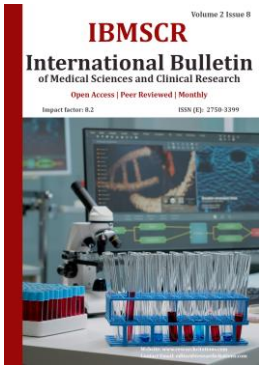

CURRENT PROBLEMS OF CHILDHOOD NEPHROLOGY AT THE BEGINNING OF THE XXI CENTURY

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Annotation: Pediatric nephrology is developing at the intersection of nephrology and pediatrics, therefore, naturally, it touches upon issues that are equally important for pediatric general practitioners and pediatric nephrologists, who mainly deal with patients with pathology of the urinary system.

Keywords: organs of the urinary system (OUS), pediatrics, diagnosis, treatment, children.

INTRODUCTION

With the development of clinical medicine, which takes place on the basis of involvement in purely applied diagnostic and therapeutic tasks, which daily confronts a practicing pediatrician, the achievements of modern biochemistry, physiology, embryology, genetics and other theoretical disciplines, the diversity of problems becomes more and more distinct. which should be known to a wide audience of physicians dealing with healthy and sick children. Much of what is studied in childhood nephrology is related to these problems. The reason is simple - the kidney belongs to the integrating organs, and therefore, no matter what disease a child develops, the organs of formation and excretion of urine suffer to one degree or another.

MATERIALS AND METHODS

One of the urgent problems is the epidemiology of organs of the urinary system (*OUS) diseases. Speaking of epidemiology, the question naturally arises of the prevalence of OUS diseases and risk factors for their development. At different stages of the existence of the human community, various influences on the child were observed, which caused certain OUS diseases. At the beginning of the last century, with the widespread prevalence of tuberculosis and streptococcal infections, OUS tuberculosis and post-scarlet nephritis occupied a large place in the structure of kidney diseases.*

RESULTS AND DISCUSSION

Risk factors for the development of various diseases of the kidneys and urinary organs are often of the same type. We must not forget that at present there is a clear decrease in immune parameters in children, which may also affect the occurrence of nephropathies [1]. It is necessary to remember the wide spread of various viral infections in recent years, which may be due to changes in the immune state of the children's body. This is clinically dangerous in the form of the development of various nephropathies. All the variety of situations that can manifest as OUS pathology can be summarized in Table. 1.

Table 1

Risk of developing a variety of diseases OUS

Anamnestic features	Development risk
Aggravated obstetric and gynecological history in the mother: miscarriages, abortions, premature births, inflammatory diseases of the genitals, hormonal disorders, endometriosis, acute respiratory infections, especially in the first trimester of fetal development, medication, etc.	• Anomalies in the development of the urinary system, dysplasia renal tissue; • Syndromic pathology with kidney damage; • Intrauterine and postnatal infection; • Membrane pathology; • Nephrotic syndrome
Pathological course of pregnancy and childbirth: gestosis; the threat of termination of pregnancy; viral and bacterial infections; arterial hypertension and hypotension; anemia; exacerbation of chronic somatic pathology; gestational pyelonephritis and cystitis; premature, rapid labor	• Anomalies in the development of the urinary system (organ, tissue, cellular, subcellular); • Morphofunctional immaturity; • Intrauterine and postnatal infection with the development in some cases of nephrotic syndrome; • Neurogenic dysfunction of the urinary system; enuresis
The presence of occupational hazards of the father and mother: physical factors (vibration, radiation); chemical factors (varnishes, paints, oil products, salts of heavy metals).	• Anomalies and malformations of OUS formation; • Dysplasia of renal tissue; • Intrauterine infection; • Morphofunctional immaturity
Adverse environmental factors of the place of residence (radiation, pollution of soil, water with salts of heavy metals) and bad habits of parents (smoking, alcoholism, substance abuse)	• Teratogenic effect on the fetus with the development of dysembryogenesis of various organs, including OUS; • Chronic intrauterine hypoxia; • Instability of cytomembranes;
Burdened heredity for diseases of the urinary system in the family; metabolic disorders, the presence of genetic diseases in the family	• Anomalies and defects of the urinary system, the development of hereditary pathology of the kidneys; • Metabolic disorders; • Enuresis; • Hereditary syndromes with lesions of the urinary system
Features of HLA antigens in the family	• Microbial-inflammatory or immune

	process in urinary system
Types of constitution: lymphatic, exudative-catarrhal, neuro-arthritic, allergic diathesis	• Microbial-inflammatory process in the urinary system; • Metabolic disorders
The presence of vulvitis or balanoposthitis in a child during the first months of life	• Urethritis, cystitis; • Ascending urorenal infection with the formation of chronic pyelonephritis
Frequent acute respiratory viral and bacterial infections, the presence of chronic foci of infection (tonsillitis, adenoiditis, sinusitis)	• Combined viral-bacterial infection of the urinary system; • Exacerbation of chronic diseases of the urinary system

A significant place among this pathology is occupied by immune and autoimmune nephropathies, both primary and secondary, developing in the systemic pathology of the connective tissue and blood vessels [2]. It should also not be forgotten that many hereditary nephropathies may first appear at preschool and even school age.

The greatest concern not only among nephrologists, but also among pediatricians, regardless of their specialization, is the frequent development of UTI in children, which includes not only diseases of the lower urinary tract, but also pyelonephritis (PN), a pathology of the renal parenchyma [5].

Among hereditary nephropathies that manifest themselves in childhood and are widely studied in recent years in the world, there are two types of diseases:

– nephropathy, the main clinical manifestation of which is hematuria;

- nephropathy, characterized by the development of NS. Genetically determined pathology with hematuria includes hereditary nephritis (Alport syndrome - SA) and thin basement membrane disease (TBM). Both diseases are non-immune glomerulopathies associated with mutations in type IV collagen genes.

The main difference between hereditary hematuric glomerulopathies lies in the characteristics of morphological changes in the basal membranes (BM) of the glomerular capillaries, detected during electron microscopic examination, as well as in the prognosis of the disease. In hereditary nephritis, BM are thickened and have a pronounced [4].

In childhood nephrology, by the beginning of the 21st century, a lot of problems have accumulated that should be known to pediatricians, regardless of their specialization. These include the epidemiology of OUS diseases, which indicates an increase in the frequency of kidney pathology and attaches importance to environmental pollution factors that affect this process. Far beyond its importance for nephrology, UTI is becoming a pediatric problem, both due to its high prevalence and the need for long-term treatment of such patients by general practitioners. DN with OCC also seriously worries pediatricians, as they can be precursors of pathology not only of the kidneys, but also of other organs.

CONCLUSION

A significant problem in pediatric nephrology is the progression of hereditary, congenital and some acquired nephropathies, which is fraught with the development of renal failure.

Renoprotectors, which are prescribed by nephrologists, should be used by patients for a long time under the supervision of general medical practitioners. This is all the more important because, unfortunately, the system of substitution therapy for children in our country is not sufficiently developed, therefore, the maximum extension of a child's life to adulthood increases his chance of using dialysis and kidney transplantation.

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