System received on November 2016 U.S. Food and Drug Administration (FDA) marketing clearance for H. pylori bacterium detection.

Disclosure of Interest: H. SHIRIN: Haim Shirin received grants and stock from a single patient can provide a bottle neck preventing multiple other users from accessing the device.

All authors have declared no conflicts of interest.

References
Aims & Methods: In this study, we investigated whether activation of gGlu-HMRG fluorescence was suppressed in H. pylori culture solution which was co-incubated with an inhibitor of GGT (GGTTop). Furthermore, we applied gGlu-HMRG to biopsy specimens which were taken from antrum and corpus of stomach in H. pylori positive patients (n = 13) and H. pylori negative patients (n = 14). We then observed the increase of fluorescence intensity over time (1 min, 5 min, 10 min, 15 min). Fluorescence intensity was quantified by Image J2 software (National Institutes of Health, Rockville, Maryland).12

Results: Activation of gGlu-HMRG fluorescence was detected in WT strain, but was not in ggt mutant strain. Activation of gGlu-HMRG fluorescence was inhibited by GGTTop. There was significant difference of the increase of fluorescence intensity between H. pylori positive and negative both in antrum corpus of stomach (antrum p = 0.0008, corpus p = 0.047).

Conclusion: GGT-activated fluorescent probe can be useful for H. pylori infection diagnosis.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1903 SEROLOGICAL CHANGES AFTER EQUIVOCA
HELICOBACTER PYLORI-SEROLOGY TEST FINDINGS DEPEND ON THE GASTRIC SECRETING ABILITY
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Introduction: The serum anti-Helicobacter pylori (H. pylori) IgG and serum pep- sinogen (PG) assays are widely used for gastric cancer screening. An equivocal serology test finding indicates IgG titers or the positive and negative results. We then observed the increase of fluorescence intensity over time (1 min, 5 min, 10 min, 15 min). Fluorescence intensity was quantified by Image J2 software (National Institutes of Health, Rockville, Maryland).12

Results: Of the 7,178 subjects who underwent the serum assays and UGI endo-
scopy on the same day, 274 (3.8%) subjects showed an equivocal H. pylori serology test finding. Of the 98 followed-up subjects, 58 (59.2%) showed sero- positive finding at the mean follow-up period of 30.6±12.4 months. Subjects with seroconversion showed a higher initial serum PG I (p = 0.023) and PG II (p = 0.036) levels than the subjects without seroconversion.

Conclusion: An equivocal H. pylori serology test finding is not rare (3.8%) in Korean adults, and 60% of the equivocal subjects showed seroconversion within 3 years. Higher seroconversion rates in the subjects with high PG I and PG II levels suggest that intact gastric secreting ability play a role for the survival of H. pylori. Therefore, equivocal subjects with increased serum PG levels should be considered as a potential seropositive subjects.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1902 HELICOBACTER PYLORI DETECTION BY γ-
GLUTAMYLTRANSPPEPTIDASE-ACTIVATED FLUORESCENT PROBE
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Introduction: γ-glutamyltranspeptidase (GGT) is a cell surface-associated enzyme that is not highly expressed in normal cell. However GGT is overexpressed in various type of human cancers. It is known that Helicobacter pylori (H. pylori) also produce GGT. Urano et al have developed an enzymatically activatable fluorescent probe, γ-glutamyl hydroxymethyl rhodamine green (gGlu-HMRG) which is fluorescent under acidic pH and normal cellular environment, but turns to be highly fluorescent upon reaction with GGT13. Aim of this study is to consider if gGlu-HMRG can be useful for diagnosing infection H. pylori.

Aims & Methods: In this study, we investigated whether activation of gGlu-HMRG fluorescence detects a wild-type of H. pylori (WT) and a ggt gene disrupted mutant of H. pylori (ggt mutant). In addition, we investigated whether activation of gGlu-HMRG fluorescence was suppressed in H. pylori culture solution which was co-incubated with an inhibitor of GGT (GGTTop).

Results: Of the 7,178 subjects who underwent the serum assays and UGI endoscopy on the same day, 274 (3.8%) showed an equivocal H. pylori serology test finding. Of the 98 followed-up subjects, 58 (59.2%) showed sero-positive finding at the mean follow-up period of 30.6±12.4 months. Subjects with seroconversion showed a higher initial serum PG I (p = 0.023) and PG II (p = 0.036) levels than the subjects without seroconversion.

Conclusion: An equivocal H. pylori serology test finding is not rare (3.8%) in Korean adults, and 60% of the equivocal subjects showed seroconversion within 3 years. Higher seroconversion rates in the subjects with high PG I and PG II levels suggest that intact gastric secreting ability play a role for the survival of H. pylori. Therefore, equivocal subjects with increased serum PG levels should be consid- ered as a potential seropositive subjects.

Disclosure of Interest: All authors have declared no conflicts of interest.

References


**P1904** WE CAN JUDGE THE EXISTENCE OF PRESENT OR PAST *H. PYLORI* INFECTION WITH ONLY ONE ENDOSCOPIC CARDIAC IMAGES (WHALE SHARK SIGN: WSS)

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**Introduction:** Several *H. pylori* (HP) infection-related gastric findings (mucosal atrophy, metaplastic change, diffuse redness, spotty redness and nodular change of the antrum etc.) are so important sign of HP infection on endoscopic examination. On the other hand, we have confused with various newly endoscopic findings as coronary reflux and map-like redness etc. were seen on the stomach eroded atom. On this time, we have found out a new other ultimate useful finding showing HP infection related gastritis at gastric cardia (EG junction) including present and post HP infection. The endoscopic image of gastric cardia is the first gastric view through the esophagus on each endoscopic examination.

**Aims & Methods:** Our aim of this study is to elucidate possibility of judgement with only this cardiac endoscopic view about presence or absence with HP infection. We have found out so useful and specific cardiac image (We call Whale Shark Sign: WSS) closely related to HP infection. We have examined the presence of WSS on 4,268 cases that have been able to overviewed on their endoscopic profiles. We have judged the presence of HP infection with serum HP antibody titers on each case. The 3,233 cases their serum HP antibody titers were measured from Jan. 2012 to Oct. 2016. A total of 2,810 patients (HP positive) were enrolled. Fisher’s exact test was used in all statistical analyses. The judgement of HP present or past infection was done more than serum HP antibody 3 U/ml to avoid false negative results.

**Results:** Mean age of patients was 52.4 years old. In case of WSS positive, all their serum HP antibody titers showed more than cut-off level (3 U/ml). This means that the presence of WSS closely related to HP related gastritis. The positive predictive value (PPV) of WSS was surprisingly high (98%). According to this high PPV, we can think WSS positive cases are high risk of gastric carcinoma. This WSS mean that the presence of irregular gastric mucosal surface pattern and the presence of lymphoid hyperplasia, that showing HP infection or gastritis stomach. Especially presence of lymphoid hyperplasia at gastric cardia is most important specific sign of HP related gastritis. This lymphoid hyperplasia at gastric cardia were recognized small round whitish nodules on white light endoscopy. And this was more emphasized with image-enhanced endoscopy (Narrow Band Imaging; NBI), it looks like Whale Shark. This WSS sign is very simple and easy for every gastroenterologist. It is so useful to know gastric cancer risk at gastric entrance (cardia) with the presence of very easy simple sign.

**Conclusion:** We have been able to judge the presence of HP infection with only cardiac endoscopic images (WSS), we should take care of seeing the presence of WSS sign. Since this sign is very easy and simple, everyone will be able to judge the presence of HP infection and gastric cancer risk.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1905** SERUM PEPsinogen I AS A NON-INVASIVE MARKER FOR DIAGNOSIS OF *HELICOBACTER PYLORI* INFECTION: A PROSPECTIVE STUDY IN A COHORT OF DYSPEPTIC PATIENTS

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**Introduction:** The diagnosis of *Helicobacter pylori* (H. pylori) infection is currently made by means of non-invasive (Urea Breath Test or HpSA) or invasive (gastric biopsy or culture) methods. Serological assessment of H. pylori infection by using levels of IgG is not recommended. Pepsinogen II (PGII) is validated in the literature as a non-invasive marker of gastritis. The aim of this study was to assess in a population of dyspeptic patients the clinical availability of PGII determination in singling out subjects infected by H. pylori in comparison with non-infected ones.

**Aims & Methods:** A cohort of 880 consecutive dyspeptic patients (F 439; mean age 55.5 yrs; range: 29.83-74 yrs) were enrolled in the study. Exclusion criteria: previous surgery, previous H. pylori eradication therapy, concomitant PPI. In all patients the diagnosis of H. pylori infection was made by means of upper GI endoscopy and at least one of these two methods: UBT, HpSA. All patients underwent blood sample for determination of serum levels of PGII (Bohlt Oyj; Finland; normal values: 2-15μg/l). In a group of 670 pts a course of antibiotics (triple, concomitant or sequential therapy) to cure H. pylori infection was performed and PGII levels tested at baseline (T0) and after two months (T1) from the end of the antibiotic therapy. The search for the most appropriate cut-off of PGII in diagnosis of H. pylori infection was assessed by using the ROC curve method.

**Results:** 430 out of 860 dyspeptic patients (F 245;mean age 52.3 yrs; range 32-69 yrs) showed an H. pylori-related gastritis (group 1) in comparison with 430 (F 261;mean age 57.3 yrs; range 38-74 yrs) resulted negative for H.p infection (group 2). The mean value of PGII in group 1 was 20.9+1.485 μg/l, opposite to 7.2+0.985 μg/l in group 2; p<0.0001. 415 out of 670 patients treated with antibiotics schedules were cured from H.p infection, opposite with 255 non-eradicated ones. In the group 1, C. miraglia1, S. scida1, A. violi1, M. franceschi2, G. baldassarre3, M. rugge4, P. crafa5, A. tursi6, G. brandimarte7, L. franzoni8, N. dal bo9, R. cannizzaro10, C. scarpignato2

**Disclosure of Interest:** All authors have declared no conflicts of interest.
P1906 CAN THE UREA BREATH TEST PREDICT HELICOBACTER PYLORI ERADICATION?

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Introduction: The Urea Breath Test (UBT) is considered the gold standard non-invasive test for detection of Helicobacter pylori infection in Ireland. In Ireland, eradication rates for standard clarithromycin-based triple therapy have fallen below the 80% deemed acceptable for a given treatment. With this in mind, it is important to optimise management of H. pylori infection. It has been suggested that the DOB value is reflective of the amount of bacteria present in the stomach and could predict whether the infection is eradicated.

Aims & Methods: The aim of this study was to determine whether there is an association between DOB and eradication of H. pylori infection in an Irish cohort. Treatment naïve adult patients undergoing UBT were included. Patients were deemed to be H. pylori positive if a Delta Over Baseline (DOB) value of > 20 % was obtained. Positive patients were categorised into low (< 16%), intermediate (16-35 %), and high (> 35 %) DOB groups. A random subset of positive patients was given clarithromycin-based triple therapy for 7 days. A follow-up breath test was performed at least 8 weeks post-treatment to confirm eradication of H. pylori in all patients. The three DOB groups were compared with respect to age, gender and eradication rates.

Results: Out of 860 of UBTs assessed (mean age 43.1 ± 14.8 years, 39% male), 289 (33.6%) were positive (mean age 43.1 ± 14.9 years, 41.9% male). Of the total positive patients, 91 (31.5%) returned for a follow-up UBT to confirm eradication of H. pylori. When patients were categorised into low, intermediate and high UBT groups, there was no significant difference in age and gender between groups (p = 0.06 for age and p = 0.3 for gender). Eradication rates in the low, intermediate and high UBT groups were 70.5%, 63.0% and 50.0% respectively (p = 0.3). Patients were then categorised according to eradication status. When eradication was successful, the average DOB value was significantly higher in the low DOB groups compared with the high DOB groups (p = 0.03, 95% CI 0.69 to 17.5). 46 (50.5%) patients were given clarithromycin-based triple therapy for 7 days. When this subset of patients was categorised into low, intermediate and high UBT groups, eradication rates were 76.5%, 72.2% and 66.7% respectively. When these rates were compared to respective rates in those whose treatment was not known, no difference was observed. The subset was also categorised according to eradication status. When eradication was successful, the average DOB value was lower, at 22.0% compared with when eradication was unsuccessful (p = 0.6). Similarly, when these DOB values were compared to respective values in whose whose treatment was not known, no difference was observed.

Conclusion: As the DOB value increases in the UBT, the eradication rate of H. pylori decreases, regardless of treatment regimen. When categorised according to eradication status, the DOB value was significantly lower when eradication was unsuccessful (20.6 % vs 29.8%, p = 0.03). The DOB value could be a useful value in stratifying patients with H. pylori infection; especially as histology and antimicrobial resistance information is unavailable in patients undergoing non-invasive testing for H. pylori infection.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1908 COMPARISON OF THE EFFICACY BETWEEN BISMUTH AND ALTERNATING RIFAXIMIN ON SECOND-LINE QUADRUPLE REGIMEN OF HELICOBACTER PYLORI ERADICATION

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Introduction: Bismuth is a heavy metal which has antimicrobial activity through inhibiting bacterial biofilm formation. Therefore, bismuth is one of the attractive agents in the treatment of Helicobacter pylori (H. pylori) infection which is highly susceptible to bismuth. So the Korean guideline preferably recommends the regimen contains bismuth for the patients who failed on H. pylori eradication with the primary regimen consists of proton pump inhibitors, amoxicillin, and clarithromycin therapy. Rifaximin is one of derivatives of rifamycin with antimicrobial activity against H. pylori. It can achieve high concentrations within the gastrointestinal tract and remains active in acidic environment. So rifaximin has been studied as a treatment for persistent H. pylori infection. Rifaximin has been prescribed for replacing the bismuth of the regimen concurrently uses PPI, metronidazole, and tetracycline in Soochunhyang University Hospital, Seoul for a while. So we reviewed the clinical outcomes of the 2 different regimens.

Aims & Methods: From May 1st 2003 to October 31st 2015, six thousand and five hundred ninety-five patients were treated their H. pylori infection in Soochunhyang University Hospital, Seoul. And their prescriptions and result of eradication were retrospectively reviewed on the medical records. The patients had clarified pre-and post-eradication result, which can be assured by the rapid urease test performed within 10 days of eradication were enrolled. And statistical analyses were performed to the patients who had second-line treatment to compare the efficacy of the bismuth containing regimen and the rifaximin containing one.

