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## **FEATURES OF THE COURSE AND PROGNOSIS OF GLOMERULAR DISEASES IN CHILDREN**

**Resume:** Glomerulonephritis in children is an acute or chronic inflammation of the renal glomeruli of an infectious and allergic nature. Acute glomerulonephritis in children is characterized by a triad of syndromes: urinary (oliguria, anuria, hematuria, proteinuria), edematous and hypertensive; in chronic forms, one of them or a latent course prevails. The diagnosis of glomerulonephritis in children is based on anamnesis data, a characteristic clinical picture, laboratory parameters, ultrasound and puncture biopsy of the kidneys.

In the acute period of glomerulonephritis in children, bed rest, diet, antibiotic therapy, corticosteroids, anticoagulants, diuretics, hypotensive and immunosuppressive drugs are prescribed.

**Key words:** glomerulonephritis, childhood.

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## **ОСОБЕННОСТИ ТЕЧЕНИЯ И ПРОГНОЗА ГЛОМЕРУЛЯРНЫХ ЗАБОЛЕВАНИЙ У ДЕТЕЙ**

**Резюме:** Гломерулонефрит у детей – острое или хроническое воспаление почечных клубочков инфекционно-аллергической природы. Для острого гломерулонефрита у детей характерна триада синдромов: мочевого (олигурия, анурия, гематурия, протеинурия), отечный и гипертензивный; при хронических формах преобладает один из них или латентное течение. Диагноз гломерулонефрита у детей основан на данных

анамнеза, характерной клинической картине, лабораторных показателях, УЗИ и пункционной биопсии почек.

В остром периоде гломерулонефрита у детей назначается постельный режим, диета, антибиотикотерапия, кортикостероиды, антикоагулянты, мочегонные, гипотензивные и иммуносупрессивные препараты.

**Ключевые слова:** гломерулонефрит, детской возраст.

**Relevance.** Glomerulopathy (GP) is a heterogeneous group of diseases, the main feature of which is the primary suffering of the glomerula (glomerulus) [1,3,5]. This GP differs from another heterogeneous group of nephrological diseases, where the primary lesion is tubulointestinal tissue and this pathology is called tubulopathy. There is also a third group of kidney damage, when both glomeruli and tubules are simultaneously included in the pathological process, which suggests the name "nephropathy" [4,6,7]. However, the latter term is used very rarely, although a combination of glomerular and tubular nephron lesions occurs in almost all cases of progression of kidney pathology, regardless of the primary suffering of one or another of its departments [2,4,8].

Currently, it has become obvious that the unfavorable development of kidney pathology in both adults and children is associated with the development of tubulointerstitial changes, which, in combination with the progression of GP, lead to an unfavorable outcome - the development of chronic renal failure (CRF).

**The aim of the study.** The aim of the study is to establish the patterns of formation, course and progression of primary glomerular diseases of the early age of their debut in order to choose the optimal tactics of patient management.

**Materials and methods of research.** We examined 139 children with newly discovered manifestations of glomerulopathy at the age of 7-16 years (75 boys and 64 girls).

**The results of the study.** When analyzing anamnestic data, it was revealed that the development of glomerulopathies in the catamnesis in children with a transition to a chronic course as a chronic focus of infection was 2.1 times more likely to detect multiple caries; 2.9 times more often there was a combination of several chronic foci of infection compared with patients without signs of chronic GN. Children of the second group were 2.0 times more likely to have a high burden of hereditary history of kidney pathology (30.5 and 15.5%, respectively) and 1.4 times more likely to have arterial hypertension (AH) in parents (69.4 and 50.5%, respectively).

In addition, during the last month before the onset of the disease, most children (69.4%) with subsequent chronic GN had changes in urine tests in the form of oxaluria (28.8%), microhematuria (19.4%), microproteinuria (13.9%), uraturia (8,3%); 8 (22,2%) patients were observed for "urinary tract infection".

The analysis of clinical manifestations of the disease onset showed that in 96.1% of patients of the first group, GN proceeded typically, with acute development of nephritic syndrome (ONS) (Fig. 1). The criteria of ONS were acute onset of the disease with the development of edematous syndrome, the presence of arterial hypertension and changes in urine tests (in the form of proteinuria, micro- or macrohematuria). At the same time, in the majority of patients of the second group (91.6%), the clinical picture was asymptomatic, mainly represented by isolated urinary syndrome.

The results of treatment were evaluated before discharge from the clinic (by the 4th-6th week from the moment of hospitalization), subsequently in 139 children after 1 year, the long-term outcome of the disease in 36 children was studied 5 years after the debut of GN by determining the functional state of the kidneys, the severity of proteinuria and erythrocyturia. The immediate effectiveness of treatment was assessed as good - the absence of proteinuria with normal or minimal erythrocyturia; satisfactory - the absence of proteinuria with moderate erythrocyturia or minimal proteinuria with normal, minimal, moderate

erythrocyturia; low - minimal proteinuria with severe erythrocyturia or the presence of moderate proteinuria.

Verification of the effectiveness of complex therapy 12-14 months after the end of therapeutic measures showed that normalization of urine tests was registered in 103 (74.1%) patients. Of these, 81 (78.6%) children managed to achieve complete clinical and laboratory remission after 4-5 weeks from the start of treatment, in 8 (7.8%) children a little later - after 10-12 weeks, in 11 (10.6%) patients after 18 weeks, in 3 (2.9%) children - isolated changes in urine were detected before 1 year, which is generally characteristic of the typical form of acute glomerulonephritis. After 5 years of follow-up, clinical recovery was established in this group.

At the same time, 36 (25.9%) children could not have regressed symptoms, as a result, chronic glomerulonephritis was subsequently formed. 33.3% of patients had recurrent urinary syndrome after normalization in the first 3 months. In 66.7% of cases, changes in urine in the form of proteinuria and (or) hematuria persisted for more than 12 months. In the future, urinary syndrome persisted by the end of the 2nd year of the disease in 20.9% of children, by the end of the 3rd year in 5.1% of patients. After 5 years from the onset of the disease, none of the patients of the second group recovered.

**Conclusion.** Based on the results of our studies, it can be concluded that the age younger than 2 years in children with steroid-resistant nephrotic syndrome and the duration of cyclosporine A therapy for more than 36 months are predisposing factors to damage to the tubules.

Thus, the paper presents the modern structure of glomerular diseases according to our clinic, their age characteristics are established. We gave clinical and laboratory characteristics of each of the morphological forms of primary glomerulopathies, characterized the course, highlighting the factors of progression. The biomarkers we have studied carry important diagnostic and prognostic information.

Based on the results of our own research, we have proposed a concept according to which the development and course of glomerular diseases depends on the interaction: 1) genetic factors that predestine or predispose to the occurrence of the disease; 2) environmental factors, the change of which leads to a change in the structure of glomerular diseases and 3) progression factors that determine the rate of decline in kidney function in children with glomerular diseases.

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