

**STRESS-CHANGES OF
IMMUNOLOGICAL REACTANCE IN
CHILDREN WITH CONGENITAL
OBSTRUCTIVE UROPATHYS**

Razin M.P.¹, Lavrov O.V.¹, Razin A.P.²

¹*Kirov State Medical Academy,*

Kirov, Russia

²*Salsk Central Hospital,*

Salsk, Russia

Actuality of the problem. Congenital obstructive uropathy (COU) is an extremely extended pathology in children's practice. These anomalies in a range of patients can be complicated with various conditions, but their especially frequent and early complication is secondary pyelonephritis which essentially burdens the main pathology run and creates additional troubles in the patients' treatment. It is conditioned not only by inflammatory changes in the pelvicalyceal system and tubulointerstitial tissue of a kidney, but also by the nascency of immunopathological reactions and different immune alterations.

The changes of immunological reactivity at COU undergo considerate changes depending on the degree of ureteropelvic obstruction and the potency of secondary infectious process. Other factors can influence the intensity of immune alterations, but in the literature available we haven't come up the data for how a surgical stress and anesthetic management during an operative intervention at COU in children influence different components of immune response.

Purpose of the research. The purpose is to study the immunologic reactivity changes in children with COU; to substantiate the balanced treatment policy taking into account the diagnosed immune alterations.

Problems of the research. 1) to study changes of cellular and humoral immunity values in children with COU; 2) to investigate the dynamics of cellular and humoral immunity values' change before and after the operative intervention in this group of patients; 3) to substantiate the balanced treatment policy taking into account the diagnosed immune alterations.

Materials and methods of the research. We examined 40 children (general group) from 5 to 15 years old with COU complicated with secondary chronic obstructive pyelonephritis.

Among them there were 28 (70%) boys and 12 girls. The surgical organ-saving treatment was prescribed for all of them. General clinical, clinical and laboratorial, biochemical and instrumental examinations were performed for the general group. Alongside with this CD₃- and CD₂₂-lymphocyte content (PCR with homogeneous antibodies), CD₄- and CD₈-lymphocyte value in blood (method of indirect immunofluorescence with homogeneous antibodies) were detected in all the children the day before and the day after the surgery; immunoglobulin (G, A, M) levels (method of radial immunodiffusion using antichain serums) and concentration of circulating immune complexes in blood serum (precipitation method) were investigated as well. The material obtained at the immunologic reactivity parameters' investigation in the observed patients was compared to the specified indexes' investigation results in 232 children of the same age of I-II health groups living in Kirov and Kirov Region (the control group). All the patients were provided with a standard complex anesthesia service: general inhalant endotracheal anesthesia with halothane + intravenous induction of stupeficient analgesics. The Haynes-Anderson's operation was carried out for hydronephrosis patients; Cohen's operation was carried out for patients with vesicoureteral reflux; Marshall-Stevenson's operation – for obstructive ureterohydronephrosis patients.

Results. Immunologic reactivity changes in the general group of patients with COU before the influence of surgical stress and anesthesia service manifested in the authentic reduction of CD₃-lymphocytes' and CD₈-cells' relative count in blood; G and M immune serum globulins' value increase. After the surgical aid and its anesthetic management the authentic reduction of CD₃-lymphocytes' relative count, relative and absolute count of CD₄-lymphocytes and CD₈-cells, and G and M immune serum globulin increase.

Conclusions:

1. There are evident immunological status changes in children with congenital obstructive uropathy.
2. These abnormalities redouble under the influence of a surgical stress and preparations of anesthetic management.

3. The diagnosed immune alterations define the advisability of using immunotropic preparations in anesthetic management of the operations concerning children's COU.

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CLINICAL VALUE OF THE DEFINITION OF SPECTRUM UROPATHOLOGICAL AGENTS IN CHILDREN WITH OBSTRUCTIVE PYELONEPHRITIS AT THE PRESENT STAGE

Razin M.P.¹, Lavrov O.V.¹, Razin A.P.², Ignat'yev S.V.¹

¹*Kirov States Medical Academy, Kirov, Russia*

²*Salsk Central Hospital, Salsk, Russia*

In the context of children's urinoexcretory tract obstructive disease number growth tendency and a large percentage of complications of these diseases with secondary infectious processes, we undertook an attempt to evaluate the features of pyelonephritis microflora in children with congenital obstructive uropathy (COU) in its dynamics and to clear up the reasons of various potency of inflammatory processes in different patients. Patient histories of 5-14 year-old children with COU, who had been treated in the surgical department of Kirov Regional Clinical Children's Hospital from 1997 to 2002, and the data for urine culture obtained during the children's examination in three months after discharge from the hospital were subject to the retrospective analysis. Obstructive pyelonephritis complicated COU in 90,4% of the cases, 52 patients being examined.

At the admission to the hospital *St.aureus* (42,3%) were cultured more often, more rarely – in decreasing order- epidermal staphylococcus, collibacillus, *Klebsiella*, saprophytic staphylococcus, streptococcus, enterobacterium, seracia. The culture was negative in 13,7% of the

patients. In the dynamics the microflora had been changing and, at the discharge of the child from the hospital, *E.coli* (23%) were detected more often, more rarely – epidermal staphylococcus, blue pus bacillus, mycology, aurococcus, *Klebsiella*, *Proteus*, enterobacterium. The culture was negative in 34% of the patients. In three months *St.epidermidis*, *E.coli* (no 13,5%) lead, yeast-like fungi were detected in 23,5% of the cases. Blue pus bacillus, different staphylococcal associations, *Proteus*, *Seracia* and aurococcus were cultured more rarely. The urine culture had no results in 21, 3 % of the cases.

For the quantitative concept of intoxication syndrome as one of the inflammatory process potency component we calculated the leucocytic index of intoxication (LII). In the patient general group at the admission to the hospital it was high and in average it was equal to 3,42. In the dynamics normalization of the index was marked. Significant differences of the LII meanings were detected in "aseptic" diseases (0,98) and COU with pyelonephritis (3,6). More than that, we paid attention to the fact that the LII at the admission was much more higher than overall average ($\approx 6,93$) in a particular group of patients. The disease forms of these children were very different, and all of them were complicated with pyelonephritis. Having compared the data we found out that *E.coli*. was cultured from the urine in 75% of the cases during the first term of the research in a group of patients with the most active pyelonephritis.

By virtue of our research results we can make the following conclusions:

1. The status severity of sick children with COU is primarily conditioned by the activity of secondary infectious process, and the laws of representation in microbiological spectrum have stage character.
2. The maximal evidence of the intoxication syndrome is typical of coli-mediated secondary chronic obstructive pyelonephritis.