Results: During the periods over 12 years, two thousand and seven hundred and forty-two patients were prescribed the standard triple eradication regimen and two thousand and eighty-nine (78.11%) patients showed the successful treatment result. One hundred twenty-six (4.10%) treatment failure group were consecutively treated with second-line regimen. Thirty-five patients were prescribed the bismuth-containing regimen and 34 (97.14%) of them showed successful eradication result. Other 91 patients were treated with the rifaximin-containing regimen and showed 92.31% of eradication rate. The treatment success rates are not different significantly in statistics.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1909 COMPARISON OF 10-DAY STANDARD TRIPLE THERAPY AND LEVOFLOXACIN BASED THERAPY FOR HELICOBACTER PYLORI ERADICATION: RANDOMIZED CONTROLLED TRIAL

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Introduction: Standard triple therapy (STT) has been widely used in Helicobacter pylori (H. pylori) infection, but eradication rate is decreasing because of clarithromycin resistance. Recently, Levoflaxacin-based therapy (LBT) has been evaluated to overcome the low eradication rate of standard triple therapy and reported eradication rate over 80%. Aims & Methods: We compared the efficacy and safety of STT group and LBT group for Koresians. Between April 2014 and April 2016, 49 patients in the STT group (amoxicillin 1 g bid, clarithromycin 500 mg bid and omeprazole 20 mg bid for 10 days) and 48 in the LBT group(levofloxacin 500 mg bid, amoxicillin 1 g bid,
P1910 TREATMENT OF HELICOBACTER PYLORI INFECTION: WILL TAILORING THERAPY FIRST TIME OVERCOME INCREASING FAILURE OF STANDARD TRIPLET THERAPY?  
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Introduction: In Ireland, Helicobacter pylori infection has become increasingly resistant to commonly used antibiotics, such as clarithromycin. Concurrently, eradication rates for standard clarithromycin-based triple therapy have fallen below the 80% deemed acceptable for a given treatment. Aim: The aim of this study was to compare eradication rates of standard clarithromycin-based triple therapy with those of tailored therapy based on antimicrobial susceptibility as a first-line treatment for H. pylori infection. Treatment-naïve adult patients undergoing endoscopy were prospectively recruited. Biopsies from H. pylori-positive patients (assessed by CLO test) were processed for sensitivity testing by E-testing and genotyping by the GenoType HelicoDR assay (Hain). Patients randomly received either clarithromycin-based standard triple therapy or tailored treatment based on antibiotic sensitivities, for 7-14 days. A follow-up breath test was performed at least 8 weeks post-treatment. Results: To date 889 patients have undergone endoscopy and 186 (21%) were H. pylori positive. Infected patients were significantly younger (mean age 53 vs 49 years, p = 0.002) and tended to be male (43% vs 53%, p = 0.02). Of 186 H. pylori-positive patients, 112 (60%) were treatment naïve. Culture of H. pylori was successful in 57% (64/112) of samples and primary clarithromycin resistance was 47% (30/64) by E-test. Genotypic resistance data was available for 93% (104/112) patients and 55% (61/114) strains were clarithromycin resistant. Thus far, 99 (88%) treatment naïve patients have been enrolled in the study; 92 (93%) have completed the study. Of these, 45 (46%) have received standard triple therapy and 54 (54%) have received tailored therapy. In the tailored arm, 25 (46%) patients received standard triple therapy, 14 (26%) received levofloxacin-based triple therapy, 13 (22%) received a PPI and combination of antibiotics based on their sensitivities (e.g. levofloxacin, clarithromycin, rifampicin, tetracycline or metronidazole), and 3 (6%) bismuth quadruple therapy. The eradication efficacy of tailored therapy by intention-to-treat analysis was higher at 74% (40/54) compared to 67% (n = 30/45) for standard therapy (p = 0.5). The eradication efficacy by per-protocol analysis was also higher, at 82% (40/49) for tailored versus 70% (30/43) for standard therapy (p = 0.2). Patients in each arm were further categorised by clarithromycin resistance status, phenotypically by E-test or genotypically by the GenoType HelicoDR assay. Of note, in clarithromycin resistant patients, tailored therapy achieved a better eradication rate per protocol analysis than standard triple therapy (83% vs 57% per protocol, p = 0.09). Conclusion: Those who are sensitive to clarithromycin, standard clarithromycin-based triple therapy achieves an acceptable eradication rate of approximately 81%. However, a high primary clarithromycin resistance rate was observed in this study (47%). In those who are resistant to clarithromycin, prescribing a regimen based antibiotic susceptibilities increases eradication rates to 83%, compared to those treated with standard triple therapy (57%, p = 0.09).

Disclosure of Interest: All authors have declared no conflicts of interest.

P1912 ARE PROBIOTICS USEFUL AS ADJUVANTS IN ERADICATION THERAPY OF HELICOBACTER PYLORI INFECTION?  
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Introduction: Helicobacter pylori (Hp) successful eradication has been considered since it contributes to several gastrointestinal disorders. Sequential therapy has been used widely as the first approach in Hp eradication therapy (HpET). However, its failure is 10-45%. The addition of probiotics has been considered because of potential benefit in the improvement of efficacy and reduction of side effects during HpET. Aims & Methods: We aimed to evaluate the effect of probiotics, as adjuvants to sequential HpET on treatment efficacy, side effects and patient compliance. This was a prospective study of total of 1159 patients followed in a gastroenterology outpatient clinic. Selected patients undergone Hp screening for unexplained gastrointestinal symptoms or disorders with HpET indication. Comparing patients under sequential therapy (10-day treatment of 5 days of pantoprazole + amoxicillin followed by further 5 days of pantoprazole + clarithromycin + metronidazole)G1-n=85 and patients with additional supplement of Lactobacillus reuteri probiotics therapy 2tab/day in previous two weeks and during treatment (G2-n=77), since it was approved for this indication. Screening Hp test and indication, eradication rate, auto-reported side effects and patient compliance were evaluated. The overall HpET screening Hp test, 147(55.5%;147/265) were positive, being the majority obtained by gastric biopsy (86.0%;n=228). The mean age was 58.6±15.8 years with female predominance (60.8%;n=161). The main indications for Hp screening were dyspepsia (27.9%), epigastric pain (24.2%), gastroduodenal peptic ulcer disease (19.2%) and gas-troesophageal reflux disease (15.8%). At gastric biopsies, chronic gastritis was present in 61.5% (n=163), gastric atrophy in 17.0% (n=45) and intestinal metaplasia in 7.9% (n=21), with Hp mild colonization in most cases (58.5%;76/130). Eradication rate was significantly higher in patients who had probiotic supplement (G1-74.1%n=G2-92.2%;p=0.002;OR = 4.132). No significant difference was verified between two groups in relation to side effects (G1-15.3%n=G2-9.1%;p=0.094) or patient non-compliance (G1-2.4%n=G2-
P1913 THE IMPACT OF CLOSTRIDIUM BUTYRICUM MIYAIRI-588 ON HELICOBACTER PYLORI ERADICATION THERAPY

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Introduction: As a country with high incidence of gastric cancer, the elimination of Helicobacter pylori (HP) is useful strategy for the prevention of gastric cancer in Japan. And the eradication therapy for HP-infected gastritis was approved as an insurance indication since 2013, and virtually all HP-infected patients were simultaenously eradicated by the therapy using proton pump inhibitor (PPI)/amoxicillin (AMPC)/clarithromycin (CAM) has been used as a regime for the primary eradication therapy. Since HP has rapidly acquired the resistant character against CAM, the eradication rate has gradually been decreasing. Recently, PPI/CAM, a novel probiotic, has been used as an alternative eradication therapy. Successful rate of HP eradication was 81.7% in the PPI group, 89.8% in the VPZ group and 94.9% in the MBM group. The eradication rate in VPZ group was not significantly higher than that of PPI group, and there was no significant difference between 3 groups.

Aims & Methods: The objective of this study is to compare, in Morocco, an eradication therapy using probiotics, _Clostridium butyricum_ Miyairi-588 (MBM) on PPI-based triple therapy comparing the eradication rate and side effect with VPZ-based triple therapy. From January 2015 to December 2016, patients who received HP primary eradication therapy in our hospital were retrospectively evaluated. They were divided into 3 groups: 1) patients who received PPI + AMPC + CAM therapy (PPI group), 2) patients who received VPZ + AMPC + CAM therapy (VPZ group), 3) patients who received PPI + AMPC + CAM + MBM therapy (PPI + MBM group), and the eradication rate and side effects were evaluated. A study on the number of patients enrolled in this study were 468: 150 cases in the PPI group, 271 cases in the VPZ group and 47 cases in the PPI + MBM group. Successful rate of HP eradication was 81.7% in the PPI group, 89.8% in the VPZ group and 89.1% in the PPI + MBM group. The eradication rate in VPZ group was significantly higher than that of PPI + MBM group. The rate of side effect was 17.4% in the PPI group, 10.0% in the VPZ group and 19.1% in the PPI + MBM group, and there was no significant difference between 3 groups.

Results: The number of patients enrolled in this study were 468: 150 cases in the PPI group, 271 cases in the VPZ group and 47 cases in the PPI + MBM group. Successful rate of HP eradication was 81.7% in the PPI group, 89.8% in the VPZ group and 89.1% in the PPI + MBM group. The eradication rate in VPZ group was significantly higher than that of PPI + MBM group. The rate of side effect was 17.4% in the PPI group, 10.0% in the VPZ group and 19.1% in the PPI + MBM group, and there was no significant difference between 3 groups.

Conclusion: This study shows that _Clostridium butyricum_ Miyairi-588 can have additive effects in PPI-based triple therapy for HP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1915 “CONCOMITANT” OR “SEQUENTIAL” THERAPY FOR THE ERADICATION OF HELICOBACTER PYLORI: WHICH REGIMEN COMES FIRST IN MOROCCO?

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Aims & Methods: The objective of this study is to compare, in Morocco, an eradication therapy using probiotics, _Clostridium butyricum_ Miyairi-588 against CAM, the eradication rate and side effect with VPZ-based triple therapy. Successful rate of HP eradication was 81.7% in the PPI group, 89.8% in the VPZ group and 94.9% in the MBM group. The eradication rate in VPZ group was not significantly higher than that of PPI group, and there was no significant difference between 3 groups.

Results: The number of patients enrolled in this study were 468: 150 cases in the PPI group, 271 cases in the VPZ group and 47 cases in the PPI + MBM group. Successful rate of HP eradication was 81.7% in the PPI group, 89.8% in the VPZ group and 89.1% in the PPI + MBM group. The eradication rate in VPZ group was significantly higher than that of PPI + MBM group. The rate of side effect was 17.4% in the PPI group, 10.0% in the VPZ group and 19.1% in the PPI + MBM group, and there was no significant difference between 3 groups.

Conclusion: This study shows that _Clostridium butyricum_ Miyairi-588 can have additive effects in PPI-based triple therapy for HP.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1914 THE EFFECTS OF SACCHAROMYCES BOULARDII SUPPLEMENTATION ON HELICOBACTER PYLORI ERADICATION RATE AND SIDE EFFECTS DURING SECONDARY THERAPY: A PROSPECTIVE RANDOMISED CONTROLLED STUDY

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Introduction: The eradication of Helicobacter Pylori remains crucial because of its constantly evolving data. The recent recommendations of Maastricht V stipulate that the concomitant quadritherapy and the bismuth quadruple therapy are more efficient than the sequential therapy because of a higher rate of eradication (90% vs 82%), but with more important side effects. The aim of our study is to investigate the effects of the Saccharomyces boulardii supplementation to the sequential therapy on Helicobacter pylori eradication rate and associated therapy side effects.

Aims & Methods: One hundred ninety nine patients with Helicobacter pylori infection documented on a histological study of gastric biopsies were enrolled from May 2013 to May 2016, on a single center, prospective, controlled and randomized study, performed in the Gastro Entérology II department on the military hospital of Rabat. Using a permuted block randomization, our patients were assigned to one of the following groups: a control group receiving the standard sequential therapy, and an experimental group receiving in addition to the sequential therapy Saccharomyces boulardii 20 mg orally and daily during the ten days of regimen. All the patients were reviewed in the end of the therapy to evaluate the adherence to treatment and the incidence and severity of side effects. The eradication of Helicobacter pylori was evaluated by _13C-urea breath_ test 4 to 6 weeks after the end of the protocol. Statistical analysis was performed by the software SPSS 20.0. A model of logistic regression was performed to analyse the effects of Saccharomyces boulardii supplementation on eradication rate and side effects.

Results: There was no significant difference between the two groups on age (middle age = 44.3 ± 13.8years vs 43.1 ± 13.2years), gender (sex ratio M/F = 1.15 vs 1.05), medical antecedents, smoking, endoscopic and histological data. In Intention To Treat ITT and Per Protocol PP analysis, the eradication rate was significantly higher in the experimental group (86.6% ITT, 87.5% PP), comparing to the control group (78.2% ITT 74.7% PP), p = 0.02. Moreover, the Saccharomyces boulardii supplementation allowed a significant reduction of the incidence of overall side effects (RR = 0.26, IC95% [0.14–0.47], p < 0.001), and the incidence of antibiotic-associated diarrhea (RR = 0.70, IC95% [0.28–2.0], p < 0.001). The incidence of nausea and vomiting, dizziness, asthma and metallica toxicity was also lower in the experimental group, although the differences were not statistically significant. In the multivariate analyse, the Saccharomyces bouardii supplementation was associated with an optimization of the eradication rate (RR = 2.4, IC95% [0.19–1.09], p = 0.02), and with a reduction of the antibiotic-associated diarrhea AAD (RR = 0.07, IC95% [0.02–0.26], p < 0.001). Conclusion: Our study shows that the Saccharomyces boulardii treatment during sequential therapy in Helicobacter pylori regimen is associated with a significant reduction of side effects and particularly the antibiotic-associated diarrhea, and allows an optimization of the eradication rate of Helicobacter pylori.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1916 PROSPECTIVE COMPARATIVE STUDY OF TWO FIRST-LINE REGIMENS FOR HELICOBACTER PYLORI ERADICATION: 14-DAYS NON-BISMUTH QUADRUPLE OPTIMIZED CONCOMITANT THERAPY VERSUS 10-DAYS BISMUTH-CONTAINING QUADRUPLE THERAPY USING A TREATMENT CAPSULE

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Introduction: The Maastricht V/Florence Consensus Report recommends bismuth quadruple or non-bismuth quadruple concomitant therapies as first-line treatments for _H. pylori_ infection, in areas where clarithromycin resistance is high (>15%), Head-to-head studies between both therapies are needed. Aims & Methods: We aimed to compare compliance, efficacy and adverse effects of two first-line _H. pylori_ eradication therapies in a high clarithromycin resistance setting.
area, and in clinical practice. A prospective study was performed in a Spanish center recruiting consecutive naïve adult patients, candidates to H pylori eradication. Omeprazole 40mg, Clarithromycin 500mg, Amoxicillin 1g and Metronidazole 500mg, all drugs b.i.d, for 14 days (OCAM); or Omeprazole 20mg b.i.d and 3-in-1 capsule with Bismuth 140mg + Tetracycline 125mg + Metronidazole 125mg. 3 capsules q.i.d, for 10 days (3–1-OBMT) were prescribed according to physician criteria. Compliance was assessed by striking the consumed doses in a patient filled template, and adverse effects using a specific questionnaire with a 1–3 intensity scale. Efficacy was determined by 13C-urea breath test. A descriptive study and analysis of efficacy by intention to treat (ITT) were performed. Cases with poor therapeutic compliance (<80%) or no available data were excluded in per-protocol (PP) analysis. Chi2, Student’s t, and Mann-Whitney U tests with significance level p < 0.05 were applied. The payment was approved by the Ethics Committee.

