IJIMM, Volume 3, Issue 5, 2025 ISSN: 2995-5319
http://medicaljournals.eu/index.php/IJIMM/issue/view/3

INTERNATIONAL JOURNAL OF INTEGRATIVE AND MODERN MEDICINE

Rickets: Etiology, Pathogenesis and Clinical Course

Ikromova Odina Ubaydullayevna
Teacher of the Department of Clinical Sciences of Namangan State University

Khojamberdiyeva Zilola Shermuhamad qizi
Student of the Faculty of Medicine, Namagan State University

Annotation: Rickets is a disease in children characterized by softening and deformation of the bones, mainly caused by a deficiency of vitamin D and minerals, especially calcium and phosphorus. The article details the causes of rickets, its effects on growth, its symptoms, and risk groups. Poor nutrition, lack of sunlight, and environmental conditions can also be cited as causes of rickets. . The article provides knowledge and practical recommendations, especially for parents and pediatricians, necessary for protecting children's health.

Keywords: Vitamin D deficiency, malnutrition, endocrine disorders, deficiency of phosphates and calcium salts, unfavorable environmental conditions, neurological and vegetative, hypophosphatemia, hypocalcemia, in early childhood, intestinal calcium absorption.

Rickets is a polyetiological metabolic disease characterized by a high demand for phosphorus and calcium by the growing organism and a failure of the system that ensures their transport and incorporation into metabolism. Rickets is characterized by bone disorders caused by insufficient mineralization of osteoids. In children older than one year and adults, this condition is called osteomalacia and osteoporosis.Rickets is the most common disease in children under one year of age. However, its exact distribution is not known, and many children have some or other remnants of this disease (defects in chewing and tooth growth, chest, limbs, head deformation, etc.).Causes of rickets. Pathogenesis.Rickets was first studied in England in the 17th century. Vitamin D was discovered in the 1930s. At the same time, it was also discovered that ultraviolet light synthesis occurs in the skin. For many years, the main cause of rickets was considered to be vitamin D deficiency.However, in recent years, after it became possible to determine the concentration of vitamin D metabolites in the blood, it was found that hypovitaminosis D is only one of the causes of the development of rickets.Currently, the leading cause of rickets is a deficiency of phosphates and calcium salts, but it is noted that hypophosphatemia is more common and of greater importance than hypocalcemia. The causes of deficiency of phosphate and calcium salts in early childhood are: Premature birth (the intake of calcium and phosphorus to the fetus increases in the last months of pregnancy) Inadequate intake of calcium and phosphorus due to malnutrition High demand for minerals during intensive growth (rickets - a disease of the hanging body) Violation of the transport of phosphorus and calcium through the gastrointestinal tract, kidneys, bones, due to pathology of organs or underdevelopment of the enzyme system. Unfavorable environmental conditions (accumulation of chromium, strontium in the body, iron, magnesium deficiency) Hereditary predisposition (for example, male children have a more severe course of rickets than female children, children of group O (I) are less likely to suffer from rickets, and those of group A (III) are more likely to suffer) Endocrine disorders (dysfunction of the thyroid gland and parathyroid glands) Exogenous and endogenous vitamin D deficiency. In rickets, the amount of parathormone increases, which reduces the reabsorption of phosphates in the renal tubules, while at the same time increasing the hydroxylation of vitamin D in the kidneys, calcium absorption in the intestine and calcium resorption from the bones, thereby eliminating hypocalcemia. Also, the activity of the thyroid gland changes, since calcitonin enhances the transfer of calcium to the bone and the conversion of a less active form of vitamin D to a more active form. The initial period begins to manifest itself most clearly at the age of 3-4 months, but the first symptoms may appear earlier - at 1-1.5 months, but they are not specific and often go unnoticed by parents. Neurological and vegetative

changes come to the fore. The child shows anxiety, capriciousness, sleep is disturbed - children fall asleep and wake up often, fear and irritability appear, children are often frightened by loud sounds or bright light. Appetite decreases significantly - the child takes the breast reluctantly and for a short time, sucks slowly - sometimes there is constipation.In addition, vegetative manifestations such as sweating, especially during sleep, and increased vascular excitability of the skin, which manifests itself in the form of increased and prolonged red dermographism, attract attention. The scalp sweats most intensely, which causes severe itching in the child, as the child constantly rubs it against the pillow, which leads to baldness on the back of the head, characteristic of rickets. In addition, the characteristic sharp and sour smell of sweat is also noticeable.The child may have a slight decrease in muscle tone. Bone changes are not typical for the early stage of rickets, but sometimes a slight bulging of the edges of the large fontanel can be detected. The initial period of the disease usually lasts from 2 to 4 weeks.

REFERENCES USED.

1. B.Qorakho'dzhayev, I.T.Salomov, M.N.Abdullayeva - Clinical practice of children's diseases. 2006.
2. N.A. Rasulova, R.Kh.Sharipov – A new approach to the prevention and treatment of rickets. 2023.
3. T.A. Daminov, B.T.Khalmatova, U.R.Boboyeva – Children's diseases. 2012.
4. 4.U.K. Narzikulov, M.N.Bo'riyev, F.R.Umarkhodzhayev, U.S.H.Ro'zikulov, G'.M.Nazirkulov, U.M.Samadov – Practical skills in children's traumatology and orthopedics. 2015.
5. D.Kh. Mamatkulova, O.A.Sharipova – Rickets in children. 2022.
6. WHO. Guideline: Vitamin D supplementation in pregnant women. - Geneva: World Health Organization, 2012. - 36 p.
7. UNICEF. Global prevalence of vitamin D deficiency and rickets. - New York: UNICEF Publications, 2020. - 22
8. DeLuca, H.F. Overview of general physiological features and functions of vitamin D // Am. J. Clin. Nutr. - 2004. - Vol. 80(6). – P. 1689S–1696S.
9. Wagner, C.L., Greer, F.R. Prevention of rickets and vitamin D deficiency in infants, children, and adolescents // Pediatrics. - 2008. - Vol. 122(5). – P. 1142–1152.
10. Khripkova, A.G. Rickets and children: a modern view of the old problem // Voprosy sovremennoy pediatrii. - 2019. - T. 18, No. 2. – P. 73–78