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CHARACTERISTICS OF THE COURSE OF ACUTE GLOMERULONEPHRITIS IN CHILDREN

Annotation. The article analyzes the data on the clinical picture of acute glomerulonephritis in 60 children aged 3 to 15 years in 2020. The most common etiology of acute glomerulonephritis in children is beta-hemolytic streptococcus group A. The outcome of this disease in most cases is recovery.

Key words: acute glomerulonephritis, nephrotic syndrome, nephritic syndrome, nephron.

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ОСОБЕННОСТИ ТЕЧЕНИЯ ОСТРОГО ГЛОМЕРУЛОНЕФРИТА У ДЕТЕЙ

Аннотация. В статье проанализированы данные о клинической картине острого гломерулонефрита у 60 детей в возрасте от 3 до 15 лет в 2020 году. Наиболее распространенной этиологией острого

гломерулонефрита у детей является бета-гемолитический стрептококк группы А. Исходом этого заболевания в большинстве случаев является выздоровление.

Ключевые слова: острый гломерулонефрит, нефротический синдром, нефротический синдром, нефрон.

Acute glomerulonephritis is an immuno-inflammatory disease of the renal parenchyma, involving the morpho—functional structure of the kidney - nephron, in particular, the glomerular nephron apparatus.

At the same time, the glomeruli of the nephron change in a number of morphological structures during alternating, exudative and proliferating processes.

If the disease becomes complicated during the course of the disease, then complete destruction of the glomeruli is observed. As the disease progresses, the glomerular functions of both kidneys are impaired.

Acute glomerulonephritis is usually an infectious disease, the causative agents of which are more often bacterial strains - hemolytic streptococcus group A (causes the disease in 90% of cases), staphylococcus, malarial plasmodium and various viruses — hepatitis B, mumps, infectious mononucleosis), also provokes the progression of the disease alcohol consumption, exposure to various medications.

This process is a diffuse immunocomplex lesion mechanism. The development of glomerulonephritis is facilitated by cooling.

This form of nephritis mainly affects and affects children from two to five years old, acute glomerulonephritis is a common pathology of this age. In adults, this form of nephritis is not widespread in relation to children, and occurs in about 1% of cases in relation to chronic glomerulonephritis.

In the process of development and progression of acute glomerulonephritis in children, various disorders in immunological reactions play a major role. In the outcome of post-streptococcal acute glomerulonephritis, the toxins of which have

an alternating effect on the glomerular basement membrane. As a result of damage to the glomerular membrane, changes occur in the vascular wall and intravascular blood flow of the kidney, which leads to a slowdown in the flow of tubular fluid and an increase in the volume of extracellular fluid, acute renal failure occurs. This pathology leads to the fact that in the glomerular apparatus there is an increased permeability of the capillary walls of the nephron to the shaped blood elements; there is a slowdown in the flow of blood circulation in the vessels of the glomerulus, which leads to the formation of small blood clots in it; blood stasis progresses, this leads to a significant or complete (in individual glomeruli) violation of the filtration function of the kidney. Over time, glomerular tissues are replaced by connective tissue (nephron sclerosis occurs) with the formation of morphological changes — the appearance of half-moons in the glomerulus of the kidney; due to the progression of death of kidney nephrons, there is a significant decrease in blood filtration by the kidneys, which entails an increase in blood circulation of decay products of various metabolic processes and damage to various organs and tissues.

With the progression of acute glomerulonephritis, children may subsequently develop:

— Uremia (due to a decrease in blood filtration by the kidneys and an increase in the content of urates and uric acid);

— Chronic renal failure (as a result of sclerosis of the renal nephrons due to the immunocomplex attack of the Bowman membrane, which leads to cell damage and its replacement of connective tissue);

— Chronic heart failure (due to damage by urates and increased nitrogen content in the blood);

—Malignant arterial hypertension (occurs due to damage to the juxtaglomerular apparatus, when a large number of components of the renin-angiotensin system are released to maintain blood pressure levels, for a normal

level of kidney filtration). Hypertension can lead to retinal detachment, headaches, hemorrhagic strokes;

— Uremic pericarditis or carapace heart (in this case, urates are deposited into the pericardial cavity. Urates and fibrin are deposited on the parietal and visceral pleura of the pericardium. These pathological deposits prevent the free contraction of the heart from the outside and this condition will progress.

The purpose of the study. To evaluate the clinical course of acute glomerulonephritis in children aged 3 to 15 years. To evaluate the clinical differences between acute glomerulonephritis with nephritic and nephrotic syndromes.

Materials and methods of research. A clinical analysis of 60 children was conducted, with a study of their course of acute glomerulonephritis at the age of 3 to 15 years in 2020. The patients were divided into 2 groups: with nephritic syndrome (41 children) and with nephrotic syndrome (19 children)

The results of the study. It was revealed that acute glomerulonephritis mainly occurs with nephritic syndrome. Hematuria occurs in 100% of cases in acute glomerulonephritis with nephritic syndrome. Proteinuria in nephrotic syndrome occurs in 100% of cases, and hematuria does not occur in acute glomerulonephritis with nephrotic syndrome (Table 1).

Table 1. Symptoms of acute glomerulonephritis

The symptom	Acute glomerulonephritis with nephritic syndrome	Acute glomerulonephritis with nephrotic syndrome
Swelling	78 %	96 %
Arterial hypertension	91 %	11 %
Oliguria	59 %	69 %
Proteinuria	97 %	100 %
Hematuria	100 %	0
Macrohematuria	39 %	0

Acute glomerulonephritis with nephritic syndrome has higher recovery rates in relation to nephrotic syndrome (Table 2).

Table 2. Outcomes of acute glomerulonephritis

The outcome of the disease	**Acute glomerulonephritis with nephritic syndrome**	**Acute glomerulonephritis with nephrotic syndrome**
Recovery	95 %	35 %
Transition to a chronic course	9 %	75 %

Conclusions. 1. Acute glomerulonephritis in children mainly occurs with the presence of nephritic syndrome.

2. The most favorable outcome of the disease in children is acute glomerulonephritis with nephritic syndrome.

3. Most children who have had acute glomerulonephritis with nephrotic syndrome have gone into a chronic course of the disease, which reduces their quality of life.

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