10:30 - 12:00   **Coffee & Talk 2**

Abdominal Viscera

SS 1801a
Diffuse liver disease: fibrosis, steatosis and inflammation
Moderators:
T. Denecke; Berlin/DE
M.M. França; Porto/PT

B-1528 10:30
Prospective comparison of transient elastography (1D-TE), shear wave elastography (2D-SWE) and magnetic resonance elastography (MRE) for assessment of liver fibrosis in HCV patients
J. Matos, I. Mussetto, F. Paparo, S. Perugin Bernardi, M. De Cesari, L. Cevasco, G. Cenderello, L. Bacigalupo, G.A. Rollandi; *Genoa/IT (jfgavinadematos@gmail.com)*

Purpose: To assess the agreement among three different stiffness imaging techniques for fibrosis staging in HCV patients. To understand which factors may influence the concordance between the different techniques.
Methods and Materials: This was a prospective study. 93 HCV patients were enrolled from March 2017 to September 2018. Each patient was subjected to three techniques performed by blinded operators on the same day. 77 patients had reliable liver stiffness measurements on 1D-TE, 2D-SWE and MRE. Patients were assigned to three different fibrosis groups using kPa cutoffs recommended in a 2015 consensus statement (group 1: no fibrosis, group 2: moderate fibrosis, group 3: advanced fibrosis or cirrhosis). Techniques were confronted (1D-TE vs MRE , 1D-TE vs 2D-SWE , MRE vs 2D-SWE) to assess agreement (kappa Cohen) and kPa value correlation (Spearman's test). Logistic regression was performed to assess factors that determine disagreement.
Results: Agreement among all three techniques was observed in 64.9% of patients. Complete disagreement was seen in just 2.6% Inter-rater agreement in assigning correct fibrosis group was good for all three pairs of techniques (1D-TE vs MRE 0.81 , 1D-TE vs 2D-SWE 0.66 , MRE vs 2D-SWE 0.70). Strong correlation of kPa values was observed for all three pairs of techniques. BMI was the only feature associated with disagreement (OR: 1,17; p: 0,02).
Conclusion: Tested techniques correctly assign patients to the same fibrosis group in the majority of cases. Good agreement and strong correlation was demonstrated between the different techniques in non-invasive assessment of liver fibrosis in HCV patients.
Author Disclosures:
 G.A. Rollandi: Grant Recipient; GE Healthcare.

B-1529 10:38
Liver stiffness quantification in patients with non-alcoholic steatohepatitis: comparison of shear wave elastography and transient elastography with liver biopsy correlation
G. Caruana, A. Taibbi, S. Petta, R. Cannella, G. Busè, G. Cutaia, D. Giambelluca, V. Di Marco, T.V. Bartolotta; *Palermo/IT (rob.cannella@libero.it)*

Purpose: To assess the accuracy of liver stiffness quantification in patients with non-alcoholic steatohepatitis (NASH) using shear wave elastography (SWE) in comparison with transient elastography (TE).
Methods and Materials: This is a prospective study performed in a single institution, including 49 patients with histological diagnosis of NASH. The stiffness of the right liver lobe was measured on the same day with two techniques: TE (FibroScan, Echosens), and SWE (RS80A ultrasound system, Samsung Medison). In the SWE evaluation, 11 patients were excluded due to more than 75% measurements fails. Receiver operating curves (ROC), areas under the ROC (AUROC) and 95% confidence intervals (CI) were calculated to assess the accuracy of TE and SWE for the diagnosis of significant fibrosis (F2-F4) and advanced fibrosis (F3-F4). Spearman's rank coefficient (rho) was used for correlation of TE with SWE. A p<0.05 was considered for statistical significance.
Results: 38 patients were included in the final population. Overall 24 (63%) patients had significant fibrosis and 17 (45%) had advanced fibrosis. TE and SWE showed an AUROC of 0.711 (95% CI: 0.545-0.877, p=0.032) and 0.729 (95% CI: 0.562-0.896, p=0.020) for the diagnosis of significant fibrosis. The AUROC for the diagnosis of advanced fibrosis were 0.803 (95% CI: 0.648-0.9580, p=0.002) and 0.811 (95% CI: 0.667-0.955, p=0.001) for TE and SWE, respectively. There was a significant correlation between TE and SWE measurements (rho=0.455, p = 0.004).
Conclusion: SWE and TE have both a good accuracy, with a significant correlation, for the diagnosis of advanced fibrosis in NASH-patients.

Author Disclosures:
 T.V. Bartolotta: Advisory Board; Samsung Medison. Speaker; Samsung Medison.

