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Cardiovascular risk factors modification and progression of coronary atherosclerosis in patients with coronary artery disease

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Topic(s):
Secondary Prevention

Citation:
Background. The aims of the cardiac rehabilitation and secondary prevention after myocardial revascularization consist of optimized medical therapy and cardiovascular risk factors modification to improve prognosis. However follow-up data on patients after percutaneous coronary interventions or coronary artery bypass graft surgery reveal high frequency of recurrent angina, myocardial infarction and revascularization procedures.

Purpose. To assess the level of cardiovascular risk factors modification and to analyze coronary atherosclerosis progression in patients with coronary artery disease after myocardial revascularization.

Methods. 110 patients with coronary artery disease (89 male) aged 40-86 years old (median 64,5±9,3) were hospitalized for repeated coronary angiography (CAG-2) between February 2015 and August 2018. Information about ambulatory/outpatient care before hospitalization, regularity of medication intake, results of laboratory and instrumental examinations was obtained by patient survey and analyzing previous medical records.

Results. Initial coronary angiography (CAG-1) was performed 24,4±12,9 months ago (6-37 months). At the time of CAG-1 91,8% of patients had severe angina symptoms (III-IV class), 45,5% had regular drug therapy including statins for at least 6 months prior to CAG-1, 40% followed a diet, 53,6% patients were followed up by cardiologist. Target level of LDL was achieved in 20% of patients, blood pressure – in 52,7%. 3-vessel disease were discovered in 77,3% patients, significant narrowings of 2 coronary vessels – in 14,6% patients, left main coronary artery lesion – in 34,6% patients. Myocardial revascularization was performed for all patients after CAG-1, 43,6% of cases with complete revascularization. Reason for repeat CAG in 70% of cases was recurrent angina, in 22,7% - myocardial infarction. At the time of CAG-2 number of patients on regular statins treatment increased by 56,4%, followed a diet - by 30%, achieved target level of blood pressure – by 38,2%, target level of LDL – by 23,5%, patients who regularly observed by a cardiologist by 28,2. Smoking cessation rate was 28,2%. Neither of patients was a participant of any cardiac rehabilitation program. Progression of coronary lesions in native vessels was 60% from CAG-1 to CAG-2; de novo coronary lesions were diagnosed in 31,8%, the combined rate of in-stent restenosis and lesions in coronary grafts was 40,9%.

Conclusion. We discovered a high frequency of recurrent angina, progression of atherosclerosis and restenosis in post-operated coronary arteries. It may be due to poor cardiovascular risk factors modification, patient adherence to treatment. It needs careful analysis of quality of outpatient care. The obtained data once again proves the need to involve all patients after myocardial revascularization in the cardiac rehabilitation programs.