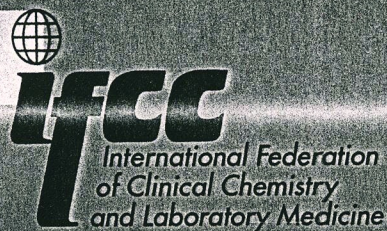


CLINICAL CHEMISTRY AND LABORATORY MEDICINE



EUROMEDLAB Amsterdam 2007

17th IFCC-FESCC European Congress of Clinical Chemistry and Laboratory Medicine

60th National Congress of the Netherlands Society for Clinical Chemistry and Laboratory Medicine (NVKC)

Amsterdam, The Netherlands, June 3-7, 2007

ABSTRACTS VOLUME



Walter de Gruyter • Berlin • New York

Access®AccuTn® is a paramagnetic particle chemiluminescent immunoassay for cardiac troponin I (cTnI) detection. We evaluated the analytical performances of the Access®AccuTn® on the BeckmanCoulter Access2 Immunoassay System at the low-end of assay range. We determined the 99th percentile upper reference limit (URL), the cTnI concentration associated with 10% total imprecision (10% CV) and the minimum detectable concentration (MDC).

Methods. The 99th percentile URL was determined by bootstrap techniques, analyzing samples from 284 healthy blood donors (223 men, 61 women, range 18-70 yr, median age 31 yr). Imprecision profile was determined in accordance with CLSI EP5-A protocol using ten serum pools (cTnI range from 0.029-0.530 µg/L), 10% CV was determined by fitting data with hyperbolic regression (ANOVA, $p < 0.001$); the 95% confidence interval (95% IC) corresponding to 10% CV was evaluated by inverse regression method, after linearization of the hyperbolic function. The MDC was defined as the concentration of cTnI corresponding to a signal 3 SD above the mean of 20 replicates of zero calibrator.

Results. The 99th percentile URL was 0.026 µg/L (16% CV) and the 10% CV was 0.048 µg/L (95% IC respectively 0.018-0.038 and 0.025-0.059 µg/L). MDC was 0.012 µg/L (20% CV).

Conclusions. Access®AccuTn® immunoassay showed optimized performances at the low-end of the assay range: this is an advantage for diagnosis and risk stratification of myocardial damage.

T093

OXIDATIVE STRESS AND ITS IMPACT ON DEVELOPMENT OF ADVANCED CORONARY ARTERY DISEASE

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Background. The imbalance of redox equilibrium plays a role in development of atherosclerosis. The aim of this study was to assess the impact of oxidative stress and antioxidative status in patients with advanced coronary artery disease.

Methods. Oxidative stress parameters were determined in group of patients with serious coronary artery disease (at least 50% stenosis of the left main coronary artery or 70% stenosis of other coronary artery according to coronarographic examination; S.n=40) and control group with normal coronary artery status (C.n=38).

Free radical concentration was determined by spectrophotometric assay based on chlorophyllin acceptance of electrons, total antioxidant capacity using kit TAS (Randox, UK), malondialdehyde, glutathione and α -tocopherol plasma concentration by HPLC. Plasma levels of allantoin, α -antiproteinase, total cholesterol, triglycerides, HDL-ch, LDL-ch, fibrinogen and hsCRP were followed.

Results. In patients with coronary stenosis (S) higher level of free radicals (FR) coincided with lower level of lipid standardised α -tocopherol (AT). FR: S: 5.11 ± 0.58 mmol/l vs C: 4.60 ± 0.79 mmol/l ($p < 0.01$); AT: S: 2.78 ± 0.45 µmol/l vs C: 3.00 ± 0.39 µmol/l ($p < 0.05$). In S group significantly ($p < 0.05$) higher levels of GSSG/GSH ratio (S: 8.09 ± 3.86 vs C: 6.13 ± 2.21), α -antiproteinase, allantoin, triglycerides and fibrinogen were found.

Conclusions. According to correlation analysis, the increased level of free radicals in patients with coronary atherosclerosis was intimately related to the presence of hypertriglyceridemia and lower levels of lipid-standardised α -tocopherol, thereby suggesting that abnormalities in both lipid metabolism and

antioxidative substance levels underlie the increased oxidative stress in advanced atherosclerosis.

Supported by Ministry of Education CR grant COST OC 124, grant 0021627502.

T094

VON WILLEBRAND FACTOR, FIBRINOGEN, PLASMA PEROXIDES AND FUNCTIONAL TESTS FOR PERIPHERAL ISCHEMIA

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Background. Von Willebrand factor (VWF) is a marker of endothelial dysfunction, however, its clinical utility in the assessment of peripheral ischemia is still controversial. In order to achieve new risk stratifications, we proposed to study the relationship of VWF with other biological risk factors and functional parameters in "stable" vs. "unstable" peripheral arterial disease (PAD).

Materials and methods. We analyzed a cohort of 99 PAD (66 male, 23 female, age 61.4 ± 9.63 years), 15 AMI patients and 27 age- and sex-matched healthy donors for known atherosclerosis risk factors: VWF antigenemia, plasma fibrinogen, HCY, hsCRP, total plasma peroxide, serum lipids and their relationship with disease group, staging, the presence of co-morbidities like diabetes and hypertension.

Results. VWF antigen was higher in PAD and AMI patients than in controls (170.51 ± 9.22 U/ml and 153.45 ± 35.64 U/ml vs. 104.48 ± 10.27 U/ml, $p = 0.008$). In the PAD group VWF appeared to be significantly influenced by critical ischemia and in a lesser extent by hypertension and disease stage. VWF could be significantly correlated to plasma fibrinogen ($R = 0.40$, $p < 0.001$), a classical, independent risk factor for PAD progression and severity and, in a subgroup, to total plasma peroxide ($R = 0.43$, $p = 0.009$). VWF showed a strong negative correlation with the summarized Doppler-index score (calculated for both limbs), and ABPI, good functional parameters of impaired peripheral blood-flow.

Conclusions. Elevated plasma VWF antigen together with fibrinogen and total peroxides are powerful predictors of severity, along with low summarized Doppler scores or ABPI in PAD patients.

T095

SIMVASTATIN-INDUCED ENDOTHELIAL CELL DETACHMENT AND MICROPARTICLE RELEASE ARE PRENYLATION DEPENDENT

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Background. Statins reduce cardiovascular disease (CVD) risk and affect endothelial function by cholesterol-dependent and independent mechanisms. Recently, circulating endothelial cells and endothelial cell-derived microparticles (EMP) have been associated with endothelial (dys)function. In this study, we investigated whether simvastatin affects endothelial detachment and release of EMP in vitro.