POSTER SESSION

LATE-BREAKERS:

SESSION 2

A CONNECTION BETWEEN ARTERIAL HYPERTENSION, DYSLIPIDEMIA AND ACTIVITY OF INTERLEUKIN-1BETA AND INTERLEUKIN-6 IN TYPE 2 DIABETES MELLITUS

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Objective: To determine the relationship between blood pressure (BP), lipid metabolism and levels of IL-1beta and IL-6 in patients with type 2 diabetes mellitus (T2DM).

Design and method: A total of 96 patients with T2DM (mean age 52.74 ± 9.56, 38 women) and 20 healthy volunteers were examined. A systolic blood pressure (SBP, mmHg), diastolic blood pressure (DBP, mmHg), and mean arterial pressure (MAP) were measured; levels of total cholesterol (TC), high density lipoprotein cholesterol (HDL), triglycerides (TG) were determined by biochemical method (mmol/L), the level of low density lipoprotein cholesterol (LDL) was calculated by Friedwald's formula. The levels of IL-1-beta and IL-6 were determined by ELISA (ng/ml).

Results: SBP in main group - 141.76 ± 1.31, in control group - 120.75 ± 1.51; DAT - 88.43 ± 0.68 and 77.75 ± 0.85, respectively; MAP - 106.23 ± 0.87 and 92.08 ± 0.98, respectively. All the results in the studied groups were statistically significant. The study of cholesterol metabolism also revealed significant differences: TC in the main group was 5.29 ± 0.15, in the control group - 4,06 ± 0.05; TG 1.20 ± 0.02 and 1.3 ± 0.03, respectively; LDL 3.28 ± 0.14 and 2.01 ± 0.04, respectively. The levels of proinflammatory cytokines significantly differed in studied groups: IL-1beta in main group was 13,58 ± 0,29, control group - 8,12 ± 0,24; IL-6 12.37 ± 0.3 and 8.83 ± 0.22, respectively. Significant ($p < 0.05$) correlations were revealed in the main group: SBP and TC (R = 0.29), SBP and TG (R = 0.28), SBP and LDL (R = 0.28), SBP and IL-1beta (R = 0.41), SBP and IL-6 (R = 0.25); DBT and IL-1beta - (R = 0.25); MAP and TC (R = 0.26), MAP and TG (R = 0.29), MAP and LDL (R = 0.27), MAP and IL-1beta (R = 0.39), MAP and IL-6 (R = 0.28). There were no significant correlations in the control group.

Conclusions: The revealed interrelations indicate that the risk of arterial hypertension is increased even with a slight elevation of BP in patients with T2DM. The reasons for this include not only the increase of vascular resistance and the decrease of the elasticity of the vascular wall, but also the progression of dyslipidemia and deployment of systemic inflammatory response due to the increased levels of proinflammatory cytokines IL-1beta and IL-6.

ACUTE MYOCARDIAL INFARCTION AND ANTECEDENT HYPERTENSION: THE CHANGES OF SELENIUM LEVELS, ANTIOXIDANT ENZYMES AND THEIR CORRELATION WITH THE LEVEL OF CARDIAC BIOMARKERS

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Objective: The purpose of this study was to determine the relationship between the activity of antioxidant agents and the levels of cardiac biomarkers in patients with non-ST elevation myocardial infarction (NSTEMI) and antecedent hypertension (AH).

Design and method: 42 patients with NSTEMI and AH were examined, mean age 61.82 ± 7.65 years; 11 women; duration of AH 9.62 ± 3.16 years (group 1). Also 30 patients with NSTEMI without previous history of AH were examined (group 2). Groups were comparable by age and gender. The levels of troponin I (TnI) and creatine kinase-MB (CK-MB) were determined in blood of all patients. Se level was measured by fluorometric method. The activity of superoxide dismutase (SOD) and catalase (CAT) was determined by spectrophotometric method.

