BJCL ISSN 1310–4543
Supplement 2009

BALKAN JOURNAL OF CLINICAL LABORATORY

XVII, 09, 1

17th Meeting of Balkan Clinical Laboratory Federation
&
5th Macedonian National Congress of Medical Biochemists
Ohrid, Republic of Macedonia, September 16–19, 2009
Abstracts volume

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PP-010

hsCRP IN HEALTHY VOLUNTEERS: CORRELATION WITH SOME OF THE LIPID AND NONLIPID CARDIOVASCULAR RISK FACTORS

Rushkovska T, Pop-Kostova A, Eftimov O.

Central Clinical Laboratory, Military Hospital, Skopje, Macedonia
E-mail: ruskovska_t@yahoo.com

Objectives: The role of inflammation has been well established in theories describing the atherosclerotic disease process and hsCRP has been proposed as the most suitable biomarker for routine clinical assessment of chronic low intensity inflammation. The aim of this study was to measure the concentrations of hsCRP in healthy volunteers and determine its correlation with some of the lipid (total cholesterol, triglycerides and HDL-cholesterol) and nonlipid (body mass index and waist circumference) cardiovascular risk factors.

Methods: Only young (28±3 years old), healthy, physically active and well trained men were selected for the study. They all had two medical checks two weeks apart. In the study were included only those which values of ESR, CBC, urea, glucose, total bilirubin, AST and ALT were within normal ranges during both checks. 35 examinees (20 nonsmokers and 15 smokers) fulfilled the inclusion criteria. For hsCRP the lower value from two measurements was considered as a basal value.

Results: hsCRP=0,75±0,40 mg/L, CHOL=5,4±1,2 mmol/L, TRIG=1,8±1,1 mmol/L, HDL=1,32±0,22 mmol/L, BMI=27,2±3,1 kg/m^2, waist circumference = 92±8 cm, without significant differences between smokers and nonsmokers for all parameters. Although there was not a statistically significant correlation between hsCRP and lipid cardiovascular risk factors, we have found significant correlation between hsCRP and BMI ($r=0,40$, $p<0,05$) and hsCRP and waist circumference ($r=0,35$, $p<0,05$). nterestingly, for nonsmokers the correlation coefficient between hsCRP and waist circumference raised to $r=0,54$, $p<0,05$, but for smokers it dropped to $r=0,21$, $p>0,05$.

Conclusions: From these data it could be concluded that cigarette smoking neutralizes the favorable effect of lower waist circumference on hsCRP.

PP-011

SIGNIFICANCE OF DETERMINATION OF CASPASE-3 ACTIVITY IN PATIENTS WITH ISCHEMIC HEART DISEASE

Ristić T[1], Ćosić V[1], Vlahović P[1], Deljanin-Ilić M[3], Stanković- Ferlž D[1], Đorđević BV[2], Kundalić S.[1]

[1]*Centre for Medical Biochemistry, Clinical Centre, Nis, Serbia.*
[2]*Institute of Biochemistry, Medical Faculty, Nis, Serbia*
[3]*Institute for Cardiovascular and Rheumatic Diseases, Niska Banja, Serbia*
E-mail: ristict@bankerinter.net

Background: Apoptotic cell death may play a critical role in a variety of cardiovascular diseases and may occur in response to ischemia, toxins and physical stimŭli. A key phenomenon of apoptotic cell death is the activation of one of the effector caspase-Caspase-3, which may be activated by both extrinsic and intrinsic apoptotic pathways. Caspase-3 activation leads to DNA fragmentation and cell death.

Methods: In this study, the activity of caspase-3 was determined in lymphocytes of peripherial blood isolated using lymphocyte separation medium. Caspase-3 activity was measured by a colorimetric commercially available ELISA kit based on the degradation of synthetic tetrapeptide DEVD-pNa. Enzyme activity was determined in lymphocytes of patients with stable angina (SAP, 30), with unstable angina pectoris (USAP, 26), and with acute myocardial infarction (AMI, 38). The obtained results were compared to the caspase-3 values of the control group (healthy individuals).

Results: In lymphocytes of patients with SAP the enzyme activity was 0.093±0.035 µmol/mg protein, but, in patients with AMI 0.110±0.062 µmol/mg protein, and both values were unsignificantly higher in comparison with controls (0.092±0.022 µmol/mg protein). In lymphocytes of NSAP patients caspase-3 activity (0.122±0.061 µmol/mg protein) was significantly higher ($p<0,05$) compared to the control as well as both other patient groups.

Conclusion: Caspase-3 activity may be valid parameter for assessing of atherosclerotic plaque activity and a new target for therapeutic intervention.

