

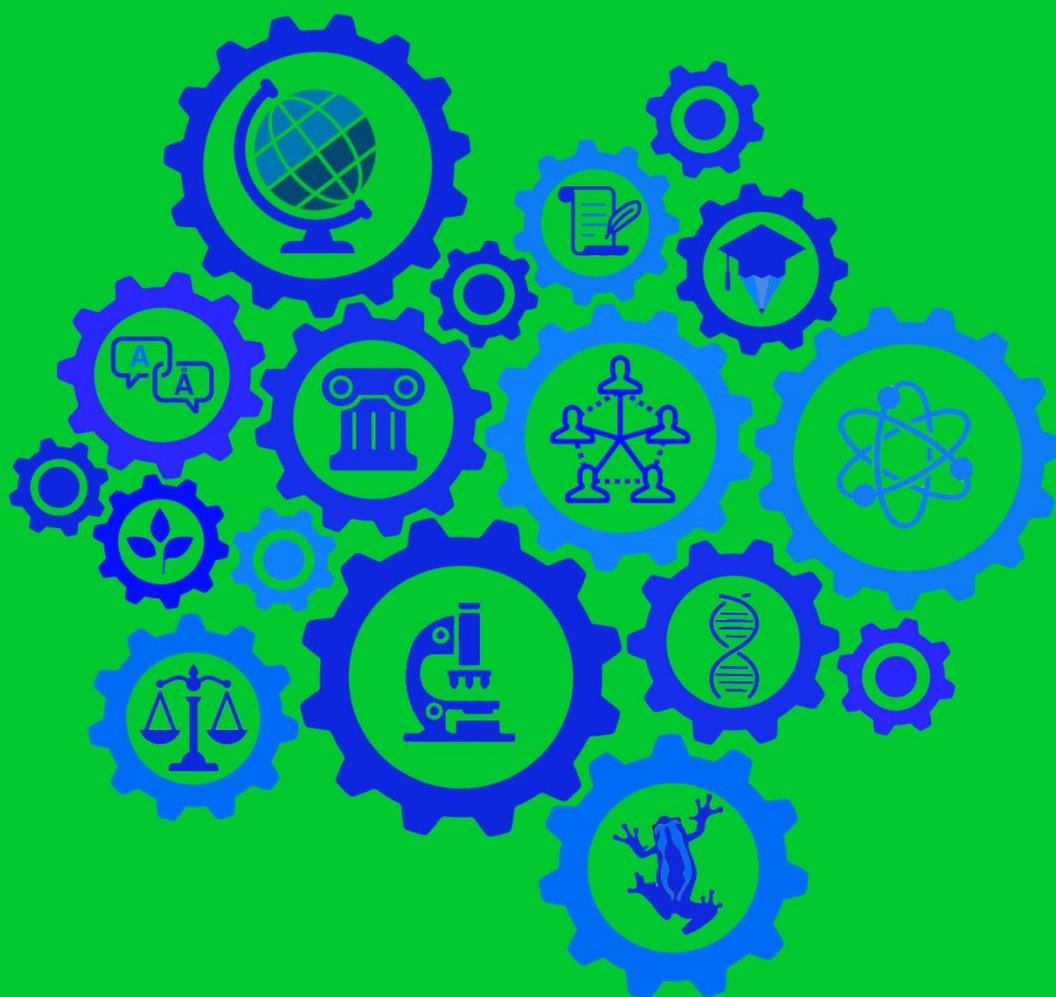
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Microscopic composition of bile in children with convalescents of viral hepatitis "A" and "C"

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Abstract: In children undergoing HAV and HCV observed opposite changes microscopic indicators that due to various pathologic and pathophysiologic changes initiated various hepatitis viruses. Thus, children rHAV cholesterol crystals are not detected in the composition of bile, and the children rHCV cholesterol crystals detected in all portions of bile. This figure shows that children rHCV found more cholelithiasis. Non-drug combination and medication interventions contributes almost complete normalization of microscopic parameters for all the children. This allows you to recommend this complex interventions as the best approach in the rehabilitation of children who had viral hepatitis.

