adaptation and on the consequent modification of laboratory parameters. **Methods:** In our study we evaluated the blood chemistry parameters of a group of 41 athletes compared with a group of 45 amateur athletes, to assess whether the training has effects on their variation. In addition we typed our subjects for polymorphisms 308 A/G of the tumor necrosis factor-α (TNF-α) and 1082 A/G of Interleukin-10 (IL10). **Results:** After statistical analysis, performed with Mann-Whitney Test, we observed a statistically significant (p value< 0,05) increase of basophils, eosinophils, monocytes, and total bilirubin and decreased levels of neutrophils, glucose, electrolytes and AST in professionals compared to amateurs. These parameters were not modified by the genetic background. Actually the training modification observed were independent of the presence of pro-inflammatory (carrier allele A of 1082 A/G of IL10) or anti-inflammatory alleles (subjects A negative for 308 A/G of TNFα). **Conclusions:** The genetic polymorphisms analyzed do not influence changes in laboratory parameters values induced by professional training.

BM8. TGF-β Pathway Polymorphisms as Markers for Gender Differential Susceptibility to Sporadic Thoracic Aortic Aneurysm

L. Scola[1], L. Vaccarino[2], C. Balistreri[2], C. Pisano[3], M. Palmeri[2], M. Bova[2], F. Di Maggio[2], C. Candore[2], G. Colonna Romano[2], C. Caruso[2], D. Lio[2], G. Ruvolo[3]
[1]University of Palermo, Palermo, Italy; [2]University of Palermo, DpT DiBiMeF, Palermo, Italy; [3]Department of Surgery and Oncology University of Palermo, Palermo, Italy

Background: It has become increasingly evident that the immune system plays a pivotal role in the development of thoracic aortic aneurysm (TAA). The Transforming Growth Factor (TGF) -β isoforms might be involved in TAA pathogenesis inducing disruption of extracellular matrix, apoptosis of smooth cells in tunica media, metalloprotease production and remodelling tissues after inflammation. **Methods:** 133 subjects affected by TAA (from Cardiac surgery Unit of Palermo University Hospital), 107 unrelated patients of the same unit without TAA and a group of 91 healthy controls matched for age and gender, all living in western Sicily, were typed for TGF-β1, TGF-β2 and their receptors polymorphisms by a KASPar assay (the KBiosciences Competitive Allele-Specific PCR SNP genotyping system). Genotype and allele frequencies were compared by statistical analysis. **Results:** No differences in distribution between cases and controls were observed except for TGF-β2 *rs900* TT genotype, whose frequency was increased in patients affected by aortic aneurysm in comparison to the controls ($P = 0.037$). In particular this genotype was significantly increased in women affected by TAA in comparison both to women of control patient group (Pvalue = 0.042) and of health control group ($P = 0.010$). **Conclusions:** TAA is a complex pathology with a greater prevalence among men. Our results suggest that rs900 TGF-β SNP might be a genetic factor involved in women's susceptibility to TAA.

BM9. Evaluation of Genome-Wide Expression Profiles of Blood Neutrophils in Cystic Fibrosis Patients Before and After Antibiotic Therapy

M. Conese[1], O. Palumbo[2], S. Castellani[1], G. Barbuti[3], A. Polizzi[4], T. Santostasi[4], M. Mariggiò[3], R. Fumarulo[3], A. Manca[4], P. Montemurro[3], M. Carella[2]
[1]Department of Biomedical Sciences, University of Foggia, Foggia, Italy; [2]Medical Genetics Unit, IRCCS - "CSS" Hospital, San Giovanni Rotondo, Italy; [3]Department of Biomedical Sciences and Human Oncology, Univ. of Bari, Bari, Italy; [4]Cystic Fibrosis Regional Center, University of Bari, Bari, Italy

Background: Cystic fibrosis (CF) lung disease is characterized by massive extravasation of neutrophils into the airways that undergo apoptosis and thereby do not clear respiratory infections. The surrogate end-points that describe this process and the effect of antibiotic therapy, such as spirometry, are not sensitive and non-specific. We sought to evaluate the gene expression profile of circulating neutrophils in CF patients before and after antibiotic treatment. **Methods:** Microarray analysis (28,869 genes, Affymetrix GeneChip Gene 1.0 ST Array System) was performed in blood neutrophils from 10 CF patients before and after treatment for clinical exacerbation with antibiotics and 7 healthy control subjects. **Results:** Blood neutrophils before therapy presented 293 down-regulated genes and 57 up-regulated genes as compared with control subjects (considering as cut-off $P < 0.05$ by ANOVA). Comparison between the same patients before and after therapy (with the same cut-off by paired t test) showed instead that 1,422 genes were down-regulated and 282 up-regulated following antibiotic treatment. Interestingly, three genes appeared to be sensitive to therapy and returned to "healthy" condition: phorbol-12-myristate-13-acetate-induced protein 1 (*PMAIP1*), hydrogen voltage-gated channel 1 (*HVCN1*), and dom-3 homolog Z (*DOM3Z*). The up-regulation of these genes after therapy were confirmed by RT-PCR in blood neutrophils (n=5) and in sputum neutrophils obtained from the same patients (n=7). **Conclusions:** These results suggest the feasibility of investigating novel biomarkers of therapeutic efficacy by a global gene-wide platform and indicate more specific targets for future interventions involving respiratory burst and apoptosis.

