



## CHARACTER OF CLINICAL AND LABORATORY PARAMETERS IN ACUTE TUBULOINTERSTITIAL NEPHRITIS IN CHILDREN ON THE BACKGROUND OF COVID-19

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**Introduction.** Renal manifestations are life threatening conditions such as end-stage renal disease, especially when associated with viral infections. Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is an emerging public health problem worldwide, potentially affecting all organs, including the kidneys. Most reports of renal manifestations have been done mainly on adults and the elderly, with a limited number on children.

**Purpose.** To study clinical and laboratory features of Covid-19-induced acute tubulointerstitial nephritis.

**Materials and methods.** We studied 32 patients aged from 5 to 18 years with acute tubulointerstitial nephritis (ATIN) divided into 2 groups: General clinical - medical history, examination, blood and urine tests, instrumental - excretory urography, renal ultrasound, nephroscintigraphy, blood pressure tests, biochemical - blood and urine creatinine, PCR, bacteriological - urine culture for microflora, statistical methods were used during the investigation.

**Results.** It was found that Covid-19 conditions of acute tubulointerstitial nephritis occurred in about 47% of our hospitalized children and 5 children requiring admission to the intensive care unit. Girls predominated in 18 (57%) of those with ATIN. The time frame for determination of ATIN after a history of Covid-19 disease from the date of admission ranged from three weeks to 2 months. Depending on the etiological factor we pointed out the following variants of ATIN: toxic-allergic - it was caused by bacterial infections (angina, otitis), increased protein breakdown (6 patients (19%)); viral infections - it developed against or immediately after acute respiratory infections (4 (12.5%)) and Covid-19 (15 (47%)). In 1 child (2.7%) the role of hemodynamic disorders (shock) was established.

When examining patients with ATIN, the degree of activity was established in accordance with the criteria proposed by N.A. Korovina, O.N. Rzhetskaya (1991).

Taking into account the problem of early diagnostics of tubulointerstitial nephritis, we should mark the peculiarities of clinical picture in this group. Clinic of ATIN in 19 children (60%) was on the 3rd - 4th day of the etiologic factor. The signs of intoxication prevailed (headache, lethargy, sleepiness, appetite decrease) - 58/93 (10/14), transient fever of subfebrile character - 47/80% (8/12), recurrent abdominal pains - 29/73% (5/11). Extra-renal manifestations (oedematous syndrome) occurred in 47/93% (8/14), isolated urinary syndrome 58/33% (10/5), tendency to hypotension 58/20% (10/3).

**Conclusions.** According to our observations, it is clear that at the admission of children with ATIN with a history of Covid-19 and Group 1, all of the analyzed parameters achieved significant differences compared to control, which is a reflection of impaired immunological reactivity of the child in the development of ATIN, while in children with ATIN against Covid-19 we observed more profound changes with respect to all the studied clinical and laboratory parameters.

In our opinion, this is associated with greater aggression of the pathogenic microorganisms causing Covid-19, which is the cause of more pronounced intoxication.