

The role of the volleyball game and specific means of prevention and rehabilitation of cardiovascular patients

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Key words: practice of physical exercise, physical effort, cardiovascular, health.

Summary: Practicing physical exercise plays an important role in preventing arterial wall structure changes during the process of atherosclerosis. Patients who after an acute coronary event continue to provide a physical exercise and lead an active life, have a life quality much better, approximately normal integrating in the family and society than those who have abandoned the physical effort. So we can say that physical recovery is indispensable for all cardiac patients and especially patients with cardiac disease ischemic. This must be part of any therapeutic program prescribed to cardiac patients.

Introduction

In the contemporary society, in the context of mechanization and automation of all human activities with the diminishing locomotory work, man is asked increasingly less in terms of physical and invited to sedentariness. The disagreement between the rapid transformation of the environment and human body's inability to adapt their pace, which is causing the disease, has led to chronic proportions of the increasingly worrying. In less than 15 years mortality due to heart disease passed on third place in the first place, now representing more than 50% of all deaths. As a result, today we assist to a growing concern of society in which we live, and in particular of modern medicine for prevention of cardiovascular diseases, just appreciation of the work capacity of patients and their recovery, the formation of healthy habits for life and work, which involved ensure adequate capacity physical tasks more demanding professional.

The two aspects, the practice of physical exercise and total physical inactivity are followed in each part of the key changes, structural and functional, of course opposed to each other, and answer the principle of "development through the application". From a structural point of view, cause physical exercise increase the volume not only muscles but also of organs as the heart and the liver. When immobilization of body

cause decrease in volume of muscles and organs mentioned, it can even lead to phenomena of degeneration. Also, the practice of physical exercise cause changes in favor of function, circulatory, nervous system and endocrine, metabolic changes, which compete to determine the main features trained physically. Therefore, physical activity and inactivity has good influence, respectively a bad one, for bodies and their function.

Material-method

It has been shown that the effects of exercise may interfere with clear mechanisms for the production of some pretty serious diseases, such as atherosclerosis and its complications. The whole program with the therapeutic effect of attacks, in order to physical rehabilitation and social reintegration of these patients, is based on the practice of physical exercise dose, well managed and adapted to every ill in part, depending on the tolerance to the effort, standardized in relation to evolution coronial acute accident.

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physical effort. So we can say that physical recovery is indispensable for all cardiac patients and especially patients with cardiac disease ischemic. This must be part of any therapeutic program prescribed to cardiac patients.

Professor Dr. Ana Asian said that "sustained physical activity enhance longevity and that sport is a source of heath and freshness". Sanobeneflcal effects of practicing physical exercise include positive modifications from the psyche as well as positive influences on certain categories of diseases of the most redoubtable: lumbar suffering a series of endocrine diseases, cancer, but especially cardiovascular accidents.

In practice, because of the frequency of occurrence at the age of increasingly young and because of all the conditions, it responds best to exercise physical action, ischemic cardio-patty must constitute the main objective of any program to move, regardless of age and sex, whether that person's activity takes place in the individual or organized and specialized supervision.

Results

Cardiovascular functional capacity has certain features depending on age. It is known that most of cardiovascular patients were aged over 40 years. The indicator of the capacity of individual effort, especially the ability of the resistance to effort, given the maximum consumption of oxygen (aerobic capacity). This decrease with 5ml/min/kg (10-11%) per decade of age between 26 and 65 years. Once with the increasing age, is an increase of labor respiratory muscles, due to reduced elasticity of the lung and chest wall, a decrease of capacity distribution of oxygen level lungs, and decrease of cardiac output up, so a decline of functional capacity of the transmission system of oxygen. To the low intake of oxygen are added some deficiencies in the distribution and use of it. As advance in age, during an intense effort, circulatory flow skin percentage increase compared to total traffic flow. This contributes to the decrease of oxygen arteriovenose difference, (the capacity of its use) with the passage of age. The capacity's utilization of oxygen in the skeletal muscles and in attack, decreases by reducing the number of capillary capacity and oxidative enzymes. In most organs increases the proportion of tissue. With the passing of the years after the age of 60 years, blood circulation tends to become hypokinetic. Lowers the maximum cardiac output, lowers the maximum frequency, thus decreasing the maximum oxygen consumption (VCh). At patients with ischemic cardiopathy, O₂ consumption is reduced, as well as cardiac output maximum. The coronary infusion in muscle activity is identical with the individual normal, but is at high pressure system, peripheral resistance is also increased. Maximum performance of coronarial patients is limited by maximum Also, the volume of heart grow by a moderate hypertrophy and reglatory heart dilation, which leads to an increase in force contracts and the growth of the economy functioning heart.

