MYOCARDIAL INFARCTION

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ABSTRACT

Myocardial infarction is the necrosis (local death) of the heart muscle layer as a result of blockage of coronary arteries by thrombus or their compression, disruption of blood supply to the heart muscle layer.

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Myocardial infarction is one of the manifestations of ischemic heart disease (IHD) , which is a limited necrosis of the heart muscle and occurs as a result of an acute imbalance between its blood supply and demand. It is based on atherosclerotic erosion of coronary arteries (in most cases), spasm and bleeding into atherosclerotic plaques. Its main cause is atherosclerosis in 95% of cases. The following three situations can lead to the development of acute necrosis in the heart muscles: 1. Arteriosclerosis and spasm of the coronary vessels, which are clearly manifested; 2. The collateral vascular system is not well developed; 3. Due to physical and mental stress, sharp increase in blood pressure and other reasons, a sharp increase in myocardial oxygen demand. Clinical picture. Common symptoms observed in this disease include: Sudden onset of severe, long-lasting (more than 30 minutes) "stabbing" pain behind the sternum (heart area, chest), o fear of death; Sudden cardiac rhythm and conduction disturbances, acute left ventricular failure, collapse or shock. In this case, secondary pain is sometimes not observed at all; Pains in the epigastric area or arms, neck, teeth, lower jaw that are unusual for the patient; Sudden acute deterioration of the patient's condition, heart failure, drop in blood pressure; Changes in the QRS in several branches of the ECG. Absence of these changes in previous ECGs; Unreasonable fever (regardless of its indicators), leukocytosis, ECHT and increase in the amount of CK, AST, ALT, LD G and other enzymes in a patient with CKD. In myocardial infarction (type of angina), manifested by classical pain, in addition to the above symptoms, the patient is covered with cold, sticky sweat and has a feeling of fear of death, a drop in blood pressure, rapid pulse, heart rhythm disturbances, fear irritability, in some cases signs of acute left ventricular failure appear. Strong, pressing, pressing, burning, "wedge-like" pains are located mainly behind the sternum, are transmitted to the left arm, under the shoulder blade, to the jaw, and in most cases last 40-60 minutes, and sometimes hours (status anginosus). Multiple doses of nitroglycerin, long-acting nitrates, and non-narcotic analgesics

are ineffective. Pain usually decreases or disappears after narcotic analgesics. The following types of myocardial infarction are distinguished according to the spread and depth of the necrosis center to the myocardial layers:

Myocardial infarction is divided into:

1. Small focus without Q-wave

- Subendocardial

- Subepicardial

- Intramural

2. With large focus or Q

-Wave - non

-Transmural - transmural

Five stages of the disease are distinguished according to the clinical course

: 1. Prodromal (pre-infarction period) - from several hours to a month, sometimes it may not happen. Clinical signs of unstable angina are observed during this period. In most cases, the ST segment and T wave change on the ECG;

2. Acute period - lasts from 30 minutes to 2 hours. During this period, a clearly manifested pain syndrome (in atypical types, their characteristic clinical signs) is observed;

3. Acute period - lasts 2-14 days (on average 10 days). During this period, clinical symptoms moderate (pain decreases or disappears). In acute and acute periods of the disease, patients may have symptoms of acute heart failure and rhythm disorders;

4. Subacute period - lasts 4-8 weeks after the onset of the disease. Pain symptoms are not observed, but symptoms of chronic heart failure may appear;

5. Scarring (post-myocardial infarction) period - lasts for 3-6 months and more after 8 weeks, when the disease is not complicated, the patient does not report any complaints.

According to the localization of pain, the types of myocardial infarction are typical (pain in the chest area), Atypical (pain in another area). Types of atypical myocardial infarction: 1-Abdominal (pain in the epigastric area) - if the infarction is at the apex of the heart, the pain moves to the epigastric area through the part of the heart touching the diaphragm. 2-Arrhythmic (painless) occurs with a rhythm disorder. 3-Cerebral (pain in the brain) patient has neurological symptoms with strongly developed stroke symptoms.