Results: 216 patients (63.43% women; mean age 51.53 - range 19-84 years) were included. OCAM were prescribed in 103 and 3–1-OBMT in 113. No differences in age, sex and functional dyspepsia as indication to eradicate were observed between groups. Main indications for treatment were functional dyspepsia (39.35%), gastroduodenal ulcer (19.44%) and non-investigated dyspepsia (13.89%). Compliance was <80% in 11 patients and unknown in 7. The efficacy outcome was unavailable in 9 subjects. Compliance >80% was observed in 91% with OCAM and in 93.53% with 3–1-OBMT (p=0.64). The ITT rates were 82.52% vs 85.84% (p = 0.63), and PP 89.47% vs 96.04% (p = 0.13), for OCAM and 3–1-OBMT respectively. The outcomes of adverse effects (frequency, number, duration and intensity) are shown in the Table.

Conclusion: A high clarithromycin resistance area, 14-days OCAM and 10-days 3–1-OBMT regimens achieve high and similar compliance and efficacy rates, but 3–1-OBMT provides a superior safety profile.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1918 MANAGEMENT OF HELICOBACTER PYLORI INFECTION AT PRIMARY CARE LEVEL. THE IMPLEMENTATION OF SPECIFIC COUNSELLING IMPROVES ERADICATION RATES
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Introduction: We have detected a large increase of urea breath test (UBT) requests for Helicobacter pylori (Hp) diagnosis by primary care physicians (PCP). In this way, most Hp-infected patients are now being managed at primary care level. However, little is known about outcomes of Hp infection by PCP.

Aims & Methods: 1. To evaluate and compare the eligibility of UBT indications, treatment regimens and eradication rates between PCP and gastroenterology specialist (GS). 2. To evaluate the effect of introduction of specific counselling to PCP in the management profile of Hp infection. First, we prospectively evaluated the effect of introduction of a specific counselling to PCP to increase the adherence to appropriate treatment regimens (71% vs 35%; p <0.0001) and eradication rates (78% vs 57.1%; p < 0.0001) were observed in the PCP group after the implementation of specific counselling based on national guidelines.

Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

WEDNESDAY, NOVEMBER 01, 201709:00-14:30
SMALL INTESTINAL III - HALL 7_

P1918 VALPROATE AND CHIR 99021 AMELIORATES RADIATION-INDUCED INTESTINAL EPITHELIAL INJURY IN MOUSE MODEL
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Introduction: Radiation-induced gastrointestinal syndrome (RIGS) stems from the clonogenic loss of crypt cells and vill depopulation and results in mucosal barrier disruption, bacterial invasion, inflammation and sepsis. Valproate (VPA) is the one of the popular anti-convulsants, recently its Notch signal modulatory effect has been reported. Notch signal pathway is the one of the important pathways to maintain intestinal stem cells and to differentiate to secretory cells such as goblet cells. Moreover, It has been reported that combination of VPA and CHIR 99021 (GSK3B inhibitor) has powerful proliferatory effect for intestinal stem cells, such as Lgr 5+ cells. One of the major difficulties for RIGS studies is the fact that crypts are not easily accessed and cultured with traditional means. Ex vivo culture techniques for single crypt or a stem cell derived enteroid, with essential features of the in vivo tissue architecture, have been recently developed. Thus, we have adopted the 3D-cultured enteroids for RIGS ex-vivo model, and proved the effect of VPA and SCFAs for RIGS.

Aims & Methods: We have adopted the 3D-cultured enteroids for RIGS ex-vivo model, and proved the effect of VPA and SCFAs for RIGS. To culture enteroid, ten centimeters segments of jejunum were procured from 9–13 week-old C57BL/6 mice. Crypts were isolated by EDTA chelation, suspended in Matrigel and grown in culture media containing epidermal growth factor, noggin, R-spondin 1. After 1 day in culture, the enteroids were treated (or not) 3 mM CHIR 99021 (GSK3B inhibitor) and 1 mM VPA. On day 3, the enteroids were irradiated as a dose dependent manner. The evaluation of irradiated enteroids was performed by measuring MITT assay, budding efficiency of enteroid, and EdU staining. On post-irradiation Day 2 and Day 7, RT-PCR was performed.

Results: Enteroid from mouse had multiple crypts (‘budding’) with well-differen- tiated goblet, Paneth cells, +4 stem cells (quiescence stem cells, BM1 is expressed), Lgr5+ stem cells. In the response of radiation, irradiated enteroid decreased proliferation rate in a dose dependent manner, as measured by MITT assay. Enteroids budding efficiency of enteroids. Irradiated enteroids with VPA +CHIR 99021 could maintain their +4 stem cells even in 10 Gy of irradiation, lethal dose of mouse intestinal epithelium, and they were able to proliferation. Combination of VPA + CHIR 99021 did not have an effect on paneth cells, enteroid, Paneth cells and goblet cells.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1921 REVIEW OF SERVICE PROVISION OF NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (NICE) RECOMMENDED QUALITY STANDARDS FOR CELIAC DISEASE AT A BIG DISTRICT GENERAL HOSPITAL

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Introduction: In the UK, 1 in 100 people are affected with coeliac disease. NICE published quality standards (QS134) for coeliac disease in October 2016 based on NICE guidelines NG20 (September 2015). This quality standard covers the recognition, assessment and management of coeliac disease in children, young people and adults. The quality standard is expected to contribute to improvements in the diagnosis of coeliac disease, growth in children and young people, health-related quality of life, incidence of osteoporosis, intestinal lymphoma, vitamin D deficiency, and iron deficiency.

Aims & Methods: We audited our departmental practices against NICE quality standards for coeliac disease. It is a retrospective data analysis of patients, 16 years and above, with positive coeliac serology from April 2016 to September 2016. All patients were source of referral, value of issue transglutaminase (tTG) antibodies, type of referral (new or follow up), timing of OGD (less than or more than 6 weeks), whether or not seen by dietician, offer of annual review, and DEXA scan.

Results: There are 209 first-degree relatives of CD patients. In total 95 cases were confirmed from patient records. All variables were compared between screen-positive relatives and screen-negative relatives.

Conclusion: The incidence and prevalence of coeliac disease in our study are 30.28 per 100,000 and 0.072 per 100,000 persons-years in our study. Thirty-four patients were positive for celiac serology which corresponds to the prevalence of CD in first degree relatives of 1%.

Disclose of Interest: All authors have declared no conflicts of interest.

Reference
NICE Quality Standards (QS134) for Coeliac Disease (October 2016) NICE guidelines NG20 (September 2015)

P1922 SERUM MICROBIAL MARKERS IN NONRESPONSIVE CELIAC DISEASE

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Introduction: In nonresponsive celiac disease (NRCD) the symptoms and duodenal histology do not improve, despite a gluten-free diet (GFD). NRCD is characterized by persistent villous atrophy and mucosal inflammation despite strict GFD, long-term complications and progression. Additionally, NRCD is associated with increased seroreactivity to microbial antibodies.

Methods: We analyzed serum microbial markers in nonresponsive celiac disease (NRCD) and gluten-sensitive enteropathy (GSE). We compared NRCD patients to GSE patients. We also compared NRCD patients to GFD responsive celiac patients served as CD controls (58 samples at diagnosis and 55 on GFD). We hypothesized that chronic infection with persistent villous atrophy and mucosal inflammation despite strict GFD and negative celiac serology (NRCD group). Corresponding GFD responsive patients served as CD controls (58 samples at diagnosis and 55 on GFD)

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Introduction: Celiac disease affects 1-2% of the population, but due to diverse presentation most patients remain unrecognized. Diagnostic efficiency could be improved by screening of at-risk groups, but long-term benefit of this approach is unclear. To shed light to this issue, we compared a variety of celiac disease-related and other parameters in large cohorts of adult patients diagnosed in childhood either because of clinical suspicion or by screening.

Aims & Methods: A questionnaire about current health and lifestyle, adherence to gluten-free diet (GFD) and follow-up of celiac disease was sent to 564 adults with celiac disease diagnosis. Further, the participants fulfilled validated Gastrointestinal Symptom Rating Scale (GSRS) and Psychological General Well-Being (PGWB) surveys for symptoms and quality of life. Clinical and histological presentation at diagnosis and other relevant medical data were confirmed from patient records. All variables were compared between screen-detected and clinically detected patients.

Results: Altogether 235 (42%) adults completed the questionnaires. At diagnosis, screen-detected patients (n = 49) were older (11.3 vs 8.8 yr, p = 0.016) and had lower vitamin D (25.7% vs 39.5%, p < 0.001) compared to clinically detected patients (n = 186). They also had a trend to have less often total villous atrophy (18% vs 32%, p = 0.075) and anemia (18% vs 32%, p = 0.072). The groups did not differ in gender, current age (median 26.5 vs 28.5 yr, p = 0.21), time from the diagnosis to referral, experience of persistent symptoms or concern about health, clinical symptoms, strict GFD (74% vs 80%, p = 0.161), lifestyle restrictions caused by GFD, presence of celiac disease-related complications, physical activity, fertility or GSRS and PGWB scores. However, screen-detected patients smoked less (4% vs 15%, p = 0.037) and had more often celiac disease in relatives (78% vs 58%, p = 0.011).

Conclusion: Diagnostic approach and presentation of celiac disease in childhood do not seem to affect the long-term health outcomes or attitude towards the disease in adulthood. Lack of difference in the dietary adherence and lifestyle recommendations gives further support for active screening and early diagnosis of celiac disease.

Disclose of Interest: All authors have declared no conflicts of interest.

Reference
United European Gastroenterology Journal 5(5S)
80 healthy blood donors as non-CD controls. Kruskal-Wallis test was used to compare antibody titers and Dunn-Bonferroni for post hoc pairwise comparisons.

**Results:** At least one serum microbial marker was positive in 80% of NRCD patients, in 97% of untreated and 87% of treated CD patients and in 44% of non-CD controls. NRCD patients had the highest frequency of ASCA positivity (64% vs 52%, 20% and 0%, respectively) and also significantly higher ASCA IgA (median 14.5 U/ml) and IgG (32.5 U/ml) titers than treated CD patients (7.0 U/ml, 13.0 U/ml and non-CD controls (4.5 U/ml, 5.8 U/ml). There was no difference in ASCA rates between NRCD and untreated CD. The frequencies of ASCA were 62% in non-CD treated and 86% in untreated CD (86%, 59%, respectively), while 12 titers were higher in NRCD (median absorbance 0.76) and untreated (1.0) and treated (0.83) CD than non-CD controls (0.32). OmpW was elevated in untreated (1.1) and treated (0.84) CD patients compared with non-CD controls (0.79).

**Conclusion:** Seropositivity and high titers of ASCA were associated with NRCD and might thus serve as additional follow-up tool for histological recovery in CD.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References**


P1923 **CORRELATION BETWEEN OXIDATIVE STRESS AND DUODENAL ATROPHY IN CELIAC DISEASE**

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**Introduction:** High levels of reactive oxygen species (ROS) and impaired antioxidant defense systems lead to oxidative stress (OSx) and tissue injury in different intestinal and extraintestinal conditions, including celiac disease (CD). A possible effect of gluten ingestion on intracellular oxidative imbalance has been suggested. Aims & Methods: The first aim of the study was to investigate the effects of OSx in CD, evaluating the levels of ROS and oxidative damage biomarkers in sera of naïve patients (N-CD), coeliac patients on a gluten-free diet (GFD) including responders (CD-GFD) or non-responders (NRCD) to dietary treatment. The second aim was to look for new serological biomarkers corresponding to morphological/functional alterations detected in biopsies according to Marsh-Oberhuber classification. Finally, a possible correlation between ROS production and/or biomarkers of OSx and/or hematological data was investigated. Analysis were conducted on small intestinal biopsy specimens and peripheral blood samples of celiac patients (N-CD, CD-GFD and NRCD). The methods included Electron Paramagnetic Resonance (EPR) technique for ROS detection, High Performance Liquid Chromatography (HPLC) analysis of erythrocytes glutathione (GSH), enzymatic assays for oxidative damage biomarkers (lipid per-oxidation measured by thiobarbituric acid-reactive substances (TBARS) method; protein oxidation, measured by a protein carbonyl (PC) assay kit; total antioxidant capacity (TAC), measured by an enzymatic kit; nitric oxides metabolites) as a marker of gut inflammation.

**Results:** Overall, blood samples and biopsies from 54 patients affected by CD were collected (44 F; median age 43.98 ± 13.44 years; range 19–80; 17 N-CD, 18 CD-GFD and 19 NRCD). Hemoglobin and haematocrit levels were significantly lower in NRCD and CD than in CD-GFD group (p < 0.05). In our study, a significantly increased production of ROS, lipid peroxidation and oxidized protein levels, plasma nitrate concentrations were reported in NRCD and N-CD compared to CD-GFD. On the contrary, the TAC and GSH levels were significantly decreased in N-CD and NRCD groups compared to CD-GFD. Data are summarized in Table 1. A significant direct relationship between Marsh subtypes and ROS production rate R2 = 0.19; p < 0.001, TBARS (R2 = 0.20; p < 0.001) and PC (R2 = 0.17; p < 0.001) was found by Pearson’s product-moment correlation while an inverse correlation between Marsh subtypes and TAC (R2 = 0.23; p < 0.001) and GSH (R2 = 0.34; p < 0.0001) was identified. In all groups of patients, at higher ROS production rate levels corresponded to greater plasma TBARS concentrations and lower erythrocytic GSH levels.