Practicing physical exercise alter the plasma concentration of various liquids, especially of the lipoproteins, preventing massive filing them in tunic intimate artery in the atherogenesis..

Prestigious cardiologists claim that, in modern society, sedentariness in combination with other noxious factors (smoking, hipercalorical diet, emotional stress) increases the risk of cardiovascular diseases and practicing regular physical exercise has a protective effect and in case the disease was already installed, an recuperator effect. For effect relationship between ischemic cardiopathy and sedentariness were done research on static frequency of these diseases in population groups with various degrees of physical activity in their professional work or leisure. The results of these studies clearly show that the incidence of ischemic

cardiopathy is considerably higher in sedentary people than those who do heavy physical work in training. Established ischemic heart disease is characterized by the narrowing of the coronary arterial lumen supplying oxygen and nutrients. People at who ischemic cardiopathy was already installed can achieve a number of therapeutic effects through the practice exercise: decreased heart rate and the flow of effort, accompanied by the increasing difference artero-vene (using oxygen in the muscles of the scheme, diminishing the concentration of lactic acid in the blood, the ischemic electrocardiographic changes and abnormal rhythm, left ventricular reduction labor, etc.)..

Among the mechanisms that get prophylactic and therapeutic effects can be listed:

- Saving heart economy by increasing locomotor function of the device. It improves muscle strength and coordination driver, with resulting decrease of oxygen needs in skeletal muscles and thus requiring less of the heart.
- Reducing the need oxygen to heart by influencing regulation neurovegetative its contractile function and metabolism and oxidative.
- Increasing extraction of oxygen (a coefficient of use of oxygen).
- Development of collateral circulation opening is a very important way to compensate for the coronariene sclerosis.
- Coagulation changes are: the maintenance of normal coagulabilitatii and prevent its growth and prone, to thrombosis
- Adjusting lipid and carbohydrate

Involving physical exercise to preserve health and its application in the prevention and recovery of heart patients have their source after thousands of years. Pythagoras and Alcmen displayed in the school of chintz as the disease is the result of vanishing harmony and healing the body is returning to the harmony of previous illness. Iccus of Tarentum sees in the practice of physical exercise a possibility of moral integration of individual personality. He is against violent efforts structures that distort the body and to recommend practical pentathlon, jumps, throwing the disc. Greco-Romans were connecting, from the second century, the idea of health with the practicing of the physical exercise.

In our country there have been concerns for the use of physical exercise in therapeutic effect for a long time. In the meeting with cardiovascular rehabilitation issues, organized by the Society of Cardiology, in Cluj in 1970 he would organize a pilot stations for functional recovery of patients with ischemic cardiac disease and hypertension and have made recommendations regarding the method of testing sick at work and

method of physical training. In Bucharest Medical Publishing, 1986 appears in the paper "Recovering patients with cardiovascular exercise" by Dr. Corneliu Obrascu. Prof. Dr. Gheorghe Mogos shows in his "high blood pressure and exercise" published in Sport-Tourism Publishing House, Bucharest, 1988, current views on the beneficial effects of practicing physical exercise on hypertension and other diseases such as atherosclerosis, diabetes, which co-partner hypertension increases the risk of death by disease in hypertension. In 1998, Dr. Obrascu, same, in collaboration with Alexandrian Ovezca, discussed favorable effects of practicing physical exercise, which can be obtained from cardiovascular patients in the work "Exercise for cardiovascular patients" Dr. Viorel Moga, published in 1990 work "Exercise in combat atherosclerosis", where, starting from the principles of sports training, looks like a systematic practice of physical exercises, various influences in a positive sense risk factors atherogenic, thereby limiting the development and worsening of atherosclerotic lesions. At the same time, he suggests that the practice of systematic exercise provides at least partial protection of vital organs (heart, brain, kidney) in fulminant evolution of atherosclerosis. Publishing Grammar Bucharest out in print the book in 1994 Mrs. Dr. Silvia Marcus, "The heart and physical effort," the book brings arguments in clear need for practicing physical exercise so as a way to prevent the occurrence of cardiovascular disease as well as a way of recovering cardiovascular patients.

