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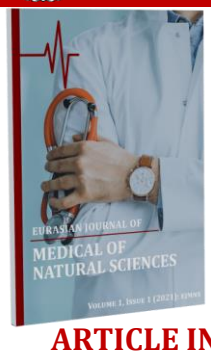

RISK FACTORS AND PREVENTION OF CARDIOVASCULAR DISEASES IN CHILDREN

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ABSTRACT

The article provides data on risk factors for cardiovascular diseases and preventive measures to reduce this pathology. The prevalence of cardiovascular disease risk factors in children has become a critical public health issue. According to the World Health Organization, most cardiovascular diseases can be prevented by addressing behavioral and environmental risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity, harmful use of alcohol and air pollution. However, recent studies have shown that the initial manifestations of these diseases observed as early as childhood and their progression during adolescence and young adulthood leads to disability and death at a young, working age.

ФАКТОРЫ РИСКА И ПРОФИЛАКТИКА СЕРДЕЧНО-СОСУДИСТЫХ ЗАБОЛЕВАНИЙ У ДЕТЕЙ

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ABSTRACT

В статье приводятся данные о факторах риска сердечно-сосудистых заболеваний и профилактических мероприятий по снижению данной потологии. Распространенность факторов риска сердечно-сосудистых заболеваний у детей стала критической проблемой общественного здравоохранения. По данным Всемирной организации здравоохранения, большинство сердечно-сосудистых заболеваний можно предотвратить путем воздействия на поведенческие и экологические факторы риска, такие как употребление табака, нездоровое питание и ожирение, недостаточная физическая активность, вредное употребление алкоголя и загрязнение воздуха.

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BOLALARDA YURAK-QON TOMIR KASALLIKLARINI XAVF OMILARI VA OLDINI OLISH

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Yurak-qon tomir kasalliklari, xavf omillari, oldini olish, arterial gipertenziya, qandli diabet, miokard infarkti.

ABSTRACT

Maqolada yurak-qon tomir kasalliklari uchun xavf omillari va ushbu patologiyani kamaytirish uchun profilaktika choralari haqida ma’lumotlar keltirilgan. Bolalarda yurak-qon tomir kasalliklari xavf omillarining tarqalishi sog‘liqni saqlashning muhim muammosiga aylandi. Jahon sog‘liqni saqlash tashkiloti ma’lumotlariga ko‘ra, yurak-qon tomir kasalliklarining aksariyati tamaki iste’moli, noto‘g‘ri ovqatlanish va semirish, jismoniy harakatsizlik, spirtli ichimliklarni zararli iste’mol qilish va havoning ifloslanishi kabi xatti-harakatlar va ekologik xavf omillarini bartaraf etish orqali oldini olish mumkin.

Relevance. The incidence of cardiovascular diseases is a major medical issue both worldwide and in the Republic of Uzbekistan. This is because this group of diseases is the most common cause of death among the adult population in developed countries. Since the second half of the 20th century, it considers arterial hypertension, diabetes mellitus, myocardial infarction, and stroke were diseases of middle and old age, leading to death after the age of 50. However, recent studies have shown that the initial manifestations of these diseases observed as early as childhood and their progression during adolescence and young adulthood leads to disability and death at a young, working age.

The growing prevalence of risk factors for cardiovascular diseases (CVD) in young children has become a critical public health issue. Recent epidemiological data indicate that risk factors established in early childhood have a significant impact on cardiovascular health throughout life [1].

The objective of this research study is to identify and analyze the main risk factors contributing to cardiovascular diseases in children aged 3 to 12 years.

A prospective cohort study was conducted from January 2023 to December 2023, involving 1,850 children from 12 pediatric centers across Uzbekistan. The study used a comprehensive assessment protocol, which included:

- Physical examinations with standardized anthropometric measurements.
- Family history documentation.
- Lifestyle assessment, including dietary habits and physical activity.
- Laboratory tests, including lipid profile and glucose metabolism markers.
- Evaluation of environmental factors.

Risk factors were quantitatively assessed using standardized pediatric risk assessment tools, and statistical analysis was conveyed to determine the relative contribution of each factor [2].

The analysis identified several significant risk factors with complex interactions between genetic components, lifestyle, and environmental influences. The primary results revealed that:

Obesity was the most significant modifiable risk factor, affecting 23% of the study population.