**Conclusion:** Several defense mechanisms are implied in maintaining the cell integ- rity and tissue homeostasis. According to our results, the presence of higher levels of ROS, oxidative damage biomarkers and nitric oxides metabolites in naïve and CD patients responding to GFD, the pro-oxidant/antioxidant balance seems to be greatly recovered.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1924 CIRCULATING EXTRACELLULAR VESICLES, A NOVEL MECHANISM OF ENDORCINE CELLULAR CROSS-TALK, ARE INCREASED IN NEWLY DIAGNOSED CELIAC DISEASE PATIENTS**

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**Introduction:** Extracellular vesicles (EVs) have been recently hypothesized to represent a major peripheral mechanism of cellular cross-talk. EVs carry surface receptors and proteins characteristic of their cells of origin and shuttle molecules (proteins, RNAs, microRNAs) potentially controlling physiological and patho- logical systemic processes. Recent studies have demonstrated an increased number of circulating EVs in a variety of conditions characterized by multi-organ impairment and/or damage such as insulin-resistance, atherosclerosis and obesity. Celiac disease (CD) is an immune-mediated inflammatory enteropathy,a dietetic change can modify inflammatory and anti-inflammatory molecules in genetically susceptible individuals. It is frequently associated with a variety of systemic conditions both autoimmune and potentially immune-mediated in nature. Aims & Methods: The aim of this study was to assess and characterize patterns of circulating EVs in newly diagnosed CD patients. We enrolled consecutive adult anti-ITG positive, biopsy proven CD patients. Circulating EVs were identified untouched on whole blood samples by a no-lyse/no-wash method, combined with EVs volumetric count (FACSVerse, BD), based on a novel six-colour flow cytometry panel, in order to identify and enumerate both the whole EV compartment and different EV subpopulations. Data are expressed as mean ± SD and statistical differences were evaluated by means of T-test. Results: We evaluated 12 EV subpopulations (mean age 42.9 ± 19.1 vs. 40.8 ± 15.9 years, F/M = 4:1) at diagnosis and 12 age- and sex-matched healthy controls. Histology was considered positive for lesions of grade ≥1 according to the Corazzi-Villanacci classification. Mean anti-ITG levels at diagnosis were 6.9 ± 3 times ULN. Mean number of total circulating EVs was significantly higher in CD than in controls (59859 ± 72482 vs 14383 ± 1008 EV/microl, p = 0.035). Subgroup analysis showed that EpCAM + EVs, of epithelial origin, and CD41+ platelet-derived EVs were not significantly different between CD and controls (894 ± 1004 vs. 548 ± 1237 and 3052 ± 1563 vs. 1734 ± 1610 respectively, p = ns). On the contrary, CD45 + EVs, of leucocyte origin, showed a significantly higher frequency compared on controls (460 ± 492 vs. 119 ± 150 p = 0.026).

**Abstract No:** P1923

Data on levels of ROS and oxidative damage biomarkers in sera of naïve patients (N-CD), coeliac patients on a gluten-free diet (GFD) including responders (CD-GFD) or non-responders (NRCD) to treatment.

<table>
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<tr>
<th></th>
<th>N-CD</th>
<th>NRCD</th>
<th>CD-GFD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROS production (μmol/min⁻¹)</td>
<td>0.21±0.03*</td>
<td>0.22±0.04*</td>
<td>0.17±0.03*</td>
<td>*&lt; p&lt; 0.05</td>
</tr>
<tr>
<td>TAC levels (mM)</td>
<td>1.07±0.30*</td>
<td>1.16±0.47*</td>
<td>1.68±0.54*</td>
<td>*&lt; p&lt; 0.01</td>
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<tr>
<td>GSH levels (μmol/L⁻¹)</td>
<td>534.40±37.46*</td>
<td>507.80±81.73*</td>
<td>634.00±187.80*</td>
<td>*&lt; p&lt; 0.001</td>
</tr>
<tr>
<td>Peroxidized lipid levels (μM)</td>
<td>3.59±0.67*</td>
<td>3.46±0.87*</td>
<td>2.82±0.47*</td>
<td>*&lt; p&lt; 0.01</td>
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<tr>
<td>Oxidized proteins levels (nmol.mg⁻¹ protein)</td>
<td>1.42±0.43*</td>
<td>1.23±0.53*</td>
<td>0.91±0.29*</td>
<td>*&lt; p&lt; 0.001</td>
</tr>
<tr>
<td>Plasma nitrates concentrations (μmol.L⁻¹)</td>
<td>99.74±30.76*</td>
<td>14.56±14.57*</td>
<td>22.21±9.22*</td>
<td>*&lt; p&lt; 0.01</td>
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</tbody>
</table>
P1925 COELIAC DISEASE AND REPRODUCTIVE DISORDERS: IS THERE ANY CORRELATION

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Introduction: The coeliac disease is an autoimmune enteropathy induced by the ingestion of gluten in genetically predisposed individuals. It causes intestinal and extraintestinal problems. Extraintestinal findings are observed in many systems. The prevalence of extraintestinal findings in CD patients is not clearly known and the correlation between them has not been yet obviously explained. There is also no data in the literature regarding the association of patient's reproductive organ (PFO) and celiac disease, which is 10–25% common in the general population. We performed an echocardiography study to determine the frequency of accompanying cardiovascular findings in our patients with celiac disease. In this article, we aimed to share the frequency of the PFO detected in celiac patients with high results.

Aims & Methods: We prospectively recruited cases of clinically suspected CD patients also, and it can lead to false-positive diagnoses. Our aim was to establish the frequency of these disorders in the coeliac disease and their evolution under gluten-free diet.

Results: About 241 patients suffering from coeliac disease, 58 patients presented reproductive disorders, either 28.9%. Recruiting 53 women and 5 men, with a sex ratio M/F of 10/6. The mean age was 32.25 years ranging from 13 to 59 years old. The diagnosis of coeliac disease was based on: Histology (severe or partial villous atrophy with intraepithelial lymphocytosis exceeding 30%), the antieti-body antibodies and/or antigliadin antibodies positive. The reproductive disorders were never isolated but always associated with digestive or extradigestive signs at the time of the diagnosis of coeliac disease. These disorders were: primary amenorrhea in 11 cases (19%), secondary amenorrhea in 13 cases (22.4%), Metrorrhagia in 12 cases (20.6%), absence of development of secondary sexual characters in 8 cases (12.5%), spontaneous abortion in 7 cases (10.9%), menometrorrhagia in 4 cases (13.8%), primary sterility in 3 cases (8.6%), precocious menopause in 6 cases (10.3%), premature labour and/or IUGR in 3 cases (5%), primary amenorrhea in 2 cases (3.4%), and intrauterine Fetal death IUFD in one case (1.7%). All our patients benefited from a gluten-free diet. 15 patients were excluded from the study, 2 patients died, and 12 patients were lost to follow-up. Of the 102 patients stayed, the evolution of the reproductive disorders under gluten-free diet was good in 26 cases (90%), with normalization of the cycles in 15 cases, The cycle was returned in 6 cases, development of secondary sexual characters in 2 cases, fertility was returned in one case, and there was normalization of the cycles in 1 case. A baby was delivered in a baby in term after a repeated premature delivery. The evolution was good in 3 cases as regard missed abortion four years after the gluten-free diet in 1 patient, and amenorrhea continued in 2 cases.

Conclusion: The reproductive disorders related to the coeliac disease were frequent and variable. In our study, these disorders well responded to the gluten-free diet in 90% of cases, and these disorders were reversible under gluten-free diet.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1926 SEVERITY OF MUCOSAL DAMAGE AND TISSUE TRANSGLUTAMINASE ANTIBODY LEVELS CORRELATE WELL IN ADULT CELIAC DISEASE IRRESPECTIVE OF CLINICAL FEATURES

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Introduction: Celiac disease (CD) is a chronic imune-mediated enteropathy that occurs in genetically predisposed individuals. The clinical phenotypes ranges from classical gastrointestinal manifestations to only atypical signs, which are regressive with a gluten-free diet. The classic form is actually a manifestation of severe CD histopathology. GI and non-GI symptoms are not reliable predictors of disease activity, which are regressive with a gluten-free diet. The classic form is actually a manifestation of severe CD histopathology. GI and non-GI symptoms are not reliable predictors of disease activity, which are regressive with a gluten-free diet.

Aims & Methods: We prospectively recruited cases of clinically recommended CD patients diagnosed with CD hospitalized at the Institute of Gastroenterology and Hepatology, “St. Spiridon” Hospital, Iasi between January, 2012- December, 2016 admitted with symptoms of abdominal disturbances (diarrhoea, heartburn, nausea, vomiting, regurgitation, abdominal pain). Demographic, clinical, serological, and histological characteristics of individuals with CD were reviewed.

Results: The study group included 81 adult patients with a female: male ratio of 3.1, 60(71.1%) female patients, mean age 40.02 ± 12.14 years. A total of 46.1% patients presented with gastrointestinal (GI) complaints and 51.9% of patients presented mostly with non-GI manifestations, and advanced age of symptom onset in the latter category (38ys ± 47ys). Marphototherapeutic classification was used to assess mucosal injury and Marsh 3c lesions were found in 25 (30.9%) cases. When assessing the serological parameters, IgA anti-transglutaminase (IgA-tTG) antibody (61.45±7.465 u/mL vs 162.02±106.179 u/mL, P = 0.001) and IgA anti-gliadin antibodies (IgA-AGA) levels (61.83±69.41u/mL vs 77.15±71.02 u/mL, P = 0.001) correlated with intestinal villous atrophy (Marsh 3b and 3c) in CD patients by Spearman rank correlation. Among symptomatic, abdominal distention and diarrhea were associated with abnormal histology. Hemoglobin levels were evaluated and anemia was diagnosed in 61.7% patients among patients with elevated IgA-tTG levels (r = 0.516, P = 0.004), IgA-AGA (r = -0.301, P = 0.006) and Marsh 3b-3c lesions (r = 0.008). Among biological markers included in the statistical analysis, low iron levels (cut off 30 mg/dl), hypocholesterolemia and low protein levels were associated with Marsh 3 b lesions (P = 0.008) and elevated IgA-IgA titers (r = -0.384, P = 0.001).

Conclusion: We prospectively recruited cases of clinically recommended CD patients also, and it can lead to false-positive diagnoses. Our aim was to establish the frequency of these disorders in the coeliac disease and their evolution under gluten-free diet.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1927 USEFULNESS OF BULB BIOPSY SAMPLES IN CELIAC DISEASE DIAGNOSIS IN ADULTS

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Introduction: Celiac disease (CD) is a chronic imune-mediated enteropathy that occurs in genetically predisposed individuals. The clinical phenotypes ranges from classical gastrointestinal manifestations to only atypical signs, which are regressive with a gluten-free diet. The classic form is actually a manifestation of severe CD histopathology. GI and non-GI symptoms are not reliable predictors of disease activity, which are regressive with a gluten-free diet. The classic form is actually a manifestation of severe CD histopathology. GI and non-GI symptoms are not reliable predictors of disease activity, which are regressive with a gluten-free diet.

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Disclosure of Interest: All authors have declared no conflicts of interest.
recommendations. Paraffin embedded biopsy samples were assessed for villous height (VH) and crypt depth (CrD) and VH:CrD ratio revealed a critically low sensitivity, either due to a sensitivity problem with this serology in the pediatric population or secondary to a suboptimal IgA band expression of the POCT.

Disclosure of Interest: All authors have declared no conflicts of interest.

POCT QUALITY STANDARDS: COELIAC DISEASE: A RETROSPECTIVE EVALUATION IN A SINGLE SPECIALIST CLINIC
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Introduction: Quality standards in coeliac disease management were recently published by the National Institute for Health and Care Excellence3. These specify a new 6-week target for the time from referral to endoscopy, which was previously covered by the 16-week referral to treatment (RTT) pathway2. They also state that all newly-diagnosed patients should discuss a gluten-free diet with a specialist dietician. We retrospectively evaluated practice in the Oxford University Hospitals NHS Foundation Trust coeliac clinic against these criteria, and against national guidelines (duodenal bulb sampling at endoscopy and screening for nutritional deficiency)1.

Aims & Methods: The medical records of 110 patients referred to our clinic between September 2015 and September 2016 were examined. The date of referral and endoscopy were recorded, along with relevant demographic, clinical and laboratory information. Data were collected and analysed in Microsoft Excel.

Results: Eighty-five patients (68% female, median age 34) were seen with suspected or newly-diagnosed coeliac disease; of whom 76 (89%) were referred with positive coeliac serology and would be subject to the 6-week target. Six patients declined or delayed endoscopy, and endoscopy or referral information were not available for 4 patients. For the remaining 66 patients, median time from referral to endoscopy was 12 weeks (SD 37 days), with 59 patients (89%) referred within 18 weeks, but only 11 patients (17%) within 6 weeks (Figure 1). Duodenal bulb biopsies were taken at endoscopy in 31 patients (44%). A diagnosis of coeliac disease was made in 74 (87%) of all patients referred, of whom 67 (90%) were referred to a specialist dietician. Haematocrits (iron studies, vitamin B12 and folate) were measured in 67 patients (90%), bone densitometry was measured in 51 patients (69%) and all patients were offered a follow-up appointment in the coeliac clinic. Iron deficiency was found in 31 patients (45%) of patients tested, folate deficiency in 12 patients (18%), vitamin B12 deficiency in 5 patients (8%) and vitamin D deficiency in 23 patients (38%). Osteoporosis was diagnosed in 5 patients (10%) and osteopenia in 10 patients (20%).

Conclusion: Appropriate dietician referral, specialist follow-up and screening for nutritional deficiency and bone disease occur within the Oxford coeliac disease service. Compliance with recommended biopsy protocols was only 44%. Whilst most referrals met the previous 18-week RTT pathway, few would have met the new quality standards.

Disclosure of Interest: M. FitzPatrick: Michael FitzPatrick is supported by an Oxford-Celgene Research Fellowship funded by Celgene Corporation.

All other authors have declared no conflicts of interest.

