

**JOURNALISTS WENT TO A DENTAL CLINIC FOR CHILDREN WITH  
PYELONEPHRITIS**

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**Summary:** The relationship between the condition of the oral cavity and general somatic diseases is constantly emphasized by dentists. This arouses the constant interest of researchers in studying the features of the course of dental pathology against the background of some forms of somatic diseases. In the literature, there is information about the state of the hard tissues of the teeth, periodontal tissues and the mucous membrane of the oral cavity in children with chronic pyelonephritis. Morphological association of pathological processes in children with chronic pyelonephritis is manifested by kidney and periodontal tissues, lymphocytic infiltration, fibrosis, damage to microvascular vessels. With the development of chronic pyelonephritis, structural and functional changes in periodontal tissues are dystrophic, accompanied by vasoconstriction of microvessels and tissue sclerosis.

**Keywords.** Chronic pyelonephritis, Dentocult System, aspartate aminotransferase, glutathione peroxidase, superoxide dismutase

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**Relevance of the topic.** During the period of exacerbation of the disease in children with chronic pyelonephritis, changes in the functional parameters of the oral fluid are observed: a decrease in the speed of salivary detachment, an increase in the viscosity of the oral fluid, a decrease in its surface tension, mineralization potential, they appear more pronounced. Osokin M.V. (2007) noted in his dissertation that large and small salivary gland lesions have been found in children with patients in the last stage of chronic kidney failure, which in some cases continue without clinical signs, of which 7% of patients are diagnosed in children, sialadenosis accompanied by increased salivary glands is observed.

**Research objective:**

It consists in studying, evaluating the dental condition of children in children with chronic pyelonephritis and improving the prevention of caries in them.

**Research methods.**

Children with chronic pyelonephritis, 125 sick children aged 1-7 were examined, who were treated in the Department of therapy and nephrology of the Bukhara regional children's Multidisciplinary Medical Center and were on the "D" account at the address of residence in the city and district polyclinics of the Bukhara region. It was believed that children aged 1 to 7 were at high risk for chronic pyelonephritis.

In all children with chronic renal failure, xerostomia was observed, the amount of immunoglobulins of Type A, M, G in the mixed saliva, as well as increased activity of the enzymes aspartataminotransferase, glutathionperoxidase, superoxidismutase, which indicates a

change in homeostasis. and the development of inflammatory-dystrophic processes, manifested by pronounced changes in the mucous membranes of the oral cavity and solid tissues of the teeth. Yashuk E.V. it is noted that chronic renal failure the severity of inflammatory processes in the periodont in children with the last stage increases with a decrease in bone density and a decrease in the level of oral hygiene, a large number of microcracks appear on the tooth enamel of such patients.

A patient with the last stage of chronic renal failure treated with hemodialysis is characterized by poor oral hygiene in children, destructive changes in the hard tissues of the teeth, a decrease in the reactivity of the dental pulp, numerous denticles and stones, which complicates the result of endodontic treatment. Souza S.M. and according to others (2008), the majority (55%) of sick children complain of bad breath.

Similar data were obtained by many researchers in the study of the dental condition of children with hemodialysis due to chronic kidney failure: decreased saliva content, poor oral hygiene, high intensity of dental caries, and periodontal diseases. The authors also note the presence of pigmented tooth sediments containing iron compounds.

Takeuchi Y. (2007) and others found an increase in the number of microorganisms in the oral cavity when a patient with chronic kidney disease analyzed data from microbiological studies of the oral cavity using Dentocult System tests in children.

The data on the prevalence of dental caries in children with chronic pyelonephritis are contradictory, and according to different authors, there are from 69.8% to 97% of different cases.

A number of authors have found that in children with chronic pyelonephritis, the amount of ionized calcium in the blood and saliva is 1.5 times higher than in somatically healthy people. When performing electrometry of hard dental tissue, a clear trend has been found to increase electrical potential in children with chronic inflammatory kidney diseases, indicating an increase in micro spaces in enamel and dentin.

### **Research results.**

National guidelines for pediatric therapeutic dentistry (2010) provide information on the need for oral rehabilitation to more than half (62%) of children with chronic pyelonephritis. The authors proposed that the reactions of periodontal and renal tissue (hematuria, diffuse bleeding from the gums) are similar due to hypersensitivity to intoxication. In addition to changes in the gingival border in 1/3 of children with chronic pyelonephritis, dental sediments are recorded in the form of dark brown, soft yellow or white plaque, firmly fixed on the neck of the teeth. Dark-colored dense plaque also occurs in sick children who do not have inflammatory changes in the periodont. Thus, the authors identify a triad of symptoms characteristic of chronic pyelonephritis in the oral cavity: pallor of the mucous membrane, dark pigmentation in the neck of the teeth and carious dentin, trophic disorders of the epithelial lining of the back of the tongue.

A study of literature data showed the prevalence of oral pathologies in children with chronic kidney disease, but most of the research is devoted to the terminal stage - chronic kidney failure, and a patient with chronic pyelonephritis does not solve the problem of dental pathology in children and adolescents.

According to modern concepts, dental caries and periodontal diseases are the main diseases that determine the structure of dental pathology in adults and children. In this regard, the causes of the origin of these diseases, the risk factors are studied with what interest, the nature of the disease, the clinical features of diseases, as well as various approaches to the treatment and Prevention of diseases that are very important for a person are being developed.

