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Features of the Development of Oxalate Nephropathy in Children and the Relationship with Digestive Tract Pathology

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Abstract: High demands are placed on therapeutic nutrition, since the kidneys are the main organ for the excretion of metabolic products received with food and formed as a result of the breakdown of body tissues, as well as the organ responsible for maintaining the constancy of the internal environment. Under certain conditions, there is a need to correct in the diet such nutrients as animal protein, gluten, urates, oxalates, phosphates, the metabolic products of which are excreted through the kidneys and affect not only the pathogenetic mechanisms of disease development, but also participate in the formation of non-immune processes of disease progression to the stage of renal failure. Objective of the study: to study the features of the development of oxalate nephropathy in children and to identify the relationship with gastrointestinal pathology. Materials and methods. We examined 66 children with oxalate nephropathy aged 5 to 16 years, living in the Samarkand region. All children underwent general clinical examinations, biochemical blood and urine tests. To assess the condition of the gastrointestinal mucosa, patients underwent ultrasound examination of the parenchymatous organs, stool examination for dysbacteriosis. Esophagogastroduodenoscopy.

Keywords: nephropathy, children, digestive tract.

Introduction. In recent years, there has been an increase in metabolic diseases, including among the child population. Among them, nephropathy is becoming increasingly common. [2,3,5]. Dysmetabolic nephropathy is the name doctors give to a complex of kidney diseases, each of which can be caused by a metabolic disorder. Both adults and children are susceptible to it. Moreover, it is children and even newborns who are more likely to fall into the risk group, because in many cases the disease occurs against the background of unfavorable heredity and manifests itself in childhood and adolescence. This is a group of metabolic disorders in children, in which structural and functional changes are observed in the kidneys. The causes of nephropathy are the following:

- low intensity of metabolic activity of the body;
- inflammation of the genitourinary system of various types;
- endocrine pathologies;
- chronic diseases and pathologies of the gastrointestinal tract;
- pollution of the environment;
- deficiency or excess of trace elements in the body;
- consumption of foods with a high content of chemical additives;
- hard water and other negative factors.

Symptoms of metabolism nephropathy: increased fatigue; edema; pain in the lower abdomen; frequent and profuse urination; inflammation of the external genitalia; low blood pressure, etc. Sometimes, such manifestations of the disease as skin rashes, itching, and weight gain due to excess fat deposition are observed. Such symptoms should be given close attention, since pyelonephritis, cystitis, urolithiasis, nephritis, and a number of other dangerous diseases can develop as a result of metabolic nephropathy. Dysmetabolic nephropathy is a group of diseases with various pathogenesis and etiology, characterized by an interstitial process in which the renal tubules are affected due to metabolic disorders [7,8,10,12]. This pathological process occurs with crystalluria - salts are formed in the urine. Dysmetabolic nephropathy occurs in 30 to 60% of the total number of urinary system diseases identified in pediatric urology [1,4,6,11,13]. Children with this disease are at risk for developing urolithiasis, pyelonephritis, nephritis, cystitis and other serious diseases. In recent years, there has been a trend towards a noticeable rejuvenation of this disease: if previously dysmetabolic nephropathy affected mainly school-age children, now it is detected in children under 5 years of age.

Objective of the study: to study the development of oxalate nephropathy in children and to identify the relationship with gastrointestinal pathology

Materials and methods. We examined 66 children with oxalate nephropathy aged 5 to 16 years living in the Samarkand region. All children underwent general clinical examinations, biochemical blood and urine tests. To assess the condition of the gastrointestinal mucosa, patients underwent ultrasound of the parenchymatous organs, stool examination for dysbacteriosis. Esophagogastroduodenoscopy.

Results and discussion. At the first stages of the work, we analyzed the anamnesis, clinical and paraclinical data and the structure of diseases of the digestive organs and urinary system in children according to the data on appeals.

The analysis of the medical and biological anamnesis revealed that in 79% of cases there was a pathological pregnancy, in 50% of the examined persons perinatal damage of the central nervous system was noted. According to the genealogical anamnesis, the examined children had a burdened heredity for pathology of the urinary system (77%) and gastrointestinal tract (42%). Artificial feeding was noted in 48% of children with pathology of the urinary system and digestive organs. The family history was burdened by urolithiasis in 22% of children, by cholelithiasis - in 18%, by peptic ulcer disease - in 22%.

The study of the data of the registration form No. 112 allowed us to establish that in the structure of the pathology of the digestive organs in children, functional disorders of the gastrointestinal tract prevail over organic ones, especially in young children.

The features of the structure of gastrointestinal diseases were revealed depending on the form of kidney pathology: in 88% of children with dysmetabolic nephropathy, pathology of the digestive organs was revealed, of which: chronic gastritis - in 32%; dysfunction of the biliary tract - in 56%; peptic ulcer - in 3%, chronic enterocolitis - 9%.

Analysis of the clinical picture in the group of children with kidney diseases indicates that with concomitant pathology of the digestive system, these patients in the clinic noted dyspeptic syndrome in the form of nausea; in 27% of patients, abdominal pain syndrome was observed; in 16%, clinical manifestations were absent. The leading clinical syndromes identified by us after clinical examination of children were: abdominal pain syndrome (85.3%), dyspeptic disorders syndrome in 83.6% of cases and asthenovegetative disorders syndrome (62%). A combination of three syndromes was detected in 62.7% of children, and the presence of two syndromes - in 39.3% of patients. None of the clinical syndromes was encountered in isolation. Examination of children with oxalate nephropathy for dysbiosis revealed that 66.3% had dysbiotic shifts of varying severity: grade I–II dysbiosis in 85%, grade III dysbiosis in 15%. It should be noted that the majority of 60% of patients did not pay attention to the state of their bowel function before the examination. However, during a targeted survey, characteristic clinical manifestations of

dysbacteriosis were revealed: flatulence, discomfort or minor abdominal pain, moderate stool disorders, mainly in the form of diarrhea.

Conclusion. In children with oxalate nephropathy, the following digestive system disorders predominate: chronic gastritis (33%), biliary tract dysfunction (55%), duodenal ulcer (4%), chronic enterocolitis (8%). Intestinal dysfunction in the form of dysbiosis was detected in 67% of children with oxalate nephropathy. Dysbiosis of I–II degree is most often diagnosed.

The leading clinical syndromes are: abdominal pain syndrome, dyspeptic disorder syndrome and asthenovegetative disorder syndrome.

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