References

POCT. However, the CD prevalence in this group was low. In the pediatric group the diagnostic power was not revealed a critically low sensitivity, either due to a sensitivity problem with this serology in the pediatric population or secondary to a suboptimal IgA band expression of the POCT.

Disclosure of Interest: All authors have declared no conflicts of interest.

POC193 MANAGEMENT OF OCCULT OBSCURE GASTROINTESTINAL BLEEDING PATIENTS BASED ON LONG-TERM OUTCOMES
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Introduction: We previously reported that small-bowel capsule endoscopy (CE) is effective in diagnosing small-bowel lesions with occult obscure gastrointestinal bleeding (OGB) (Gastroenterol Res Pract. 2013). However, there is no consensus regarding the management of occult OGB patients without bleeding source identified.

Aims & Methods: We aimed to consider management of occult OGB patients based on the long-term outcomes. A total of 357 consecutive occult OGB patients (203 men; mean age: 59.7 years) who underwent CE at Hiroshima University Hospital before March 2016 and whose entire small-bowel could be observed and followed-up by CE for at least 12 months, were enrolled. We examined each patient to confirm the positive CE findings rate, the detection rate of bleeding source lesions, the details of bleeding source lesions, the overt
bleeding rate with or without treatment, the rate of anaemia exacerbation (hemoglobin levels 0 g/dL), 5 year overall survival rate (OS), and 5 year disease specific survival rate (DSS). Occult OGB is defined as recurrent or persistent iron deficiency anaemia with or without a positive faecal occult blood test and no bleeding findings by esophagogastrroduodenoscopy and colonoscopy.

Results: The rate of positive CE findings was 44% (157/357) and the detection rate of bleeding source lesions was 27% (98/357). All of the treated bleeding source lesions (Group A) were as follows: angioectasia 61 patients (Yamamoto classification Type 1a 37 patients, Type Ib 24 patients), non-specific ulcers 15 patients, hereditary non-polyposis colorectal cancer 5 patients, hemangiomas 5 patients, Crohn’s disease 3 patients, primary cancer 2 patients, metastatic cancer 2 patients, gastrointestinal stromal tumour 2 patients, malignant lymphoma 2 patients, others 3 patients. Lesions that were not regarded as bleeding source lesions (Group B) were as follows: angioectasia 25 patients (Type 1a without oozing 25 patients), erythema 31 patients, others 3 patients. There were no patients with overt bleeding in Group B. Although 6 patients (10%) had anaemia exacerbation in Group B, none of these patients were diagnosed as having a bleeding source lesion. On the contrary, in both Group A and Group B was 90%. DSS in Group A was 99% and in Group B it was 100%. One patient in Group A died of a primary small-bowel cancer.

Conclusion: Conclusion: Long-term outcomes with occult OGB patients were good except malignant tumor, because overt bleeding and/or anaemia exacerbation did not occur within the follow-up period. Thus, occult OGB patients without bleeding source lesions, including Type 1a angioectasia without oozing, and erythema, are unnecessary to follow-up with CE in occult OGB patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

Table 1A

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</tr>
<tr>
<td>HCV</td>
</tr>
<tr>
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</tr>
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<td>PSC</td>
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<td>Asian</td>
</tr>
<tr>
<td>African-American</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
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<tr>
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Table 1B

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P1932 A PILOT STUDY EXPLORING THE VALUE OF FIT AND CE IN SMALL BOWEL CAPSULE ENDOSCOPY

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Introduction: Small bowel capsule endoscopy (SBCE) is a very useful method of investigating iron-deficient anaemia, or occult gastrointestinal (GI) bleeding. It can also detect the causes of anaemia or bleeding, such as angioectasia, small bowel Crohn’s disease, polyps, lymphoma, and malignant lesions. There is however a need to improve the diagnostic yield, particularly where resources and access to capsule endoscopy are restricted. Faecal immunochromatographic test (FIT) has an established role, in investigating large bowel bleeding, and is incorporated into a number of bowel cancer screening programmes.

Aims & Methods: The aim of our study was to investigate whether FIT could help predict likelihood of small bowel bleeding or other significant pathology at time of small bowel capsule endoscopy. This was a prospective pilot study, performed at our centre from September 2016-April 2017. Indications for enrolment were patients referred for SBCE with the indication of anaemia or occult GI bleeding.

Baseline patient characteristics were obtained including age, gender, history of renal disease, transfusion requirements and use of antiplatelet/anti-coagulants. Patients were asked to return one completed FIT for further analysis. A cut of 50 ng/ml was chosen as this is the standard cut-off used, in the Irish National Bowel Cancer Screening programme.

Results: A total of 40 patients were enrolled, mean age 55.4 years (range 18-77), 64% were female. A total of 27.6% of patients were on anti-platelet agents or anti-coagulants. 34% of patients had a blood transfusion within the last year. Mean Hb for the cohort was 12.8 g/dL (range 7.8-15.9 g/dL). The average FIT reading was 459 ng/mL (range 0-4426 ng/mL). 30% of patients had a FIT level >50 ng/mL. 46% of patients, had positive findings at SBCE. 9/12 (75%) of patients, with a FIT level >50 ng/mL had positive findings at capsule endoscopy compared to 5/28 (17.8%) for FIT level <50 ng/mL, p value =0.002, 95% C.I. 0.29-0.86 O.R. 10.16. These included 4/12 (33%) new cases of Crohns, 3/12 (25%) angiodysplasia, 3/12 (33%) non-HBD enteritis, 1/12 (16.7%) small bowel tumour and 1/12 (16.7%) melanoma, with no clear source. In addition there was a good correlation between FIT and Haemoglobin levels. 60% of patients with FIT >50 ng/mL were anaemic (Hb <11.5 g/dL), compared to 17% with FIT <50 ng/mL, p value =0.02 95% C.I. 0.09-0.76 O.R. 1.4. Combining Hb and FIT levels, was also informative and predictive of small bowel pathology. 83% of patients, who were anaemic and had a FIT >50 ng/mL had clinically significant findings at SBCE compared to 21% pick up rate in patients with normal Hb and FIT levels, p value =0.03 95% C.I. 0.22-0.83 O.R. 0.05. Overall the sensitivity for a FIT >50 ng/mL for detecting small bowel pathology was 83% with a specificity of 92%, giving a positive predictive value of 83.3% (95% C.I. 56.5-95%). Platelet levels were not predictive of a positive FIT, as 16.7% of patients with a FIT >50 ng/mL were on anti-platelet agents, compared to 83.3% who weren’t.

Conclusion: FIT is useful at predicting clinically significant small bowel pathology at the time of capsule endoscopy. It may help better identify and prioritise patients who would best benefit from referral.

Disclosure of Interest: All authors have declared no conflicts of interest.
Conclusion: VCE detected small bowel lesions in 71% in our cohort. There is a high prevalence of PHE in patients with decompensated cirrhosis. Vascular lesions are the most common finding in the small bowel of this population. Disclosure of Interest: All authors have declared no conflicts of interest.

References

P1934 MULTICENTER PROSPECTIVE CASE-CROSSOVER STUDY ON THE ASSOCIATION BETWEEN OVERT SMALL-BOWEL BLEEDING AND DRUGS USING CAPSULE ENDOSCOPY

DATABASE IN JAPAN

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Introduction: Small-bowel capsule endoscopy (SBCE) have been useful in managing obscure gastrointestinal bleeding. We previously reported that the use of omeprazole and diclofenac was associated with an increased risk of nonsteroidal anti-inflammatory drug (NSAID)-induced small-bowel injury (Aliment Pharmacol Ther 2014). However, the etiology and temporal development of drug-associated small-bowel bleeding (SBB) has not been well characterized.

Aims & Methods: The aim of this study is to determine the risk of drugs associated with overt SBB using a case-crossover design. The Japanese Association for Capsule Endoscopy developed a prospectively recorded database of outpatients and inpatients that underwent SBCE at 18 medical centers in Japan, and data were collected from 1052 patients with obscure gastrointestinal bleeding (OGIB) between December 2010 and June 2016. This database includes patient characteristics, drugs used, SBCE findings, and final diagnosis. Drugs used were identified during a “case period” 4 weeks before the overt SBB, and a “control period” 24-5 weeks before the overt SBB. Drug adherence was classified into 4 groups: 1) 100%, 2) 50% or higher, 3) lower than 50%, and 4) 0%. Using conditional logistic regression, odds ratios (ORs) and 95% confidential intervals (CIs) were estimated using Mantel-Haenszel estimator in discordant cases.

Results: Of 1052 patients with OGIB (male/female: 678/374, age of onset: 64.8 ± 12.7 years, 45.2%: 21.5%, 29.7%, 17.3%) and colon (n = 133), 346 patients on 346 drugs which could be identified 24 weeks before overt SBB were analyzed. ORs (95% CIs) of enteric-coated aspirin (n = 51), warfarin (n = 27), clopidogrel (n = 24), and loxoprofen (a propionic acid derivative, n = 21) were 5.7(1.3-24.3), 3.70(1.0-14.5), 4.1(1.3-13.6), and 18.0(2.3-139.6). Aspirin-associated SBB was caused by aspirin-induced injuries, angiodysplasia, Meckel’s diverticula, and polyps. Loxoprofen-associated SBB was caused by mostly loxoprofen-induced injuries.

Conclusion: Enteric-coated aspirin, clopidogrel, and loxoprofen were identified as drugs causing overt SBB during a relatively short period after administration. Disclosure of Interest: All authors have declared no conflicts of interest.

Reference

P1935 META-ANALYSIS REVEALS SIMILAR REBLEEDING RATES AMONG EASTERN AND WESTERN POPULATIONS UP TO FIVE YEARS AFTER INDEX VIDEO CAPSULE ENDOSCOPY

EXAMINATION FOR OBSCURE GASTROINTESTINAL BLEEDING

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Introduction: Video capsule endoscopy (VCE) is the first-line diagnostic modality for obscure gastrointestinal bleeding (OGIB) investigation and different re-bleeding rates have been published among Western and Eastern studies.

Aims & Methods: Aim of this meta-analysis was to examine the differences in re-bleeding rates in patients with OGIB after index VCE, as measured in Western and Eastern studies. A comprehensive literature search in MEDLINE was conducted to identify all studies examining re-bleeding rate after VCE for OGIB. Meta-analysis assessed the pooled proportion of re-bleeding events after VCE for OGIB according to study’s origin (Western vs. Eastern) as the primary end point. Pooled relative risks for re-bleeding vs. negative index VCE and after longer (>24 months) vs. short (<24 months) follow-up in the two study origins, comprised the secondary endpoints. Study outcomes effect sizes were calculated using RevMan 5.3 software random effect model and they are presented as random-effects model. Publication bias was examined with funnel plots inspection.

Results: Thirty-eight (14 Eastern and 24 Western) studies were included in the analysis with 5197 patients followed from 6 to 52 months. We detected significant heterogeneity with no evidence for publication bias in the meta-analyzed studies. While the overall, pooled rate of re-bleeding after VCE was 25%/29%/27%, I² = 93%, similar re-bleeding rates were detected among Eastern and Western populations [22%/28%], I² = 93% vs. [28%/35%], I² = 95%. The re-bleeding risk after positive vs. negative VCE was 1.20(0.58-2.61), I² = 77% and 1.90(1.40-2.53), I² = 71% in Western and Eastern studies, respectively. For studies with long-term follow-up, no significant difference in the OR of re-bleeding after positive vs. negative index VCEs was detected either in the East [2.03(0.64-4.9), I² = 71%] or in the West [2.7(0.81-5.0), I² = 98%].

Conclusion: Our analysis shows that patients undergoing VCE for OGIB have similar re-bleeding rates in the East and in the West, regardless of the length of the follow-up. An increased re-bleeding risk after positive vs. negative index VCE was noted only in studies originating from the East.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1936 LONG-TERM OUTCOMES AFTER NEGATIVE DOUBLE-BALLOON ENTEROSCOPY FOR SUSPECTED OVERT SMALL BOWEL BLEEDING (OBSCURE-OVERT GASTROINTESTINAL BLEEDING)

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Introduction: There are very few reports about long-term outcomes in patients with negative balloon assisted enteroscopy for suspected overt small bowel bleeding (obscure-overt gastrointestinal bleeding).

Aims & Methods: The aim of this study is to evaluate long-term outcomes and risk factors of re-bleeding after negative double balloon enteroscopy (DBE) for suspected overt small bowel bleeding. We investigated 297 patients undergoing DBE for suspected overt small bowel bleeding between December 2004 and April 2016 at Sendai Kosei Hospital. Prospectively collected data were reviewed, and 83 patients (27.9%) showed negative results in the first antegrade and/or retrograde DBE. For these patients, letter and telephone interviews were conducted in April 2017. As a result, a cohort of 64 patients could be followed. The primary outcome measurement is overt rebleeding and necessity for clinical assessment after negative DBE.

Results: The observation was performed in 19 of 64 patients (29.7%) with 76 months follow-up period. The mean period during the first DBE and the first rebleeding episode was 11.6 months(2day-48months). Three patients showed rebleeding after more than three years of the first DBE. At the time of rebleeding, emergent endoscopy including DBE (within less than 48 hours) and/or contrast-enhanced computed tomography (CECT) was performed in all patients. The bleeding source was identified in 17 of 19 patients (89.4%). The bleeding source were duodenum (n = 8), jejunum (n = 7) and colon (n = 2), respectively. One
patient died due to uncontrollable duodenal bleeding. Blood transfusion before the first DBE was associated with rebleeding (odds ratio 22.5, n = 0.0005), but total endoscopy rate, use of capsule endoscopy, use of anti-thrombotic agents and use of NSAIDs were not associated with rebleeding.

**Conclusion:** Rebleeding after negative DBE for suspected overt small bowel bleeding was rare. Blood transfusion before the first DBE may predict rebleeding. Emergent endoscopy including DBE and concomitant CECT use could help the diagnosis on re-bleeding.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**P1937 DOES DISCONTINUATION OF ANTITHROMBOTIC AGENTS AFFECT DIAGNOSTIC YIELD OF SMALL BOWEL CAPSULE ENDOSCOPY IN PATIENTS WITH OBSCURE GASTROINTESTINAL BLEEDING?**

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**Introduction:** Capsule endoscopy (CE) is a useful and noninvasive modality for investigation of the small intestine, and currently, it has become the first-line method for the therapy of obscure small bowel bleeding (OSBB). Use of antithrombotic agents including antiplatelets and anticoagulants is associated with gastrointestinal bleeding. Antithrombotic users account for a large portion of patients with OSBB, and those with OSBB often undergo CE. It should be noted that some patient with over OSBB discontinue antithrombotic agents at the time of CE, which may affect endoscopic findings.