Keywords: viral hepatitis, bile, cholesterol crystals, microliths, microscopic composition of bile

Relevance: Currently, there is an increase in the prevalence of liver diseases worldwide. In the Republic of Uzbekistan, the incidence of viral hepatitis tends to decrease dynamically. In 2010, compared with 1990, the incidence of viral hepatitis decreased 8.2 times and amounted to 107.7 versus 882.0 per 100 thousand population. In 2010, compared with 2009, the incidence of viral hepatitis decreased by 18.6% [1].

Modern methods of diagnosis and treatment of patients with viral hepatitis are being introduced into practice. However, despite this, measures to combat viral hepatitis need further improvement, especially in terms of early detection of patients, laboratory differential diagnosis, treatment of patients with acute forms of hepatitis, also with residual manifestations [2]. Often, dysfunctions of the biliary tract occur in children with multiple foci of secondary infections, also after viral hepatitis [3, 5].

Considering the above, differentiated therapy of biliary dysfunctions is of great difficulty. It is known that the conditions for the normal functioning of liver cells, and thus the entire hepatobiliary system, are the absolute integrity of the membranes and the physiological structure of the cell organelles. Stabilization of cell membranes provides physiological secretion of bile, and restoration of intercellular connections - normalization of its outflow [4].

Objective: To study changes in the microscopic composition of bile in convalescent children of viral hepatitis A (cHAV) and C (cHCV) and optimize therapeutic treatment

Materials and methods of research

The clinical part of the study was conducted in the children's infectious diseases department of the 3rd TMA clinic, the "City Consultative and Diagnostic Hepatological" center on the basis of the 1st CIH, the hepatological department on

the basis of the Virology Research Institute and the children's hepatitis department of the EMIZ Research Institute. The study included 60 children of rVG and 32 children of rVGS with pathology of the biliary tract.

As a comparison group, the indicators of 20 children of cHAV and cHCV without LVP pathology were taken; 10 practically healthy children took similar indicators as a control group.

The pathology of HDL was confirmed by the results of general clinical studies, biochemical blood tests, instrumental methods (ultrasound of the abdominal cavity, duodenal probing), microscopic examination of the composition of bile, statistical.

In children of convalescents of viral hepatitis with the pathology of HDL was more common at the age of 7-14 years (65.6%), and in children of cHAV and cHCV girls prevailed (51.7% and 59.4%, respectively).

Depending on the treatment, patients with LVP pathology were divided into 3 groups: group 1 consisted of 20 cHAV patients and 10 cHCV patients who received only dietary nutrition (diet No. 5 according to Pevsner); group 2 - 20 cHAV patients and 10 cHCV patients who received physiotherapy treatment (electrophoresis with magnesia sulfate solution) against the background of diet therapy; group 3 - 20 cHAV patients and 12 cHCV patients who received combination therapy (physiotherapy treatment and Phosphogliv drug). Phosphogliv was prescribed according to the following scheme: for 10 days – intravenously, then orally from the following calculation: children under 3 years - ½ capsule 3 times a day, from 3 to 7 years - 1 capsule 3 times a day, older than 7 years - 2 capsules 2-3 times a day. The duration of the course of treatment with the capsule form was on average 14 days.

Results of the study and discussion: The results of the study of the microscopic composition of bile before treatment are shown in Table 1.

