

Xolboboyeva Sh. A., Djalaladinova N.
Central Asian Medical University

ISCHEMIC HEART DISEASE DIAGNOSIS, TREATMENT AND PREVENTION METHODS

Abstract. Ischemic heart disease is a cardiac pathology caused by impaired blood supply to the myocardium. Acute manifestations of the disease are infarction, sudden cardiac arrest, in chronic forms there are pains in the heart during physical exertion (angina), shortness of breath (heart failure), arrhythmia. IHD is the leading cause of death in all countries. As a rule, men over 40 years of age suffer from it, in women the manifestations of the disease develop later - after menopause.

Key words: Ischemic heart disease, postinfarction cardiosclerosis, chronic heart failure, nausea and vomiting, shortness of breath, angina.

INTRODUCTION.

Ischemic heart disease (IHD) is a disease caused by insufficient supply of oxygen and nutrients to the heart (myocardium), which occurs due to impaired blood supply to the myocardium due to damage to the coronary arteries. Clinical manifestations of coronary heart disease are varied: from acute manifestations in the form of myocardial infarction or sudden cardiac death to long-term chronic diseases - angina pectoris (periodic chest pain), post-infarction cardiosclerosis, chronic heart failure.

IHD occurs due to atherosclerosis of large (epicardial) coronary (heart) arteries of varying degrees: from a slight narrowing of the lumen in the vessel to its complete blockage by atheroma (cholesterol, fatty)

Among them, IHD is the leader - in 2020, it affects 126 million people worldwide, which is 16% of all deaths. Men are more susceptible to IHD than women. According to WHO, mortality from coronary heart disease is highest in Russia, Ukraine and the USA. According to the latest WHO data published in 2020, deaths from Ischemic Heart Disease in Uzbekistan reached 69,725 or 43.19% of total mortality[1].

Over the past five years, their incidence has increased by 20 percent - even among young people.

Ischemic heart disease is the leading cause of death worldwide. In Russia, about 10 million people suffer from this disease.

It has been established that cardiovascular diseases as the main cause of death are registered in 60.4% of cases, among complications - in 74.7%, among concomitant diseases - in 83.2%.

Other causes of IHD are spasm of the coronary arteries and damage to the microcirculatory bed in the myocardium. In most cases, they also develop against the background of existing atherosclerosis.

The most susceptible groups of the population to developing coronary heart disease (CHD) can be identified: people with high blood pressure, tobacco addicts, high cholesterol, diabetes, chronic kidney disease. Male gender and old age are also risk factors for developing CHD[2].

Symptoms of coronary heart disease are often accompanied by dizziness, nausea, fear of death, and the patient may lose consciousness. Sometimes the disease is asymptomatic and is detected during a routine examination.

One of the forms of CHD is sudden cardiac death. It is usually preceded by loss of consciousness and a squeezing sensation in the left half of the chest.

With myocardial infarction, the clinical picture of an angina attack first develops, but the difference is that the pain is more intense than usual and is not relieved by nitroglycerin and analgesics. Blood pressure drops, the pulse quickens, the skin becomes pale and covered with sticky sweat, sometimes nausea and vomiting appear, the patient loses consciousness[3].

The main etiological factor of coronary heart disease is atherosclerotic lesions of the arteries. Coronary atherosclerosis is a pathological process that manifests itself in the formation of cholesterol plaques on the walls of blood vessels, which leads to their narrowing and deterioration of blood flow with the development of ischemia. With complete closure of the lumen of the artery, myocardial infarction develops - this situation often occurs with a jump in pressure, when the sclerotic vascular wall is damaged and a thrombus forms, which clogs the artery.

More rare causes (no more than 5% of cases) are hereditary anomalies in the structure of the coronary vessels, systemic rheumatological pathologies, severe defects of the heart valves[4]. Doctors also identify factors that predispose to the development of coronary heart disease:

1. Non-modifiable – age, male gender, family history of heart and vascular diseases.
2. Modifiable (those that can be influenced by medication or lifestyle changes) – hypertension, lipid and carbohydrate metabolism disorders, obesity, low physical activity, smoking, alcoholism, unbalanced diet with a predominance of high-calorie foods, stress.