A family history of premature cardiovascular disease increased the risk by 2.8 times.

A sedentary lifestyle exceeding 4 hours per day observed in 68% of high-risk children.

Poor dietary habits, particularly high consumption of sugar and saturated fats strongly correlated with adverse cardiovascular markers. Environmental factors, including exposure to secondhand smoke, increased the risk by 1.6 times [3].

In addition to the implementation of modern technologies and new medications, a significant role in preventing these dangerous diseases belongs to preventive measures, which everyone should learn about from school age. To prevent these diseases, it is essential to understand their causes and risk factors, which can contribute to development of diseases to certain extent, and strive to mitigate them. The list of risk factors is continuously updated and refined, with approximately 250 currently identified. They are divided into hereditary factors, which cannot be changed, and non-hereditary factors, which depend on individual behavior, the external environment, and can be modified. The second group includes high blood pressure, smoking, obesity, poor diet, low physical activity, and psychological stress [4].

It has been proven that arterial hypertension (AH) is the leading cause of stroke and myocardial infarction. Nearly 30% of cases of high blood pressure in children and adolescents persist in adulthood. AH is most commonly diagnosed during adolescence, which is associated with hormonal changes in the body. Aggravating factors include a family history of hypertension and atherosclerosis, as well as low physical activity, obesity, and smoking.

A high level of physical activity can be maintained by following simple measures:

- Daily morning exercises;
- Spending more than an hour outdoors every day;
- Engaging in active games;
- Participating in sports and physical education classes;
- Limiting screen time (TV and computer) to no more than 2 hours per day.

However, many students and young people do not follow these recommendations. They often spend time outdoors only when commuting to and from school, skip physical education classes and sports, and spend more than four hours a day watching TV or using a computer, often eating while doing so. This negatively affects their overall health and, in particular, their cardiovascular system.

The vast majority of overweight children do not follow a structured daily routine: they eat irregularly throughout the day, often at night before bed, with long intervals between meals (more than six hours), frequently skipping breakfast while consuming 60% of their daily caloric intake in the evening. Many tend to add extra salt to their food, frequently

consume carbonated drinks, chips, chocolate, and fast food. This negatively influences on fat metabolism, leading to excessive cholesterol and its components accumulating in the blood. These deposits form plaques on blood vessel walls, impairing blood flow to the heart, brain, and other organs.

A non-eco-friendly environment at home, school, or within the family can lead to stress, triggering dangerous physiological processes not only in adults but also in children. It is important to avoid such situations, communicate with children, calmly understand their concerns, and find solutions. In difficult cases, seeking help from specialists such as neurologists or psychotherapists should not be stigmatized. Much depends on an individual's psychological attitude and behavior. It is essential not to isolate oneself but to participate in social activities and take an active role in improving one's own health rather than relying on a "miracle pill" for diseases.

Conclusions. Our findings highlight the multifactorial nature of cardiovascular risk in young children and emphasize the critical importance of early intervention. The study demonstrates that while genetic predisposition plays a significant role, modifiable risk factors provide the greatest opportunity for effective intervention.

Therefore, the following measures are necessary:

- Implementation of systematic screening programs for early detection of risk factors.
- Development of family-centered lifestyle intervention programs.
- Integration of cardiovascular health education into school curricula.
- Enhanced monitoring of children with multiple risk factors.
- Establishment of specialized pediatric clinics for cardiovascular disease prevention.

These measures should focus particularly on modifiable risk factors, as they offer the most promising strategies for reducing the burden of cardiovascular disease among young populations.

References:

1. World Health Organization. (2023). Global Report on Child Cardiovascular Health: Risk Factors and Prevention Strategies. Geneva: WHO Press.
2. Karimov R. et al. (2023). Cardiovascular Risk Factors in Children: A Comprehensive Analysis of Modifiable and Non-Modifiable Components. International Journal of Pediatric Research, 56(4), 423-435.
3. American Heart Association. (2023). Scientific Statement on Strengthening Cardiovascular Health in Children: Evidence-Based Approaches. Circulation, 147(8), 892–908.
4. https://dkb.smoladmin.ru/zozh/ChildrenHeartDiseases.pdf
5. Kurbanov R.D. et al. Prevention of Key Risk Factors as a Basis for Reducing Cardiovascular Disease Mortality. http://www.med.uz/ Medical portal of Uzbekistan 2021.