RELATIONSHIP OF THE DEVELOPMENT OF OXALATE NEPHROPATHY IN CHILDREN WITH PATHOLOGY OF THE DIGESTIVE SYSTEM

Kayumova Amira Temurovna
student of group 326 of the Faculty of Medicine № 2

Akhmedova Dilbar Yusufzhanovna
Assistant at the Department of Pediatrics № 1 and Neonatology
Samarkand State Medical University
Samarkand. Uzbekistan

Introduction. Diet therapy plays an important role in the complex treatment of acute and chronic kidney diseases in children. High demands are placed on therapeutic nutrition, since the kidneys are the main organ for excreting metabolic products that come with food and formed as a result of the breakdown of body tissues, as well as the organ responsible for maintaining a constant internal environment. Under certain conditions, there is a need to correct in the diet such nutrients as animal protein, gluten, oxalates, urates, phosphates, the metabolic products of which are excreted through the kidneys and affect not only the pathogenetic mechanisms of the development of the disease, but also participate in the formation of non-immune processes of disease progression to stage of renal failure.

Key words: oxalate nephropathy, children, pathology, digestive system

Relevance. In recent years, there has been an increase in metabolic diseases, including among the child population. Among them, metabolic nephropathy is becoming increasingly common. Metabolic nephropathy is one of the serious problems of pediatric practice. Today, according to statistics, doctors note a large percentage increase in morbidity associated with serious metabolic disorders in the kidneys. At the same time, the level of metabolic nephropathies in general is 26-54% [1,2,5]. This group of diseases is united by the fact that they are accompanied by metabolic diseases. A crystalline sediment appears in the urine, which damages the

parenchymal structure of the kidneys and other parts of the urinary system. Usually urine is a solution of salts, saturated with various components. When crystals begin to form in the genitourinary system, this balance is disrupted, and the boundary between the types of protective and damaging factors is lost. In addition, protective factors – substances that retain salts in the form of a solution – also play an important role in the development of the pathological process. [7,10,11]. They are partially found in the blood plasma and are the “starting material” for the primary and final filtration of urine. They are secreted by the epithelium of the renal tubules.

The amount of colloidal components of urine depends on biologically active substances: trypsin, cathepsin, pepsin. Their function is closely related to the action of an acidic environment, inhibitory and activating substances. If there is insufficient protective factors in the body, predisposing factors predominate, and the premorbid background is accompanied by infectious diseases or injuries, crystals or, in the worst case, stones begin to form in the urinary system. [4,6,12].

The human intestinal microflora is an integral part of the human body and performs many vital functions. The total number of microorganisms living in different parts of the macroorganism is approximately twice the number of its own cells. The total mass of microorganisms in the human body is about 3-4 kg. The largest number of microorganisms is found in the gastrointestinal tract (75-78%), the rest - 9-12% - in the genitourinary system and skin. [8,9]. The sites of crystal accumulation are usually the collecting ducts, interstitial space, and renal tubules. The formation of crystals leads to the development of a complex inflammatory process of an immunocomplex nature. Its next stage is secondary damage to kidney cells - nephrons.

Purpose of the study: To study the relationship between the development of oxalate nephropathy in children with pathology of the digestive system

Materials and methods. We examined 84 children with oxalate nephropathy aged 5 to 14 years living in the Samarkand region. All children underwent general clinical examinations, biochemical tests of blood and urine. To assess the condition

of the mucous membrane of the gastrointestinal tract, esophagogastroduodenofibroscopy was performed, patients underwent ultrasound of parenchymal organs, and stool examination for dysbacteriosis.

Results and discussion. At the first stages of 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 of appealability.

When analyzing the medical and biological history, it was revealed that in 48% of cases there was a pathological pregnancy, 52% of the subjects had perinatal damage to the central nervous system. According to the genealogical history, the examined children were found to have a family history of pathology of the urinary system (68%) and gastrointestinal tract (32%). Artificial feeding was observed in 38% of children with pathologies of the urinary system and digestive organs. The family history was aggravated by urolithiasis in 22% of children, cholelithiasis in 18%, and peptic ulcer in 22%.

The study of data from registration form No. 112 made it possible 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.

Features of the structure of diseases of the gastrointestinal tract were identified depending on the form of kidney pathology: in 91% of children with dysmetabolic nephropathies, pathology of the digestive organs was identified, of which: chronic gastritis - in 32%; biliary tract dysfunction – in 56%; peptic ulcer - 3%, chronic enterocolitis -9%.

Analysis of the clinical picture in a group of children with kidney diseases indicates that with concomitant pathology of the digestive system, these patients in the clinic had dyspeptic syndrome in the form of nausea; 27% of patients had abdominal pain syndrome; 17% had no clinical manifestations.

The leading clinical syndromes that we identified after a clinical examination of children were: abdominal pain syndrome (82.3%), dyspeptic disorder syndrome in

84.6% of cases and asthenovegetative disorders syndrome (64.0%). None of the clinical syndromes occurred in isolation. A combination of three syndromes was identified in 61.8% of children, and the presence of two - in 38.4% of patients.

An examination of children with oxalate nephropathy for dysbiosis revealed that 64.3% had dysbiotic changes of varying severity: dysbiosis of I–II degrees - in 102 (85%), dysbiosis of III degree - in 18 patients (15%). It should be noted that the majority of 60% of patients did not pay attention to the state of intestinal function before the examination. However, when conducting a targeted survey, characteristic clinical manifestations of dysbiosis were identified: flatulence, discomfort or minor abdominal pain, moderate bowel movements, mainly in the form of diarrhea.

Inhibition of the growth of facultative anaerobes was observed in all patients with identified dysbiosis: bifidobacteria were found in the sixth, and lactobacilli in the fifth dilution (105 CFU/g). The total amount of E. coli corresponded to the norm in only 38 patients (31.6%), was moderately increased (up to 6.2x108 CFU/g) in 42 (35%), and decreased in the remaining 40 patients (33.3%). The decrease in the level of normal E. coli, as a rule, was moderate - to 1.3–2.8x108 CFU/g, in some cases - to 107 CFU/g (11 patients). In case of dysbiosis of the third degree, along with quantitative and qualitative changes in the normal flora, excessive growth of opportunistic microorganisms was noted: more often - hemolytic Escherichia coli, less often - Candida fungi.

Conclusion. In children with oxalate nephropathy, digestive system disorders such as chronic gastritis (32%), biliary tract dysfunction (56%), duodenal ulcer (3%), chronic enterocolitis (9%) predominate.

Intestinal dysfunction in the form of dysbiosis was detected in 65.3% of children with oxalate nephropathy. The most commonly diagnosed dysbiosis is grade I–II (85%). The leading clinical syndromes are: abdominal pain syndrome (84.3%), dyspeptic disorder syndrome (85.6%) and asthenovegetative disorders syndrome (60.0%). A combination of three syndromes occurred in 61.7% of children.

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