**Aims & Methods:** To examine the effect of discontinuation of antithrombotic agents on the diagnostic yield of CE, and to assess the predictive factors associated with positive CE findings in patients using antithrombotics who develop overt OSBB. Between March 2004 and December 2015, 130 consecutive patients (75 male; mean age, 71.9 years) taking antithrombotics who underwent CE for overt OSBB were enrolled, whereas patients who underwent double-balloon endoscopy prior to CE were excluded. Findings were considered positive if the observed lesions could explain the bleeding, while findings including isolated red spots and a single small polyp were considered negative. The primary endpoint was the diagnostic yield of CE findings between patients who continued and those who discontinued antithrombotic agents. Furthermore, a propensity score analysis was performed to reduce the effects of selection bias and potential confounding factors. The secondary endpoint was to assess the predictive factors for the positive CE findings by using multiple logistic regression.

**Results:** Of the 73 patients who continued antithrombotic agents, 36 (49.3%) patients had positive findings in the small intestine (ulcer/erosion [n = 24], angioectasia [n = 7], tumor [n = 4], and blood pooling [n = 1]), while of the 57 patients who discontinued these agents, 35 (61.4%) patients had positive findings (ulcer/erosion [n = 17], angioectasia [n = 11], tumor [n = 3], and blood pooling [n = 4]). The rates of positive CE finding did not differ between the two groups. Even after propensity score matching, discontinuation of antithrombotic agents did not affect the positive CE finding. In multivariate analysis, the lowest hemoglobin level before CE examination was an independent predictive factor associated with positive CE findings. The odds ratio per 1 g/dl increase in the lowest hemoglobin (OR 1.05, 95% confidence interval 1.01-1.09). However, other factors, including sex, age, and discontinuation of antithrombotic agents, were not associated with positive CE findings.

**Conclusion:** Discontinuation of antithrombotic agents did not affect the diagnostic yield of CE with overt OSBB, and lowest hemoglobin level was associated with positive CE findings.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**

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**P1938 EFFICACY OF REBAMIPIDE TO PREVENT LOW-DOSE AASPIRIN-INDUCED SMALL INTESTINAL INJURY**

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**Introduction:** Long-term use of low-dose aspirin (LDA) is associated with development of peptic ulcers, gastrointestinal bleeding, enteropathy. For prevention of LDA-induced small intestinal mucosal injury, enteropathy, subjects comprised undergoing lifelong low-dose aspirin therapy prescribed by cardiologist. Patients with a high-risk of gastrointestinal bleeding were excluded. This trial was performed as a randomised open-labelled clinical study with the permission of an institutional review board. The trial was included 100 patients (50 cases in each group) received gastro-coated low-dose aspirin (90 mg). The Group PPI received LDA plus pantoprazole 40 mg, the Group RBD received plus rebamipide 300 mg. Before starting therapy, we checked the background characteristics of each patient (H.pylori, use of LDA, NSAID, bismuth, PPI; and endoscopic findings). Gastroscopy and capsule endoscopy were performed, and the fecal occult blood reaction and fecal calprotectin levels were measured before, two and four weeks after drug administration. After the therapy, we have asked physicians and patients about medication compliance and side effects. Capsule endoscopy was then repeated. The primary endpoint was the change in the number of mucosal breaks from baseline to 4 weeks. The secondary endpoints were the rates of side effects.

**Results:** The fecal calprotectin levels increased significantly in Group PPI, they did not increase in Group RBD. The mean number of small intestinal injuries by capsule endoscopy in Group PPI increased significantly up to 3.9 after 4 weeks of LDA treatment. There was not detected new small intestinal injuries in Group RBD. Stomach ulcer, bleeding or stenosis were not found in any subjects. There were no significant differences in the presence of fecal occult blood in both groups. There were no significant side effects in Group RBD.

**Conclusion:** In conclusion, rebamipide is effective and sufficient for preventing mucosal injury of the small intestine induced by low-dose aspirin. These results show the gastroprotective and enteroprotective effects of rebamipide, suggesting that it may be a good choice in low-dose aspirin users with gastrointestinal toxicity that is not suppressed by acid suppressants alone.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

**References:**
P1940 VALIDATION OF A SCORE CHART TO PREDICT THE RISK OF CHRONIC MESENTERIC ISCHEMIA: A DISCRIMINATIVE AND USEFUL TOOL IN CLINICAL DECISION-MAKING

Aims & Methods: Patients suspected of CMI referred to two Dutch specialized centers were included consecutively from January 2014 to August 2016. After diagnostic work-up of medical history taking, mesenteric CT-angiography and/or conventional catheter angiography, and a functional test for detecting mucosal ischemia using either tonometry or visible light spectroscopy, all patients were discussed in a specialized CMI multidisciplinary meeting resulting in an expert based consensus diagnosis. All CMI suspected patients. This score chart consists of patient characteristics and anatomic observation in the general population but not necessarily related. Harki et al(1) designed a score chart to predict the risk of CMI based on a cohort of CMI suspected patients. This score chart consists of patient characteristics (female 1 pt, weight loss 1 pt, cardio-vascular disease 1 pt) and radiologic evaluation (50–70% celiac artery (CA) stenosis 1 pt, >70% CA stenosis 4 pts, 50–70% superior mesenteric artery (SMA) stenosis 1 pt and >70% SMA stenosis 3 pts). A total score of 0–2 pts predicts an absolute risk of CMI of 0–21%, 3–6 pts a risk of 22–79%, we aimed to validate this prediction model in a prospective large multicenter patient cohort.

Aims & Methods: Patients suspected of CMI referred to two Dutch specialized centers were included consecutively from January 2014 to August 2016. After diagnostic work-up of medical history taking, mesenteric CT-angiography or MR-angiography, and a mucosal ischemia test (visible light spectroscopy or tonometry), all patients were discussed in a specialized multidisciplinary meeting resulting in an expert based consensus diagnosis. All patients with a CMI consensus diagnosis were planned for treatment (revascularization) or non-occlusive ischemia (NOMI) due to decreased cardiac output or hypoxia-oxygenation. The diagnosis of CMI remains challenging as chronic abdominal pain is common and mesenteric artery stenoses are frequently observed in the general population but not necessarily related. Harki et al(1) designed a score chart to predict the risk of CMI based on a cohort of CMI suspected patients. This score chart consists of patient characteristics (female 1 pt, weight loss 1 pt, cardio-vascular disease 1 pt) and radiologic evaluation (50–70% celiac artery (CA) stenosis 1 pt, >70% CA stenosis 4 pts, 50–70% superior mesenteric artery (SMA) stenosis 1 pt and >70% SMA stenosis 3 pts).

A total score of 0–2 pts predicts an absolute risk of CMI of 0–21%, 3–6 pts a 22–46% risk and ≥7 pts a risk of ≥79%. We aimed to validate this prediction model in a prospective large multicenter patient cohort. Aims & Methods: Patients suspected of CMI referred to two Dutch specialized centers were included consecutively from January 2014 to August 2016. After diagnostic work-up of medical history taking, mesenteric CT-angiography or MR-angiography, and a mucosal ischemia test (visible light spectroscopy or tonometry), all patients were discussed in a specialized multidisciplinary meeting resulting in an expert based consensus diagnosis. All patients with a CMI consensus diagnosis were planned for treatment (revascularization) or non-occlusive ischemia (NOMI). A definitive diagnosis of CMI was made if successful treatment resulted in durable symptom relief. The score chart to predict the risk of CMI was computed for each patient.

Results: A total of 246 patients were included and consensus diagnosis of CMI was made in 108 (44%) patients, which resulted in 96 (39%) patients with a definitive diagnosis of CMI after a positive response therapy. A definitive diagnosis of CMI was made in 9% of the patients with low risk, in 40% of the patients with intermediate risk and in 94% of the patients with high risk of CMI according to the score chart, respectively. Etiology and vascular lesions are shown in the table. The discriminative ability of the score chart was strong (C-Statistic 0.87).

Conclusion: The score chart for CMI based on patient characteristics and anatomic observation is a reliable tool to discriminate the risk of CMI and useful for clinical decision-making, for example to adopt a wait-and-see policy in patients with a low risk and immediate vascular intervention in patients with high risk of CMI. Disclosure of Interest: All authors have declared no conflicts of interest.

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Reference

P1941 LONG-TERM SYMPTOM RELIEF AFTER REVASCULARIZATION IN PATIENTS WITH SINGLE ARTERY CHRONIC MESENTERIC ISCHEMIA

Aims & Methods: Data were collected from all 97 consecutive patients with gastrointestinal symptoms and a single mesenteric artery stenosis referred to the outpatient clinic of our tertiary care institution for analysis of CMI between January 2006 and October 2010. All patients underwent a standardized diagnostic work-up for CMI at baseline consisting of medical history taking and physical examination, imaging of the gastrointestinal arteries with either CT- or MR-angiography and/or conventional catheter angiography, and a functional test for detecting mucosal ischemia using either tonometry or visible light spectroscopy. All cases were discussed in a multidisciplinary meeting attended by a vascular surgeon, interventional radiologist and gastroenterologist, all specialized in CMI, leading to an expert based consensus diagnosis. Patients with consensus diagnosis of CMI underwent surgical or endovascular revascularization. The primary outcome was clinical response to revascularization, defined as relief of presenting symptoms as experienced by the patient.

Results: Consensus diagnosis of CMI was obtained in 62/97 patients and all consensus patients were revascularized. Isolated CA stenosis was present in 55/ 62 patients (89%) (31 vascular disease; 24 median arcuate ligament syndrome, MALS) and isolated atherosclerotic SMA stenosis in 7 patients. After a mean follow-up of 5.5 ± 3.0 years, 42/62 patients (68%) experienced sustained symptom relief. Responders to revascularization had a BMI increase during follow-up in contrast to the non-responders (+0.43 ± 2.5 versus −1.06 ± 2.4 kg/m², p = 0.033). Response to revascularization was not related to lesion localization (CA 67% versus SMA 71%, p = 0.825) or lesion etiology (MALS 63% versus vascular disease 71%, p = 0.483). See table.
A substantial proportion of patients with clinical symptomatic angiooagulants). Anaemia and/or overt bleeding resolved spontaneously in 24 patients between index and repeat endoscopy was 21 weeks. A total of 48 patients were detected but left untreated during the index endoscopy. Median time endoscopies with APC in patients with angiodysplasias who were left untreated
treat endoscopic detected angiodysplasias difficult.

Technique: The aim of this study is to investigate the need for repeat endoscopies with APC in patients with angiodysplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding. We initiated an international, multicentre cohort study to collect clinical, laboratory and endoscopic data from angiodysplasia patients. Cases were identified through a systematic search in endoscopy reports from 2010–2015 with inclusion criteria was endoscopic detection of angiodysplasia in patients with iron deficiency anaemia or overt bleeding resulting from gastrointestinal angiodysplasia. In the minority of patients active bleeding angiodysplasias are seen during endoscopy, but in contrast non-bleeding angiodysplasias can be an incidental finding. This can make the decision whether to treat endoscopically detected angiodysplasias with APC difficult.

Aims & Methods: The aim of this study is to investigate the need for repeat endoscopies with APC in patients with angiodysplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding. We included 39 patients. Thirty-two were females (82.1%) and the mean age was 43.6 years. Median follow-up was 37 months (range 18–57). In 52% of the cases (n = 103) APC treatment for bleeding angiodysplasia(s) was performed at the index endoscopy. Repeat endoscopy with APC was necessary in 17 patients (18%) in whom angiodysplasias were detected but left untreated during the index endoscopy. Median time between index and repeat endoscopy was 21 weeks. A total of 48 patients (51%) who received a purely diagnostic index endoscopy were in need of other treatment modalities (e.g. iron supplementation, blood transfusion, stop anti-inflammatory agents). Anemia and/or overt bleeding resolved spontaneously in 24 patients (26%).

Conclusion: A substantial proportion of patients with clinical symptomatic angiodysplasia bleeding do not receive APC at the index endoscopy and continue to be dependent on iron supplementation, blood transfusion or undergo repeat endoscopy with APC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1942 UNDERUTILIZATION OF ENDOSCOPIC ARGON PLASMA COAGULATION FOR TREATMENT OF BLEEDING GASTROINTESTINAL ANGIODYSPLASIAS: AN INTERNATIONAL MULTICENTRE COHORT STUDY

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Introduction: Endoscopic argon plasma coagulation (APC) is the first-line treatment in patients with iron deficiency anaemia or overt bleeding resulting from gastrointestinal angiodysplasia. In the minority of patients active bleeding angiodysplasias are seen during endoscopy, but in contrast non-bleeding angiodysplasias can be an incidental finding. This can make the decision whether to treat endoscopically detected angiodysplasias with APC difficult.

Aims & Methods: The aim of this study is to investigate the need for repeat endoscopies with APC in patients with angiodysplasias who were left untreated during the index endoscopy performed for iron deficiency anaemia or overt bleeding. We initiated an international, multicentre cohort study to collect clinical, laboratory and endoscopic data from angiodysplasia patients. Cases were identified through a systematic search in endoscopy reports from 2010–2015 with inclusion criteria was endoscopic detection of angiodysplasia in patients with iron deficiency anaemia or overt bleeding resulting from gastrointestinal angiodysplasia. In the minority of patients active bleeding angiodysplasias are seen during endoscopy, but in contrast non-bleeding angiodysplasias can be an incidental finding. This can make the decision whether to treat endoscopically detected angiodysplasias with APC difficult.

Conclusion: A substantial proportion of patients with clinical symptomatic angiodysplasia bleeding do not receive APC at the index endoscopy and continue to be dependent on iron supplementation, blood transfusion or undergo repeat endoscopy with APC.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1943 DIGESTIVE INVOLVEMENT IN SYSTEMIC DISEASES: A UNIVERSITY HOSPITAL EXPERIENCE

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Introduction: Digestive manifestations in systemic diseases including vasculitis and granulomatosis is broad and can affect any segment of the digestive tract and related organs. The clinical symptoms are not specific and it can be challenging for diagnosis. The other difficulty remains the interference of digestive side effects of medication used.

Aims & Methods: We aimed to review various digestive manifestations of systemic diseases. This was a retrospective study from Feb 2009 to Sep 2016 in internal medicine and gastroenterology departments. The exclusion criteria was incomplete data considering the diagnosis of the systemic disease.

