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Features of myocardial damage indexes in patients with metabolic syndrome and nonalcoholic fatty liver disease

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Abstract

Background: Metabolic syndrome (MetS) is a cluster of several risk factors and is considered major risk for the development of cardiovascular disease. Metabolic syndrome patients often have concomitant nonalcoholic fatty liver disease (NAFLD), and two coming together of these two conditions increases the risk of myocardial damage.

Purpose: We to assess the myocardial damage indexes' levels in patients with metabolic syndrome and nonalcoholic fatty liver disease.

Methods: 212 consecutive patients with metabolic syndrome have been enrolled in the study (aged 35-67 years, mean age 53.25 ± 14.0 years, male=46%). Patients were divided into two groups by 106 according to the presence or absence of nonalcoholic fatty liver disease in addition to the metabolic syndrome. NAFLD was diagnosed by CT scan. MetS was diagnosed by ATP III panel recommendations. Baseline characteristics, anthropometry, high sensitive C reactive protein (hsCRP), plasma brain natriuretic peptide (BNP), plasma N-terminal pro-b type natriuretic peptide (NT-proBNP) were assessed. All statistical analysis was performed by STATA software.

Results: Patients with MetS and NAFLD (Group I) tended to have higher level of hsCRP than those without NAFLD (Group II; $P < 0.05$). There were not statistically significant changes in terms of BNP ($P > 0.05$) and NT-proBNP ($P > 0.05$) between two groups. When we separately analyzed by gender there were not any significant changes between men and women ($P > 0.05$). Among MetS components, hypertension (1.7; 1.15-2.35; CI 95%, $P < 0.05$), dyslipidemia (1.5; 1.10-2.10; CI 95%, $P < 0.05$) were positively correlated with hsCRP.

Conclusion: Patients with MetS and NAFLD might be affected by asymptomatic myocardial damage, in terms this could quickly lead to the development of the cardiovascular disease. Further studies are needed with large amount of participants.

Keywords: metabolic syndrome, nonalcoholic fatty liver disease, myocardial injury

Abbreviations: Metabolic syndrome - MetS; Nonalcoholic fatty liver disease - NAFLD; High sensitive C reactive protein - hsCRP; Brain natriuretic peptide - BNP;

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None