Table 1

Microscopic picture of all portions of bile in children of convalescents of viral hepatitis with a violation of the biliary system before treatment

Composition		Composition				
		cHAV (n=60)		cHCV (n=32)		Norm
			%	abc	%	
Portion A	Slime	13	21,6	2	6,3	abs
	Cylindrical epithelium	8	13,3	32	100	single
	Leukocytoids in p/zr. 10	21	35	32	100	single
	Leukocytoids in p/zr. 10	9	15	-	-	abs
	Cholesterol Crystals	-	-	11	34,4	abs
	Ca Bilirubinate	2	3,3	7	21,8	abs
	Microliths	4	6,6	12	37,5	abs
Portion B	Slime	7	11,6	-	-	abs

	Cylindrical epithelium	6	9,9	32	100	single
	Leukocytoids in p/zr. 10	20	33,4	32	100	single
	Leukocytoids in p/zr. 10	7	11,6		-	abs
	Cholesterol Crystals	-	-	17	53,1	abs
	Ca Bilirubinate	2	3,3	17	53,1	abs
	Microliths	5	8,3	18	56,3	abs
Portion C	Slime	5	8,3	-	-	abs
	Cylindrical epithelium	8	13,3	32	100	single
	Leukocytoids in p/zr. 10	17	28,3	32	100	single
	Leukocytoids in p/zr. 10	3	5	-	-	abs
	Cholesterol Crystals	-	-	22	68,7	abs
	Ca Bilirubinate	2	3,3	14	43,7	abs
	Microliths	2	3,3	14	43,7	abs

As can be seen from Table 1, in children, cHAV (21.6%, 11.6%, 8.3%, respectively), mucus occurs in all portions of bile (A, B, C). In children with cHCV, mucus was detected only in portions of bile (6.3%). In 100% of children with cHCV, the epithelium is cylindrical and leukocytoids up to 10 pp. were determined in all portions of bile. In children with cHAV, the cylindrical epithelium is detected in more than 8.2-13.3% of cases in all portions of bile. In children with r cHAV, leukocytoids are up to 10 pp/hr. they are detected in all portions of bile (35%, 33.4%, 28.3%, respectively), and more than 10 pp. 15%, 11.6%, and 5% are detected, respectively.

In children of cHAV, cholesterol crystals are not detected, and in children of rVGS, cholesterol crystals are detected in all portions of bile (24.9%, 33.2%, 36%, respectively). This indicator proves that children with cHCV have more cholelithiasis.

In children with cHCV, microliths are detected in more than 21.8-68.7% of cases in all portions of bile (microliths are not normally detected), which indicates the lithogenic properties of bile in children with parenteral hepatitis. On the contrary, in children with cHAV, microliths were detected less in all portions of bile (A - 5.6%, B - 5.9% and C - 2.7%).

In this regard, based on the data obtained, we applied various therapy regimens in children with impaired microscopic parameters of HAV and HCV survivors. The results of the studies are shown in Tables 2 and 3.

We evaluated the effectiveness of dietary therapy in children with cHAV and cHCV. Our studies have shown that in children who had HCV, diet therapy did not lead to normalization of microscopic parameters. This may be explained by deeper and grosser pathomorphological and pathophysiological disorders caused by the HS

virus. Therefore, in children with rVH, it is necessary to supplement diet therapy with other medicinal and non-medicinal interventions.

In group 1, cHAV had a certain effect in some cases. Thus, 3.3% of patients did not have cylindrical epithelium in the composition of "A" portions of bile. However, diet therapy in isolation did not have a noticeable effect on other microscopic indicators.

The next stage of the study was to study the effect of dietary therapy in combination with physiotherapy interventions.

The effectiveness of such a combination turned out to be somewhat higher. So, in children with cHAV, mucus and leukocytoids in the n/ a normalized over 10 - in 5% of cases, the epithelium is cylindrical and leukocytoids in the n / a. little to 10 – in 10% of cases as part of "A" portions of bile. In the composition of "B" portions of bile, only leukocytoids in the n/a. little to 10 – in 5% of cases, in the composition of "C" portions of bile, mucus, epithelium cylindrical, leukocytoids in the n/a. little to 10 and leukocytoids in the n/a over 10 – in 5% of cases were normalized. The remaining microscopic parameters did not change.

In group 2 of cHCV, the cylindrical epithelium and leukocytoids (in n/a. little to 10) significantly decreased in all portions of bile compared with the results before treatment and group 1. In 20% of children, cholesterol crystals in the composition of "C" portions of bile significantly decreased compared to the results before treatment.

