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Features Of Physical Rehabilitation After Myocardial Infarction.

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ABSTRACT

In the process of rehabilitation after suffering myocardial infarction, it is necessary to rationally increase the motor activity of patients. Since the muscle of the heart in the area of necrosis undergoes myomalacia, and the formation of scar tissue is slow, excessive and too early exercise is extremely undesirable. It is fraught with the progression of myocardial ischemia and the risk of myocardial aneurysm, threatening its rupture. For this reason, the use of individually selected motor mode is necessary in optimal time. This contributes to the optimal development of reparative processes in the area of necrosis, the appearance of collateral circulation, stabilization of hemodynamic parameters. All this is possible with a reasonable dosage of physical activity. The impact of physical stress on a patient after a stroke can be judged on the basis of a comprehensive account of the dynamics of the parameters of his body, including the reaction of the central nervous system, cardiovascular system, respiratory system and metabolism. The severity of changes in body functions after myocardial infarction in response to exercise depends largely on the individual characteristics of a person and the initial level of his fitness. Optimum motor activation of post-infarction patients helps them optimize the blood supply to the tissues, has a beneficial effect on their physical and mental condition, shortens the period of hospitalization and reduces the risk of death in the near future.

Keywords: heart attack, pathology, health, rehabilitation, exercise.

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INTRODUCTION

The process of ontogenesis of the organism is often accompanied by the development of various dysfunctions [1, 2, 3], and sometimes pronounced pathology [4, 5]. This is true for all species of mammals and humans [6, 7]. Very often, a person has vascular diseases based on atherosclerosis [8, 9]. Damage of heart vessels leads to coronary heart disease, often causing myocardial infarction [10].

It is known that after myocardial infarction rehabilitation should be based on a rational motor mode. Since the muscle of the heart in the area of necrosis undergoes myomalacia and then scar tissue forms, excessive and too early exercise, leading to increased heart function, increased ventricular pressure, is fraught with not only myocardial ischemia, but also the risk of myocardial aneurysm [11, 12].

On the other hand, hypodynamia in post-infarction patients also impairs overall hemodynamics, inhibits the development of coronary collaterals, and disrupts metabolic processes in the myocardium. It reduces the intensity of reparative processes in it and slows down the formation of scar tissue in the area of necrosis [13-17].

In this regard, the basis for the rational rehabilitation of patients after myocardial infarction are events with individual motor regimen. They should contribute to more rapid development of reparative processes in the area of necrosis, the emergence and development of collateral circulation with the exception of excessive stress on the myocardium [18, 19]. Given the difficulty in solving this problem in practice, the goal was set in the work: to consider the basics of physical rehabilitation after myocardial infarction.

FEATURES OF PHYSICAL ACTIVITY FOR MYOCARDIAL INFARCTION

For people who have suffered a myocardial infarction, rational motor mode is extremely important. Due to the fact that the cardiac muscle in the area of necrosis undergoes myomalacia, and only after that the scar tissue begins to form [20], too early and excessive physical exertion, causing increased heart function and an increase in intraventricular pressure, can provoke not only myocardial ischemia, but also carries the risk of myocardial aneurysm and even its rupture [21, 22].

However, it is also impossible to completely exclude physical stress during a heart attack, since hypodynamia leads to a worsening of the general hemodynamics and negatively affects the metabolic processes occurring in the myocardium. This reduces the intensity of reparative processes and slows the formation of scar tissue in the area of necrosis [23]. Given this, dosing of physical activity plays a very important role in the rehabilitation process of a person who has suffered a heart attack [24].

The process of physical rehabilitation of this category of patients should be gradual and necessarily take place under the supervision of physicians. The process of rehabilitation of the patient should begin in a hospital, and then can be continued in a sanatorium and in polyclinic conditions [25, 26].