Recovering patients with myocardial infarction based on the finding, made many years ago, the adoption of an attitude of avoiding any physical effort, after an acute myocardial infarction, combined with rest in bed extended acute phase of infarction, made of these some sick "handicapped" wrongly dates of the performance targets of their heart. If 20 years ago, there were still units in the hospital with a heart attack patient was immobilized in bed for up to 4-6 weeks, currently, most cases of uncomplicated acute myocardial infarction, are external hospital after 8-14 days after the onset of the disease.

Classic, the first stage of the recovery of MI conducted in seven steps of mobilization, whose scroll should take 3 days for each step. Currently, each step is covered in 2 days or less depending on the evolution of individual cases. In the first stage, the patient will be instructed to perform passive movements of the extremities, in bed, reaching as in the seventh stage, the patient to get down to single 1-2 floors being so ready to return home.

Stage **two** is the largest recovery in physics because the ill person aims to restore as much of its capacity compatible with physical functional status of the body.

Stage three is the stage of maintaining a physical recovery and aims to maintain and possibly improve physical condition and cardiac functional parameters

(Of the card parametres)obtained in the second phase. Is aimed at reducing labor heart for a given level of effort, raising the capacity of maximum effort, maximum cardiac performance improvement and, optionally, the development of the coronary collateral circulation. At the end of this phase, is estimated the capacity of the patient's effort to determine whether he can continue or not his previous professional activity.

The patient's inclusion in the second phase of the physical recovery is preceded by a test effort. Before starting the exercise, heart patients should be subjected to functional tests to determine their ability of adapting to the effort of the cardiovascular device. For this purpose shall be taken into consideration subjective symptoms of the sick during testing (cardiac pain, stressed fatigue, dizziness, headaches) and a series of objective indices: heart rate, electrocardiogram, echocardiography, calculation of the systolic volume and the heart's debt, respiratory debt and oxygen consumption.

It's undeniable that the long and systematic practice of physical exercise in the recovery lesson, determines in the body a series of changes leading to a functional economic response in rest and effort and a perfect effort adaptation resulting in favorable reaction of the body subjected to various requests. The physical recovery lesson changes the responses to requests, improving the yield of each system with almost 20-30% and 100% considering the global effects. The period of physical exercise is an important element. The effect of practicing physical exercise is obtained from the duration of the effort which takes 5 minutes and this effect grows progressively and directly proportional with the period of effort. It is necessary that the recovery lessons to be repeated by a number of times a week, currently, that are required at least 3-4 lessons per week, if possible separated by a day off.

The lesson consists in 3 parts: physical heating, which is used in light training, the recovery itself which are used means of action to achieve the proposed purpose and the third part of recovering in which are used the relaxation exercises.

Structures of the exercises used in the first stage of recovery from IMA medical gymnastics could be:

- the flexion and extension of the foot(5-10 times for 40-45 s)
- opening and closing the hand's fingers(3-5 times for 30 s)
- the bending and the extension of the arm from shoulder with a closed fist(3-5 times for 30 s)
- lifting of the arm vertically stretched and moving it down by the CFM trainer(3-5 times for 30 s)
- the flexion and extension of the knee, made by the CFM trainer(3-5 times, for 30 s)
- arms stretched forward, carrying them in side with inspiration, return and expiration(5-10 times for 1 min)
- from laying down, alternatively lifting of the stretched lower member, with inspiration, its return and expiration(10-15 times for 1 min)
- from standing with the legs distant, with the arms on hips, rotate your trunk(10-15 times for 1 min).

Between the structures from the medical gym exercises used in the second base of the IMA recovery, are included breathing exercises, exercises for muscle strength and endurance and the development of joint mobility and muscle fitness.

In the cardiac patients' recovery have been imposed structures of volleyball exercises taken from volleyball. Means of action of the game of Volleyball were divided into two categories depending on the phase in which they are used and the request on the patient. Thus, different simple and average structures of exercises are distinguished.