The best results were obtained by us in the 3rd group.

As can be seen from these tables, in children who underwent HAV, an absolute effect was obtained in the composition of "B" portions of bile in all indicators, in the composition of "A" and "C" portions of bile, mucus, leukocytoids in n/a. little to 10 and cylindrical epithelium significantly decreased compared to the results before treatment, groups 1 and 2.

In 75-83.4% of children with cHCV, the cylindrical epithelium and leukocytoids (in n/a. little to 10) were normalized in all portions of bile. In 8.3% of children, calcium bilirubinate and cholesterol crystals were detected in the "B" and "C" portions of bile. These indicators significantly decreased compared to the results before treatment, groups 1 and 2.

Microliths (microscopic stones) usually consist of lime, mucus and a small amount of cholesterol. Microliths are normally more often found in portions "B" and "C" in mucus flakes. "Sand" or the accumulation of all sedimentary elements of bile in the form of microscopic grains also indicates the presence of cholelithiasis.

Thus, the results of the above studies show that children with cHCV have more cholelithiasis than children with cHAV.

Table 2 - microscopic picture of bile in cHAV

Type	Pr. healthy (n=10)		Group before treatment (n=60)		group (n=20)		2 group (n=20)		P 1	3 group (n=20)		P2	P3
	ađc	%	Ađc	%	ađc	%	ađc	%		ađc	%		
Portion A													
mucus	-	-	13	21,6±5,3	4	20±9,1	3	15±8,1		1	5±5,0**	< 0,003	<0,003
The epithelium is cylindrical	1	10±9,4	8	13,3±4,3	2	10±6,8	-	-		-	-		
Leukocytoids in p/zr. 10	1	10±9,4	21	35±6,1	7	35±10,9	5	25±9,6		1	5±5,0**	< 0,05	< 0,003
Leukocytoids in p/zr. 10	-	-	9	15±4,6	3	15±8,1	2	10±6,8		-	-		
Cholesterol Crystals	-	-	-	-	-	-	-	-		-	-		
Ca Bilirubinate	-	-	4	6,6±3,2	1	5±5,0	1	5±5,0		-	-		
Microliths	-	-	4	6,6±3,2	1	5±5,0	1	5±5,0		-	-		
Portion B													
mucus	-	-	7	11,6±4,1	2	10±6,8	2	10±6,8		-	-		
The epithelium is cylindrical	1	10±9,4	6	9,9±3,8	2	10±6,8	2	10±6,8		-	-		
Leukocytoids in p/zr. 10	1	10±9,4	21	35±6,1	7	35±10,9	6	30±10,5		-	-		
Leukocytoids in p/zr. 10	-	-	7	11,6±4,1	2	10±6,8	2	10±6,8		-	-		
Cholesterol Crystals	-	-	-	-	-	-	-	-		-	-		
Ca Bilirubinate	-	-	4	6,6±3,2	1	5±5,0	1	5±5,0		-	-		
Microliths	-	-	6	10±3,8	2	10±6,8	2	10±6,8		-	-		
Portion C													
mucus	-	-	7	11,6±4,1	2	10±6,8	1	5±5,0		-	-		
The epithelium is cylindrical	1	10±9,4	9	15±4,6	3	15±8,1	2	10±6,8		1	5±5,0**	< 0,05	
Leukocytoids in p/zr. 10	1	10±9,4	17	28,3±5,8	5	25±9,9	4	20±9,1		1	5±5,0**	< 0,05	< 0,05
Leukocytoids in p/zr. 10	-	-	3	5±2,8	1	5±5,0	-	-		-	-		
Cholesterol Crystals	-	-	-	-	-	-	-	-		-	-		
Ca Bilirubinate	-	-	4	6,6±3,2	1	5±5,0	1	5±5,0		-	-		
Microliths	-	-	4	6,6±3,2	1	5±5,0	1	5±5,0		-	-		

