

**FEATURES OF THE CLINIC AND BLOOD PARAMETERS IN PATIENTS WITH  
CHRONIC HEPATITIS ON THE BACKGROUND OF RHINOSINUSITIS****Rajabov A. Kh.\***

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**ABSTRACT**

240 children aged 3 to 15 years with chronic hepatitis B in combination with rhinosinusitis were examined. All patients with manifestations of RS and CHB had recurrent sinusitis, symptomatic RS of General intoxication, dyspeptic phenomena, enlargement and densification of the liver and pronounced biochemical parameters of the blood. The clinical significance of rhinosinusitis in children with chronic hepatitis B is determined by its role in the development of severe for RS of the course, the influence on the rate of progression of the underlying disease and the frequency of adverse outcomes. In children with chronic hepatitis B on the background of chronic rhinosinusitis develop deep clinical and biochemical changes.

**KEYWORDS:** Rhinosinusitis, chronic hepatitis B, liver, blood biochemistry.

Relevance of the problem. Currently, an urgent problem of otorhinolaryngology are inflammatory diseases of the nose and paranasal sinuses. Acute and chronic rhinosinusitis occur in people at any age and are detected in 80% of the world's population.<sup>[6,8,9]</sup>

The General medical significance of rhinosinusogenic pathology is due to the fact that rhinosinusitis (RS) can affect the function of distant organs and systems. Inflammation of the paranasal sinuses is a direct or indirect cause of numerous pathological conditions in children, as well as a factor aggravating the course of various diseases.<sup>[2,3,4]</sup> Currently, more than 100 diseases associated or combined with RS have been described, including liver pathology.<sup>[1,5,7]</sup>

Currently, the existing conservative methods of treatment of RS in combination with other diseases are insufficiently pathogenetically justified, since they do not completely provide suppression of focal infection and their further promotion to other organs and systems of the body. To date, there is no clear answer to the question of how rhinosinusogenic infection affects the liver, and in what clinical for RS this relationship manifests itself.

Based on the above, we aimed to identify the characteristics of some blood parameters and features of clinical manifestations of two different diseases in their combination. In this regard, it was of interest to study the features of the clinical course of combined pathology in order to expand the representation of both influences and

interdependence. Given the data on the high frequency of RS in patients with chronic hepatitis B (CHB), the negative impact of its exacerbations on the course of the underlying disease, it becomes obvious the need for rehabilitation of the infectious focus in the nasal cavity and paranasal sinuses.

**MATERIALS AND METHODS OF RESEARCH**

We examined 240 children aged 3 to 15 years, patients with RS in combination with CHB. The study was conducted in the Department of Hepatology and congenital and acquired diseases of ENT organs of the Republican specialized scientific and practical center of Pediatrics of the Ministry of health of Uzbekistan. Depending on the method used, the study methods and for comparison, the results of the study, the patients we observed were divided into 3 groups.

The first group consisted of 120 children with RS in combination with CHB (the main group). For comparative analysis of biochemical parameters of mono- and combined pathologies, the following two groups were taken: 60 patients with RS (the first group compared) and 60 children with CHB (the second group compared). 20 practically healthy children of the same age (control group) were also examined.

The method of examination included a detailed study of complaints and anamnesis of patients, examination of the nasal cavity. Diagnosis of CHB was established on the basis of anamnesis of the disease, clinical examination, conventional biochemical, serological and instrumental

studies. Biochemical examination included generally accepted in Hepatology studies (Alanine aminotransferase, Aspartate amino transferase, total bilirubin, total protein, thymol sample, gammaglobulin, cholesterol, SMP, CIC, Lactate dehydrogenase -4, Lactate dehydrogenase -5) by a unified method.

## RESEARCH RESULT

Changes in biochemical parameters in the examined patients were characterized by various violations of certain blood parameters depending on the pathological process in the nasal cavity and liver. The results of functional indicators of the liver in the examined patients are presented in the form of a table.