Results: We included 39 patients. Thirty-two were females (82.1%) and the mean age was 43.6 ± 11.3 years. The mean BMI before surgery was 41.6 ± 7.5 kg/m². There was a significant decrease in BMI after surgery and, on average, the mean total body weight loss was 34% and the mean excess BMI loss was 90%. Before

Patients symptoms and clinical findings were: Abdominal pain in 32 cases (22.9%), Nausea and vomiting in 7 cases (5%), stool modification 15 cases (10.7%), jaundice in 4 cases (2.9%), dyspepsia in cases (7.1%), hepatomegaly in 4 cases (2.9%), splenomegaly in 8 cases (5.7%), ascitis in 13 cases (9.3%), digestive bleeding 17 cases (12.1%). Laboratory findings: elevated liver enzymes in 13 cases (15.9%), alkaline phosphatase elevation 15 cases (19.2%). Radiological findings: 17 ascitis (14.4%), 12 digestive thickening (10.6%), 6 hepatomegaly (5.8%), 14 splenomegaly (11.8%), 2 portal cavernoma (1.6%), 3 portal thrombosis (2.5%), 4 esophageal distension (3.4%), acaulcus cholecystitis in 2 cases (1.6%), 2 portal hypertension (1.6%), steatosis in 3 cases (2.5%), 3 hepatic angiomia (2.5%), acute pancreatitis in 2 cases (1.6%), 2 mesenteric ischemia (1.6%), 1 badd chiari (0.8%), 1 hepatic carcinoma (1.8%). Upper gastrointestinal Endoscopy findings: hiatus hernia in 3 cases (8.6%), esphagitis in 11 cases (31.4%), esophageal varies in 2 cases (5.7%), Gastritis in 2 cases (5.7%), duodenitis in cases 16 cases, ulcers in 3 cases (8.6%), 4 celiac disease (11.42%). Lower GI endoscopy: Crohn’s disease in 1 case (8.3%), ulcerative colitis in 1case (8.3%), 1 hyperplastic polyps (6.3%), 2 colitis (16.6%). Esophageal manometry: motility disorder in 4 cases. The most used drugs were immunosuppressive drugs, steroids and hydrocholeaurine, all causing digestive side effects mainly abdominal pain.

Conclusion: The digestive involvement is around 10% of cases in the most represented systemic diseases, the main symptom is abdominal pain probably related to medication, and clinical manifestations are mainly non specific but we found some association with celiac disease and IBD. Liver involvement was noticed in 15% of cases.

Disclosure of Interest: All authors have declared no conflicts of interest.

WEDNESDAY, NOVEMBER 01, 2017/09/14:00

NUTRITION III - HALL 7

P1944 CHANGES IN LEVELS OF VITAMIN D IN OBSESE PATIENTS SUBMITTED TO BARIATRIC SURGERY

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Introduction: An association between obesity and vitamin D deficiency has been reported in several studies. This may be explained, among other things by the sequestration of the fat-soluble vitamin D in the adipose tissue. Bariatric surgery, including Roux-en-Y gastric bypass (RYGB) is an effective treatment for more extreme cases of obesity, promoting significant weight loss and consequently reduction in some obesity-related health problems. However, the problem of vitamin D deficiency doesn’t seem to be solved after RYGB and can even be exacerbated by the changes in digestion and absorption of this nutrient after the surgery.

Aims & Methods: The aim of this study was to analyze the prevalence of vitamin D deficiency (VDD) and vitamin D insufficiency (VDI) in a population of obese patients, before and after being submitted to RYGB. We included patients patients selected to undergo RYGB for obesity. We measured anthropometric variables as BMI and serum levels of 25-hydroxyvitamin D (25(OH) D) before and 1 year after the procedure. VDD was defined as serum 25(OH) D <20 ng/mL and VDI as serum 25(OH)D concentrations between 20–30 ng/mL. Levels of 25(OH) D >30 ng/mL were considered normal.

Results: We included 39 patients. Thirty-two were females (82.1%) and the mean age was 43.6 ± 11.3 years. The mean BMI before surgery was 41.6 ± 7.5 kg/m². There was a significant decrease in BMI after surgery and, on average, the mean total body weight loss was 34% and the mean excess BMI loss was 90%. Before
bariatric surgery, 52.3% of patients had VDD and 36.8% had VDI. After surgery, the number of VDD increased to 71.1% (p = 0.0079). The mean levels of 25(OH)D decreased significantly from 19.8 ng/mL before surgery to 16.6 ng/mL after surgery (p < 0.05). There was no correlation between the amount of weight loss and the changes in the levels of 25(OH)D in our study.

**Conclusion:** There is a high prevalence of vitamin D deficiency in obese patients eligible for bariatric surgery. The level of deficiency tends to increase after RYGB. This population of patients should, therefore, be offered an adequate level of vitamin D supplementation, especially after the procedure.

**Disclosure of Interest:** All authors have declared no conflicts of interest.

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**P1946 INTRAGASTRIC BALLOON: A CRITICAL VIEW IN NON ELECTIVE BARIATRIC SURGERY PATIENTS**

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**Introduction:** Bariatric surgery is established as an excellent therapy for obesity. However, lower degrees of overweight without surgical indication also impact on patients’ health and quality of life, and the intragastric balloon (IGB) may be a treatment option.

**Aims & Methods:** We aimed to assess the efficacy of excess weight treatment with an IGB in patients with overweight and grade I obesity at EndogastroRio Clinic. A total of 717 patients were analyzed. A liquid filled IGB was used. The patients had initial body mass index (BMI) between 27 and 34.9 kg/m². The level of significance was set at p < 0.05.

**Results:** 615 patients were women. 131 patients had overweight and 586 had grade I obesity. Mean age was 37.97 years (17-75). Weight loss results and treatment success rates are shown on table 1. Percent excess weight loss (%EWL) was higher in overweight group (p < 0.0001) and percent total body weight loss (%TBWL) was higher in the grade I obesity group (p = 0.0009). 96 (73.28%) overweight patients and 132 (22.52%) grade I obesity patients reached a normal BMI (< 25 kg/m²).

**Conclusion:** Endoscopic treatment of obesity with an IGB shows to be an excellent therapeutic option to non elective patients for bariatric surgery according to BMI criterion.

**Disclosure of Interest:** M. Galvao Neto: I declare that I have received personal fees from FRACTYL LABS, GI WINDOWS, APOLO ENDO SURGERY, GI DYNAMICS, ETHICON ENDO SURGERY, not related to the present study. All other authors have declared no conflicts of interest.

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**P1947 SPATZ³® ADJUSTABLE INTRAGASTRIC BALLOON TREATMENT: A BRAZILIAN MULTICENTRIC EXPERIENCE**

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**Introduction:** Intragastric balloons (IGB) are already used worldwide in the treatment of overweight and obesity, with established success. The Spatz³® adjustable balloon brings the possibility of balloon volume control during all the treatment, possibly reducing the risk of early removals due to intolerance and greater weight loss when compared to traditional IGBs.

**Aims & Methods:** We aimed to analyze the initial 25 months results regarding weight loss and complications with Spatz³® adjustable intragastric balloon in Brazil. In this retrospective longitudinal study were included patients submitted to Spatz³® adjustable IGB treatment between October 2014 to April 2017 in four private clinics in Brazil. The IGB Spatz³® was filled with a standard volume of 600 ml that was downward or upward adjusted when necessary. The patients presented a minimum body mass index (BMI) of 27 kg/m². Were analyzed the complications of Spatz³® treatment and BMI reduction, percent total body weight loss (%TBWL) and percent excess weight loss (%EWL). Data were analyzed using descriptive statistic and the Student t test. The level of significance was set at p < 0.05.

**Results:** 422 patients underwent implant Spatz³® balloon in the period. The complications (14.28%) at the present study were: early balloon removal (6.89%), gastric ulcer (3.94%), spontaneous deflation (1.48%), gas production inside the balloon (0.98%), gastric perforation (0.23%) and Malory Weiss Syndrome (0.23%). There was no death at the present study. Twenty-eight patients underwent downward adjustment due to intolerance (mean volume reduction: 162.86 mL) and all of then kept in the treatment (no early removals). 180 patients have completed the treatment (minimum 9 months of gastric balloon stay). The BMI decreased from 37.69 to 31.51 kg/m² (p < 0.0001), body weight decreased from 107.67 to 90.16 kg (p < 0.0001) and excess weight dimished from 36.79 to 19.27 kg (p < 0.0001). Eighty-six patients underwent upward adjustment. The adjustment resulted in a further mean weight loss of 4.2 kg (< 9 to 20 kg), the range of upward volume was 281.73±66.58 ml (100–420 ml) and the moment of the procedure was 7.06 ± 1.64 months. The group of patients that did the upward adjustment don’t have a higher %TBWL, %EWL or a higher BMI reduction when compared to the group that did not (p = 0.4413, p = 0.9245, p = 0.2729, respectively).

**Conclusion:** This study shows that Spatz³® IGB treatment is an effective procedure for weight reduction, without mortality but with higher morbidity rates when compared to traditional IGBs. Even more, the downward adjustment treatment may be effective in preventing the early balloon removal. Although the upward adjustment does not show to be able in providing a greater weight loss.

**Disclosure of Interest:** M. Galvao Neto: I declare that I had received personal fees from FRACTYL LABS, GI WINDOWS, APOLO ENDO SURGERY, GI DYNAMICS, ETHICON ENDO SURGERY, not related to the present study. All other authors have declared no conflicts of interest.
Patients’ body mass distribution had a clear improvement, with a significant increase in the percentage of Fat-Free Mass. A significant reduction of the basal metabolic rate of 1893.24 to 1694.67 was noted. Endoscopic approach with gastric balloon provides a significant weight loss and helps patients acquiring healthy habits

Disclosure of Interest: M. Galvao Neto: Apollo endosurgery consultant
All other authors have declared no conflicts of interest.

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Introduction: Endoscopic methods, especially the intragastric balloon (IGB), have been shown to be effective for the treatment of excess weight.

Aims and Methods: We aimed to assess the efficacy and complications of excess weight treatment with a non adjustable IGB. A liquid-filled IGB with a volume of 600 to 700 ml was used. Treatment success rate (%EWL > 25) was 93.0%, as follow: overall weight was 99.0%, grade I obesity was 95.83%, grade II obesity 93.65% and grade III obesity 86.09%. Percent EWL was higher in the overweight group (OVW) (131.54% EWL) followed by grade I obesity (G1O) (95.83%) and grade II obesity (G2O) (93.65%) and grade III obesity (G3O) (50.61%) and grade IV obesity (G4O) (45.45%) sequentially (p < 0.0001). Percent EWL was also higher in women (69.71% EWL) than in men (53.39% EWL) (p < 0.0001).

Results: A total of 5874 patients were analyzed. The incidence of complications was 7.32% (n=430), as listed below: 299 (5.09%) early IGB removal, 58 (0.98%) absence of weight loss or weight gain. The incidence of gas production inside the balloon was 0.20% (n = 12) and the incidence of leakage was 0.54% (n = 32); pregnancy was 0.32% (n = 19); gastric perforation was 0.06% (n = 4); Upper digestive bleeding was 0.01% (n = 1); pancreatitis and esophageal perforation was 0.01% each (n = 1). Of the 5444 remaining patients, 4081 (74.9%) were women and 1363 (25.1%) were men. Mean age was 38.38 years. The patients showed a significant weight loss, with a significantly lower final BMI (mean: 30.08 ± 5.06 kg/m2) than the initial BMI (mean: 36.94 ± 5.67 kg/m2) (p < 0.0001). Mean BMI reduction was 6.85 ± 3.06 kg/m2, (range: 0.25–29.79). Mean percent total body weight loss (TBWL) was 18.42 ± 7.25% and mean percent excess weight loss (EWL) was 65.66 ± 36.24% (range: 3.99–336.14). The weight loss in kilograms was 19.13 ± 8.86. The treatment success rate (%EWL > 25) was 93.0%, as follow: overall weight was 99.0%, grade I obesity was 95.83%, grade II obesity 93.65% and grade III obesity was 86.09%. Percent EWL was higher in the overweight group (OVW) (131.54% EWL), followed by grade I obesity (G1O) (76.67%), grade II obesity (G2O) (50.61%) and grade III obesity (G3O) (45.45%) sequentially (p < 0.0001). Percent EWL was also higher in women (69.71% EWL) than in men (53.39% EWL) (p < 0.0001).

Results are better shown in table 01.

Disclosure of Interest: All authors have declared no conflicts of interest.
Hypersensitivity and intestinal inflammation aggravated by certain FODMAPs (Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols) and abdominal complaints. A diet low in FODMAPs can reduce symptoms in patients with IBS but mechanisms were poorly understood.

Aims & Methods: We aim to explore the role of FODMAPs in triggering IBS symptoms by investigating visceral sensitivity, intestinal inflammation, and short chain fatty acid (SCFA) stress in induced IBS mouse models. Fructo-oligosaccharide (FOS) as one of the most frequently exposed FODMAPs in daily life was used in the study. Mice were subjected to water avoidance stress (WAS condition; 1 h/day for 10 days) or sham stress (basal condition; 1 h/day for 10 days) with oral gavage of saline or FOS. The effects of FOS were compared with saline-administered mice in WAS condition. In basal condition, no difference of visceral sensitivity, intestinal inflammation and SCFA production was observed between saline and FOS-administered mice compared with saline-administered mice in WAS condition. In WAS condition, increased visceral sensitivity and mucosal mast cell (12.3 ± 2.61 vs. 8.33 ± 3.55, P < 0.01) were observed in FOS-administered mice compared with saline-administered mice. In WAS condition, cytokine expression was mediated by FOS with increased IL-23 (2.11-fold, P < 0.01) in ileum and IL-1b (2.45 ± 1.55-fold, P < 0.05) in colon compared with saline. In addition, the average concentrations of acetate (2.48 ± 0.02 vs. 1.04 ± 0.10, P < 0.01), propionate (0.48 ± 0.09 vs. 0.33 ± 0.09, P < 0.05) and butyrate (0.19 ± 0.03 vs. 0.09 ± 0.03, P < 0.05) significantly increased in FOS-administered mice compared with saline-administered mice in WAS condition. In basal condition, no difference of visceral sensitivity, intestinal inflammation and SCFA production was observed between mice treated with FOS or saline.