B-1530 10:46
Comparison of sound touch elastography (STE) and shear wave elastography (SWE) using liver biopsy as 'gold standard' for chronic liver disease assessment
I. Gatos[1], P. Drazinos[2], S. Yarmenitis[3], I. Theotokas[1], A. Soultatos[1], E. Panteleakou[1], P. Zoumpoulis[2]; [1]*Athens/GR,* [2]*Kifissia/GR,* [3]*Marousi/GR (p.zoumpoulis@echomed.gr)*

Purpose: Chronic liver disease (CLD) is currently one of the major causes of death and the major cause of hepatocellular carcinoma development. sound touch elastography (STE) that is available in Resona 7 Ultrasound (US) device and is similar to shear wave elastography (SWE), seems promising for CLD diagnosis but needs to be validated. The aim of this study is to compare the diagnostic performance between the STE and SWE for CLD assessment, using Liver Biopsy (LB) as "gold standard".
Methods and Materials: 290 subjects, 68 normal (F0) and 222 with CLD (F1-F4), were included in the study. A B-Mode and Elastographic examination was performed on each patient with Resona 7 and Aixplorer US devices. The STE (Resona 7) and SWE (Aixplorer) measurements were performed on the Right Lobe (RL) of each patient and were compared to LB results according to the Metavir Classification System (F0-F4). Receiver Operating Characteristic (ROC) analysis was then performed for each of the two methods to obtain best cut-off stiffness values.
Results: ROC analysis showed AUC_{STE}=0.9741 and AUC_{SWE}=0.9854 for F=F4 (Cirrhosis), AUC_{STE}=0.9723 and AUC_{SWE}=0.9755 for F≥F3, AUC_{STE}=0.9675 and AUC_{SWE}=0.9662 for F≥F2, AUC_{STE}=0.8889 and AUC_{SWE}=0.9288 for F≥F1 Fibrosis Stages. Best cut-off stiffness values for each method (STE/SWE) were: F=F4: 12.2/13.5 kPa, F≥F3: 9.5/8.7 kPa, F≥F2: 9.15/8.55 kPa, F≥F1: 6.5/6.05 kPa respectively.
Conclusion: Both STE and SWE can differentiate between all Metavir fibrosis stages. SWE seems more reliable in differentiating normals from patients with F≥F1 and Cirrhotic patients (F=F4) but less accurate in diagnosing intermediate stages (F≥F2, F≥F3).
Author Disclosures:
 I. Gatos: Equipment Support Recipient; Mindray is cooperating with Diagnostic Echotomography SA in relation with a Clinical Study. A Resona 7 Ultrasound system has been provided by Mindray in order to carry out this study. P. Drazinos: Equipment Support Recipient; Mindray is cooperating with Diagnostic Echotomography SA in relation with a Clinical Study. A Resona 7 Ultrasound system has been provided by Mindray in order to carry out this study. S. Yarmenitis: Equipment Support Recipient; Mindray is cooperating with Diagnostic Echotomography SA in relation with a Clinical Study. A Resona 7 Ultrasound system has been provided by Mindray in order to carry out this study. I. Theotokas: Equipment Support Recipient; Mindray is cooperating with Diagnostic Echotomography SA in relation with a Clinical Study. A Resona 7 Ultrasound system has been provided by Mindray in order to carry out this study. A. Soultatos: Equipment Support Recipient; Mindray is cooperating with Diagnostic Echotomography SA in relation with a Clinical Study. A Resona 7 Ultrasound system has been provided by Mindray in order to carry out this study. E. Panteleakou: Equipment Support Recipient; Mindray is cooperating with Diagnostic Echotomography SA in relation with a Clinical Study. A Resona 7 Ultrasound system has been provided by Mindray in order to carry out this study. P. Zoumpoulis: Equipment Support Recipient; Mindray is cooperating with Diagnostic Echotomography SA in relation with a Clinical Study. A Resona 7 Ultrasound system has been provided by Mindray in order to carry out this study..

B-1531 10:54
Volumetric iodine density using dual-layer spectral CT for liver fibrosis staging and histopathological correlation
L. Wang, R. Li, F. Yan, J. Qiang, Q. Han, X. Chen; *Shanghai/CN (15216572203@163.com)*

Purpose: To investigate the value of volumetric iodine density (VID) using dual-layer spectral CT for liver fibrosis staging and correlated with histopathological results.
Methods and Materials: Twenty rabbit models of CCl_4-induced liver fibrosis were established and four untreated rabbits served as controls. All of rabbits underwent four-phasic (noncontrats, arterial phase [AP], venous phase [VP], and equilibrium phase [EP]) enhanced CT using dual-layer spectral CT (IQON). Volumetric iodine density of the liver (VID_{liver}) and aorta (VID_{aorta}) were derived based on whole-liver and whole-aorta volume measurement. Normalized volumetric iodine density (NVID) were determine as ΔVID_{liver}/ ΔVID_{aorta}. Fibrosis stage, percentage of sinusoidal area (SA%) and α-SMA staining microvessel area (MVA) were quantified at histopathology. Correlation analysis was performed between NVID and fibrosis stage, SA%, and MVA. Receiver operating characteristic (ROC) analysis was performed for assessing