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ABSTRACTS

Application of lipoprotein apheresis in atherosclerosis and its complications

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Abstract
Dyslipidemias play the key role in determining cardiovascular risk. Statin therapy targeting low density lipoprotein cholesterol provides the relative risk reduction of cardiovascular outcomes of 30%. However because of statin intolerance or hereditary disorders of lipid metabolism some patients fail to achieve optimal level of lipid parameters. In this review, description of modern methods for extracorporeal lipoprotein elimination with their features and limitations are highlighted. With respect to actual results of clinical investigations, implications of lipoprotein apheresis in patients resistant to conservative therapy are described. According to contemporary international guidelines, the indications for lipoprotein apheresis were critically revised.

Keywords: atherosclerosis, coronary heart disease, lipoprotein apheresis, LDL apheresis, hereditary hyperlipidemias, lipoprotein(a).

Fractional flow reserve measurement for decision making in multivessel and diffuse coronary artery disease

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Abstract
Aim. This study was undertaken to evaluate the role of fractional fow reserve (FFR) measurement in the complex diagnosis and treatment of multivessel coronary artery disease (CAD).
Materials and Methods. 162 patients with CAD were randomized into 2 groups: control angiography (n=82) and FFR-control (n=80). Subsequently, each group was divided into deferred and performed percutaneous coronary intervention (PCI) subgroups. In FFR-control group PCI was performed if FFR was less than 0.80.
Results. In the analysis of the primary endpoint (all-cause mortality, cardiovascular death, nonfatal myocardial infarction, revascularization): the survival of patients without major adverse cardiac events (MACE) in the FFR-control group was signifcantly higher by 7.5% than in the angiography-control group, 73 (94.8%) vs. 69 (87.3%), p = 0.04. In the analysis of the secondary endpoint, which included the MACE and relapse or progression of angina was found that the survival rate without angina and MACE of patients in FFR-control group was signifcantly higher by 23.5% than in the angiography-control group, 62 (80.6%), versus 45 (57%), p = 0.0005.

Conclusion. FFR measurement in patients with multivessel disease not only reduces the cost of treatment (reducing the number of stents), with a comparable exposure time and total time of intervention, but also has a positive effect on prognosis in this group of patients.

Keywords: fractional fow reserve, myocardial ischemia, coronary artery, intermediate stenosis, functionally signifcant stenosis, chronic ischemic heart disease, angina

In-hospital outcomes of pharmacoinvasive approach in patients with acute myocardial infarction with ST-segment elevation

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Abstract

Aim. The evaluation of in-hospital outcomes of pharmacoinvasive approach in real practice.

Material and Methods. 90 patients were included in the present study. They were admitted to hospital from February to October 2010 with ST elevation myocardial infarction within 6 hours from the onset of symptoms. All patients received prehospital thrombolytic therapy (TLT). Patients were divided into 2 groups according to TLT results. 38 patients achieved electrocardiography (ECG) confrmed success of TLT within 90 min and formed the facilitated percutaneous coronary intervention (PCI) group. Another 52 patients had not ECG signs of reperfusion after 90 min from the beginning of TLT and they were included to the rescue PCI group. In all patients of both groups PCI was completed by stent implantation.

Results. Generally 52 culprit lesions in the rescue PCI group were treated by 71 stent implantation (1.37±0.63 per patient) and in the facilitated PCI group there were 56 stent implantations (1.47±0.60 per patient) in 38 culprit lesions. PCI with stent implantation has been successfully completed in all cases, so an immediate success in both groups achieved 100%. One day after initial PCI a repeat successful PCI with new stent implantation was performed in 1 patient of the facilitated PCI group due to recurrence of chest pain and diagnosed acute stent thrombosis by follow-up angiography. This re-PCI was performed with monafram (IIb/IIIa GP blocker) support. Another 89 patients after initial PCI were free of symptoms during their stay in the hospital. In most cases Q-wave appeared on ECG despite rapid reperfusion: in 51 from 52 patients of rescue PCI group (98.1 %) and in 30 from 38 patients of facilitated PCI group (78.9%, p=0.004).

Conclusion. In-hospital outcomes were favorable in all patients and they were discharged. So, this pharmacoinvasive approach for the treatment of patients with acute ST-segment elevation myocardial infarction is a promising and relatively safe choice.

Keywords: myocardial infarction with ST segment elevation, thrombolytic therapy, percutaneous coronary intervention, coronary perfusion, facilitated percutaneous coronary intervention, rescue percutaneous coronary intervention.

Relationship of low densities lipoprotein subfractions with triglycerides level in patients with different grade of coronary arteries stenosis

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Abstract
Aim. To determine relationship of low-density lipoprotein (LDL) subfractional profle in patients with normal and elevated triglyceride (TG) levels with different grade of coronary arteries stenosis.
Materials and methods. Patients aged 18-80 years who underwent invasive coronary angiography (n=267; 176 male, 91 female) were included in the study. LDL subfractions were separated and measured using «Lipoprint LDL System».
Results. Patients were divided into two groups according to the degree of coronary artery stenosis: 0-20% or > 70%. Positive correlation between TG levels and LDL3 and LDL4 portions was found: $r=0.35$, $p<0.0001$ and $r=0.25$, $p<0.0001$, respectively. In patients with increased TG levels, irrespectively of coronary arteries stenosis degree, portion of VLDL, IDLC and LDL2 were increased, while portions of IDLA and LDL1 were decreased. Higher portion of small dense pro-atherogenic LDL3 and LDL4 together with elevated TG levels were found only in patients with severe atherosclerosis detected.
Conclusion. The combination of elevated TG levels with higher portion of small dense LDL particles might be regarded as an additional risk factor and/or marker of severe atherosclerosis.

Keywords: lipoprotein, triglyceride, small dense low-density lipoprotein, coronary artery atherosclerosis.

Abdominal aortic calcification in peripheral arterial occlusive disease: risk factors and markers

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Abstract
Aim. The objective of the study was to determine the most signifcant predictors and markers of an abdominal aortic calcifcation in patients with peripheral arterial occlusive disease.
Methods. A total of 193 patients with peripheral arterial occlusive disease were included in the study. The study group included 108 patients with objective signs of an abdominal aortic calcifcation. The control group was presented by 85 patients with peripheral arterial occlusive disease without an abdominal aortic calcifcation. An abdominal aortic calcifcation have been verifed by CT-imaging. Multivariate logistic regression analysis identifed predictors and markers of an abdominal aortic calcifcation. Odd ratios were adjusted for demographics, comorbidities and laboratory values of patients.
Results. Multivariate predictors and markers of abdominal aortic calcifcation included female gender, systolic arterial hypertension, smoking duration, hyperhomocysteinemia, elevated serum C-reactive protein levels, ischemic heart disease, cerebrovascular disease and osteoporosis.
Conclusion. Identifcation of abdominal aortic calcifcation predictors and markers may signifcant infuence on the treatment strategy, short and long-term outcomes in patients with peripheral arterial occlusive disease.

Keywords: calcinosis, abdominal aorta, peripheral arterial occlusive disease, risk factor, marker.