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The growth differentiation factor 15 is an independent predictor for kidney injury in patients with acute coronary syndrome

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The development of renal dysfunction in patient with acute coronary syndrome (ACS) is an actual problem, because it worsens the prognosis for those patients. In order to diagnose this condition in time the search for biomarkers is going. One of them is the Growth differentiation factor 15 (GDF 15). Purpose: estimate the role of various markers in the development of acute kidney injury (AKI) in patients with ACS. Methods. 73 patients were screened with different forms of ACS (55 male and 18 female), mean age was 61, 8 ± 1, 3 years. Based on the results of the examination glomerular filtration rate (GFR) was calculated by chronic kidney disease - epidemiology collaboration formula (CKD-EPI). A group of patients has been selected (n= 54), their creatinine level was determined during the first 24 hours and after 48 hours. All patients were divided into two groups according to acute kidney injury network classification (AKIN): 21 patient in the first group with negative dynamic (1st stage AKIN and higher), 33 patient in the second group without creatinine dynamic. In addition, the levels of GDF 15, N terminal-pro B-type natriuretic peptide (NT-pro BNP) were determined during the first day of hospitalization Results. The analyses of biomarkers interconnection (NT pro-BNP, GDF 15) and GFR showed significant difference of estimated parameters in both groups as well ($p \leq 0.04$; $p \leq 0.02$, respectively). Also, correlation of high and medium strength was found between biomarkers (GDF 15, NT pro-BNP) and GFR ($p \leq 0.0001$, $p \leq 0.01$). For identification of the main risk factor for reduced kidney function, we have used logistic regression method and found GDF 15 (area under the ROC curve (AUC) 0.77; $p<0.0001$, predictive value≥2200 pg/ml) with 65 % of sensitivity and 87 % of specificity can predict AKI in patients after ACS. In our study NT-pro BNP could not predict the AKI formation (AUC 0.612; $p \leq 0,25$; specificity 80%; sensitivity 38%). Conclusion. Change in GDF 15, but not NT-pro BNP, independently predicts development of AKI in patients with ACS.

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