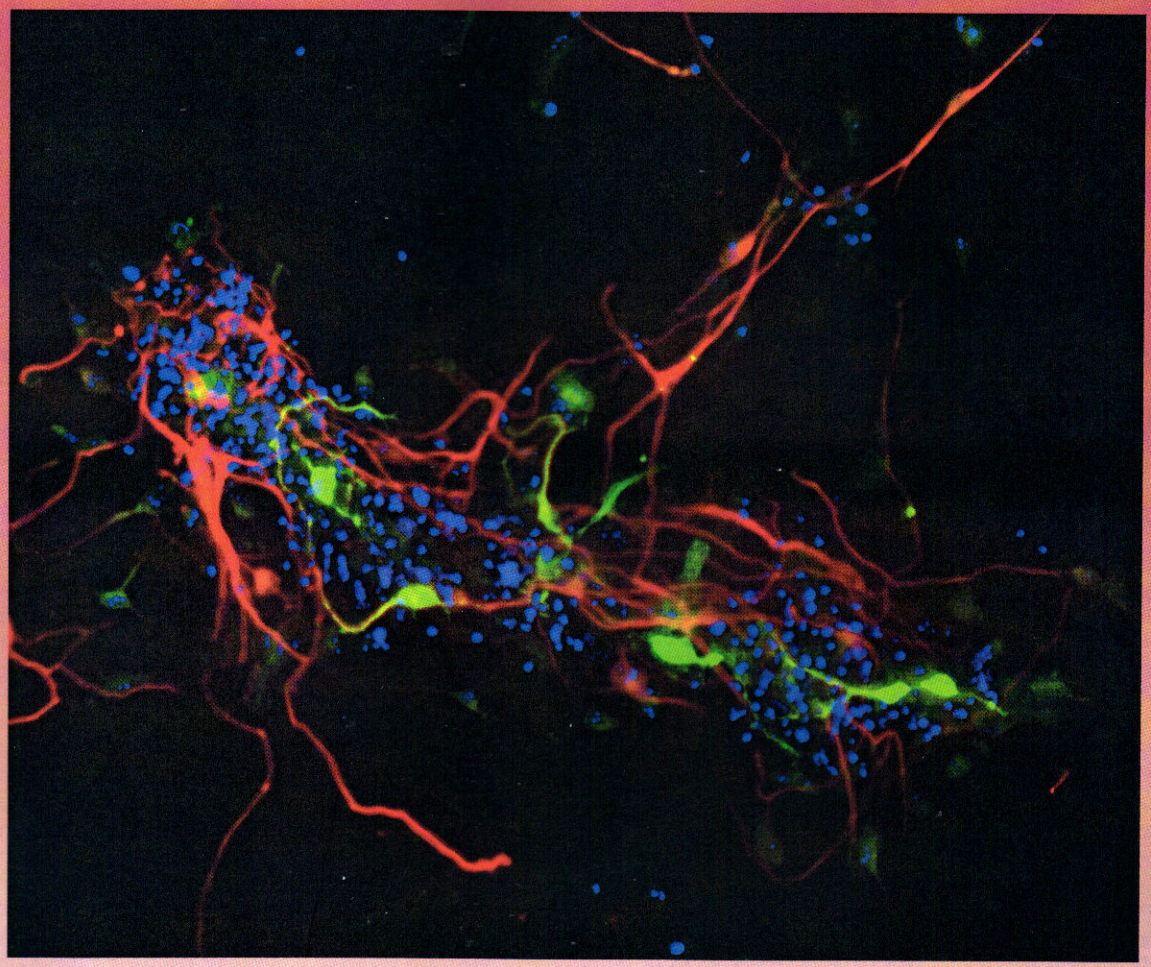
Abstracts of the 2nd Joint Meeting of Pathology And Laboratory Diagnostics



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TGA should be followed up to determine whether t-TGA is falsely positive or significant for an initial form of CD.

COAGULATION

COAG1. Genetic Factors as Promising Biomarkers of Sporadic Ascending Aortic Aneurysm

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Background: Thoracic aorta shows various changes with advancing age and a progressive deterioration in structure and function. As a result, vascular remodeling (VR) and medial degeneration (MD) occur. VR and MD are typical entities of sporadic thoracic aortic aneurysm (TAA), actually considered a common and serious health risk and a pathology by unclear mechanisms. Increased activity of the coagulation system, inflammation, activation of extracellular matrix remodeling and endothelial dysfunction pathways have been recently evidenced to have a key role in its onset. Thus, polymorphisms of the coagulation system [fibrinogen (rs1800790); Factor II (rs1799963); Factor V (rs6025); Factor VII (rs121964926); tPA (rs2020918); PAI-1 (rs1799768); TAFI (rs2146881)], inflammation [TLR4 (rs4986790); CCR5 (rs333)], extra-cellular matrix remodeling [MMP9 (rs3918242); MMP2 (rs243865)], endothelium dysfunction [eNOs (rs 1799983); ACE (rs1799752)] were analyzed.
Methods: A total of 161 TAA individuals (127 men and 34 women; mean age: 63±10.7) and 128 controls (61 men and 67 women; mean age: 61.08±5.83 years) from Western Sicily were enrolled. Their DNA samples were genotyped for the selected polymorphisms.
Results: Inconsistent associations of coagulation polymorphisms with TAA were observed while analysing preliminary data. More relevant results might be obtained when analysing their combined genotypes. Interestingly, we observed that the rs4986790 TLR4 polymorphism confers a higher susceptibility for sporadic TAA and it represents together with rs1799752 ACE, rs3918242 MMP-9 and rs2285053 MMP-2 SNPs, an independent sporadic TAA risk factor. Their combined risk genotype was also associated with TAA.
Conclusions: Results obtained seem to suggest a new perspective for the diagnosis and prevention of sporadic TAA, utilizing genetic profiles as possible risk biomarkers.

