

Miocardial Infarction in Young People

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Abstract: Myocardial infarction (MI) occurs predominantly in the population of middle-aged and elderly people, but in recent years the disease is increasingly developing in people under 45 (often been observed at the age of 25-35) years of age, which is apparently associated with modern lifestyle changes. Due to the tendency towards “rejuvenation” of myocardial infarction, high mortality of patients young people with MI, it is necessary to develop a system of prevention indications for assistance for young patients by informing the population about primary care issues prevention of cardiovascular diseases, as well as increasing the availability of percutaneous coronary interventions and thrombolytic therapy at the regional level.

Myocardial infarction is the death (necrosis) of a section of the heart muscle due to a sudden disruption of blood supply in the coronary arteries. The supply of oxygen to myocardial cells is disrupted when the arteries of the heart, coronary vessels are narrowed or even blocked by atherosclerotic plaques or blood clots. In most cases, vascular accident is caused by plaques - fat deposits on the walls of blood vessels. Most often, they say that myocardial infarction is a consequence of poor lifestyle and stress. The medical literature provides the following factors that predict early heart attack[1-10]:

- ✓ heredity;
- ✓ some diseases, including hypertension, diabetes;
- ✓ viral diseases transmitted on the legs;
- ✓ bad habits (including smoking, alcohol, drugs, especially cocaine);
- ✓ poor nutrition;
- ✓ overweight;
- ✓ low physical activity;
- ✓ stress and (attention) harmful work.

There are five periods in the clinical course of myocardial infarction:

1st period – pre-infarction (prodromal): increased frequency and intensification of angina attacks, which can last several hours, days, weeks;

period 2 – the most acute: from the development of ischemia to the appearance of myocardial necrosis, lasts from 20 minutes to 2 hours;

period 3 – acute: from the formation of necrosis to myomalacia (enzymatic melting of necrotic muscle tissue), duration from 2 to 14 days;

4th period – subacute: initial processes of scar organization, development of granulation tissue in place of necrotic tissue, duration 4-8 weeks;

Period 5 – post-infarction: scar maturation, adaptation of the myocardium to new operating conditions.

Typical cases of myocardial infarction are characterized by extremely intense pain with pain localized in the chest and radiating to the left shoulder, neck, teeth, ear, collarbone, lower jaw, and interscapular area. The nature of the pain can be squeezing, bursting, burning, pressing, sharp (“dagger-like”). The larger the area of myocardial damage, the more severe the pain.

Purpose of the study: Analysis of risk factors, clinical picture and course of infarction myocardium in young people (25-45 years). 15 case histories were retrospectively analyzed patients aged 25 to 45 years (mean age 35 ± 3.7 years) diagnosed with myocardial infarction, who were undergoing inpatient treatment at RSHTYoIM in 2020-2024.

All patients underwent clinical examination: taking anamnesis; inspection; laboratory tests: CBC, TAM, blood glucose, biochemical analysis blood (CPKMB, CPK, troponins, total bilirubin, AST, ALT); instrumental methods ECG examination upon admission and again depending on the clinical situation; echocardiography (EchoCG); X-ray of the chest organs (if indicated).

Research results. 70.2% of patients upon admission to the hospital had a condition of moderate severity, severe – 3.2%. 81.2% of patients had the classic anginal form of MI. As a result of the study, it was revealed that the most common risk factors were: male gender – 72.4%, smoking – 65.9%, obesity – 39.8 and 45.7% of young patients had burdened heredity.

By according to echocardiography, dilatation of the left atrium cavities was noted in the analyzed patients and left ventricle, reduced ejection fraction.

EchoCG indicators Patients with AMI (n=15)

AO	3,64	2.8-3.7 см
LA	3,72	2.4-3.6 см
RV	2,28	1.8- 2.6 см
LV ESD	3,86	To 3.7 см
LV ESD	5,49	To 5.5 см
FV	54,5	55 and more

Note: AO - size of the aorta, LA - size of the left atrium, RV - size of the right ventricle, LV ESD - final systolic size of the left ventricle, LV ESD – final diastolic size of the left ventricle, EF – ejection fraction.

Conclusion. Despite the fact that MI still occurs in young people quite a rare event, in recent years there has been a steady increase in the frequency of its occurrence. In a group at increased risk of early development MI occurs primarily among young men, smokers, people with a hereditary predisposition to the early development of cardiovascular pathology, and those who have problems finding employment. Better understanding causes and mechanisms of development of MI in young patients is a serious medical and a social task.

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