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HOMOCYSTEINEMIA AND POLYMORPHYSM OF THE GENE FOR METHYLENTETRAHYDROFOLATE REDUCTASE (C677T) IN PATIENTS WITH CORONARY ARTERY DISEASE

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Purpose: The aim of this study was to determine the concentration of total homocysteine (tHcy) in healthy subjects, and in patients with coronary artery disease (CAD), as well as to determine the prevalence of C677T mutation of the enzyme methylentetrahydrofolate reductase (MTHFR).

Material and Methods: The study included 204 participants divided into two main groups: 123 healthy individuals and 81 patients with CAD. The concentration of plasma tHcy was determined by cyclical enzymatic method, and mutation of MTHFR gene C677T by polymerase chain reaction by Schneider.

Results: The concentration of plasma tHcy in patients was significantly higher than in healthy subjects ($p<0.001$). The highest frequency in healthy subjects and patients for mutations in the MTHFR gene had C677T heterozygous genotype CT (46% vs 50%), of homozygous wild genotype CC (44% vs 33%), and the lowest frequency had the genotype TT (10% vs 17%).

Conclusion: There is a significant association of tHcy with CAD development; hence tHcy is not a marker but a risk factor for occurrence and development of CAD. Mutations in the gene MTHFR C677T are not risk factors for CAD.

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INVESTIGATION OF SERUM ISCHEMIA MODIFIED ALBUMIN AND MALONDIALDEHYDE LEVELS IN PROFESSIONAL ATHLETES AND SEDENTARY WOMEN

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Aim: Sedentary lifestyle is a risk factor for the development of numerous disease. Along with this, physical activity has emerged as an important lifestyle factor for primary prevention of numerous diseases. In this study, it was aimed to investigate the ischemia modified albumin (IMA) and malondialdehyde (MDA) levels in serum of professional athletes and sedentary women.

Methods: Totally 60 women were included in the study, 30 of whom are sedentary (Group 1), and 30 of whom are professional athlete (Group 2). Serum IMA and MDA levels were measured spectrophotometrically.

Results: Serum IMA levels were significantly higher in group 2 compared with group 1 ($p<0.05$). There was no significant difference between serum MDA levels of groups. There was a statistically significant positive correlation between MDA and IMA levels of group 1 ($p<0.05$).

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NEUTROPHILIC GELATINOUS ASSOCIATED LIPOCALIN AS AN EARLY BIOMARKER OF ACUTE KIDNEY INJURY IN NEONATES

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Aim: Acute kidney injury (AKI) is a common clinical problem in newborns in the neonatal intensive care unit (NICU). Predisposing factors associated with neonatal kidney injury are: certain clinical conditions, therapeutic interventions and nephrotoxic drugs. The aim of the study was to determine the incidence, risk factors and efficiency of the biomarker urinary neutrophilic gelatinous associated lipocalin (NGAL) in early diagnosis of neonatal AKI.

Subjects and Methods: The study included 100 newborns hospitalized in NICU of University Children's Hospital (50 with AKI and 50 without AKI). Medical data records of admitted neonates with AKI were analyzed. NGAL was analyzed in urine samples collected with urinary sachet or urinary catheter using ELISA method (Bioporto).

Results: The estimated prevalence of AKI in neonates was 6.4%, according to the standard definition. There was a significant difference between the values of urinary NGAL of newborns with AKI compared to the control group ($p<0.001$). NGAL's monitoring on the day of hospitalization and three days later showed a slight upward trend. There was a significant difference between the values of urinary NGAL in newborns with AKI and lethal outcome and newborns without lethal outcome ($p<0.001$).

Conclusion: Urinary NGAL is an early predictive biomarker of AKI in critically ill newborns that provides better outcome and prognosis of the disease. The results have shown that NGAL allows early diagnosis of AKI in the first hours of its onset, when the disease is clinically manifested, and degradation products are within normal range.