# DIAGNOSIS AND PREVENTION OF MYOCARDIAL INFARCTION

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**Abstract:** This article discusses primary and secondary prevention of heart attacks. The doctor offers a number of methods and techniques. It is important to discuss the correct recommendations for patients during treatment and to eliminate problems that may arise during and after treatment. It also provides recommendations for cardiology professionals interested in teaching medical students these skills and applying them in practice.

**Key words:** myocardial infarction, cardiovascular diseases, cardiology, primary prevention of myocardial infarction, prevention of secondary myocardial infarction.

# MIOKARD INFARKTINING DIAGNOSTIKASI VA OLDINI OLISH

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**Annotatsiya:** Ushbu maqolada yurak xurujining birlamchi va ikkilamchi oldini olish masalasi muhokama qilinadi. Shifokor taklif qiladi qator usullari va texnikalarni. Muhokama qilish ahamiyati to'g'ri davolash davomida bemorlar uchun tavsiyalar davolash paytida va undan keyin yuzaga kelishi mumkin bo'lgan muammolarni bartaraf etish . Shuningdek, tibbiyot talabalariga ushbu ko'nikmalarni o'rgatish va ularni amaliy mashg'ulotlarda qo'llash kardiologiya sohasidagi qiziqqan mutaxassislar uchun tavfsiyalar berish usullari.

**Kalit so'zlar:** yurak xuruji miokard, yurak-qon tomir kasalliklar, kardiologiya, asosiy oldini olish yurak xuruji miokard, ikkinchi darajali miokard infarktning oldini olish..

**Diagnostics:**Pain zones during myocardial infarction: dark red - typical area, light red - other possible areas

View from the back

The prevalence of myocardial infarction among those presenting to emergency departments with chest pain is approximately as follows: 5–10% STEMI, 15–20% NSTEMI, 10% unstable angina, 15% other cardiovascular disease, 50% non-cardiovascular disease diseases. In particular, physicians must rule out other life-threatening conditions such as aortic dissection, pulmonary embolism, and pneumothorax. Chest pain can also be a symptom of other diseases, such as pancreatitis, cholecystitis, chest trauma, and pathologies of the cervical spine.

Typically, myocardial infarction is diagnosed using the following criteria: presence of symptoms, presence or absence of ST-segment elevation on the ECG, elevated troponin levels, detection of a blood clot using angiography or computed tomography

An electrocardiogram measures the electrical activity of the heart: it contracts and produces electrical signals that the ECG machine reproduces on paper. An ECG shows how fast the heart is beating and records the rhythm (steady or irregular). An ECG confirms the diagnosis in approximately 80% of cases. When diagnosing myocardial infarction, an ECG may be done several times.

To determine markers of myocardial damage, the level of cardiac troponin is measured - this protein is not usually found in the blood and is released only during myocardial necrosis and is considered one of the most specific laboratory tools for diagnosing myocardial infarction. Troponin levels begin to rise after 2-3 hours and reach a peak after 24-28 hours.

For diagnosis, imaging is used, that is, a set of methods that help obtain images of the heart. It can be non-invasive (radiography, CT or MRI of the chest, echocardiography) and invasive (angiography). X-rays can help rule out alternative causes of symptoms and check for complications after a heart attack. Using echocardiography (ultrasound of the heart), you can visualize the heart muscle, see how the heart valves pump blood, and assess possible damage.

Coronary angiography helps determine if there is a blockage or narrowing of an artery. During this procedure, the doctor inserts a thin tube (catheter) into the body through a blood vessel in the groin or arm, and through it, a special dye (contrast agent) is used to help locate the blockage or narrowing. The pathology can be immediately corrected by installing a stent - a procedure called percutaneous coronary intervention (PCI).

“Prevention of myocardial infarction” is an important and integral component of a healthy lifestyle. Myocardial infarction (heart attack) is the development of necrosis (death) of the heart muscle due to acute insufficiency of blood flow, in which the

delivery of oxygen to the heart is disrupted. May be accompanied by pain in different parts of the body, loss of consciousness, nausea, sweating and other symptoms. [9]

The main cause of myocardial infarction is blockage of the coronary arteries, which supply the heart with blood and oxygen. When an artery becomes completely or partially blocked, the myocardium - the muscles of the heart - does not receive enough blood and its normal functioning is impaired. It is in such cases that severe and prolonged chest pain occurs, which is one of the main symptoms of myocardial infarction.

However, most cases of myocardial infarction can be prevented if comprehensive preventive measures are implemented. Prevention of myocardial infarction is divided into primary and secondary.

Primary prevention is aimed at preventing a heart attack before it occurs and is carried out in the presence of cardiac problems. Maintaining a healthy lifestyle is of utmost importance. [20]

This prevention strategy places particular emphasis on physical activity. A sedentary lifestyle has a negative impact on the cardiovascular system, while regular moderate exercise helps strengthen the cardiovascular system, improve blood circulation, control weight, reduce stress levels and improve overall body tone. Walking, swimming, biking, dancing are all good options for staying active and taking care of your heart.

Giving up bad habits plays an important role in preventing the development and progression of atherosclerosis, so you should refrain from smoking tobacco. [13] Alcohol consumption also needs to be controlled and its amount limited. Excessive alcohol consumption can harm the heart muscle and other organs, as well as provoke arrhythmia and vascular spasm. Nicotine and other harmful substances contained in tobacco disrupt the functioning of the heart and blood vessels, increase blood pressure and affect metabolic processes in the body. Therefore, giving up these bad habits can significantly reduce the risk of developing myocardial infarction. [5]

Nutrition plays a key role in preventing myocardial infarction. The diet should be rich in nutrients and low in salt, saturated fat and cholesterol. It is recommended to choose fresh vegetables and fruits, healthy fats (such as omega-3 fatty acids found in fish), whole grains, low-fat dairy products and limit consumption of red meat, processed foods and sweets. At the same time, you should limit your salt intake. If you have extrasystole, you should not eat spices, as they can provoke arrhythmia.

Managing stress is an integral part of taking care of your health. Adequate rest and sleep are also important components. Stress and depression can lead to a heart attack because they cause vascular spasm in the heart. For some people, it may be helpful to seek treatment from a psychologist.

To further prevent myocardial infarction, it is especially important to attend medical examinations. It is recommended to undergo medical examination annually. Doctors will be able to monitor all health indicators, conduct the necessary tests and studies, determine the presence of risk factors and offer individual recommendations to prevent myocardial infarction. Regular examinations by a cardiologist are especially important for people over 40 years of age. It is necessary to do an ECG and a lipid profile to monitor the level of cholesterol and its fractions. Blood sugar levels also require monitoring.

Regular monitoring of the patient's condition, blood pressure levels, biochemistry indicators (in particular the level of liver enzymes and lipid profile indicators), changes in ECG, and echocardiography is required. If necessary, daily ECG monitoring is performed. Control of blood pressure is of particular importance, since rupture of an atherosclerotic plaque is often accompanied by high blood pressure. If arterial hypertension is detected, it is necessary to take antihypertensive drugs prescribed by a cardiologist on time and constantly. [12]

Secondary prevention of myocardial infarction is especially important for those who have already had it. The purpose of this prevention is to prevent another heart attack and lasts throughout life.

In addition to the measures used for the primary prevention of heart attack, the constant use of medications is prescribed by the doctor:

- Dual antiplatelet therapy (aspirin and a second antiplatelet agent such as ticagrelor or clopidogrel) for a year after myocardial infarction helps reduce risk.

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