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IRON DEFICIENCY ANEMIA IN ADOLESCENTS: CAUSES AND BASIC PREVENTION STRATEGIES

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Introduction

Iron deficiency anemia is one of the most common nutritional disorders worldwide and represents a significant public health problem, especially among adolescents. This period of life is characterized by rapid physical growth, hormonal changes, and increased nutritional requirements. When iron intake does not meet the body's needs, iron deficiency anemia may develop. According to international health organizations, adolescents are among the most vulnerable groups affected by anemia.

Iron deficiency anemia can negatively influence physical development, cognitive performance, and overall quality of life. Adolescents with anemia often experience fatigue, weakness, decreased attention, and reduced academic performance. Despite being a preventable condition, iron deficiency anemia remains highly prevalent, particularly in low- and middle-income countries. Therefore, understanding its causes and prevention strategies is essential for future healthcare professionals.

Aim of the study

The aim of this study is to analyze the main causes of iron deficiency anemia in adolescents and to describe basic and effective prevention strategies.

Materials and methods

This thesis is based on a review of scientific literature, including World Health Organization reports and standard medical textbooks. The collected materials were analyzed to identify common causes, clinical manifestations, and preventive approaches related to iron deficiency anemia in adolescents. This study is theoretical in nature and does not include experimental or clinical research.

Iron metabolism and the role of iron in the body

Iron is an essential trace element required for the synthesis of hemoglobin, myoglobin, and various enzymes. Hemoglobin plays a key role in transporting oxygen from the lungs to body tissues. Adequate iron levels are necessary to maintain normal energy metabolism and immune function.

During adolescence, iron requirements increase due to rapid growth, increased blood volume, and, in girls, menstrual blood loss. When iron intake or absorption is insufficient, iron stores become depleted, leading to reduced hemoglobin production and the development of anemia.

Causes of iron deficiency anemia in adolescents

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The causes of iron deficiency anemia in adolescents are multifactorial. One of the main reasons is inadequate dietary intake of iron. Many adolescents consume diets low in iron-rich foods such as meat, fish, and legumes. Instead, their diets often include processed foods with low nutritional value.

In adolescent girls, menstrual blood loss is a significant contributing factor. Increased iron loss during menstruation can quickly lead to iron deficiency if not compensated through diet or supplementation. Rapid growth during puberty further increases iron requirements.

Other contributing factors include poor absorption of iron due to gastrointestinal disorders, parasitic infections, and chronic inflammation. Socioeconomic factors and lack of nutritional education also play an important role.

Clinical manifestations

The clinical features of iron deficiency anemia are often nonspecific and develop gradually. Common symptoms include fatigue, weakness, pallor, dizziness, and shortness of breath during physical activity. Adolescents may also experience headaches, irritability, and difficulty concentrating.

In severe cases, anemia can affect immune function, increasing susceptibility to infections. Early recognition of symptoms is important to prevent long-term complications related to growth and cognitive development.

Prevention strategies

Prevention of iron deficiency anemia focuses primarily on proper nutrition. Adolescents should be encouraged to consume iron-rich foods, including red meat, poultry, fish, legumes, nuts, and green leafy vegetables. Foods rich in vitamin C enhance iron absorption and should be included in meals.

In high-risk groups, such as adolescent girls, iron supplementation may be recommended under medical supervision. School-based nutrition programs and health education initiatives can play an important role in raising awareness about anemia prevention.

Medical students and healthcare professionals should actively participate in educational campaigns aimed at improving dietary habits and early detection of anemia.

Discussion

Iron deficiency anemia in adolescents is a preventable condition with significant health and educational consequences. The reviewed literature demonstrates that early prevention and proper nutrition can significantly reduce its prevalence. Health education, especially in schools, is a key strategy in addressing this problem.

From a medical education perspective, understanding anemia helps students develop a holistic approach to patient care, combining clinical knowledge with preventive strategies.

Conclusion

Iron deficiency anemia remains a common health problem among adolescents. Its development is mainly associated with increased iron requirements, inadequate dietary intake, and iron loss. Preventive strategies, including balanced nutrition, supplementation, and health education, are essential for reducing anemia prevalence. Medical students should be aware of these factors to contribute effectively to adolescent health promotion in their future practice.

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