Functional assessments of coronary stenoses in chronic coronary syndrome

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Introduction: Coronary artery disease is a pathological process characterized by the accumulation of atherosclerotic plaques in the epicardial arteries. When chronic coronary syndrome is suspected in a patient with anginal symptoms, it is necessary to assess comorbidities, perform basic tests, biochemical tests, 12-lead ECG, and transthoracic echocardiography. Invasive procedure is performed only if its results lead to a different therapy, i.e. if its goal is to determine the coronary anatomy in a patient who is a candidate for revascularization. A more precise assessment of the lesion can be achieved by quantitative coronary angiography, or by measuring thrombolysis in myocardial infarction TIMI, i.e. the time it takes for the contrast to completely fill artery; while TIMI 1 (minimal filling) or 2 (delayed filling) indicate significant stenosis. Intermediate findings, or findings inconsistent with symptoms, require further workup, including intravascular ultrasound (IVUS), optical coherence tomography (OCT) or functional evaluation of the significance of coronary artery narrowing (FFR, iFR, cRR).[1]

Patients and Methods: We present the results of functional assessment of coronary stenoses found in patients with stable angina pectoris and no evident myocardial ischemia during a one-year period. We evaluated clinical data, 2D quantitative coronary angiography, and functional assessment results in all patients undergoing coronary angiography for stable angina pectoris from October 2021 to October 2022.

Results: Out of 1088 patients who underwent coronary angiography because of stable angina pectoris, invasive functional testing was performed in 98 (9%) of patients. Median percentage of luminal stenosis assessed was 60%. In 98 patients a total of 127 stenoses were analyzed, with 66 (52%) stenoses in the LAD, 22 (17%) in the CxA/marginal/diagonal, and 39 (31%) stenoses in the RCA. All patients had non-hyperemic indices (iFR or cRR) analyzed, with 10 (10%) patients with borderline results requiring additional FFR. Positive iFR or cRR was found in 32 (48%) LAD stenoses, and only 4 (19%) and 9 (24%) stenoses in the CxA/marginal/diagonal and RCA, respectively.

Conclusion: In comparison to the same period in 2019, functional assessment increased significantly from 1.3% to 9%. Functional testing is increasing according to guidelines, and it clearly affects the rates of PCI in chronic coronary syndromes.

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LITERATURE

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