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 [27]. It should be remembered that during exercise the patient should monitor blood pressure and pulse [28]. The duration of the walk should be gradually increased, and by the 6th week after a heart attack the patient is allowed to walk about 30 minutes a day [29]. In this case, the rest of the time a person is obliged to spend in bed [30].

In the future, the intensity of physical exercises, which should be aimed at saturating the body of a patient with oxygen, should be gradually increased. 6 months after suffering a heart attack, the patient may be allowed to go swimming, work on a stationary bike and walk on a treadmill [31]. The intensity of physical exertion also depends on the age of the person who suffered a heart attack, the state of his health, and on what type of heart attack he suffered [32].

THE BASICS OF POSTINFARCTION WALKING

Dosed walking after myocardial infarction can save lives. The physical activity of the patient of the acute cardiology department must be rational. Early activation of the patient is necessary to prepare him for a

return to normal life. Dosed loads, and in particular, walking after myocardial infarction, help reduce the risk of death from recurrent myocardial infarction by about 25% [33].

STAGES OF RECOVERY OF PHYSICAL ACTIVITY AFTER MYOCARDIAL INFARCTION

The inpatient (hospital) stage - the patient is prepared for self-service - he should go out into the corridor on his own, walk at a slow pace up to 200 meters, possibly in several steps (70 steps per minute). The main condition is that such walking after myocardial infarction does not cause unpleasant painful sensations. Under the supervision of the physiotherapy instructor, the patient masters climbing the stairs, first on a span and then on one floor. Subsequently, the patient prepares 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 pace of walking and the distance are increased gradually up to 1-1.5 km up to 2 times a day and then up to 2-3 km per day in several steps at a pace of walking up to 100 steps / min [34].

At the sanatorium stage, dosed walking after myocardial infarction and walking up the stairs continue with the connection of exercises on a general-purpose simulator (exercise bike). In sanatoriums, dosed walking often takes place in the form of a terrenkur - alternation of walking on a flat surface and over rough terrain with ups and downs. Special routes are laid of known length and complexity, preferably in beautiful places, which adds to the treatment the effect of positive emotions [35-37].

Outpatient stage - the gradual introduction of prolonged physical exertion, after a heart attack should go through 3-4 months. Contraindications: left ventricular aneurysm, frequent strokes of tension and rest, severe heart rhythm disturbances [38, 39].

DOSAGE OF PHYSICAL ACTIVITY, TAKING INTO ACCOUNT FUNCTIONAL CLASSES

Physical exercise - physical therapy, walking after a myocardial infarction should not cause unpleasant sensations in a patient - pain, shortness of breath, dizziness, so it is used in doses, taking into account the limitations that the post-infarction period makes for each patient individually. There are four functional classes of gravity of this period [40,41].

First grade. Patients who do not experience discomfort when running, walking at a fast pace, when climbing to the 5th and higher floors.

Second class. Patients with some limitation of physical activity. For them, walking and walking to the 5th floor are allowed [42]. Short and non-intense runs are also allowed [43].

Third class. For patients who are forced to significantly limit physical activity, walking after a myocardial infarction at a pace of up to 100-120 steps per minute is individually allowed. Climbing the stairs is allowed only on 2-3 floors [44].

Fourth grade. For patients experiencing pain or their equivalent in any physical activity, only slow walking with stops is allowed [45].

CONCLUSION

Dosed physical exertion in postinfarction patients causes changes in the activity of the body. The effect of physical exertion on a sick person can be judged only on the basis of a comprehensive account of the totality of the reactions of his whole organism, including the reaction from the central nervous system, cardiovascular system, respiratory system and metabolism. The severity of changes in the functions of the body of the patient after a myocardial infarction in response to physical exertion is also associated with the development of his adaptation process to the conditions of existence. Early rational motor activation of postinfarction patients contributes to the development of collateral circulation in their hearts, has a beneficial effect on their physical and mental condition, shortens the hospitalization period and reduces the risk of death in the early postinfarction period.

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