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MODIFIED COMPREHENSIVE TREATMENT OF CHRONIC PYELONEPHRITIS IN CHILDREN

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Abstract
The aim of this work was an attempt to evaluate the effect of complex treatment on some endogenous intoxication indicators in chronic pyelonephritis developed on the background of dismetabolic nephropathy (DMN) (DCHP). Patents and methods. A survey of 177 children DCHP, aged 4 to 15 years. Patients were divided into 3 groups depending on treatment method. Results. Comparative assessment of the results of the study of endogenous intoxication conducted after treatment in children with DCHP, depending on the method of treatment. Conclusion. The use of complex treatment when DCHP is the most appropriate method of therapy. This method leads to the restoration of the TAC (total albumin concentration) and EAC (effective albumin concentration) in the blood, TAC in the urine.

Keywords: endogenous intoxication, regional lymph antibiotic therapy.

Introduction

Preventive medicine is topical and in many ways discourteous. In connection with the high frequency of chronic kidney disease in children, the prevention of their exacerbations is gaining increasing recognition [3, 12]. The most prevalent in the structure of nephropathy now are kidney lesions of metabolic origin, which constitute the majority - 40.0% of all kidney diseases in children, and in young children up to 71.6% [4, 11]. In the practice of a pediatrician, signs of metabolic disturbances in the urine are found in every third child [1, 2, 13]. In Uzbekistan, in the structure of dismetabolic nephropathy in children, oxalate crystalluria is the most common, accounting for 68-71% of all metabolic disorders [5, 6]. Dysmetabolic disorders are one of the leading predisposing factors to the recurrence and progression of chronic pyelonephritis in children [8, 14]. At the basis of the pathogenesis of dismetabolic nephropathies, especially those caused by genetic factors, there are metabolic processes of interstitium, glomerulus and renal tubules [2, 7]. And therefore, the consequence of renoprophylaxis should be the prevention of marked glomerular sclerosis and tubulointerstitial fibrosis, which is the basis of chronic renal failure [3, 9, 15]. In the case of dismetabolic chronic pyelonephritis, the measures should be directed to reduce the concentration of nephrotoxic salts leading to ischemia, edema and sclerosing of the kidney [5, 10, 16].

Objective:

To develop the principles of secondary prevention of chronic pyelonephritis in children.

The study involved 177 children with chronic pyelonephritis on the background of dysmetabolic disorders of the oxaluria type at the age of 4 to 15 years. Patients were conditionally divided into 4 groups depending on the method of treatment. Group I included 48 children who received conventional therapy (in the first three days, it is usually i\m cefotaxime, after the results of bacteriological study - antibacterial drug, depending on the sensitivity of the pathogen). Group II consisted of 47 patients who received antibiotics in a lymphotropic way, that is, regional lymphotropic antibacterial therapy (RLAT) was performed in combination with vitamin A. The patients of all studied groups received a copious drink and followed a diet used for oxaluria. The control group consisted of 30 practically healthy peers.

All examined patients under went genealogical pedigree analysis in order to establish the fact of hereditary burden. Studies of indices of endogenous intoxication and functional state of the kidneys were performed in all children before and after treatment. Glomerular filtration of the kidneys was determined by the clearance of endogenous creatinine (Van Slayke), osmolarity of urine by cryoscopic method on OMK apparatus A - 1 C - 01, oxalate by NV. Dmitrieva (1966) method.

Indicators of protein metabolism were determined (total serum protein, protein fractions, total and effective albumin concentration, albumin binding capacity). The value of the total and effective albumin concentration was determined using the Albumin-UTS kit (manufactured by Eiliton LLC by order of A / o Unimed CJSC) in quartz cuvettes of section 1 per 1 cm. Albumin binding capacity and toxicity index were calculated using the formulas : ABC = (EAC / TAC) * 100%, where TAC is the total concentration of albumin in g / l, EAC is the effective concentration of albumin, the equivalent of “healthy” albumin, measured by a fluorescent method with a K-35 probe, in g / l. [6]. Mathematical processing of the obtained results was carried out using computer statistical programs Excel. In the study of indices of endogenous intoxication, depending on the method of treatment of chronic pyelonephritis, it was revealed: in children receiving standard therapy (group I), before discharge from hospital, the level of TAC, EAC, ABC in blood plasma remained practically unchanged ($P_1 > 0.1$) (Table 1).

