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CHRONIC HEPATITIS B IN CHILDREN AND ADOLESCENTS REPRESENTATIVES OF THE MONGOLOID RACE

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The article is devoted to problem of infectology and pediatrics. Ethnic features of the course of chronic hepatitis were studied in Russia and other countries. In previous studies in Yakutia, a high incidence of chronic viral hepatitis was established. The share of the indigenous population (Yakut and the small indigenous peoples of the north) in the RS (Y) does not exceed half, but among children with chronic hepatitis B it is two thirds of cases. Among the indigenous population representatives of the indigenous population of Yakutia (the Yakuts and small indigenous peoples of the north) belong to the Mongoloid race. This article presents the result of a study of epidemiological, clinical and laboratory data of children and adolescents diagnosed with chronic viral hepatitis B. A comparative analysis of the data of patients of the Mongoloid and Caucasoid race was carried out. Due to the fact that the chronic hepatitis B clinic is meager, most patients learn about their disease only after the examination. After a detailed poll, complaints were found about the deterioration of health, malaise, fatigue noted. On the second place in frequency there were nasal bleedings. Also, pain syndrome and dyspeptic complaints were noted. It is established that in children and adolescents of the Mongoloid race there is a tendency to a more severe course of the disease. In these patients, weight loss and low growth were more common. They are more often identified with complaints related to impaired liver function; marked cytolytic syndrome, signs of violations of protein-synthetic liver function; more pronounced changes in the liver parenchyma according to ultrasound. The leading role of family contact in the structure of transmission routes indicates the importance of social factors in the onset of the disease. The prevalence of representatives of indigenous nationalities among patients with chronic hepatitis shows that in addition to the social factors affecting the epidemic process, there are probably genetic factors determining the frequency and extent of liver damage in patients with chronic hepatitis B.

Keywords: children, adolescents, chronic hepatitis B, the Mongoloid race.

Introduction

The general incidence of children and adolescents under 17 with chronic viral hepatitis, in recent years, in the RF has a tendency to decrease. Reduction is due to a decrease in the number of newly detected chronic hepatitis B. Conducting mass immunization of the population against hepatitis B in the Russian Federation allowed to reduce the incidence of acute hepatitis B. However, in some regions of the country HBV still occupies a leading place among children, the highest incidence rates of children and adolescents with chronic viral hepatitis were noted in the Far Eastern Federal District [2]. The Republic of Sakha (Yakutia) belongs to regions with high endemicity [1, 5]. In recent years, several papers have appeared devoted to the study of the prevalence of HG in different ethnic groups. In Canada and Australia, the study of the epidemiological and clinical data of chronic hepatitis B in aboriginal and alien populations was conducted. In recent years, several papers have appeared devoted to the study of the prevalence of chronic hepatitis in different ethnic groups. In Canada and Australia, the study of the epidemiological and clinical data of chronic hepatitis B in aboriginal and alien populations was conducted. In the territory of the Russian Federation, such studies were conducted in Tyva. Such works were conducted in China, Mongolia, Japan and other Asian countries. Our data are consistent with the data of a number of authors who studied chronic hepatitis in adults in the RS (Y) and in other regions, these studies indicate a higher incidence of chronic hepatitis in representatives of the Mongoloid race and a more severe course of the disease [3,4] Genetic factors affecting outcomes of CG [7,6].

The **purpose** of our study was to study the features of the epidemiological process and the clinical picture in patients of indigenous and non-indigenous nationality in the Republic of Sakha (Yakutia).

Materials and methods of research

153 patients were examined under the supervision of chronic hepatitis B at the age from 1 year to 16 years. According to ethnicity, the patients were distributed as follows: children of the Yakut nationality accounted for 70.5% (108 patients), Russian patients - 20.9% (32 patients), representatives of small indigenous peoples of the North (5.8%) (7 patients), other nationalities - 3.9% (6 patients).

The study was conducted on the basis of the Pediatrics Clinic of the National Center of Medicine of the RS(Y) and Children's City Clinical Hospital №2. When establishing the diagnosis, epidemiological, clinical, biochemical data, serological and molecular-biological markers of viral hepatitis were taken into account.

The selection criteria for the study group were the presence of hepatitis B verification by the method of enzyme immunoassay and polymerase chain reaction. The monitoring of patients, in addition to the clinical examination, included an evaluation of the results of routine biochemical and instrumental methods of investigation. The clinical and laboratory data were processed using the statistical package IBM SPSS STATISTICS 19. The normal distribution of the quantitative variables was checked using the Kolmogorov-Smirnov test with the Lillieforce correction and the Shapiro-Wilk test. Depending on the nature of the distribution, the Student's t-criterion, the nonparametric criteria of Mann-Whitney and Kraskel-Wallis, were used for comparison of independent groups by quantitative characteristics. When comparing dependent groups, the Wilcoxon test.

Results and its discussion

Chronic hepatitis B is much more common in children and adolescents of indigenous nationality: the Yakuts accounted for 70.5% (108 patients), (ICS) - 5.7% (7 patients), Russians 20.9% (32 patients), other nationalities – 3.9% (6 patients). Wherein, it should be borne in mind that according to official statistics in the Republic of Sakha (Yakutia) Yakut make up 45.54%, Russian - 41.15%, small indigenous peoples of the North - 1.23%. The share of the indigenous population (Yakut and the small indigenous peoples of the north) in the RS (Y) does not exceed 47%, but among children with chronic hepatitis B it is 75.2%. Such distribution of sick children on a national basis allows to assume

presence of ethnic features of a course of a virus defeat of a liver.