Childhood dental caries is a multifactorial disease to many biological risk factors. There are also risk factors such as artificial feeding of the child in infancy, impaired oral microflora, frequent use of easily digestible foods. Carbohydrates, poor oral hygiene, intrauretin and postpartum developmental disorders, malnutrition, and parents ' low level of education about diseases are included.

In 1998, the International Institute for Life Sciences (ILSI) published the monograph "Caries Preventive Strategies" on the etiology, pathogenesis and prevention of dental caries. In this article, the authors identify two groups of factors that should be considered when assessing the risk of caries. The first group includes factors that damage dental tissues - plaque, easily digestible carbohydrates, the composition and functions of saliva. The second group includes features associated with the development of caries, but not directly involved: socio-economic factors, dental diseases and general somatic diseases.

The current theory of caries etiology and pathogenesis recognizes the priority of the chemical-parasitic concept. Many researchers have shown the polyethiological nature of periodontal diseases, and inflammatory reactions triggered by oral microflora play a large role in their development.

Bacterial colonization of tooth surfaces is an important etiological factor in the most common diseases of the oral cavity-dental caries and periodontal disease. There are many studies in foreign literature that show the leading role of *Streptococcus mutans* in the appearance and development of caries in temporary, removable and permanent teeth. Sticky polysaccharides help bacteria find their place in the plaque and ensure their adhesion to the enamel. the contact of the enamel apatite surface with bacterial polysaccharides is provided by hydrogen bonds,  $\text{Ca}^{2+}$  ions and adessin proteins. Adessin proteins include glycoprotein with a molecular weight of 200 kDa , released by streptococci.

In the oral cavity, there are more than 300 types of microorganisms that form on the surface of the teeth, especially in places of proximal surface and fractures, seizures such as plaque. The effect of microflora on tooth enamel occurs through its colonization in the oral cavity, which is carried out in the form of the formation of dental plaque. The appearance of caries is associated with progressive demineralization of the hard tissues of the tooth under the influence of organic acids, the formation of which is associated with the activity of microorganisms of the permanent microflora of the oral cavity. Dental plaque has a high metabolic activity, defining more than 50 different enzymes, mainly bacterial origin. Acid and alkaline phosphatases, RNA-aza and DNA-aza, glycolysis enzymes, tricarboxylic acid cycle, peroxidases and other enzymes are included. The activity of all enzymes increases with inflammation of many caries and periodontal tissues. The accumulation of organic acids formed in the process of breaking down food carbohydrates is accompanied by a local decrease in pH. Accumulated  $\text{H}^+$  protons begin to replace  $\text{Ca}^{2+}$  ions in enamel hydroxyapatite crystals, which leads to the destruction of its mineral component. The results of experimental studies showed that the proteolytic enzymes of plaque are able to destroy

the organic part of the enamel, and then the phosphates are released. All these reactions begin the development of the carious process.

Tooth resistance to caries is also largely determined by the composition and properties of the saliva. Experimentally, it was found that  $\text{pH} = 6.2$  is a critical value of the hydrogen index, in which a clear violation of the structural properties of the saliva develops, and its mineralization potential decreases. The shift of  $\text{pH}$  in the saliva to the acid side leads to a decrease in the level of extreme saturation of the oral fluid with calcium and phosphate ions and an increase in the active concentration of sodium ions. Rinsing the mouth with a 5% glucose solution was found to cause a decrease in  $\text{pH}$  within 10-12 minutes after the procedure; it would take more than 1 hour to restore  $\text{pH}$ . The dynamics of  $\text{pH}$  changes in patients vary, allowing this indicator to be used as a specific test to divide people into caries-resistant and caries-sensitive groups.

Maintaining optimal oral  $\text{pH}$  levels is done by three buffer systems: bicarbonate, phosphate, and protein. Together, they form the first line of defense against an acidic or alkaline attack on the oral tissue. All buffer systems of the oral cavity have different capacity limits: phosphate is the most active  $\text{pH}$  6.8-7.0, bicarbonate –  $\text{pH}$  6.1-6.3, and the protein provides buffer capacity at different  $\text{RN}$  values. The bicarbonate system provides 80% of the buffering properties of saliva, although it is highly unstable. The Protein buffer system is close to the biological processes that occur in the oral cavity. It is represented by proteins that dissolve well in water. This system contains more than 944 different proteins.

When developing treatment and preventive measures, dentists should take into account all risk factors for the development of dental caries and periodontal diseases, take into account the correction of the child's hygiene skills, the culture of eating easily digestible carbohydrates, as well as the timely diagnosis of violations of the composition and functions of the saliva.

**Conclusion.** The development and course of dental caries is largely determined by the ratio of processes of Re- and demineralization of the surface layer of enamel. Remineralization of the teeth is provided by the components of the oral fluid. At the same time, plaque prevents the necessary micro - and Macroelements from entering the enamel from the oral fluid, thereby disrupting the processes of mineralization and remineralization of tooth enamel. In children, such changes develop faster due to low mineralization of caries hard tooth tissue, the furnace of demineralization becomes a carious cavity faster than in adults. It has been found that children have fewer mineral components in their newly erupted teeth than adults in enamel, characterized by morphological and functional maturity. During the period of complete mineralization of enamel, molars are considered to have the highest sensitivity to caries.

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