BM10. First Trimester Biochemistery to Predict Cesarean Section for Fetal Distress and Cardiotocographic Alterations During Labor at Term of Gestation

A. Londero[1], L. Driul[2], M. Ceraudo[3], S. Visentin[4], M. Della Martina[2], S. Bertozzi[5], F. Curcio[3], D. Marchesoni[2]
[1]University of Udine, Udine, Italy; [2]Clinic of Obstetrics and Gynecology, University of Udine, Udine, Italy; [3]Institute of clinical pathology, University of Udine, Udine, Italy; [4]Department of Gynecological Sciences and Human Reproduction, Universit, Padua, Italy; [5]Department of Surgery, AOU "SM della Misericordia" of Udine., Udine, Italy

Background: At this time the literature tries to predict the outcome of pregnancy in the first trimester of pregnancy such as analyzing placental function. Our study compares first trimester clinical and biochemical characteristics between controls and pregnancies affected by cardiotocographic (CTG) anomalies or characterized by urgent Cesarean section (CS) during labor at term. **Methods:** In this study at term pregnancies were considered. Clinical and biochemical characteristics were evaluated during the first trimester. The blood examinations have been performed between 2004 and 2010. We collected data about all CTGs performed during labor classified in three categories based on the National Institute of Child Health and Human Development terminology of 2008: 1)normal; 2)intermediate; 3)abnormal. **Results:** In a multivariate logistic regression reduced PAPP-A is correlated with a higher frequency of urgent CS at term of pregnancy ($P < 0.05$), regardless of hypertensive disease of pregnancy, IUGR, BMI, maternal age, gestational age at delivery and other obstetric pathologies considered. Abnormal CTGs were associated with older maternal age, higher prevalence of nulliparous women, and lower placenta weight than normal ones ($P < 0.05$). First minute Apgar scores were lower in category 3 than in 1 and 2 ($P < 0.05$). Finally, CTG alterations defined in category 3 were correlated with lower free-beta-hCG and PAPP-A values during the first trimester, although without statistical significance. **Conclusions:** A low PAPP-A in the first trimester of pregnancy appears to be correlated with a higher frequency of urgent CS at term of pregnancy and fetal distress during labour.

BONE METABOLISM

BMT1. Nitric Oxide Mediates Low Magnesium Inhibition of Osteoblast-Like Cell Proliferation

S. Castiglioni[1], W. Albisetti[1], G. Banfi[1], J. Maier[1]
[1]University of Milan, Milano, Italy

Background: An adequate intake of magnesium is important for bone cell activity and contributes to the prevention of osteoporosis. Because i) magnesium is mitogenic for osteoblasts and ii) reduction of osteoblast proliferation is detected in osteoporosis, we investigated the influence of different concentrations of extracellular magnesium on osteoblast-like SaOS-2 cell behavior. **Methods:** SaOS-2 cells were cultured in media containing different concentrations of magnesium. Nitric oxide synthase (NOS) activity was evaluated by mass spectrometry and Griess assay. NOS isoforms were studied by western blot. **Results:** We found that low extracellular magnesium inhibited SaOS-2 cell proliferation. An addictive effect was observed when cells cultured in low magnesium were silenced for the magnesium transporter Transient Receptor Potential Melastatin (TRPM)7, which plays a prominent role in intracellular Mg homeostasis. In particular, we found that low magnesium inhibition of SaOS-2 cell proliferation was due to an increase of nitric oxide production through the up-regulation of inducible nitric oxide synthase (iNOS). Indeed, both pharmacological inhibition with the iNOS inhibitor L-NIL and genetic silencing of iNOS by siRNA restored the normal proliferation rate of the cells. **Conclusions:** Because a moderate induction of nitric oxide is sufficient to potentiate bone resorption and a relative deficiency in osteoblast proliferation can result in their inadequate activity, we conclude that maintaining Mg homeostasis is relevant to ensure osteoblast function and, therefore, to prevent osteoporosis.

BMT2. Fragility Fractures and High Energy Fractures: Serum Concentrations of IL-6, TNF-A, OPG, RANKL and Their Correlation with Radiographic Assessment

M. Giganti[1], F. Liuni[1], M. Celi[1], E. Gasbarra[1], R. Zenobi[1], I. Tresoldi[1], A. Modesti[1], R. Bei[1], U. Tarantino[1]
[1]University of Rome Tor Vergata, Rome, Italy

Background: Stages of bone turnover during fracture repair can be assessed employing serum markers of osteoblastic and osteoclastic activity, inflammatory cytokines, clinical evaluation and imaging instruments. Our study compares the fracture healing process in fragility fractures and high energy fractures by evaluating serum changes of IL-6, TNF-α, OPG and RANK-L in combination with radiographic (RUST) and clinical (LEM) assessments. **Methods:** Subjects: femoral or tibial shaft fractures (group A,14), femoral fractures (group B,14), healthy (control A,14) and osteoporotic subjects (control B,14). Serum concentrations of IL-6, TNF-α were