ATHEROSCLEROSIS: CAUSES, SYMPTOMS, DIAGNOSIS, TREATMENT AND PREVENTION

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Abstract. This article describes in detail the symptoms and signs of atherosclerosis, one of the cardiovascular diseases, causes of atherosclerosis, types of atherosclerosis, atherosclerosis and diabetes, stages of development, diagnosis of atherosclerosis, modern treatment methods, prevention of atherosclerosis.

Keywords: atherosclerosis causes, atherosclerosis types, atherosclerosis and diabetes, stages of development, atherosclerosis diagnosis, modern treatment methods, atherosclerosis prevention.

АТЕРОСКЛЕРОЗ: ПРИЧИНЫ, СИМПТОМЫ, ДИАГНОСТИКА, ЛЕЧЕНИЕ И ПРОФИЛАКТИКА

Аннотация. В данной статье подробно описаны симптомы и признаки атеросклероза, одного из сердечно-сосудистых заболеваний, причины возникновения атеросклероза, виды атеросклероза, атеросклероза и сахарного диабета, стадии развития, диагностика атеросклероза, современные методы лечения, профилактика атеросклероза.

Ключевые слова: причины атеросклероза, виды атеросклероза, атеросклероз и сахарный диабет, стадии развития, диагностика атеросклероза, современные методы лечения, профилактика атеросклероза.

INTRODUCTION

What is atherosclerosis?

Atherosclerosis is a chronic disease of blood vessels, in which cholesterol and low-density lipoproteins (low-density lipoproteins) accumulate in the inner wall of the vessels in the form of plaques and plaques, and the walls themselves become thicker and lose their elasticity. Due to the accumulation of fat and deposits, the blood vessel walls harden, lose their elasticity and eventually narrow, which makes it difficult for blood to flow to the organs. Eventually, the blood vessel may become completely blocked. If this disease is accompanied by blood coagulation disorders, the susceptibility to thrombosis and ischemic damage to organs increases.

MATERIALS AND METHODS

Atherosclerosis is one of the most dangerous diseases leading to death. The disease is often diagnosed after the blood circulation in the brain, heart, limbs has been disturbed, that is, late. Atherosclerosis is the main cause of cardiovascular diseases: ischemic heart disease and myocardial infarction.

The number of people with atherosclerosis increases with age, that is, this disease is more common in old people. Therefore, doctors consider it a disease of old age, but the disease is getting younger every year, which is related to the modern lifestyle.

Symptoms and signs of atherosclerosis

Atherosclerosis is a systemic disease that usually affects all major blood vessels of the body. Based on this, the symptoms are also different. Mainly heart, brain, legs suffer. Symptoms are specific, but atherosclerosis is not so obvious that it can be diagnosed without additional methods.

Its symptoms depend on which organ suffers more from lack of blood circulation. In any form of atherosclerosis, two symptomatic periods are distinguished. In the pre-clinical period, the process is just beginning, so a specific manifestation of the disease is not observed. The main problems related to the blood supply and functioning of the organs begin when more than half of the arterial space is closed.

Pain in the heart is manifested in 75% of cases. Atherosclerosis affects the coronary vessels and impairs the delivery of oxygen and nutrients to the myocardium. The heart is one of the organs that is very sensitive to changes in the intensity of nutrition. Only the brain surpasses it in this respect. Symptoms of the disease develop immediately, it is important to correctly interpret the patient's feelings.

Atherosclerosis of coronary arteries

Violation of normal blood circulation in the heart is manifested by angina pectoris syndrome. Symptoms occur periodically and include:

1. Pain in the chest area. There is a pressing, persistent, increasing or burning sensation (these are typical symptoms of an ischemic process). The pain spreads to the shoulder blade, left shoulder, wrist and fingers (along the entire length of the circulatory system);
2. A feeling of pressure in the chest (as if a heavy load was placed on the chest);
3. Painful sensations during breathing (also during exhalation);
4. Respiratory disorders.
5. Angina is paroxysmal (with attacks) as a feature of atherosclerosis. During attacks, there is instability in the level of blood pressure.
6. In rare cases, atherosclerosis of the coronary vessels is manifested by the following symptoms:
7. Pain in the left lower jaw, ear, neck;
8. Pain in the shoulders;
9. Feeling of weakness in the arms and legs;
10. A feeling of chills, sweating and varaja (skin tingling);
11. Tachycardia or bradycardia (heart rhythm disorder);
12. Vomiting and nausea;
13. Confusion or short-term loss of consciousness.
14. The intensity and periodicity of symptoms directly depends on the level of tension of the body (stress, overeating, abuse of psychoactive substances, etc.).