From the simple structures of exercises:

- from laying down on the back, passing from the top with a hand
- the same with two hands
- the same 2-3 smaller passings, 4-5 bigger passings
- the same, passings with a partner standing in front of the performer
- the same, passings with a partner standing in the back of the performer
- the same, in side right and left
- from standing with the legs distant, rolling the ball with engaging
- the same, but higher speed
- the same, but increasing the height
- the same, with the face on a corner, passings at the two walls
- the same, increasing the distance
- the same, combining the front passings with the ones in side right and left

From the average structures of exercises:

- from the hip, passings between 5-6 performers
- the same, changing the direction of passing
- from standing, passings between 2 partners

- the same, increasing the distance
- the same, with variation of the passings
- from standing, passings between 2 partners with small jumps
- the same, increasing the distance
- the same, with variation of short and long passings for moving ahead-back-1-2 steps
- on pairs, 2-3 control passings, from top, followed by a passing to the partner
- the same, touching a line placed in side right and left
- volleyball in the swimming pool

The practice of physical exercises must be part of the complex of medical severity of ischemic cardio-patty and its manifestations are more smaller than the sedentary.

The practice of systematic and long exercise leads to significant changes in the levels of various functions of the body, accompanied by raisin the capacity of effort. Aerobic capacity (maximal oxygen consumption) can reach values of 85-90ml/kcorp trained the man against the man unschooled 40-50ml Ch/kcorp.

One of the modifications the early products of systematic practice of physical exercise is brahcardia(reduced heart rate). It is also noticed the decrease of oxygen consumption of heart during training effort. The heart's capillarisation is better. The unschooled heart does not use all available capillaries treatment measures that are taken for the recovery of cardiac patients. Physic recovery lesson manages to give to the patient a reconditioning of the locomotor apparatus and an economic functioning of the cardiovascular apparatus. The continuation in long time of practicing physical exercise after the convalescent period is to avoid the harmful effects of sedentariness, maintaining favorable effects already obtained, filling them with others that occur in longer periods of controlled effort (improving the cellular metabolism).

Discussions

The patient's education for the systematic practice of the exercise should be done in appropriate language, the subject should be advised and directed 'to go' on the road that leads to health, and learn to be restored, to recreate himself. Recovery does not mean absolute rest, but a good dose and conducted activity according to possibilities and preferences. Increasing of exercise capacity is particularly useful in coronary patients, on whom quality of life is precarious, with a number of limitations due to physical disease. The society loses serious material and moral values as a result of coronary illness. By practicing physical exercise dosed and well-

controlled, it shall facilitates the returning to normal life, professional, but also recreational. It is recommended the introduction of cardiovascular patients in the programs offered by institutions of recovery and monitoring of patients. In the absence of such possibilities, the recovery can be done also by the physical education teacher, under the control of your regular doctor.

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Titlu: Rolul jocului de volei si a mijloacelor specifice in prevenirea si reabilitarea bolnavilor cardiovasculari.

Cuvinte cheie: practica exercițiului fizic, efortul fizic, cardiovascular, sănătatea

Rezumat: Practicarea exercițiului fizic joacă un rol important in prevenirea modificărilor structurii pereților arteriali, in cursul procesului de arteroscleroză. Bolnavii care, după un accident coronian acut, continuă să presteze un exercițiu fizic și să ducă o viață activă, au o viață calitativ mult mai bună, integrându-se cvasinormal in familie și societate decât cei care au abandonat efortul fizic. Putem spune deci că recuperarea fizică este indispensabilă tuturor bolnavilor cardiaci si mai ales bolnavilor cu cardiopatie ischemică. Ea trebuie să facă parte din orice program terapeutic prescris bolnavilor cardiaci.

Titre: Le rôle du jeu de volley-ball et des moyens spécifiques de la prévention une réhabilitation des patients cardiovasculaires

Mots-clés: la pratique d'exercice physique, L'effort physique, Cardiovasculaire, La santé.

Résumé: La pratique de l'exercice physique joue un rôle important dans la prévention des changements de la structure de la paroi artérielle, durant le processus de l'artériosclérose. Les malades qui, après un accident coronarien aigu, continuent de fournir un exercice et d'avoir une vie active, ont une vie bien meilleure en termes de qualité et s'intègrent normalement dans la famille et dans la société que ceux qui ont abandonné l'effort physique. Mais, nous pouvons dire que la récupération physique est indispensable pour tous les patients cardiaques et, en particulier, pour les patients avec cardiopathie ischémique. Elle doit faire partie de tous les programmes thérapeutiques prescrits pour les malades cardiaques.