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Abstract:

Title: Investigating changes in serum levels of 15-GDF& hs-cTn in patients with coronary artery disease

Introduction: Coronary artery disease is one of the most important causes of Mortality worldwide. Therefore, the identification of biological biomarkers plays a significant role in the prognosis and early diagnosis of patients with myocardial infarction. The present study was conducted in order to investigate changes in serum hs-cTn and 15-GDF on a number of patients with coronary heart disease in Urmia city.

Materials and methods: In this study, 70 people after angiography by an interventional cardiologist were divided into two groups, healthy and those with coronary artery occlusion, based on the degree of coronary artery occlusion. Patients with coronary artery occlusion were subsequently classified into one-vessel, two-vessel, and three-vessel occlusion subgroups based on the number of occluded vessels. Demographic information of patients including age, gender, diabetes mellitus and obesity were recorded. Then blood samples were taken from selected patients and serum was isolated. Blood lipid profile, including triglyceride, cholesterol, LDL, HDL, as well as troponin I, hs-cTn and 15-GDF values were measured by ELISA method.

Results: The results showed that the prevalence of coronary artery occlusion in men was higher than in women, and 20% of the affected patients were obese and 48.6% had diabetes mellitus. Examining the values of hs-cTn, 15-GDF and troponin I in patients with coronary artery occlusion compared to the control group showed that this increase is more in patients with three vessels than in affected groups. Also, a significant increase in triglyceride and LDL was shown in the patient groups compared to the control group ($P < 0.05$). These findings are intensified by increasing the number of involved vessels. Examining the ROC curve results showed that troponin I, hs-cTn and 15-GDF values have high specificity and sensitivity for early diagnosis of CAD, respectively.

Conclusion: The levels of troponin I, hs-cTn and 15-GDF in patients with coronary artery disease increase significantly with the increasing severity of coronary heart disease and can be used as ideal indicators for diagnosis and follow-up of coronary heart disease patients.

Key words: troponin I, hs-cTn and 15-GDF, coronary heart disease, Urmia