Conclusion: Oral gavage of FOS leads to both an increase in visceral sensitivity and gut inflammation in stress induced IBS mice. These effects are linked with the production of SCFA in the gut which involved in the regulation of sensitivity and intestinal immune activation. These findings support the hypothesis that visceral hypersensitivity and intestinal inflammation aggravated by certain FODMAPs may be responsible for IBS symptom generation, and indicate an alternative mechanism of the efficacy of the low-FODMAP diet for IBS patients.

Disclosure of Interest: All authors have declared no conflicts of interest.

References

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Disclosure of Interest: All authors have declared no conflicts of interest.

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Conclusion: The outcomes were educational and enjoyable for all age groups. The interactive approach and the environment out of health-care centres facilitated population to feel comfortable and eager to learn, as well as clinical cases simulation provided a valuable entertaining experience. This strategy of raising public awareness of GI diseases seems promising, we are refining the model for a national campaign.

Disclosure of Interest: All authors have declared no conflicts of interest.

References
P1958 OPTIMAL NUTRITIONAL ROUTE FOLLOWING TOTAL GASTRECTOMY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Total gastrectomy can profoundly influence patients’ nutritional status due to the altered anatomical route for nutrients. The optimal nutritional route after total gastrectomy is still under debate.

Aims & Methods: The aim of the review was to determine the optimal nutritional route after total gastrectomy. The search was performed from 1950 to 2015 via PubMed, Cochrane Library and Embase. Articles focusing on randomized controlled trials dealing with the optimal nutritional route after total gastrectomy were included for data analysis.

Results: A total of 62 studies were included in this meta-analysis. The meta-analysis revealed that patients who received TPN compared with JEN (OR 4.59, 95%CI 1.74–12.10, p = 0.01) had a significantly higher mortality rate. There was a trend towards greater mortality in patients who received TPN compared with JEN (OR 2.95, 95%CI 1.13–7.68, p = 0.02) and TPN decreased weight loss significantly (p = 0.0001 and p = 0.05 respectively) but there was no change in gut transit, HFD induced short -term memory (p = 0.02), whereas VAD compromised spatial learning (p = 0.04). HFD rats were more anxious in OFT (p < 0.01).

Conclusion: HFD-induced alterations in memory and anxiety were not affected by VAD but VAD blunted effect of HFD on water intake and faeces weight, suggesting that their operating mechanisms are different. VAD by itself impaired spatial memory that requires further investigation.

Disclosure of Interest: All authors have declared no conflicts of interest.

P1959 TAUROLIDINE PREVENTS CATHETER-RELATED BLOODSTREAM INFECTIONS IN PATIENTS ON HOME PARENTERAL NUTRITION—A RANDOMIZED CONTROLLED TRIAL


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Introduction: Patients on home parenteral nutrition (HPN) are exposed to a lifelong risk of catheter-related bloodstream infections (CRBSI), which threaten catheter and patient survival. Both taurodilnine 2% and saline 0.9% solution are used as catheter lock solutions (CLS) to prevent CRBSI. The optimal agent however, remains unclear. We hypothesized that taurodilnine as CLS is superior to saline in preventing CRBSI in HPN patients.

Aims & Methods: We hypothesized that taurodilnine 2% as CLS is superior to saline 0.9% in preventing CRBSI in HPN patients. This multicenter double blind trial randomly assigned HPN patients to use either the CLS taurodilnine 2% or saline 0.9% for one year. Primary outcome was the number of CRBSI/1000 catheter days. Secondary outcomes included time to CRBSI or catheter removal due to CRBSI, number of catheter removals due to CRBSI, exit-site infections, catheter occlusions, and (serious) adverse events.

Results: Of 102 randomized patients enrolled as modified intention-to-treat population. With taurodilnine, 5 CRBSI occurred during 15318 catheter days. In the saline arm 18 CRBSI occurred over 12493 catheter days. CRBSI/1000 catheter days were 3.33 (95%CI 1.44 in the taurodilnine and saline groups, respectively). The relative risk, 0.25; 95% CI 0.07 to 0.73; P = 0.002. The cumulative proportion of CRBSI-free patients after one year was 88% in the taurodilnine group and 49% in the saline group (P = 0.002). The number of catheter removals due to CRBSI was two (4%) in the taurodilnine group and eight (16%) in the saline arm (P = 0.049). The cumulative proportion of patients without a catheter removal due to CRBSI was higher in the taurodilnine group (P = 0.025). Exit-site infection and catheter occlusion rates were similar in both groups. Except for occurrence of CRBSI (P = 0.002), there was no difference in (serious) adverse events between groups. Drug-related adverse events were rare and generally mild to moderate.

Conclusion: Taurolidnine 2% decreased the risk for CRBSI by more than four fold in HPN patients compared to saline 0.9%. Given its favorable safety profile and lack of evidence for altering microbial susceptibility, taurolidnine locking therefore seems a key strategy to prevent CRBSI.

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P1960 REPAIR OF DAMAGED CENTRAL VENOUS CATHETERS SUBSTANTIALLY ENHANCES SURVIVAL IN PATIENTS ON HOME PARENTERAL NUTRITION

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Introduction: Patients with severe intestinal failure depend on lifelong home parenteral nutrition (HPN) support. Repeated central venous catheter (CVC) loss due to complications, including mechanical damage, compromises vascular access. It remains unclear whether repair of damaged CVCs is an effective strategy to extend catheter life, avoid surgical replacement and maintain venous access.

Aims & Methods: The objective of this study was to characterize patients who underwent catheter repair and to evaluate effects on catheter survival and describe complications. This study concerns a retrospective analysis of all catheter repairs that were performed in HPN patients at the Radboud University Medical Center between January 2000 and May 2017. Primary endpoint was the difference in catheter survival in the presence or absence of catheter repair. To this end, a non-parametric survival analysis was performed. Secondary outcomes included localization of catheter damage and frequency of repair-related complications within 1 month after catheter repair.

Results: A total of 50 repairs in 38 CVCs of 32 HPN patients were included in the analysis. 16 CVCs (32%) were damaged at the distal end, near the screw thread of the catheter, 25 CVCs (50%) at the junction between the rigid and flexible part of the catheter, and 9 CVCs (18%) at the flexible part of the catheter. The mean time to catheter repair after placement was 2.2 years (95% CI 1.5–5.2). The mean catheter survival after repair was extended by 1.4 years to 3.6 years (95% CI 2.69–4.46; p = 0.01). No repair-related complications occurred within 1 month after catheter repair.

Conclusion: Repair of damaged CVCs significantly extends catheter life in HPN patients and maintains venous access. Catheter repair is a safe procedure.

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P1961 LONG-TERM CLINICAL OUTCOMES OF PATIENTS ON HOME PARENTERAL NUTRITION USING TAUROLIDINE CATHETER LOCKS

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Introduction: Catheter-related complications (CRCs) in home parenteral nutrition (HPN) patients are a threat to both catheter and patient survival. Taurolidine 2%, an antimicrobial catheter lock solution (CLS), is an effective agent for the prevention of catheter-related bloodstream infections (CRBSIs). Aim & Methods: The aim of this retrospective study was to evaluate long-term clinical outcomes of our HPN patient cohort that uses the CLS taurolidine. Between 2008 and 2016, all adult HPN patients requiring a central venous catheter (CVC) with taurolidine as a CLS were included. CRC incidence rates/1000 catheter days were described. Kaplan-Meier analysis was used to determine the time until a first CRC. Cox proportional hazard analysis was performed to identify risk factors for a first CRC.

Results: In 221 HPN patients, 658 CVCs (418 Hickmans, 172 PACs, and 28 non-tunnelled CVCs) were inserted, comprising 261252 catheter days. Median survival for Hickmans, PACs and non-tunnelled catheters was 175 (43–544), 310 (61–827) and 14 (7–19) days, respectively. During eight years follow-up, 17 CRBSIs occurred. CRBSI occurred in 80 catheter-related complications (CRC). CRBSI and CRO rates/1000 catheter days were 0.74 and 0.34, respectively. In 47% and 32% of patients, at least one CRBSI or CRO occurred, respectively. Median time to a first CRBSI or CRO was 246 (54–817) and 215 catheter days (5–2070). Numerically, but not significantly, CRBSI and CRO rates decreased over time. The sole use of intra-venous fluids was associated with a significantly lower risk for CRBSI (RR 0.32). Twenty patients reported adverse events (5 grade 1, 13 grade 2 and 2 grade 3) which were possibly related to the use of taurolidine.

Conclusion: This study describes the largest cohort of HPN patients to date on long-term taurolidine 2% as CLS. Overall, CRC incidence rates were low when compared with the literature. We found no evidence for a decreased effect of taurolidine over time.

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P1962 INTESTINAL DYSBIOSIS IN PATIENTS WITH SHORT BOWEL SYNDROME DEPENDENT ON TOTAL PARENTERAL NUTRITION IS REFLECTED BY ALTERED METABOLOME IN FAECES

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Introduction: Patients with short bowel syndrome (SBS) exhibit substantial disturbances in gut microbiota composition, which implicates significant alterations of intestinal metabolism.

Aims & Methods: The aim of this study was to perform genetic and metabolomic analysis of stool samples collected from SBS patients totally dependent on parenteral nutrition (TPN). We collected 40 stool samples from 8 healthy individuals and 8 SBS patients with TPN. Faecal microbiota composition was assessed by sequencing of variable V4 and V3 regions of 16S rRNA gene using Illumina MiSeq TM platform. Library preparation, template building and template sequencing was performed. RNA was isolated according to manufacturer’s protocol. Obtained data were filtered by quality and length and processed for alpha and beta diversity analyses using QIIME software package. SCFA profile was measured using solid phase microextraction (SPME) coupled to gas chromatography and high resolution mass spectrometry employing time of flight mass analyser (Pegasus GC-HRT; LECO, USA). D-lactate content was determined using Megazyme kit.

Results: Weighted UniFrac analysis revealed significant differences between control and TPN subjects. In healthy controls, most abundant phylum was Firmicutes (64 ± 7.5%), followed by Bacteroidetes (22 ± 9.1%) and Actinobacteria (8.9 ± 4.5%). Proteobacteria were found only in one control sample. In TPN group, Firmicutes reached 66 ± 29% of microbiota but Bacteroidetes were absent and Actinobacteria significantly reduced (1.6 ± 4.1%). Proteobacteria were found in all samples (23.6 ± 15%). The most abundant metabolites in control stool samples were short-chain fatty acids (SCFA): acetate, propionate and butyrate. In the TPN group, lactate predominated significantly, while SCFA were absent in the intestinal content of these patients.

Conclusion: Long-term dependence on total parenteral nutrition results in dysbiosis of the intestine residuum characterized by extinction of Bacteroidetes and appearance of Proteobacteria. This was reflected by the changes in the composition of prevailing metabolites in stool.

Disclosure of Interest: All authors have declared no conflicts of interest.

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P1963 COMPARING RISKS OF ADVERSE EVENTS ASSOCIATED WITH PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) PLACEMENT BETWEEN DIFFERENT ENDWALL TECHNIQUE AND THE OVERTUBE ASSISTED PULL TECHNIQUE

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Introduction: Techniques of percutaneous endoscopic gastrostomy (PEG) placement can be divided into two techniques, the pull technique or the introducer technique (IT). Although the differences in procedural safety for the gastrostomy placement, the pull technique, in which the PEG catheter is delivered through the oral cavity and the hypopharynx, is more preferable regarding procedure related adverse events. However, severe peristomal bleedings were observed only in the modified introducer group. Four patients required suture placements and 3 in the pull technique group. Four patients required suture placements and 3

Aims & Methods: In this study, we retrospectively investigated risks of adverse events associated with the modified introducer technique using a blunt cannula compared with the conventional pull technique demonstrated that the modified introducer technique was more preferable regarding procedure related adverse events. Meanwhile, use of an overtube while guiding the catheter into the stomach may reduce the risk of bleeding at the gastrostomy site.

Results: During the study period, 236 PEG placements were done in 234 patients. The average age was 69.3 ± 12.5. The modified introducer technique was applied in 167 procedures (70.8%) and the overtube assisted technique was applied in 69 procedures (29.2%). The average age of the PEG technique was placed aiming for nutrition supports for cancer patients in 132 procedures, cerebrovascular accident in 51 procedures, aspiration pneumonia in 32 procedures, and others such as infection and duodenal ulcer in 21 procedures. Age (the overtube assisted pull technique > the modified introducer group) and gender (the modified introducer group) were significantly different between the two groups (p < 0.05). Overall, adverse events were observed in 19 (8.1%) procedures, although there was no procedure related mortality in the both groups. The risks of clinically significant adverse events were not different between the two groups. There was no significant difference in the types and the rate of adverse events between the two groups. However, severe peristomal bleedings were observed only in the modified introducer technique group. Four patients required suture placements and 3
patients required blood transfusion for the peristomal bleeding. In a univariate analysis, age, the rate of aspiration pneumonia as the reason for the PEG placement were higher in patients encountering adverse events (p < 0.05) (table 1). Also, serum platelet level, serum albumin and the rate of nutrition supports for cancer as the reason of the PEG placement was lower in patients encountering adverse events (p < 0.05). In a multivariate analysis, lower serum platelet level was solely recognized as a relevant predictive factor for adverse events (p < 0.05). The types of the technique used were not relevant to risks of adverse events.

### Clinical backgrounds of patients with and without adverse events.

<table>
<thead>
<tr>
<th></th>
<th>with adverse events (n = 19)</th>
<th>without adverse events (n = 217)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean ± SD)</td>
<td>77.4 ± 7.9</td>
<td>68.6 ± 12.6</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Sex (male/female)</td>
<td>13/6</td>
<td>162/55</td>
<td>n.s.</td>
</tr>
<tr>
<td>Technique for PEG (introducer/pull)</td>
<td>13/6</td>
<td>154/63</td>
<td>n.s.</td>
</tr>
<tr>
<td>Reasons for PEG (cancer/cerebrovascular accident/aspiration pneumonia/others)</td>
<td>5/5/6/3</td>
<td>127/46/26/18</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Lab tests (mean ± SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ChE (U/L)</td>
<td>184.9 ± 60.8</td>
<td>214.9 ± 78.9</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

(continued)

**Conclusion:** There was no significant difference in overall risks of adverse events between the modified introducer technique group and the overtube assisted pull technique group. However, the modified introducer technique may be associated with higher risks of severer adverse events. Especially, special care should be taken in patients with lower serum platelet level.

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**References**