EFFECT OF PHYSICAL ACTIVITY ON CARDIOVASCULAR DISEASES

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Introduction. Cardiovascular diseases (CVD) are some of the serious problems of modern mankind. Annually, according to WHO, CVD causes death of 17.4 million people worldwide. The development of CVD occurs gradually and is caused by certain risk factors, such as smoking, excessive consumption of alcoholic beverages, obesity, blood pressure and lack of proper physical activity (PA) or lack of exercise. The latter entails a disturbance of the circulatory functions (stroke, myocardial infarction), thromboembolism, a decrease in muscle strength and endurance, impaired coordination of movements, increased heart rate (tachycardia), etc.

Aim. Analyze the effectof physical activity on cardiovascular diseases .

Materials and methods. For the study, materials from the WHO Information Bulletin «Physical activity and Sport» were used in February, 2017; The Global Plan of Action for the Prevention and Control of non-communicable Diseases, nutrition and PA; Global recommendations on physical activity for health.

Resultsand discussion. According to WHO, physical inactivity accounts for 25% of breast and colon cancer cases, 27% of cases of diabetes and more than 30% of CVD cases, and 5.2 million deaths a year. The main problem of reducing the FA is the use of passive mode of transport, a sedentary lifestyle, computerization and labor automation. According to the British Heart Foundation, only 40% of women and 28% of men comply with recommendations for FA. Reduction of FA annually causes 14% of cases of myocardial infarction, 12% of cases of coronary heart disease and 10% of cases of tachycardia. According to the studies of the American Heart Association, the proper implementation of FA reduces the risk of developing CVD by 45%, and in patients who have had a heart attack, reduces the risk of recurrent myocardial infarction by 8 times, and reduces the death rate by 6 times.

Over time, due to the absence of FA, bone mass decreases, this phenomenon leads to pathological changes in the bone tissue of the joints and spine, a decrease in lung volume and pulmonary ventilation, weakening of arteries and veins tone, lowering of arterial pressure, deterioration of oxygen flow in tissues. And also the absence of FA on the formation of calcium salts in soft tissues or organs, which leads to the development of calcification and obturation (clogging of blood vessels).

With FA increases the concentration of lactic acid in the blood, with which muscle fatigue is associated. Systematic studies of FA lead to the expansion of the blood vessels of the heart, as well as to an increase in coronary blood flow, so that people engaged in FA spend less blood to work the heart than physically inactive. In the prevention of CVD, FA normalizes fat metabolism and maintains it at the optimal level, reduces platelet clumping and prevents the formation of thrombi due to which it is possible to avoid the development of atherosclerosis, which in turn contributes to the risk of coronary heart disease.

The minimum threshold of FA, which will help reduce the risk of death from CVD, is at the level of 2.5 hours per week. One of the most significant effects that is present in performing regular physical activity is an increase in the concentration in the vascular wall of nitric oxide at the molecular level. Nitric oxide is responsible for the result of the process of isolation from the mast cells of histamine and heparin, which help to expand the lumen of the vessels. Heparin in the form of a drug, in turn, is used to the therapy and prophylaxis of thromboembolic diseases, for operations on the heart and blood vessels, and for preventing the clotting of blood in laboratory studies.

With regular muscle, load increases blood flow and improves contractility of the heart muscle, and develops collateral blood circulation, which is directly related to the great plasticity of the blood vessels and the uninterrupted blood supply of organs and tissues. The positive and protective effect of training on the cardiovascular system occurs through the endothelium, autonomic nervous system, blood coagulation system, and through anti-inflammatory action.

Conclusions. Regular FA helps to reduce the risk of CVD, and improves the health of patients suffering from various pathologies. Therefore, it is necessary to develop programs to introduce FA in the everyday way of life of the population, as well as to conduct special activities in the workplaces that contribute to the development of FA taking into account the recommendations of the WHO on FA for human health.