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Epidemiology, Risk Factors And Methods Of Prevention Of Coronary Heart Disease In The Population Of Medical Workers In The Fergana Valley

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Abstract

Coronary heart disease (CHD) is a disease caused by a decrease or cessation of blood delivery to the heart muscle as a result of pathological changes in the arteries of the heart. Coronary heart disease occurs as a result of organic (irreversible) and functional (transient) changes. The main cause of organic damage is

atherosclerosis of the arteries of the heart. Functional changes include arterial spasm and blood clots.

***Keywords**: IHD risk, coronary profile, epidemic pathology, hypertension.*

INTRODUCTION

IHD risk factors that cannot be influenced: Male gender; Age; The burden of a family history of cardiovascular diseases; Menopause and postmenopausal period. The risk of developing the disease in women increases after menopause. IHD risk factors that can be influenced: An increase in the level of "bad" cholesterol (low-density lipoproteins) and a decrease in the level of "good" cholesterol (high-density lipoproteins) in the blood; Arterial hypertension; Diabetes mellitus; Smoking; Low physical activity; Fatness; Stress factors and personality type A (stress-coronary profile). People with the so-called stress-coronary profile (personality type A) are characterized by the following features: anger, depression, a feeling of constant anxiety, aggressiveness. Psychoemotional stress in combination with these personality traits is accompanied by a high release of catecholamines into the blood. This increases the heart rate, causes an increase in blood pressure and increases the need for oxygen to the heart muscle.

Primary prevention of risk factors for atherosclerosis and coronary heart disease mainly provides for a set of measures for non-drug correction of risk factors, which requires changes in human behavior, his food and other addictions that affect the development of cardiovascular diseases and, above all, atherosclerosis and arterial hypertension, which are classified as non-infectious epidemic pathology.

Currently, risk factors for atherosclerosis and coronary heart disease have been identified and programs have been developed to influence a number of them. First of all, this concerns a rational diet, the fight against smoking and alcohol abuse, increased physical activity in case of physical inactivity, blood pressure control and self-weight.

LITERATURE ANALYSIS

Coronary heart disease (CHD), arterial hypertension (AH), cardiac arrhythmias in combination with borderline neuropsychiatric disorders remain the main causes of morbidity, impaired performance, up to disability and disqualification, as well as mortality [1-3]. In Europe, these diseases are the cause of 40% of all deaths and 30% 43 epidemiology and prevention of deaths under the age of 65 [4, 5]. Russia is ahead of most European countries in terms of mortality due to coronary heart disease and hypertension [1-3]. The dependence of the occurrence and course of the latter on gender, professional, psychosocial and environmental factors has been established [6-9], which should be taken into account when organizing therapeutic and preventive measures. In this regard, the penitentiary system is of scientific and practical interest, which houses a fairly large number of men and women who are negatively affected by significant psychoemotional stress (PEN), which contributes to the occurrence of various psychosomatic disorders in them [9, 10], sometimes with serious complications — up to fatal outcomes. If we consider that comprehensive health monitoring of workers is the most important task of occupational medicine, since the conditions of industrial activity do not always meet regulatory requirements and contribute to the occurrence of various diseases [6-9], then the same postulate fully applies to penitentiary medicine [9-11]. That is why the creation of a rational project for the protection of prisoners' health and the optimization of adequate medical and psychological assistance to them in the context of the democratization of society and the humanization of the penitentiary system should be considered the most important problem of medical science and practical health care, including penitentiary medicine. The above was the basis for the implementation of this study, a fragment of the author's scientific and practical project “Medical and

psychological monitoring of persons in isolation".The aim of the study was to establish the frequency of coronary heart disease, hypertension and FR atherosclerosis among convicted men and to evaluate the effectiveness of secondary prevention of persons with coronary heart disease and hypertension.

RESEARCH METHODOLOGY

The risk factors for the development of coronary heart disease are:
— dyslipidemia (high concentration of LDL cholesterol;
— lowering HDL cholesterol; increasing triglyceride levels);
— combination of dyslipidemia with insulin resistance, obesity and diabetes mellitus;
— smoking;
— arterial hypertension;
— diabetes mellitus;
— lack of estrogens.

Smoking is considered as an independent risk factor for the development of coronary heart disease and arterial hypertension. In patients who smoke a lot, the risk of premature death is 2 times higher than in non-smokers. In some cases, consultation with a narcologist is necessary. It is recommended to conduct a total cholesterol study annually for all persons over the age of 20. In the presence of two or more risk factors, a complete study of the lipid profile is carried out.

