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Immunological predictors of myocardial injury development after coronary artery stenting

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Abstract

More than three million myocardial revascularization procedures are performed annually in the world. Recently, the ratio of angioplasty with coronary artery stenting and coronary artery bypass grafting in Europe is 2:1, in the USA and Japan – 6:1. Small myocardial injuries occur in 8-15 percent of cases after planned intracoronary stenting. It is often manifested only by the level of increase in cardiospepific immunological markers of myocardial damage without clinical and electrocardiographic signs of myocardial damage. The results of studies of 100 patients with coronary artery disease and stable angina (the second and third functional class) in one day after percutaneous coronary intervention with implantation of intracoronary stents (Xience, Taxus, Cypher, Vision, Kaname) in the department of the Federal Center for Cardiovascular Surgery during one year of follow-up were studied. Study group: patients on the first day after intracoronary stenting without clinical manifestations and changes in electrocardiography, but with immunochemical manifestations of small myocardial injury syndrome. Comparison Group: patients on the first day after intracoronary stenting without complications. Control group: 30 patients before intracoronary stenting. In the blood of patients of the studied groups, the levels of MB-creatine phosphokinase and troponin T were determined in dynamics by electrochemiluminescence using Elecsys reagent kits from Roche on the Elecsys2010 immunochemical analyzer from Roche Diagnostics (Switzerland). As a result of the conducted studies, some immunological and clinical-instrumental predictors of the risk of developing small myocardial injury syndrome after intracoronary stenting were established in patients with coronary artery disease and stable angina of the second functional class and the third functional class: diffuse coronary artery lesion (p<0,001), stenosis length – 24,07±1,3 mm (p<0,001), recanalization and stenting of coronary arteries (p<0,05), lateral branch occlusion (p<0,05), implantation of metal stents (p<0,05), implantation of two or more stents (p<0,05), the level of blood leukocytes - 10,23*10^9 / I (p<0,05), systemic atherosclerosis (p<0,05). Small myocardial injuries have an adverse effect on the long-term results of intracoronary stenting in patients with coronary artery disease and stable angina of the second functional class and the third functional class even after one year of followup after surgery: return of angina (2,86%), repeated hospitalizations (5,71%).

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Biography

In 2005 has completed her PhD at the at the National Medical esearch Center of Cardiovascular Surgery. Head of the Department of Cardiology of the State Medical University from 2008 to 2018, then professor of this Department. Head of the Primary Vascular Center for the Treatment of Patients with Acute Coronary Syndrome and Acute Stroke from 2013 to 2018. Since 2018 has been a professor at the Department of Cardiology of the Central Medical Academy of the Presidential Administration of RF. She is the chief physician of the Cardiological Center. She is the author of 12 Patents for innovations, 3 monographs, 12 educational tutorial. Awarded a Silver and a Bronze Diploma of the International Championship (International Academy of Sciences and Higher Education, London, UK, 2012). She has published over 300 articles, has been serving as an of 5 editorial boards member.