PP-012

CATALASE ACTIVITY IN PATIENTS WITH STABLE AND UNSTABLE ANGINA PECTORIS

Stanković-Ferlež D[1], Zvezdanović-Čelebić L[1], Kundalić S[1], Perišić Z[2], Djordjević V.[3]

[1]*Centre of Medical Biochemistry, Niš,*
[2]*Clinic of Cardiovascular Diseases, Clinical Centre Niš,*
[3]*University School of Medicine, Niš, Serbia*
E-mail: iferlez@eunet.rs

PP-046
EVALUATION OF OXIDATIVE STRESS AND INFLAMMATION BIOMARKERS IN CHRONIC HAEMODIALYSIS PATIENTS BEFORE AND AFTER HAEMODIALYSIS

Rushkovska T[1], Cvetkovska J[1], Antarorov R[2], Jansen E.[3]

[1]Central Clinical Laboratory, Military Hospital, Skopje, R. Macedonia
[2]Department for Haemodialysis, Military Hospital, Skopje, R. Macedonia
[3]National Institute for Public Health and the Environment, Bilthoven, the Netherlands
E-mail: ruskovska_t@yahoo.com

Objectives: Oxidative stress and chronic inflammation are common features in haemodialysis (HD) patients that contribute in their high cardiovascular morbidity and mortality. The aim of this study was to evaluate their values of oxidative stress and inflammation biomarkers before and after HD and to compare them with those obtained for healthy volunteers.

Methods: 32 chronic HD patients and 17 healthy nonsmokers were included in the study. Reactive oxygen molecules (ROM) and ferric reducing ability of plasma (FRAP) as biomarkers for oxidative stress were determined by photometric methods. hsCRP was measured by immunoturbidimetric method.

Results: Before HD, patients had slightly but not significantly higher concentrations of ROM (347±61: 317±47 CARR U, p>0,05) and significantly higher values of FRAP (1758±320: 1390±155 umol/l, p<0,01) than controls. Oxidative index (obtained by subtraction of standardized FRAP variable from standardized ROM variable) was paradoxically low in patients before HD (-2,25±2,56), that could be explained by influence of uremia itself on FRAP assay.

After HD, patients had significantly higher concentrations of ROM (385±70, p<0,01) and significantly lower FRAP values (1100±194, p<0,01) than controls, with oxidative index of 3,00±1,90.

Along with significant increase of ROM and decrease of FRAP during HD we have also measured a significant increase of hsCRP (p<0,01) for average 20% from starting values, that varied considerably among individuals.

Conclusions: Although measurement of oxidative stress and inflammation biomarkers is important for HD patients, a careful evaluation of results is essential, especially in terms of influence of uremia on assays for determination of total antioxidant status.

PP-047
THE EFFECT OF MEMBRANE TYPES AND DIALYSATE ON OLYGOELEMENTS (Fe AND Mg) VALUES AT HEMODIALYSIS PATIENTS

Obradovic S, Radakovic A, Spasic G.

Department of Laboratory Diagnostic, Clinical Center "Zvezdara", Dimitrija Tucovica 161, 11000 Belgrade, Serbia
E-mail: sanjaobradovic31@yahoo.com

Background: Chronic renal failure is the clinical syndrome which requires dialysis in order to relieve the organism of toxic material surpluses. The purpose of hemodialysis is to decrease the amount of life threatening metabolites and electrolytes (i.e. urea, creatinine, potassium), by using different membrane types and dialysate.

The goal of our study is: To monitor changes in concentration of olygoelements Fe and Mg during hemodialysis at 2 groups of patients using different types of membranes (F60S and F7HPS) and same types of dialysate fluids.

Method: The blood was drawn to patients in both groups, homogenous by gender and age (27 per each group), before and after the hemodialysis. The concentration of Mg and Fe was measured on Olympus AU400 by using original Olympus reagents, with bichromatical spectrofotometrical method, measuring absorbance on 600/800 nm for Fe and 520/800 nm for Mg.

Results: There is no statistically significant difference in changes of Fe concentration between 2 groups of patients (2,2±2,0 µmol/l vs. 2,6±3,06 µmol/l; p<0,05), on which were used different types of membranes (membrane type has no effect on increase Fe concentration). Positive correlation was proven between Fe concentration increase and weight loss (r=0,89, p<0,01). There is no statistically significant difference in changes of Mg concentration between 2 groups of patients (0,1±0,07 mmol/l vs. 0,1±0,06 mmol/l; p<0,05), on which were used different types of membranes (membrane type has no effect on decrease Mg concentration).

Conclusion: Membrane types used in hemodialysis does not effect the changes in concentration of olygoelements (Fe and Mg). The increase in Fe concentration is a result of relieving the organism of excess fluids. The decrease in Mg concentration is a result of lower concentration Mg in dialysate.