Diet is an obligatory component of complex therapy. A strict diet can reduce LDL cholesterol by 5-15%, body weight and blood pressure, but it must be noted that for most people it is difficult to change their eating habits. When detecting these diseases, lean meat is recommended — beef, pork, lamb. Before cooking, the fat from meat, and from poultry, both fat and skin must be cut off. Fats rich in saturated fatty acids should not be used for frying. It is useful to consume no more than 170 g of meat per day (the weight of the raw product is indicated). Processed meat (sausage, sausages, etc.) is not recommended. It is advisable to increase the amount of fish consumed, preferably low-fat marine. From dairy products, it is permissible to use skimmed or 1% milk, skimmed cottage cheese, 1 or 2% kefir. It is advisable to use sunflower, rapeseed, olive oil from vegetable oils. To get high-grade protein with less fat and calories from food, it is advisable to combine pasta with small portions of lean meat, fish or poultry. A nutritionist can give more detailed recommendations. The effectiveness of vitamins C, E and b-carotene with suspected antioxidant activity for the prevention of coronary heart disease has not been confirmed.

Physical activity can have both anti-atherogenic and pro-atherogenic effects. A rational load can be selected using load tests (bicycle ergometry) followed by calculation of the number of steps per minute. The lower limit of the pulse rate is set according to the formula "220 – patient's age", which corresponds to a load of 60-70% of the maximum. In case of physical inactivity, physical exercises should be recommended 4-5 times a week for 30-40 minutes or 2 times a week with an increase in their duration. It is advisable to practice outdoors. Brisk walking, jogging, cycling, walking, swimming, tennis, volleyball, skiing are recommended, taking into account concomitant diseases.

In the primary prevention of coronary heart disease, moderate physical activity is indicated, the degree of which is controlled by pulse. For self-monitoring, you can recommend a heart rate. which should be 60-70% of the maximum permissible for a particular age of the patient:
Age Pulse

31-35 years old 111- 132
36-40 years old 108 -129
41- 45 years old 105 — 125
51 -55 years old 99 — 118
56 -60 years old 96 — 115
61 -69 years old 95 – 111
Control studies of lipids
Control studies of lipids should be carried out after 4-6 weeks and after 3 months.
Overweight and obesity

Overweight and obesity increase the risk of coronary heart disease by 2-3 times. The frequency of coronary complications increases by 10% with an increase in BMI per unit. The report of WHO experts (1998) emphasizes the dependence of the probability of occurrence of cardiovascular diseases on body weight. The risk of complications that develop with obesity largely depends not on its severity, but on the distribution of fat. Androidic, or abdominal, upper obesity (in the form of an apple) is the predominant distribution of fat on the abdomen, around the waist, and gynoid, or lower, around the buttocks and thighs (in the form of a pear). in the case of the android type of obesity, the probability of morbidity and mortality is higher than in the case of hypoid. A fairly accurate criterion for the distribution of fat according to one of the types is the ratio of the length of the waist circumference to the circumference of the hips (OTB). Normally, the OTB in women does not exceed 0.8, and in men — 1.0.

If the body weight decreases by less than 7% during 3 months on the background of diet and physical activity, make sure that the patient follows the dietary recommendations or they should be revised.
Alcohol abuse

Alcohol doses of 20-30 ml for men and 10-20 ml for women based on ethanol are considered acceptable and contribute to the prevention of atherosclerosis, but alcohol dependence can develop with daily use.
Hormone replacement therapy

Hormone replacement therapy in postmenopausal women can reduce LDL by 10% and increase HDL by 15%. However, this type of therapy is not recommended due to a 2-3-fold increase in the risk of thromboembolism and the lack of a positive effect on cardiovascular and general mortality.

Prevention of atherosclerosis of coronary heart disease is divided into two stages – it is a primary and secondary method of preventive measures.

The primary stage of the prevention of coronary artery disease consists in measures that are carried out before the formation of pathology, that is, they affect all possible factors that can lead to progressive atherosclerotic pathology.

Secondary prevention is to prevent the rapid development of pathology and prevent serious consequences.
A secondary preventive method is often found, since the primary one is based on a healthy lifestyle, proper nutrition, and so on, but people follow these recommendations.

Prevention of cardiac ischemia is carried out in a complex to prevent the development and progression of the disease, as well as to prevent complications that can lead to death.

Prevention of atherosclerosis and coronary heart disease is carried out not only by patients with this diagnosis, but also by people who do not want to admit it. The risk group includes people who have at least one reason for its occurrence. The risk increases with the number of eliminated and irreversible causes. But this does not mean that if a person over the age of forty has no reason to develop atherosclerosis and coronary heart disease, then he should not take preventive measures. Such people should undergo medical examination at least once every three years.

Patients with atherosclerosis and coronary heart disease undergo non-drug therapy, that is, they completely or partially exclude all possible development factors, it may be:
quitting smoking,
physical exercises,
a balanced diet,
giving up hormonal contraceptives,
normalize the pressure
reduce the content of bad cholesterol in the blood and others.
Prevention of atherosclerosis and coronary heart disease is a kind of lifestyle improvement. Harmful habits in the form of malnutrition, gluttony, inactivity, smoking, alcohol abuse can lead to serious pathologies and abnormalities, and they, in turn, can become chronic.