COAG2. Vitamin K Deficiency Leads to Chronic Inflammatory Bowel Disease Diagnosis: A Case Report

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Background: Vitamin K deficiency is a very rare condition in non-hospitalized patients and, in the adult, is the consequence of reduced intake in post-operative or is secondary to malabsorption syndromes. Patients with Crohn's disease (CD) commonly present with symptoms related to ileocecal inflammation, such as crampy, prolonged diarrhea and low-grade fever.
Methods: We report a case of a man 45-years old that came to the ER of the University Hospital P. Giaccone, Palermo, for the sudden onset of ecchymosis localized to the upper and lower limbs and a hematoma at left gluteus. At admission, he was subjected to blood count, first (PT, aPTT and fibrinogen) and second level investigations (FII, FVII, FIX, FX and thromboeleastography).
Results: Laboratory investigation showed PT and aPTT prolongation, decreased levels of FII, FVII, FIX, FX, correction to mixing test. Moreover, plasma thromboelastography displayed a prolongation of reaction time. Basing on laboratory data, diagnosis of deficiency of vitamin K-dependent coagulation factors was made. The endoscopy of gastrointestinal tract with histological examination allowed the diagnosis of Crohn's disease.
Conclusions: We have presented the case of a patient that did not show any clinical common manifestation of CD, but he suddenly experienced skin hemorrhagic manifestations due to acquired vitamin K deficiency. Clinical and laboratory features of this patient suggested that the deficiency of vitamin K-dependent coagulation factors might reveal chronic inflammatory bowel disease.

COAG3. Analytic Performance Comparison between Immunological Methods: Turbidimetry, Enzyme Assay and Chemiluminescent Assay

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Background: D-dimer is a fibrin degradation product (FDP) used for the exclusion of, or as an aid to, the diagnosis of venous thromboembolism (VTE). The gold standard for D-dimer measurement is an immunoenzymatic system, ELFA (Enzyme Linked Fluorescent Assay). However, there are faster, equally reliable methods available, some with the additional benefit of being applicable on instruments currently in use for other tests. The aim of our study is to compare different assays, in hopes of replacing the enzyme linked fluorescent assay with the chemiluminescent assay.
Methods: D-dimer levels were measured on plasma citrate samples from the Central Laboratory Services of the University Hospital of Udine from August 2013 to February 2014, using the following immunological methods: turbidometry (ACL-Top700), enzyme assay (Vidas) and chemiluminescent assay (AcuStar). After excluding the outliers, results were compared using Bland-Altman plots and the Spearman test (non parametric regression analysis).
Results: Results demonstrated that:
- Vidas vs ACL-Top (n=129): ACL-Top=0.6408 x Vidas + 27.243, r=0.875, BIAS=132;
- Vidas vs AcuStar (n=108): AcuStar=0.9870 x Vidas + 8.1492, r=0.931, BIAS=-1.8.

Confirmed by:
- AcuStar vs ACL-Top (n=114): ACL-Top=0.5424 x AcuStar + 66.085, r=0,907, BIAS=146.

Conclusions: The extrapolated and analysed data reveal a major correlation between the compared methods and we conclude that we can confidently move from one method to another for both high and low values.

COAG4. Biomarkers of Thrombotic State in Type 2 Diabetes Mellitus (T2DM) Patients

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Background: The metabolic disorder linked to hyperglycemia leads to a relative prothrombotic state in T2DM patients. The aim of this study is to investigate hemostatic parameters that could be potentially useful markers of prothrombotic risk in these patients.
Methods: A total of 104 adult patients with T2DM (55 untreated, and 49 treated with acetylsalicylic acid), and 27 healthy controls, aged between 40 and 85 years, were enrolled at our Institution. We evaluated, by standardized procedures, platelet count, PT, aPTT, ATIII, fibrinogen, PAI-1 and HbA1c. We also assessed platelet ADP-induced aggregation at 5 and 20 µM by LTA using AggRam (Helena Laboratories). Statistical evaluation by Mann-Whitney, Kruskal-Wallis tests and Spearman correlation was performed using SPSS 20.0 for Windows.
Results: Fibrinogen showed a significant increase in T2DM patients vs. healthy controls [372(IQR, 338-454) mg/dl vs. 314(IQR, 255-358) mg/dl, p<0.0001]. Statistical analysis demonstrated a positive correlation between HbA1c levels and PAI-1 (p<0.0001) in a subset of diabetic patients. We did not observe any significant variation in treated vs. untreated diabetics at both 5 µM [44% (IQR, 30-53) vs. 37% (IQR, 28-50),