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The Functional State Of The Body With Vascular Dysfunction On The Background Of Regular Physical Exertion.

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ABSTRACT

The functional state of the vascular wall is very important to ensure the functioning of the body. The optimum of its parameters guarantees normal rheological blood parameters, and, consequently, a sufficient level of trophism of all tissues. The development of vascular disorders always leads to the development of dysfunctions and pathologies, often life-threatening. A striking example of vascular pathology in humans is myocardial infarction. Its widespread prevalence and high health risks dictate the need for a further search for approaches for the effective rehabilitation of such patients. Most researchers are inclined to believe that in order to slow down this process there should be dosed exercise. Such patients require an individual motor mode, which should contribute to the more rapid development of reparative processes in the necrosis zone, the appearance of collateral circulation, the restoration and stabilization of hemodynamic parameters. Rational physical activity can cause functionally beneficial adjustment in various body systems. Their characteristics and degree depend on the power, the nature of motor activity of the initial level of health and fitness. The severity of changes in vascular functions in response to physical activity depends on the individual characteristics of a person's health. Early motor activation of such patients shortens the period of their hospitalization and reduces the risk of death. Individualized activation of muscular loads is the key to successful physical rehabilitation of post-infarction patients at all stages of their recovery.

Keywords: health, cardiovascular system, infarction, physical activity, rehabilitation.

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INTRODUCTION

The functional state of the vascular wall is very important to ensure the functioning of the body. The optimum of its parameters guarantees normal rheological blood parameters, and, consequently, a sufficient level of trophism of all tissues [1]. At the same time, the development of vascular disorders always leads to the development of dysfunctions and pathologies, often life-threatening [2].

A striking example of vascular pathology in humans is myocardial infarction. Its widespread prevalence and high health risks dictate the need for a further search for approaches for the effective rehabilitation of such patients. Most researchers are inclined to believe that dosed physical loads should be widely used for the success of this process [3]. This is determined by the fact that hypodynamia in these patients greatly impairs overall hemodynamics, does not contribute to the development of coronary collaterals, worsens metabolic processes in the myocardium, reduces the intensity of reparative processes in it, and, consequently, lowers the reserve capacity of patients [4-6]. For such patients, an individual active motor regimen is needed, which should contribute to the more rapid development of reparative processes in the necrosis zone, the appearance of collateral circulation, and the restoration of hemodynamic parameters. However, it should not create an excessive load on the myocardium, not cause its ischemia [7]. In this regard, the goal was set in the work: to consider aspects of the health effects of physical exertion on the body of vascular patients [8].

Basics of physical activity in myocardial infarction

For people who have suffered a myocardial infarction, optimization of the motor mode becomes extremely important. Due to the fact that the heart muscle in the area of necrosis undergoes myomalacia, against the background of which scar tissue begins to form, too early and excessive physical exertion, causing increased heart function and an increase in intraventricular pressure, can trigger the development of myocardial aneurysm and even its rupture [9, 10].

However, physical exertion during infarction cannot be completely excluded either, since hypodynamia leads to worsening of the general hemodynamics and metabolic processes occurring in the myocardium, which reduces the intensity of reparative processes and slows the formation of scar tissue in the necrosis zone. Given this, dosing of physical activity plays a very important role in the rehabilitation process of a person who has suffered a heart attack [11,12].

The process of physical rehabilitation of such patients should be gradual and mandatory under the supervision of physicians. It should begin in stationary conditions, and then it can be continued in a sanatorium or in a clinic [13].

The first exercise that a person who has suffered a heart attack can perform is walking, the duration of which at the first stage of the rehabilitation process should not exceed 5 minutes per day. It should be remembered that during exercise the patient should monitor blood pressure and pulse [14-16]. The duration of the walk should be gradually increased, and by the 6th week after a heart attack the patient can be allowed to walk for about 30 minutes. In this case, the rest of the time a person is obliged to spend in bed [17]. In the future, physical exercises should be aimed at saturating the patient's body with oxygen [18,19]. Approximately 6 months after suffering a heart attack, the patient can be allowed to go swimming, work on a stationary bike and walk on a treadmill. The intensity of physical activity in this case strongly depends on the age of the patient, the initial state of his health and the extensiveness of the tolerated heart attack [20-22].

Features of walking after myocardial infarction

Regular walking after myocardial infarction increases vitality. Thus, the earliest possible, reasonable and dosed activation is necessary. This provides effective preparation for returning the patient to normal life [23]. Dosed loads, and in particular, walking after a myocardial infarction, help reduce the risk of death from recurrent myocardial infarction by about 25% [24-26].

Stages of recovery of physical activity

The inpatient stage of rehabilitation for post-infarction patients consists in preparing the patient for self-care. He should independently go out into the corridor, walk at a slow pace up to 200 meters, possibly in several steps (70 steps per minute) [27]. The main condition is that such walking after myocardial infarction does not cause unpleasant painful sensations. Under the control of a physiotherapy instructor, the patient masters climbing the stairs, first on a span and then on one floor [28]. Then the patient is prepared for dosed walking up to 900 meters in several steps at a pace of 70-80 steps per minute. The first walk is conducted under the supervision of an instructor. The distance is gradually increasing to 1-1.5 km, 2 times a day. Then, up to 2-3 km per day in several stages at a pace of walking - up to 100 steps/min [29].

At the sanatorium stage after myocardial infarction, dosed walking along the corridor and walking along the stairs are combined with the start of training on the exercise bike [30,31]. In sanatoriums, dosed walking often takes place in the form of a terrenkur - alternating walking on a flat surface and walking on rough terrain with ups and downs. Often, special individual routes are laid of known length and complexity, which pass through beautiful places in order to add to the treatment of positive emotions [32].

At the outpatient stage, there is a gradual increase in the duration of physical exertion [33]. Contraindications to this are not only left ventricular aneurysm, frequent attacks of angina, serious heart rhythm disturbances. At this time, the amount of physical activity given to the patient is determined taking into account the four functional classes to which he may belong [34].

First grade. Patients who do not experience discomfort when running, walking at a fast pace, when climbing to the 5th and higher floors [35-37]. They are given great physical exertion.

Second class. Patients have some limitations on physical activity. They are allowed to walk and walk to the 5th floor, as well as short and non-intensive runs [38].

Third class. Patients are forced to significantly limit physical activity. They are individually allowed to walk after a myocardial infarction with load limitations and only at a pace of up to 100-120 steps per minute. Climbing the stairs is allowed only on 2-3 floors [39,40].

Fourth grade. For such patients, pain is characteristic of any physical activity. They are allowed only a leisurely walk with stops at their request [41].

CONCLUSION

Rational physical activity can cause functionally beneficial restructuring in the vascular system of the body. Their characteristics and power depend on the initial level of health and fitness. The effect of physical exertion on a person should be judged only on the basis of a comprehensive account of the reactions of the whole organism. The severity of changes in body functions in response to physical activity is highly dependent on the characteristics of the human vascular system. Their regular rational use ensures the achievement of a positive effect in patients after myocardial infarction. Early motor activation of such patients contributes to the development of collateral circulation, has a beneficial effect on their physical and mental condition. It shortens the hospitalization period and reduces the risk of death. Individualized activation of muscular loads is the key to successful physical rehabilitation of post-infarction patients at all stages of their recovery.

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