Classification

The following clinical forms of coronary heart disease are distinguished: acute and chronic circulatory failure, painless ischemia, angina pectoris, myocardial infarction, arrhythmia, post-infarction cardiosclerosis, sudden cardiac death.

Chronic coronary heart disease (angina pectoris) has 4 classes according to the severity of clinical manifestations[5]:

- attacks of pain occur with a load exceeding the usual.
- symptoms develop against the background of walking at a fast pace, climbing through the forest or uphill, when overeating, in winter - after going out into the cold.
- pain syndrome is provoked by routine household chores and minor physical activity.
- angina symptoms develop at rest and worsen with minimal physical activity.

In severe cases and the absence of adequate treatment of coronary heart disease, complications arise. Among them:

1. heart valve insufficiency, accompanied by hemodynamic disorders;
2. inflammation of the outer cardiac membrane (pericarditis);
3. aneurysm - dissection of the heart wall, can end in its rupture;
4. cardiogenic shock - a condition in which the contractile function of the heart sharply worsens and the blood supply to vital organs is disrupted;
5. acute and chronic heart failure.

MATERIAL AND METHODS

We monitored 1025 (420 women and 605 men) patients with ischemic heart disease. The following signs were observed in them:

- Attacks of chest pain. They can be burning, pressing, localized in the middle of the chest or in its left half, in the stomach area, between the shoulder blades, and radiate to the lower jaw, neck, upper back and shoulder girdle. The pain syndrome is provoked by physical exertion, emotional experiences, or occurs at rest, more often at night. Usually the pain lasts from 5 to 15 minutes and goes away after rest or taking medications containing nitroglycerin.
- Manifestations of arrhythmia. This may be a "stopping" of the heart, interruptions in its work, rapid heartbeat.
- Shortness of breath. Is a sign of heart failure. The patient experiences a lack of air during movement, in the later stages, suffocation occurs even at rest, especially in a horizontal position of the body, which is why the patient is forced to sleep in a half-sitting position[6]. Then swelling of the lower extremities joins, the face becomes gray, and the lips - bluish.

Patients who are being monitored in dynamics underwent medical control 2 times a year:

1. Laboratory: clinical blood and urine tests, hemostasis, biochemical analysis (sugar, lipid profile, creatinine, urea, liver function indicators, natriuretic peptide - a marker of CHF).

2. Instrumental: electrocardiogram, 24-hour blood pressure and ECG monitoring, chest X-ray, ultrasound of the heart, neck and limb vessels, kidneys and abdominal cavity. Visualization techniques are used (stress echocardiography, myocardial scintigraphy, CT of the coronary arteries), coronary angiography (X-ray assessment of the heart vessels using contrast).

The laboratory-instrumental technique of the national laboratory of the pulmonary artery is used to calculate the blood pressure in the blood vessels of the heart. The 40-year-old patient is required to carry out the menopausal diseases and to perform the necessary tests.

An important element of the therapy of coronary heart disease is considered to be lifestyle correction:

- normalization of weight;
- physical activity of at least 30 minutes a day (at least walking);
- quitting bad habits;
- diet (at least 400 g of vegetables per day, protein in the form of fish 2 times a week and red meat no more than 3 times a week, give preference to low-fat dairy products, add nuts and vegetable fats to food);
- minimization of the consumption of table salt.

Surgical methods of treating coronary heart disease are also used, the essence of which is to restore blood flow in pathologically altered arteries - these are balloon angioplasty, stenting (expanding the lumen of the vessel with a special frame) and bypass (creating a bypass to restore blood supply to the heart muscle below the site of stenosis). The choice of method is made by a vascular surgeon[7].

PREVENTION

Primary Prevention. In 2020 the American Heart Association developed a health prescription called "Life's Simple 7" designed to improve overall cardiovascular health and reduce the risk of cardiovascular disease. These recommendations are outlined below.