We judged the severity of cytolytic syndrome by the activity of serum levels of Alanine aminotransferase and Aspartate Amino Transferase, which were most elevated

in the groups of patients with RS +CHB and CHB. The level of Alanine aminotransferase in the group of patients with RS +CHB (the main group) increased by 7.7 times compared to the data of the healthy group ( $p<0.05$ ), in children in the second comparative group increased by 3.5 times ( $p<0.05$ ). The average level of liver enzymes in patients with RS compared with those of patients with RS +CHB and CHB was relatively lower and was 2.1 times higher ( $p<0.05$ ) than in healthy children. Mean values of Aspartate Amino Transferase in patients with RS +CHB and CHB, respectively, were 5.3 and 3.8 times higher than in children of the control group and 2.4 and 1.7 times higher than in patients with RS. The total protein in all 3 groups was kept approximately at the same level, but it was most significantly reduced in patients with RS +CHB compared to data from healthy individuals.

### Liver function tests in the patients examined

Indicator	Practically Healthy n=20	RS n=60	CHB n=60	RS + CHB n=120
		the first comparison group	the second comparison group	major group
Alanine aminotransferase, $\mu\text{mol} / \text{l}$	0,27 $\pm$ 0,014	0,58 $\pm$ 0,07*	1,24 $\pm$ 0,17*	2,08 $\pm$ 0,02*
ACAT, mmol / l	0,29 $\pm$ 0,019	0,65 $\pm$ 0,02*	1,12 $\pm$ 0,08*	1,56 $\pm$ 0,09*
Total protein, g / l	74,6 $\pm$ 5,6	66,4 $\pm$ 5,1	60,1 $\pm$ 5,7	59,4 $\pm$ 6,6
$\gamma$ -globulin, %	16,7 $\pm$ 0,81	18,1 $\pm$ 0,73	24,6 $\pm$ 1,4*	26,3 $\pm$ 1,7*
Thymol test, ed.	1,2 $\pm$ 0,01	2,8 $\pm$ 0,16*	8,18 $\pm$ 0,9*	8,41 $\pm$ 0,87*
Bilirubin:				
- total, mmol / l	8,4 $\pm$ 0,61	12,6 $\pm$ 0,76*	29,8 $\pm$ 2,3*	30,1 $\pm$ 2,4*
- straight, mmol / l	2,2 $\pm$ 0,17	2,1 $\pm$ 0,12	5,2 $\pm$ 0,4*	5,1 $\pm$ 0,09*
Cholesterol mmol / l	4,2 $\pm$ 0,11	5,0 $\pm$ 0,41	6,24 $\pm$ 0,44*	6,32 $\pm$ 0,51*
SMP, ed.	0,13 $\pm$ 0,008	0,44 $\pm$ 0,013*	0,89 $\pm$ 0,07*	1,11 $\pm$ 0,08*
CIC, ed.	0,29 $\pm$ 0,02	0,68 $\pm$ 0,05*	0,76 $\pm$ 0,07*	0,93 $\pm$ 0,09*
LACTATE DEHYDROGENASE:				
- total, me / l	168,4 $\pm$ 11,2	228,3 $\pm$ 12,3*	478,0 $\pm$ 18,2*	464,3 $\pm$ 17,1*
- Lactate dehydrogenase-4, %	5,6 $\pm$ 0,05	15,2 $\pm$ 0,71*	19,6 $\pm$ 1,21*	20,1 $\pm$ 2,11*
- Lactate dehydrogenase-5, %	2,8 $\pm$ 0,04	13,9 $\pm$ 0,87*	24,8 $\pm$ 2,13*	29,3 $\pm$ 2,43*
Leukocyte index of intoxication (LII), ed.	0,39 $\pm$ 0,005	0,64 $\pm$ 0,012*	0,47 $\pm$ 0,01	0,75 $\pm$ 0,03*

#### Note:

\* - Differences compared to healthy individuals are statistically significant ( $P<0.05$ ).

Biochemical indicators of cholestasis syndrome had a certain relationship with diseases of the General body, and in particular with the activity of the pathological process in the liver. Thus, the level of total bilirubin in children with RS+CHB was 3.6 times ( $P<0.05$ ), in patients with CHB was increased 3.5 times ( $P<0.05$ ) than in healthy children. A similar pattern was for indicators of direct bilirubin.

The average cholesterol level in patients in the main group was significantly higher than in the healthy group ( $p<0.05$ ), the average position was occupied by children with CHB ( $P<0.05$ ) and RS.

Mesenchymal inflammatory syndrome - the level of thymol test increased dramatically in children with RS+CHB and CHB. Thus, the average level of thymol sample in patients with RS+CHB exceeded 10.1 and 3.1 times than in healthy individuals ( $P<0.05$ ) and in patients with RS ( $P<0.05$ ), respectively. In patients with CHB, the thymol test was also significantly higher than in children of the healthy (1.2 $\pm$ 0.01) group ( $P<0.05$ ). However, in children with RS, the level of this indicator was 2.3 times higher in comparison with practically healthy children, which can be explained by the change in liver function tests in patients with inflammatory lesions of the paranasal sinuses.

