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Comparative Assessment of Cardiac Parameters in Patients with NSTE- ACS with Neurovegetative Disorders

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Abstract: Acute coronary syndrome (ACS) refers to a group of conditions that include ST-segment elevation myocardial infarction (STEMI), non-ST-segment elevation myocardial infarction (NSTEMI), and unstable angina. It is a type of coronary artery disease (CAD) that causes one-third of all deaths in people over 35. Some forms of CAD may be asymptomatic, but ACS is always symptomatic. Psychosomatics is the transformation of a psychological conflict into a physical (bodily) symptom. For example, a person “does not want to see it” – and his vision deteriorates, or he “cannot hear it” – and his hearing deteriorates. The cause of the disease can also be “frozen” in the body, unexpressed and unprocessed emotions, which gradually turn into a destructive force, causing illness. In acute somatic pathology, for example, in ACS, the opposite situation is formed - the somatic disease and its expected consequences are the generators of psychological conflict (Belyalov F.I., Maltseva L.E., 2010).

Keywords: Myocardial infarction (MI), Unstable angina, ST-elevation myocardial infarction (STEMI), Non-ST elevation myocardial infarction (NSTEMI), Ischemia, Atherosclerosis, Coronary artery disease (CAD), Autonomic nervous system (ANS).

The aim of the work. To study the features of coronary artery lesions depending on the etiopathogenetic risk factors of destabilization of coronary heart disease.

Materials and methods . A total of 114 patients diagnosed with acute coronary syndrome without ST segment elevation (ACS NSTE) were examined at the Samarkand branch of the Republican Scientific Center for Emergency Medical Care (SB RSCEMC) from 2021 to 2024. The average age of patients with ACS NSTE was 62.85±10.06 years. Of these, 55 (48.2%) patients had ACS without ST segment elevation and without neurovegetative disorders and 59 (51.2%) patients had ACS without ST segment elevation with neurovegetative disorders and 30 patients with stable angina who made up a comparable group. All patients gave their written informed consent for inclusion in the study. All patients were explained the purpose and objectives of the study, the potential clinical benefit of prophylactic medication and possible side effects associated with non-compliance with medical recommendations. The study included 35 women and 24 men ACS NSTE c NVN , as well as 19 women and 36 men with NSTE- ACS without NVN .

Results and discussions. For a comparative assessment of cardiac parameters in patients with NSTE - ACS with and without NVI , ECG and echocardiography parameters were studied.

After conducting EchoCG, it can be said that, among patients with ACS NSTE LVEF was statistically

reduced compared to patients with SS. In patients with NSTE-ACS and NVR, LVEF was slightly reduced compared to patients with NSTE -ACS without NVR. And cases with ST segment depression are 20.2 % more common in patients with NSTE -ACS and NVR, in contrast to patients without NVR.

The above data indicate that comorbid conditions such as psychosomatic disorders lead to destabilization of coronary heart disease, in turn, destabilized variants of coronary heart disease can increase the incidence of fatal cases.

ECG – the study was performed on the device «SCHILLER CARDIOVIT AT-2 plus » (Switzerland). All patients in the study groups had ECG registration in 12 leads (3 standard, 3 enhanced, 6 chest leads). In the remote period, ECG research was carried out after 1, 3, 6, 9 and 12 months to assess the effectiveness of treatment, as well as in case of recurrence of angina.

When conducting an ECG study among patients with ACS + NVI, ST segment elevation is 20.2% more common .

One of the objectives of our study was to assess the degree of coronary artery damage in patients with coronary heart disease depending on the presence of NVI. After admission to hospital, patients with acute coronary syndrome without elevation ST diagnostic coronary angiography was performed. To diagnose the localization and extent of coronary artery lesions, we performed coronary angiography by catheterization of the femoral artery (25.2%) and radial artery (74.8%). For this purpose, we examined 92 patients with NSTE-ACS , in 18 patients (19.5%) no hemodynamically significant coronary artery (CA) lesions were detected. Lesions of one CA were detected in 27 (29.34%) patients, lesions of two CAs in 12 (13.04%), three CAs in 16 (17.39%) and more than 3 CAs were detected in 19 (20.65%) patients .

It should be noted that when examining the affected branches of the coronary artery, it was found that the lesion of the anterior interventricular artery (AIVA) was the most common and was detected in 65 (52.4%) patients with NSTE-ACS , lesion of the left coronary artery was found in 12 (31.9%) patients, while lesion of the second coronary artery was found in only 6 (5.2%) patients, lesion of the diagonal branch (DB) was also common and was detected in 46 (33.4%) patients, lesion of the circumflex branch was found in 54 (26.7%) patients, the obtuse marginal branch in 32 (20.8%) patients, and lesion of the posterior interventricular artery in 13 (4.8%) patients .

When distributing the damage to the coronary artery depending on the presence of NVN, we did not identify any reliable data as such, i.e. the localization of the damage to the coronary artery did not depend on the presence of NVN.

Thus, the most vulnerable coronary arteries were the left LA, left coronary artery, diagonal and circumflex arteries.

Conclusion. In our study, when comparing coronary artery lesions among patients with NSTE -ACS with NIH (n=34) and patients with NSTE -ACS without NIH (n=23), significantly more frequent and multiple coronary artery lesions were detected. Thus, among patients with NSTE -ACS and NIH, lesion of the 1st coronary artery occurred in 22 (17.2%) patients, lesion of 2 coronary arteries in 8 (16.1%), lesion of 3 coronary arteries in 4 (10.6%) and lesion of more than 3 coronary arteries in 27 (32.7%) patients. Then, among patients without NIH, lesion of the 1st coronary artery was detected in 16 (17.9%) patients, lesion of 2 coronary arteries in 11 (12.3%) patients, lesion of 3 coronary arteries in 2 (2.2%) patients and lesion of more than 3 coronary arteries was detected in 7 (7.8%) patients, which indicates a direct relationship between atherosclerotic lesions coronary arteries and the development of NVI and requires further consideration to identify the main etiological factors of their relationship.

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