Table 2 - microscopic picture of bile in cHCV

Тип	Pr. healthy (n=10)		Group before treatment (n=60)		group (n=20)		2 group (n=10)		P 1	3 group (n=12)		P2	P3
	abc	%	abc	%	abc	%	abc	%		abc	%		
Portion A													
mucus	-	-	7	21,8±7,2	2	20±12,6	2	20±12,6		-	-		
The epithelium is cylindrical	1	10±9,4	32	100	10	100	9	90±9,4**	<0,05	2	16,6±10,7**	<0,001	<0,001
Leukocytoids in p/zr. 10	1	10±9,4	32	100	10	100	9	90±9,4**	<0,05	2	16,6±10,7**	<0,001	<0,001
Leukocytoids in p/zr. 10	-	-	-	-	-	-	-	-		-	-		
Cholesterol Crystals	-	-	11	34,4±8,3	3	30±14,4	2	20±12,6		-	-		
Ca Bilirubinate	-	-	7	21,8±7,2	2	20±12,6	2	20±12,6		-	-		
Microliths	-	-	13	40,6±8,6	4	40±15,4	3	30±14,4		-	-		
Portion B													
mucus	-	-	10	31,2±8,1	3	30±14,4	2	20±12,6		-	-		
The epithelium is cylindrical	1	10±9,4	32	100	32	100	8	80±12,6**	<0,05	3	25±12,5	<0,001	<0,001
Leukocytoids in p/zr. 10	1	10±9,4	32	100	32	100	8	80±12,6**	<0,05	2	16,6±10,7	<0,001	<0,001
Leukocytoids in p/zr. 10	-	-	-	-	-	-	-	-		-	-		
Cholesterol Crystals	-	-	17	53,1±5,6	5	50±15,8	4	40±15,4		-	-		
Ca Bilirubinate	-	-	17	53,1±5,6	5	50±15,8	5	50±15,8		1	8,3±7,9	<0,003	<0,003
Microliths	-	-	18	56,3±8,7	5	50±15,8	4	40±15,4		-	-		
Portion C													
mucus	-	-	7	21,8±7,2	2	20±12,6	2	20±12,6		-	-		
The epithelium is cylindrical	1	10±9,4	32	100	32	100	8	80±12,6**	<0,05	2	16,6±10,7	<0,001	<0,001
Leukocytoids in p/zr. 10	1	10±9,4	32	100	32	100	9	90±9,4**	<0,05	2	16,6±10,7	<0,001	<0,001
Leukocytoids in p/zr. 10	-	-	-	-	-	-	-	-		-	-		
Cholesterol Crystals	-	-	22	68,7±8,1	7	70±14,4	5	50±15,8**		1	8,3±7,9	<0,003	<0,003
Ca Bilirubinate	-	-	14	43,7±8,7	4	40±15,4	4	40±15,4		-	-		

Microliths	-	-	14	43,7±8,7	4	40±15,4	4	40±15,4		-	-		
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Note:*- reliability of differences compared to healthy children; **- reliability of differences compared to the group of children before treatment; P1 - reliability of differences between groups 1 and 2; P2 - reliability of differences between groups 1 and 3; P3 - reliability of differences between groups 2 and 3

Conclusions:

1. Children who have undergone HCV and HCV have multidirectional changes in microscopic parameters, due to various pathomorphological and pathophysiological changes initiated by various hepatitis viruses;
2. In children of rVGA, cholesterol crystals are not detected in the composition of bile, and in children of rVGS, cholesterol crystals are detected in all portions of bile. This indicator proves that children with rVGS have more cholelithiasis.
3. The combination of non-drug (physiotherapy) and drug (Phosphogliv) interventions contributes to the almost complete normalization of microscopic parameters in all children who have undergone CAA, as well as in most children with rVGS. This allows us to recommend this set of interventions as the optimal approach in the rehabilitation of children who have suffered viral hepatitis.

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