So, we can conclude that everyone should be engaged in the prevention of ischemic pathology, which is publicly available.

Risk factors for cardiac ischemia are divided into two types:
• changeable.
• modifiable.

The changeable factors that can provoke the development of atherosclerosis and coronary heart disease include: smoking.

During smoking, a person's heartbeat accelerates and the sympathoadrenal system is activated. Due to smoking, local vasospasms occur, increasing the likelihood of arrhythmia (heart rate is impaired). Patients who have smoked for a long time are diagnosed with atherosclerosis of the coronary artery.

Patients with constant high blood pressure are predisposed to atherosclerosis and coronary heart disease. A factor that requires special attention is a rapid pulse in elderly people;

Impaired metabolism can cause insufficient physical activity. As a result, body weight increases, abdominal obesity is observed (fat accumulates in the tissues of the upper body), namely, this affects the fact that blood pressure increases regularly. It is worth noting that people who are physically active live longer. All heart diseases are more often diagnosed in overweight people. If a patient's body weight is 10% higher than normal, then the risk of coronary heart disease increases by 10%;

also, the appearance of ischemia is influenced by nutrition, namely food that contains a lot of sugar, fat;
in women, atherosclerotic disease develops due to an insufficient amount of estrogen in the body;
Modifiable factors include: Age. Atherosclerotic changes are manifested in older people, which increases the incidence of atherosclerosis and coronary heart disease. Men are more likely to be diagnosed with the disease before the age of 60, after 60 men and women are on equal terms.

Genetic predisposition also plays an important role. The chances of a pathology increase in those people whose family had similar diseases, especially if the parents had the disease. The risk also increases if the pathology of the parents was diagnosed in their youth.

ANALYSIS AND RESULTS

IHD risk factors that cannot be influenced: Male gender; Age; The burden of a family history of cardiovascular diseases; Menopause and postmenopausal period. The risk of developing the disease in women increases after menopause. IHD risk factors that can be influenced: An increase in the level of "bad" cholesterol (low-density lipoproteins) and a decrease in the level of "good" cholesterol (high-density lipoproteins) in the blood; Arterial hypertension; Diabetes mellitus; Smoking; Low physical activity; Fatness; Stress factors and personality type A (stress-coronary profile). People with the so-called stress-coronary profile (personality type A) are characterized by the following features: anger, depression, a feeling of constant anxiety, aggressiveness. Psychoemotional stress in combination with these personality traits is accompanied by a high release of catecholamines into the blood. This increases the heart rate, causes an increase in blood pressure and increases the need for oxygen to the heart muscle.

It should be emphasized that the risk of coronary heart disease increases with a combination of several factors. The main cause of coronary heart disease is the gradual narrowing of one or more heart vessels by atherosclerotic plaques. The main component of atherosclerotic plaque is cholesterol. By gradually narrowing the lumen(s) of the heart vessels, atherosclerotic plaques lead to a lack of blood flow in various areas of the constantly working heart muscle. Usually, in the early stages of this long process, the disease does not manifest itself with any symptoms, in the intermediate stage it manifests itself with chest pain during physical exertion and at rest, in the late stage, when the heart vessel closes completely, a myocardial infarction may develop. A heart attack is a severe and life-threatening complication of coronary heart disease, but it can be prevented. To do this, various methods of prevention, many medicines and various methods of surgical treatment are successfully used. Preventing a heart attack is a very important task, since any heart attack can be fatal, each repeated heart attack is more severe than the previous one and subsequently leads to more severe disability. The most important basic principle of the prevention of coronary heart disease is to adhere to a healthy lifestyle. This will eliminate many risk factors and reduce the risk of severe complications. Prevention of coronary heart disease Prevention of coronary heart disease is indicated for both sick people and healthy people who are at risk of developing the disease. The most important measures in the framework of the prevention of coronary heart disease are: Maintaining a healthy lifestyle: Quitting smoking. Smokers have a significantly higher risk of developing coronary heart disease than non-smokers. Smoking significantly increases the risk of sudden death, atherosclerosis of the heart arteries in smokers is more pronounced than in non-smokers; Restriction or complete abstinence from alcohol; Increasing the level of physical activity, taking into account age, health status and the presence of other concomitant diseases. To choose the optimal level of physical activity, it is recommended to consult a specialist doctor. Nutrition recommendations: Restriction of salt in food. This will reduce the amount of fluid that is trapped in the body and reduce the load on the heart, which is forced to pump an increased volume of blood. Elevated blood pressure develops, among other things, due to fluid retention. It is recommended to limit the use or completely abandon pickles and marinades, ready-made sauces, smoked meats and sausages, fast food, snacks and semi-finished products; Adherence to a low-fat diet. It is recommended to reduce the consumption of animal fat. Fatty foods of animal origin - canned meat, pork, fatty poultry, all kinds of offal, sausage, smoked meats and lard - are rich in "bad" cholesterol, which is deposited in blood vessels in the form