Objective examination: at the onset of the disease or after 1-1.5 hours, the patient is agitated, there is restlessness in his movements. They often change their position to reduce the pain, sometimes they walk around the room without stopping. On examination, the skin is pale, hands and feet are covered with cold, sticky sweat, cyanosis on the lips. The limits of the heart do not change (if there are no AG and other reasons). During auscultation, the weakening of the I tone at the apex of the heart and the II tone over the aorta, if there are signs of damping in the small blood circulation, the emphasis of the II tone over the pulmonary artery is detected. In the 2nd-3rd hour of the disease, sinus tachycardia is observed due to the activation of the sympatho-adrenal system due to painful stress. In some cases, sinus bradycardia develops due to the activation of the parasympathetic nervous system and the weakening of the automaticity of the sinonasal node. On the 2nd-3rd day of myocardial infarction, the body temperature can rise to 37.2-38°C due to resorption-necrotic syndrome and it remains for 3-4 days. Early and

late complications can be observed in patients with myocardial infarction at different stages of the disease. If these complications are not detected in time and monand help is not provided, they will lead to bad consequences.

Early complications: heart rhythm (fluctuating arrhythmias, extrasystoles, paroxysmal tachycardias, fibrillations) and conduction disturbances (AV blocks), cardiogenic shock, acute heart failure, thromboembolism, thromboendocarditis, acute and chronic aneurysm of the heart, internal and external crack.

Late complications. Complications that occur in the early stages of myocardial infarction mentioned above can also occur in its late stages. In addition, patients with Dressler's syndrome and SYY are observed only in the late period of myocardial infarction. Dressler's syndrome - develops in 2-8 weeks of the disease and is accompanied by pleurisy, pneumonitis, pericarditis. Chronic circulatory insufficiency is manifested in patients with symptoms of dampness in small and large circulation circles.

In myocardial infarction, the following changes are detected in the ECG according to its periods.

1. Area of ischemia - coronary (equal-shouldered, sharp-pointed) T wave (highly positive in myocardial infarction without Q wave and negative - in transmural myocardial infarction);

2. Ischemic damage - the RS-T interval rises above the midline (in transmural myocardial infarction) or falls down (in subendocardial damage to the heart muscle);

3. Area of necrosis - appearance of pathological Q wave (duration more than 30 ms, depth >1/3 -1/4R) decrease in voltage of R wave or QS complex. Also, it is possible to determine the location of the necrosis center depending on the change in one or other sectors observed on the ECG. The figure below shows the dynamics of changes observed in electrocardiography in myocardial infarction.

Changes observed in the ECG during different periods of myocardial infarction (columns 1 and 2 - acute and acute periods; columns 3 and 4 - subacute period; columns 5 and 6 - scarring period)

Treatment: All patients with myocardial infarction are hospitalized in special intensive care units. Treatment measures should be aimed at complete elimination of the pain syndrome, prevention of heart rhythm and conduction disorders, and limitation of the focus of necrosis. To achieve this goal, patients are given thrombolytics (streptokinase, streptodecasa), anticoagulants (heparin, fraxiparin), antiaggregants (aspirin, cardiomagnyl, stasis (clopidogrel), nitrates (nitrosorbide, nitrong, monosan, olicard), beta-blockers (atenolol, egilok, nebilet). , AAFI (berlipril, prendopril, enalapril), antiarrhythmic drugs (cordarone, beta-blockers, allapinin) are prescribed in individual doses depending on the patient's condition. When prescribing, it is necessary to take into account the presence of indications and contraindications.

Prevention: quitting smoking, normalizing body weight, eating a diet low in animal fat, treating hyperglycemia and diabetes, moderating blood uric acid and hypercholesterolemia .

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