As can be seen from the table, in fact, biochemical blood parameters were registered the highest in children with combined pathology of RS+CHB (main group), lower in children with CHB (second comparison group), and even lower in patients with RS (first comparison group).

When deciphering the presented table, we also analyzed the frequency and severity of individual symptoms of endotoxemia syndrome in the examined patients. Thus, when studying the level of SMP in serum in children of the main group, it equated to an average of  $1.11 \pm 0.08\%$  and significantly exceeded in comparison the corresponding indicators in children of healthy group ( $P < 0.05$ ) and, respectively, in patients with RS ( $P < 0.05$ ). In children with CHB, the average level of this indicator was  $0.89 \pm 0.07\%$  and was 6.8 times higher than in the control group.

The number of CIC increased on average 3.2 times in patients with RS+CHB ( $P < 0.05$ ), 2.6 times in patients with CHB ( $P < 0.05$ ) and 2.3 times in patients with RS ( $P < 0.05$ ) compared to control. LII as an indicator of endogenous intoxication in children of patients with RS+CHB increased 1.9 times, in patients with CHB-1.2 times. In children with RS, the level of this indicator had  $0.64 \pm 0.012$  mean value and was 1.6 times higher compared to the control, exceeded 1.3 times, to the indicator of patients with CHB.

The study of indicators of the total level of lactate dehydrogenase and its isoenzymes-lactate dehydrogenase-4 and lactate dehydrogenase-5 (hepatic fractions) in the serum of the examined patients was of different activity. Thus, the greatest increase in the activity of total lactate dehydrogenase was observed in children with CHB and reached an average of  $478.0 \pm 18.2$  IU / L. in patients with RS+CHB, the average level of total lactate dehydrogenase exceeded 2.7 times compared to healthy individuals ( $P < 0.05$ ), respectively, similar indicators were also increased in patients of comparative groups and 1.4 and 2.8 times higher ( $P < 0.05$ ).

The isoenzyme spectrum was characterized by a significant increase in the activity of its hepatic fractions-lactate dehydrogenase-4 and lactate dehydrogenase-5, the severity of which depended on the combined pathological factors. At the same time, the greatest increase in lactate dehydrogenase-4 and lactate dehydrogenase-5 was revealed in patients with RS against the background of CHB  $20.1 \pm 2.11\%$  and  $29.3 \pm 2.43\%$ , the average level of this indicator was in patients of both comparative groups- $15.2 \pm 0.71$  and  $13.9 \pm 0.87$ ;  $-19.6 \pm 1.21$  and  $24.8 \pm 2.13$ , respectively. Whereas in patients with RS+CHB, the level of lactate dehydrogenase-4 and lactate dehydrogenase-5 exceeded 3.5 and 10.4 times compared to healthy individuals ( $P < 0.05$ ), and in children of the comparative group, the value of similar indicators was 2.7 and 4.9, respectively; 3.5 and 8.8 times higher ( $P < 0.05$ ).

Thus, the study of biochemical parameters in the examined patients showed that the severity of syndromes - cytolytic, mesenchymal-inflammatory, cholestatic, endotoxemia and reduction of protein-synthetic liver function was directly dependent on the combined factors with the greatest emphasis of violations in rhinosinusitis in children in combination with CHB. Such pronounced changes in biochemical parameters in the blood of patients with RS in combination with CHB may have been due to chronic intoxication in the body due to RS and had an adverse effect on the inflammatory process in the liver, contributing to frequent recurrence of CHB.

## SUMMARY

1. The clinical significance of rhinosinusitis in children with chronic hepatitis B is determined by its role in the development of severe forms of the course, the influence on the rate of progression of the underlying disease and the frequency of adverse outcomes.
2. Children with rhinosinusitis on the background of chronic hepatitis B develop deep clinical and biochemical changes. At the same time, the leading syndromes are endotoxemia, cytolysis and hemorrhagic syndrome.
3. Timely detection and early correction of treatment of rhinosinusitis in patients with chronic hepatitis b gives sufficient clinical effect and normalization of biochemical parameters, which improves the prognosis of the underlying disease in children.

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