of atherosclerotic plaques. They can disrupt blood flow, including in the vessels that feed the heart itself. It is recommended to include low-fat veal, rabbit, chicken and turkey in the menu. It is better to give preference to boiling, steaming or baking without adding additional fat; It is recommended to limit the use of foods that excite the nervous system. These are caffeine and caffeinated drinks: cocktails, energy drinks. They increase the heart rate, additionally loading the heart muscle. The same stimulating products include strong tea, rich broths and dishes containing a large amount of spices; It is recommended to add Omega-3 fatty acids to the diet. They help to lower cholesterol levels in the body, lower blood pressure, and prevent the process of thrombosis. Most Omega-3s are found in vegetable oils and fish oil. It is recommended to choose not too fatty varieties of fish and seafood. It is best to boil them, but you can also fry them without fat. Salted, smoked and canned fish are recommended to be consumed with great caution in small portions due to excessive salt content; Fractional power supply. An overfilled stomach and bloating can lead to irritation of the autonomic nerves responsible for the work of the heart. This can affect the functioning of the heart, especially with systematic overeating. 4-5 small meals during the day will be digested easily and will not create additional stress on the nervous and cardiovascular system. Health monitoring: Blood pressure monitoring; Control of cholesterol levels in the blood; Elimination of negative psychoemotional stressful situations, which implies the creation of a state of mental comfort both at work and at home, the use of psychotherapy; Regular medical examinations and professional examinations; Treatment of concomitant diseases.

CONCLUSION.

First time a significant prevalence revealed of CHAD and AH, of CARD and RFA, significant deviations of peripheral and coronary flow in isolated persons, therapeutical efficacy of secondary prevention (80,0%-93,3%) among prisoners with CD and AH.

For the first time, a high frequency of epidemiological variants of coronary heart disease, hypertension and cardiac arrhythmias, predictors of atherosclerosis, violations of the daily blood pressure profile and coronary hemodynamics, as well as the effectiveness of medical and psychological monitoring of convicted men with these conditions were established among male prisoners. The proven method of secondary prevention of coronary heart disease and hypertension in penitentiary conditions can be recommended for use in the framework of medical and psychological support for convicted persons, currently recommended for active use in the penitentiary system.

LIST OF REFERENCES USED

1. Salim Yusuf, Steven Hawken, Stephanie Ounpuu. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control stud // Lancet. — 2004. — Вып. 364(9438). — doi:10.1016/S0140-6736(04)17018-9.
2. Yasuhiko Kubota, Kelly R Evenson, Richard F Maclehose. Physical Activity and Lifetime Risk of Cardiovascular Disease and Cancer // Med Sci Sports Exerc. — 2017. — Вып. 49(8). — doi:10.1249/MSS.0000000000001274.
3. R S Paffenbarger Jr, R T Hyde, A L Wing. The association of changes in physical-activity level and other lifestyle characteristics with mortality among men // N Engl J Med. — 1993. — Вып. 328(8). — doi:10.1056/NEJM199302253280804..
4. The U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2015-2020. — Department of Agriculture (USDA)Department of Health and Human Services (HHS), 2015. — 144

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5. J Antonio Aviña-Zubieta, Hyon K Choi, Mohsen Sadatsafavi, M. Risk of cardiovascular mortality in patients with rheumatoid arthritis: a meta-analysis of observational studies // Arthritis Rheum. — 2008. — Вып. 59(12). — doi:10.1002/art.24092.
6. National Kidney Foundation. K/DOQI clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratificationer // Am J Kidney Dis. — 2002. — Вып. 39.
7. Ron T Gansevoort, Ricardo Correa-Rotter, Brenda R Hemmelgarn. Chronic kidney disease and cardiovascular risk: epidemiology, mechanisms, and prevention // Lancet. — 2013. — Вып. 382(9889). — doi:10.1016/S0140-6736(13)60595-4.
8. Peter B Lockhart, Ann F Bolger, Panos N Papapanou. Periodontal disease and atherosclerotic vascular disease: does the evidence support an independent association?: a scientific statement from the American Heart Association // Circulation .. — 2012. — Вып. 125(20). — doi:10.1161/CIR.0b013e31825719f3..
9. L Montebugnoli, D Servidio, R A Miaton. Periodontal health improves systemic inflammatory and haemostatic status in subjects with coronary heart disease // J Clin Periodontol .. — 2005. — Вып. 32(2). — doi:10.1111/j.1600-051X.2005.00641.x.