RESULTS

Causes of atherosclerosis

The causes of the development of atherosclerosis are factors such as high blood pressure, smoking, diabetes, and high cholesterol in the blood. But the main cause of atherosclerosis is a disorder of cholesterol metabolism. The formation of atherosclerosis is a natural process that begins at the age of 10-15. With age, its formation can slow down or speed up.

The following risk factors are distinguished for atherosclerosis:

Sex. Men are more prone to developing atherosclerosis than women. The first symptoms of this pathology can begin at the age of 45 or even earlier, and in women it can be observed after the age of 55. Perhaps this is due to the active participation of estrogens in the metabolism of cholesterol and low- and very low-density lipoproteins;

Young. This is a natural risk factor. Atherosclerotic processes increase with age;

Heredity. Of course, this is one of the causes of atherosclerosis. Factors causing atherosclerosis are multifaceted. Therefore, the level of the hormonal background, hereditary dyslipoproteinemia (disruption of the plasma lipid profile), and the activity of the immune system play an important role in accelerating or slowing down the development of atherosclerosis;

Harmful habits. Smoking is a poison for the body. This habit is another reason for the development of atherosclerosis. If you want healthy blood vessels - stop smoking! As for alcohol, there is an interesting connection: a small amount of alcohol - 50 grams of vodka, 100 grams of wine or 0.5 liters of beer every day is a good way to prevent atherosclerosis. At the same time, this amount contributes to the development of liver cirrhosis. Thus, we treat one and injure the other. In general, it is not recommended to consume alcohol even in very small quantities, which guarantees the development of a number of pathologies;

Excess weight. This factor increases the likelihood of atherosclerosis. Obesity can lead to diabetes, and this pathology is a direct path to atherosclerosis;

Malnutrition. Fatty, harmful foods are the main risk factor. Eating is a very important physiological process in our life. Our future health will depend on how useful the products are. Very few people know, but all diets other than a healthy and balanced diet are not approved by the World Food Hygiene Council. Eating should be appropriate and reasonable based on your needs and energy expenditure.

The average life expectancy in Japan is 84 years, and in Uzbekistan it is about 68.5 years. What is the difference? The answer is simple: look at the diet of Japanese and other eastern peoples. Their diet includes a variety of grains, vegetables, herbs, legumes, and fresh fish. Every day, the Tokyo market is flooded with seafood containing valuable fatty acids. What do they do to cure the disease, if they can prevent it. To thank yourself in old age, start eating right from a young age.

Types of atherosclerosis

- Atherosclerosis of heart vessels (coronary arteries). Stimulates the development of ischemic heart disease, angina pectoris and infarction;
- Aortic form. The aorta is the largest artery in the body. Its damage with atherosclerosis significantly affects all organs and systems;
- Atherosclerosis of renal vessels. Lack of blood circulation causes kidney dysfunction and severe arterial hypertension;
- Atherosclerosis of blood vessels supplying the brain;
- Atherosclerosis of the veins of legs and arms.
- Forms of the disease can appear independently, but often occur systematically.

Atherosclerosis and diabetes disease

Cholesterol takes an active part in the synthesis of digestive juice and hormones of the pancreas, and although it is not the cause of the development of diabetes, it has a significant effect on its course.

Diabetes increases the risk of atherosclerosis of blood vessels (the probability of development increases by half). In addition, atherosclerosis of vessels aggravates diabetes. The risk of developing atherosclerosis in the presence of diabetes is determined equally in men and women (if there is no diabetes, men often suffer).

Diabetes, in turn, seriously complicates the course of atherosclerosis:

- Atherosclerosis can appear at a young age in patients with diabetes. Usually, the disease develops after 45-50 years of age.
- Aneurysms are more likely to appear;
- The veins are not only closed, but also become very thin, which increases the probability of a stroke;
- This process will have a systemic nature affecting the heart, brain and limbs.

