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Short Communication

The Relevance of The Problem of The Spread of Ischemic Heart Disease in Childhood and Adolescence

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Abstract

Scientific and technological progress and modern research methods have allowed the medical community to delve into the problems of cardiovascular diseases in childhood and adolescence in more detail. Modern research reflects the influence of various types of risk factors in childhood on the development of cardiovascular diseases in adulthood. In this work, we decided to analyze the statistics, risk factors, causes and clinical picture of myocardial ischemic disease.

Keywords: risk factors; myocardial ischemic disease

Introduction

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Scientific and technological progress and modern research methods have allowed the medical community to delve into the problems of cardiovascular diseases in childhood and adolescence in more detail. Modern research reflects the influence of various types of risk factors in childhood on the development of cardiovascular diseases in adulthood. The relevance of the issue is determined by the fact that cardiovascular diseases are recognized as the leading cause of death in industrialized countries [1], while cardiological issues are also important in pediatric practice, since the pathogenesis and causes of coronary heart disease in childhood have a different nature than in adults. Since the second half of the 20th century, it was believed that such formidable diseases as arterial hypertension, diabetes mellitus, myocardial infarction, stroke are the lot of mature and elderly people, leading to death after 50 years. But recent studies have shown that the initial manifestations of these diseases are observed already in childhood, the progression of diseases in adolescence and youth leads to disability and death at a young, working age.

In this work, we decided to analyze the statistics, risk factors, causes and clinical picture of myocardial ischemic disease.

Coronary heart disease is an acute and chronic disease caused by a discrepancy between the myocardium's oxygen needs and the amount of coronary blood flow [2]. IHD is one of the most common and pressing therapeutic problems today, as it has an almost epidemic distribution in modern society [3].

Mortality statistics for the Russian Federation for 2006 show that it is the leading cause of death in the country (49.4%), the average age of men who died from IHD is 66.9, women - 77.5. At the same time, the disease is one of the main causes of loss of working capacity of the population [4]. In the Grodno region, as well as in the Republic of Belarus as a whole, cardiovascular diseases remain the main cause of morbidity, disability and premature mortality among the working-age population, the mortality rate from which in the Republic of Belarus is from 51 to 57% [5].

The prevalence of myocardial ischemia in the population of children and adolescents from 0 to 18 years old is 4.48%. The structure of the disease is as follows: 18% - organic heart disease (cardiomyopathy, myocardial dystrophy, congenital heart disease and carditis), 82% - extracardiac pathology [6].

If we move on to the analysis of the causes of coronary heart disease, it is worth noting that the main cause of the disease is such a pathological process as ischemia.

Ischemia is a condition based on organic or complete cessation of arterial blood flow. The following types of ischemia are noted due to: compression (compression of the afferent artery); obstructive (partial narrowing or complete closure of the artery lumen by a thrombus or embolus, or inflammatory changes in atherosclerosis, obliterating endarteritis, etc.); angiospastic (irritation of the vasoconstrictor apparatus and their reflex spasm, which is caused by emotional impact, physical factors, chemical irritants, etc.) [7].

In parallel with the advances of medical science with the introduction of increasingly sophisticated research methods into clinical practice and the growing awareness of the population on the main issues of cardiology, the symptoms of functional disorders of cardiac activity are also changing to a certain extent [8].

As information accumulates on the lifetime state of coronary circulation, it is no coincidence that periodicals increasingly publish therefore reports of ischemic heart disease with normal coronary arteries, according to angiocardiography data. Typical, seemingly anginal attacks in the absence of coronary atherosclerosis, described by W. Osler (1910), were found in 10-15% of all patients admitted to hospital for angiocardiography [8].

Coronary angiography performed after myocardial infarction usually indicates severe stenosis or complete occlusion of at least one of the three coronary arteries. Nevertheless, normal coronary vessels are determined in 1-13% of patients with clear indications of the development of myocardial infarction without previous chronic coronary insufficiency. [8]. When using more stringent criteria, unchanged coronary vessels are found in 5% of patients with typical myocardial infarction and 30% with questionable myocardial infarction, or in 10.3% of patients with angina without a history of myocardial infarction, in 1.9% of patients with a history of transmural myocardial infarction, and in 16.1% of patients with a history of small focal myocardial infarction. Incorrect recognition of myocardial infarction in these cases is completely excluded [8]. The most simplified interpretation of such observations comes down to the possibility of erroneous interpretation of coronary angiograms. Indeed, this technique does not allow visualization of lesions of small coronary arteries with a diameter of 0.1 to 1 mm. Even highly qualified examinations fail to recognize in a number of cases occlusion of one of the secondary branches of the left coronary artery, parietal changes or moderate stenosis (no more than 20% of the vessel diameter), as well as uniform diffuse narrowing of the entire artery [8].

The overwhelming majority of these errors, however, are due only to underestimation, or, conversely, overestimation of the severity of the lesion. Constant improvement of X-ray equipment and professional skills of radiologists, the use of several projections when performing the examination and careful analysis of the obtained data by 2-3 specialists reduce to a minimum the likelihood of any technical error or false interpretation of coronary angiograms [8].

In addition, the absence of any pathological changes in the vessels both during repeated angiocardiography and during targeted pathomorphological study of the coronary arteries in the case of sudden death of such patients testifies against erroneous interpretation of coronary angiograms. The clinical picture of the disease itself, which usually occurs at a young age (and even in teenagers aged 14-16) with normal biochemical parameters and the absence of minimal risk factors, and a very favorable prognosis make the possibility of atherosclerotic lesions of the coronary vessels very doubtful [8].

The list of risk factors is constantly updated and clarified; there are about 250 of them. Conventionally, they are divided into hereditary, which a person cannot change, and non-hereditary, i.e. those that depend on the external environment and can change. The second group includes: high blood pressure, smoking, obesity, poor nutrition, low physical activity, psychological stress [9].

All these diseases attract the close attention of pediatricians, cardiologists, family doctors due to their high prevalence, the complexity of diagnosis and the choice of adequate methods of therapy [5].

According to the World Health Organization (WHO), the annual mortality from CVD among the adult population is more than 17.5 million people. According to scientists, if the current trend of increasing incidence continues, mortality from CVD will be about 23.6 million people by 2030 [5]. Thus, despite the demographic decline of recent years, a certain increase in the incidence of children has been noted, including cardiovascular diseases (CVD). Arterial hypertension (AH), cardiac arrhythmia, cardiomyopathy and even atherosclerosis have become more common in children, although they progress and cause disability in most cases during the period of maximum working capacity. Diagnosis of these diseases is delayed. The problem of adult morbidity cannot be solved without solving the problem of early detection, treatment and prevention of cardiac pathology in children and adolescents [10].

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