Table 1. Dynamics of indices of endogenous intoxication of the kidneys in blood plasma in patients with CSP, depending on the method of treatment (M ± m)

Indices	Healthy (n=30)	Before treatment (n=177)	After treatment	
			I группа (n=48)	II группа (n=47)
TAC, g/l	47,5±0,55	30,13±0,96 P<0,001	31,04±1,03 P_1>0,1	40,16±0,81 P_1<0,001, P_2<0,001
EAC, g/l	40,4±3,7	23,4±0,84 P<0,001	23,02±0,91 P_1>0,1	35,5±0,3 P_1<0,001, P_2<0,001
ABC, (EAC\TACx100) %	93±0,9	77±0,3 P<0,001	73,3±0,8 P_1>0,1	87,9±0,3 P_1<0,001, P_2<0,001

Note: P-reliability of the difference between indices of healthy children and in children with chronic pyelonephritis. P1 - the reliability of the difference between the indicators before and after treatment. P2 - the reliability of the difference between traditional therapy and the group of children who received RLAT in combination with vitamin A.

More marked changes in the indices of endogenous intoxication in patients were revealed on the background of the use of RLAT in combination with vitamin A (group II). Thus, the parameters of TCA, ECA and BCA in blood plasma did not only significantly improve with respect to the relevant parameters before treatment and after the standard treatment (P_1 <0.001, P_2 <0.001), but also reached the level of healthy children (P>0.1).

Analyzing the state of kidney function in the examined patients who received traditional treatment, there was an improvement in the indices, but the difference was statistically unreliable (P_1>0.1). In patients of group II, a significant increase in the clearance of endogenous creatinine (P_1<0.001), urine osmolality (P_1<0.001), daily diuresis (P_1<0.001), oxaluria (P_1<0.001) was noted compared with similar indications before treatment and indicators after conventional treatment (P_2<0.001) (Table 2).

Table 2. Dynamics of renal partial function indicators in patients with CSP, depending on the treatment method (M ± m)

Indices	Healthy (n=30)	Before treatment (n=177)	After treatment	
			I группа (n=48)	II группа (n=47)
RGF, ml/min.м²	98,6±7,8	72,0±0,25 P<0,001	72,5 ±1,59 P_1>0,1	96,8±1,61 P_1<0,001, P_2<0,001
Osmolarity of urine, mmol/24hours	1000±200	646,7±9,9 P<0,001	712,7±24,73 P_1<0,001	935,7±24,0 P_1<0,001, P_2<0,001
24hours diuresis, l/24h.	1,7±0,036	1,06±0,015 P<0,05	1,08±0,027 P_1>0,1	1,22±0,046 P_1<0,05, P_2<0,05
Oxaluria, mg/24hours.	25±2,4	46,8±1,14 P<0,001	45,2±1,66 P_1>0,1	26,4±0,29 P_1<0,001, P_2<0,001

Note: P-reliability of the difference between indices of healthy children and in children with chronic pyelonephritis. P1 - the reliability of the difference between the indicators before and after treatment. P2 - the reliability of the difference between traditional therapy and the group of children who received RLAT in combination with vitamin A.

The obtained results allowed to recommend complex treatment (RLAT + vitamin A) of chronic pyelonephritis for the prevention of frequent relapses, development of renal failure, that is, to use as a method of renoprophylaxis.

Conclusions

1. In the period of exacerbation of chronic pyelonephritis, disturbances of partial kidney functions were noted in patients: a decrease in the glomerular filtration rate, osmolarity of urine, daily diuresis; processes of endotoxicosis: a significant reduction in the total albumin concentration, effective albumin concentration, the binding capacity of albumin in the blood plasma.
2. The use of complex treatment: RLAT + vitamin A in CCP is the most acceptable method of therapy, which leads to recovery of daily diuresis, has a positive effect on the level of oxaluria, the functional state of the kidneys and the indices of endogenous intoxication: the level of TCA, ECA , BCA in blood plasma.

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