Atherosclerosis begins in both type 1 and type 2 diabetes. Diabetes is associated with disorders of digestion and lipid metabolism, which causes normal metabolism to stop. The walls of blood vessels become extremely permeable to fat fractions, and a lot of "bad cholesterol" enters the bloodstream. Fat gradually accumulates on the walls of large arteries and closes the vessel space.

Over time, fat layers are covered with connective tissue and crystallized under the influence of calcium deposits. This structure turns into a "stone" and the artery space is further closed. The artery becomes brittle and loses its permeability. As a result, blood circulation disorders, ischemia, vessel rupture and necrosis are observed in the affected area.

Patients with diabetes are 4 times more likely to suffer from cardiovascular diseases such as hypertension, ischemic heart disease and angina pectoris. In addition, diabetics are almost seven times more likely to develop necrosis (gangrene) of the legs along with atherosclerosis. These factors should be considered in treatment.

What is dangerous with atherosclerosis? Stages of development

According to statistics, atherosclerosis is the most common disease of the cardiovascular system and the main cause of death of most patients worldwide. Atherosclerosis is variable, and despite the fact that the essence of the disease is the narrowing or blocking of the space of blood vessels, it significantly affects the whole body. Lack of circulation affects the heart, brain, abdominal organs, legs and arms (rarely). Violation of blood circulation in arteries also affects small blood vessels, which causes secondary ischemia.

DISCUSSION

It is very easy to diagnose past atherosclerosis. Determining the location of the process and determining the center of damage is a difficult issue. A lot of work needs to be done for this. Only an experienced doctor can perform such a difficult task.

Initial view

- In addition to functional tests aimed at assessing the level of blood supply to the limbs, an experienced doctor pays attention to the following factors:
- Loss of hair on the legs;
- Sudden loss of body weight;

- Heart murmurs, increased blood pressure, heart rhythm disturbances;
- Hyperfunction of sweat and sebaceous glands;
- Deformation of nails;
- The presence of persistent edema even in the absence of kidney disease.

Modern treatment methods

Usually, in 80% of cases, drug treatment is enough to eliminate the cause of atherosclerosis and its harmful effects. Treatment with special drugs is combined with the appointment of an optimal regimen of diet and physical activity.

Among anti-atherosclerosis drugs, several groups of drugs can be distinguished:

Statins. The most popular statin drugs are still used. Their effect is to suppress the liver's activity of cholesterol production. In parallel with statins, patients with atherosclerosis are prescribed drugs that support the heart and digestive system (because statins have the most negative effect on these organs). The influential scientists and specialists of the modern medical world question the benefits of statins, as well as the role of cholesterol in the development of atherosclerosis.

Bile acid sequestrants. Significantly reduces the function of bile acid synthesis of the liver. As a result, the body needs to spend more cholesterol for normal and stable digestion. Long-term use can cause disturbances in the digestive system. It is prescribed at the initial stage of the disease or to prevent pathology;

Fibrates. It breaks down neutral fatty structures - triglycerides. Sufficiently effective in the fight against atherosclerosis, but it is strictly contraindicated for people with liver problems;

Nicotinic acid preparations. Despite the fact that they do not fight cholesterol, they have a vasodilating and spasmolytic effect. They are used together with other drugs and constitute an important part of drug therapy. However, nicotine is contraindicated for people with diabetes, liver and gall bladder disease. Instead of them, other vasodilator and spasmolytic drugs are prescribed.

Conservative treatment also includes physiotherapy. This method is indicated for people suffering from atherosclerosis of the ends of the body.

CONCLUSIONS

Prevention of atherosclerosis

First of all, it is necessary to quit smoking, regulate weight, make certain restrictions on eating, and increase physical activity.

In order to support the body and prevent atherosclerosis, it is necessary to eat less foods containing salt and cholesterol. Eat more cereals, vegetables, boiled fish, yogurt, sunflower oil and, of course, any fruits.

Body weight regulation is a necessary measure in atherosclerosis, because obesity causes vascular complications and is characterized by lipid metabolism disorders. Low-calorie diets with optimal fat content and physical activity are recommended for weight loss;

Physical activity should be increased taking into account the general state of health and age. It can be started with the safest type of physical activity - walking. Classes should be at least three to four times a week for 35-40 minutes.

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