Results: Patients of group 1 were characterized by significantly higher TnI levels (+ 25.7%, 28.3 ± 3.23 ng / mL, p = 0.006), CK-MB levels (+ 19.2%, 186.3 ± 24.4 units / L, p = 0.008) and lower levels of SOD (-23.2%, p = 0.005), CAT (-40.63%, p = 0.003) and Se (-18.9%, p = 0.008) as compared with group 2. In both groups, the activity of SOD had a negative correlation with TnI: (r = –0.46, p = 0.005) and (r = –0.38, p = 0.004), respectively. CAT activity and CK-MB levels correlated in following manner: a strong correlation (r = –0.61, p = 0.003) was observed between the studied indices in group 1, a weak relationship (r = –0.14, p = 0.022) was revealed in group 2. Significant negative relationships were found between Se levels and indexes of biomarkers in group 1: TnI (r = –0.32, p = 0.009), CK-MB (r = –0.18, p = 0.005), whereas in group 2 a weak correlation was found between the levels of Se and TnI only (r = –0.12, p = 0.006).

Conclusions: The obtained data demonstrate that Se levels and the activity of antioxidant enzymes in blood of patients with NSTEMI negatively correlate with the markers of myocardial injury. Patients with NSTEMI and antecedent hypertension have significantly lower levels of antioxidant agents, higher levels of TnI and CK-MB, and stronger connections between them, indicating the development of more significant myocardial injury.

AMBULATORY BLOOD PRESSURE PARAMETERS IN UNCONTROLLED ESSENTIAL HYPERTENSIVE PATIENTS

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Objective: Ambulatory blood pressure monitoring (ABPM) is a modern diagnosis tool for blood pressure measurement, however, the explanatory value of some ABPM parameters like pulse and mean blood pressure in controlled hypertension status has not been well-established. The goal of this study was to evaluate the association between 24 h-ABPM-parameters with controlled and uncontrolled blood pressure level in hypertensive patients with sinus rhythm.

Design and method: We studied 43 essential hypertensive patients (Ehs) (62 [56 - 65] years, 53 % female) in antihypertensive therapy with well controlled 24 h- systolic blood pressure (SBP) (less 130 mmHg) and 24 h- diastolic BP (DBP) (less 80 mmHg) and 102 Ehs (59 [53 - 70] years, 39 % female) in antihypertensive therapy with uncontrolled 24 h- systolic BP and 24 h- DBP, who underwent 24-h ABPM and 24-h ECG. We calculated averages and parameters of variability of SBP, DBP, pulse pressure (PP), mean arterial pressure (MAP) and blood pressure loads for SBP, DBP. According to the degree of nocturnal SBP, DBP fall, patients were sub-classified as dippers, mild dippers, extreme dippers, reverse dippers. A bivariate logistic regression analysis was performed to evaluate the explanatory value of ABPM parameters for uncontrolled hypertension status.

Results: Comparisons between groups showed no differences in age, sex, diabetes status, as well as in SBP dippers (p = 0.480), mild dippers (p = 0.794), extreme dippers (p = 0.799), reverse dippers (p = 0.248) and DBP (p = 0.627), mild dippers (p = 0.996), extreme dippers (p = 0.852), reverse dippers (p = 0.372). The best fitting model for explanatory uncontrolled hypertension (log likelihood = –6,50; AUC ROC = 0,9981) after adjustment for age, sex (male vs female), diabetes status (yes vs no) with ORs was: 24-h PP (2.63; CI 95% 1.15–6.0, p = 0.022), 24-h MAP (3.30; CI 95% 1.33–8.22, p = 0.010), 24-h normalized square index DBP (12.47; CI 95% 1.11–140.0, p = 0.041). VIF for all included variables was <10.0.

Conclusions: 24-h PP, 24-h MAP, 24-h normalized square index DBP are the ABPM parameters that were more closely associated with uncontrolled hypertension status in Ehs with sinus rhythm.

THE ROLE OF CERTAIN POLYMORPHIC VARIANTS IN GENES, ASSOCIATED WITH ARTERIAL HYPERTENSION WITH DEVELOPMENT OF CORONARY HEART DISEASE

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Objective: To analyze the effect of polymorphic variants associated with the blood pressure values in previous studies in/next to genes and locuses CYP7A1 and PLEKHA7 for the development of ischemic coronary heart disease in Bulgarian patients (Caucasian).