

THE ROLE OF MATHEMATICAL CALCULATIONS IN ASSESSING THE EXERCISE IMPACT ON SCHOOL-AGE CHILDREN'S ORGANISM

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Introduction. Mathematics is an extremely powerful and flexible tool in the study of the world around us. It is the queen of sciences, since its application can be found in every sphere of human activity. In particular, a set of numbers is constantly applied in the daily life of each person. Therefore, on today's a day the issue of the day is role of mathematical count at the estimation of influence of the physical loading on the organism of children of school age.

Aim. Mathematically to estimate influence of the physical loadings on work of heart of man, and also to pay regard to method of Rufe, determining level of the physical loading for a man without a risk for his health.

Materials and methods. Experiments conducted among 1000 students of school age during engaged in a physical culture. Research was conducted with the observance of ethnic norms and rules of conduct with teenagers.

Results and discussion. Studies have shown that the quantitative ratio of cardiovascular (CV) diseases rank first among all adolescent ailments and make up 35.9%. It should be added that 83 - 85% of teens have a poor performance in the functional tests. The main diseases of the cardiovascular system are mitral valve prolapse (MVP) constituting 47.1%, in second place - cardio psychoneurosis (CPN) - 26.8%, and the third - vascular dystonia (VD) - 17.9%.

In most cases after the detection of a secondary schoolchild or teenager's high blood pressure (HBP) or hypertension (HT), drug treatment is not applied, though non-pharmacological treatment and observation are recommended. However, in cases where non-pharmacological therapy is ineffective, medication and non-drug therapy are administered simultaneously.

It should be noted that the pharmaceutical industry is the most important link in the treatment of adolescents, as it is extremely difficult to cope with any disease without the help of drugs. The choice of drugs in adolescence and young age should also take into account the peculiarities of hypertension pathophysiology, the presence of risk factors for cardiovascular diseases, the presence of comorbid conditions

(obesity, diabetes, disorders of the autonomic nervous regulation, renal functioning, and others).

In addition, the criteria for drugs selection include: drug efficacy, side effects, cardio protective effect of the drug, the number of doses per day, the cost of the drug. Concerned parents may also begin to self-medicate, which can cause further problems, as they should start with the lowest dose of the drug to reduce the adverse side effects. Increase of the dosage is also possible. Subsequently, a decision on replacement of a drug or a combination of therapies is made, depending on drug tolerability and its antihypertensive effect.

It is necessary to mention that 7 major classes of antihypertensive drugs are used in the current long-term treatment of hypertension in different age groups: diuretics, b-blockers, calcium channel blockers, angiotensin converting enzyme inhibitors, angiotensin receptor antagonists II, a-blockers, and centrally acting agents. Diuretics occupy the honorable first place among these agents, which in principle do not differ in anti-hypertensive action. Moreover, judging from the degree of influence on the endpoints of hypertension in young patients, risk factor was more significant than the increase in general cholesterol level. This study marked the beginning of new goals in the prevention of CVD since adolescence. It became obvious that hypertension in adolescents should be cured as soon as possible – not only for improvement of the quality of patients' life, reduction of blood pressure and existing symptoms, but also for long-term prevention of cardiovascular diseases.

Conclusions. It can be concluded that a number of studies make us look at the problem in a new way and to draw attention to the need for the diagnosis of hypertension in adolescents, taking into account the risk factors that will help to determine the prognosis and tactics. Therefore, such examination by skilled workers and the choice of drugs on the advice of the pharmacist will lead to the best results.