- Quit smoking—or better yet, never start. Smoking is considered one of the key risk factors for heart attack.
- Eat less of the foods that add to heart problems, and more of the foods that protect the heart. Aim for an eating plan that's low in saturated fats and trans fats, higher in monounsaturated and polyunsaturated the fats found in olive oil and fish, high in fiber (found in plant foods), and low in salt and sugar.
- Become more active, and stay active, all through life. A good goal is at least 150 minutes (2.5 hours) of moderate exercise each week, or 75 minutes (1.25 hours) of vigorous aerobic exercise each week. Or aim to be active for 30 minutes a day, most days of the week.
- Keep your weight within the normal range on a Body Mass Index (BMI) chart. If you're overweight, losing just 5 percent to 10 percent of your current weight will lower your risk of developing coronary artery disease.
- Find healthy outlets for your stress. Some stress is unavoidable in life. But it tends to push us toward not-so-great habits (overeating, drinking, sitting too much)[8].

Secondary prevention is the therapy to prevent further damage and progress

sion of the disease after the patient has a diagnosis of cardiovascular disease, including coronary artery, cerebrovascular, or peripheral arterial disease. The guidelines are somewhat similar to that of primary prevention, including diet, exercises, and smoking cessation as discussed above. A large part of secondary prevention also includes pharmacological therapy. In contrast to primary prevention, anti-thrombotic therapy (low dose aspirin) is strongly recommended unless contraindicated. The daily strength of 75 mg of clopidogrel is recommended for people who are intolerant or allergic to aspirin.

Blood pressure should be lowered in all patients with coronary artery disease and stage 1 hypertension using both non- pharmacological and pharmacological therapies[9].

Thus, the results of modern population and pharmacoeconomic studies have shown that today coronary heart disease and stable angina in particular are a major medical and social problem.

Despite a significant breakthrough in the treatment of patients with cardiovascular diseases, mortality from coronary heart disease still remains in the leading positions[10]. Angina significantly limits the physical activity of patients, worsens the quality of life.

This determines the relevance of studies devoted to the search for new optimal treatment regimens and a comprehensive approach to an objective assessment of the therapy.

REFERENCES:

1. Arnett DK, Blumenthal RS, Albert MA, Buroker AB, Goldberger ZD, Hahn EJ, Himmelfarb CD, Khera A, Lloyd-Jones D, McEvoy JW, Michos ED, Miedema MD, Muñoz D, Smith SC, Virani SS, Williams KA, Yeboah J, Ziaeian B. 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*. 2019 Sep 10;140(11):e596-e646.
2. Грацианский, Н.А. Лечение и предупреждение обострений ишемической болезни сердца (острых коронарных синдромов) / Н.А. Грацианский // Международный журнал медицинской практики. 2000. - №11. - С. 4455.
3. Карпов, Ю.А. Стабильная ишемическая болезнь сердца: стратегия и тактика лечения / Ю.А. Карпов, Е.В. Сорокин М.: Реафарм. - 2003. - 256 с.
4. Пшеничников, И. Безболевая ишемия миокарда у больных ишемической болезнью сердца в оценке тяжести заболевания / И. Пшеничников, Т. Ши-пилова, А. Удрас // Терапевтический архив. 1994. — №9. - С. 21-24.
5. Ford TJ, Corcoran D, Berry C. Stable coronary syndromes: pathophysiology, diagnostic advances and therapeutic need. *Heart*. 2018 Feb;104(4):284-292.
6. Ильинский Б. В. — ИБС и наследственность. — Л.: Медицина, 1985. — 176 с
7. Поллок М. Л. Шмидт Д. Х. — Заболевания сердца и реабилитация. — Киев. Олимпийская литература, 2000. — 408 с.
8. Kleiger, R.E. Decrease heart rate variability and its association with increased mortality after acute myocardial infarction / R.E. Kleiger // *Am. J. Cardiol*. 1987. - Vol. 59. P. 256-262.
9. Nihoyannopoulos, P. Magnitude of myocardial dysfunction is greater in painful than in painless myocardial ischemia: an exercise echocardiographic study / P. Nihoyannopoulos, A. Marsonis, J. Joshi // *J. Am. Coll. Cardiol*. -1995.-Vol. 25.-P. 1507-1512.
10. Singh, B.N. Impact of heart rate on cardiovascular disorders: focus on chronic stable angina / B.N. Singh // London: Science Press Ltd. 2004. - P. 25-36.