Abstract: P3596

The role of MSCT and SPECT in patients with acute coronary syndromes and non-obstructive coronary artery disease.

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Acute Coronary Syndromes: Myocardial Infarction with Non-obstructive Coronary Arteries

Citation:
Background: Approximately 1–14% of patients with ACS not have obstructive changes in the coronary arteries according to the data of invasive coronary angiography (ICA) is myocardial infarction(AMI) with non-obstructive coronary artery- MINOCA. MSCT has the ability to assess the lumen of the vessel, visualize the artery wall, the structure of the atherosclerotic plaque. SPECT is used to detect myocardial ischemia, determine the functional significance of atherosclerotic plaques, and evaluate regional tissue perfusion. There are no data on a research of a structurally functional condition of a coronary blood-groove by means of MSCT, SPECT.Aim. To study the role of MSCT and SPECT in patients with MINOCA, to compare MSCT with invasive coronarography.Material and methods. The study is registered on ClinicalTrials.gov. Inclusion criteria are listed on the site. All patients underwent CT, SPECT, on the 6th day from the beginning of the index event. All MSCT and SPECT studies were performed on a 64-section combined single-photon-emission and X-ray computer tomograph GE Discovery NM / CT 570C.Endpoint: Frequency of occurrence of atherosclerosis, frequency of occurrence of unstable plaques according to MSCT, the magnitude of a transient defect in myocardial perfusion according to SPECT.

Results. The study included 14 patients with MINOCA, women predominate - 11 (78.6%), the average age was 61.1 ± 14 years. The risk of GRACE was moderate in 8 (57%) pts. 12 (85.7%) pts were hospitalized within the first 6 hours of the onset of the disease. Thrombolytic therapy was performed in 3 (21.4%) pts, 2 of them were effective (14%). 57% of patients at admission were troponin-positive. According to the results of ICA, intact coronary arteries were detected in 9 (64.3%) pts, 5 (35%) had stenosis up to 50%. Coronary slow flow (TIMI 2) was determined in 11 (78.6%) pts, of which 8 (57%) pts have coronary slow flow and intact coronary arteries. Coronary spasm was in 1 (7.1%) patient. According to MSCT, the proportion of pts with intact coronary arteries decreased (9 (64.3%) ? 5 (35.7%)) and the proportion with non-obstructive atherosclerosis increased (5 (35%) ? 9 (64.3%)). All pts had a positive remodeling index, soft-tissue, predominantly calcified stenoses and eccentric plaques. The average Segment Involvement Score was 2.1 (0; 5), the Segment Stenosis Score was -2.4 (1; 3). 12 pts (85%) had transitory perfusion defects. The median SSS values were 7.5 (4; 13), SRS 4.7 (1.0; 9.0), SDS 4.7 (3.0; 8.0). Conclusion. In 78% of pts had a slowing of the coronary blood flow and intact coronary arteries according to ICAG. However, according to MSCT, only 36% of the patients did not have plaques. MSCT allows to identify eccentric soft tissue atherosclerotic plaques that have a high risk of rupture / erosion, and, accordingly, the high risk of the development of AMI in this group. Using SPECT revealed a statistically significant transient perfusion defect.