When analyzing the data of the epidemiological anamnesis, the following data were obtained. A high frequency of family contact in children and adolescents of patients with chronic hepatitis B has been revealed. 26 patients had an indication of parenteral manipulation in the anamnesis (17.4%). Transfusion of blood products in the history was revealed in 15 patients (10.2%). 102 children (67.1%) were treated at the dentist. There were no statistically significant differences in patients of different nationalities.

As a rule, complaints were not actively presented, but after a detailed interview in 33.3% of cases (51 children) the following complaints were revealed: worsening of health, malaise, increased fatigue were noted in 34 patients (22.1%). On the second place in frequency there were nasal bleedings - in 32 patients (21,3%). Pain syndrome was noted in 29 patients (19.8%). Complaints of a dyspeptic nature were noted in 26 patients (16.9%)

Thus, the most frequent complaints were related to a violation of liver function. Violation of detoxification function manifested itself in the reduction of health and headaches, synthetic - in nosebleeds. Pain and dyspeptic syndromes, apparently, are associated with chronic diseases of the gastrointestinal tract. In patients with chronic hepatitis B, gastrointestinal disorders were found in 82.1% of cases, and pathology of the biliary tract in 30.3% of cases. There were no statistically significant differences in the incidence of complaints between patients of different nationalities, but there was a trend towards greater manifestation of liver function abnormalities in children and adolescents of indigenous nationality (Table 1).

Children and adolescents of indigenous nationality complained 1.8 times more often (Table 2). Complaints of intoxication (deterioration of well-being) were more frequent in 1,5 times more often, nasal bleedings -1.8 times more frequent, headaches were noted only in patients of indigenous nationality.

The physical development of patients with chronic hepatitis B was assessed by centile tables developed for RS (Ya) and taking into account ethnic differences. In patients with chronic hepatitis, in most cases, a disharmonious development has been observed in terms of body weight deficiency. Low body mass indexes in more than half of the children diagnosed with CHB show evidence of chronic intoxication. And pathologically low growth was met 2.2 times less often than pathologically low body weight. When analyzing the data of physical development in patients of different nationalities, it was noted that children of non-indigenous nationality had, in general, a large body weight and a higher growth (Table 2).

The syndrome of jaundice in chronic hepatitis B is not characteristic. Visually, jaundice was detected only in 12 patients, which amounted to 7.8% of all cases. Part of the patients were diagnosed with "extrahepatic signs", which include palmar erythema, telangiectasia, and widening of the venous pattern on the skin of the chest and abdomen. These signs were rare. Statistically significant differences were revealed in the frequency of extrahepatic signs between chronic hepatitis patients of indigenous and non-indigenous nationality: 12.2% (14 children) and 5.2% (2 children), respectively ($p < 0.05$).

The severity of cytolytic syndrome was assessed by the levels of ALT and AST in the serum of the patient. The incidence of ALT elevation in CHB was 4.6% (7 patients). In all patients, the ALT level did not exceed the laboratory norm by 2 times (2 N). The level of ALT in patients with chronic hepatitis B ranged from 4.0 to 67 U / l and averaged 23.1 ± 12.3 U / l. The frequency of increase in AST in chronic hepatitis B was 29.4% (45 patients). In all patients, the index did not exceed 1.5 N. The level of AST in patients with chronic hepatitis B ranged from 8.0 to 60.2 U / l and averaged 32.0 ± 12.1 U / l. In absolute values, the change in AST levels was greater than ALT, although no statistically significant differences were revealed.

In patients with CHB, cytolytic syndrome was found in almost a third, statistically significant differences were noted between the frequency of hyperfermentemia in ALT and AST ($p < 0.02$). Significantly larger, the frequency of increase in AST levels indicates more severe changes in hepatocytes.

The increase in the level of total bilirubin was noted in 18.3% of cases (28 patients). The level of total bilirubin among patients with hyperbilirubinemia averaged 23.3 ± 15.8 μmol / l in patients with chronic hepatitis B, and in all cases the direct fraction prevailed. Thus, in all patients, the increase in total bilirubin did not reach high values, and exceeded the

Table 1

Complaints of patients with chronic hepatitis B of the Mongoloid and Caucasoid race

Complaints	Patients with chronic hepatitis (n=153)				p
	Mongoloid race (n=115)		Caucasoid race (n=38)		
	n	%	n	%	
Complaints	43	37,3	8	21,1	>0,05
Complaints of malaise	28	24,3	6	15,8	>0,05
Dyspeptic complaints	20	17,4	6	15,8	>0,05
Abdominal pain without clear localization	11	9,6	4	10,5	>0,05
Pain in the right hypochondrium	4	3,5	1	2,6	>0,05
Pain in epigastrium	7	6,1	2	5,2	>0,05
Nasal bleeding	27	23,5	5	13,2	>0,05
Headache	4	3,4	0	0	>0,05
Dryness of the skin	5	4,3	3	7,8	>0,05
Itchy skin	3	2,6	1	2,6	>0,05
Stool disorder	7	6,1	2	5,2	>0,05

Table 2

Physical development of patients with chronic hepatitis B of the Mongoloid and Caucasoid race

Centile	Patients with chronic hepatitis (n=153)							
	Mongoloid race (n=115)				Caucasoid race (n=38)			
	Body mass		Growth		Body mass		Growth	
	n	%	n	%	n	%	n	%
< 3	6	5,2	3	2,6	1	2,6	0	0
3-10	22	19,1	4	3,5	5	13,2	1	2,6
10-25	35	30,4	21	18,3	9	36,8	4	10,5
25-75	45	39,1	61	53,1	18	47,4	21	55,3
75-90	3	2,6*	16	13,9	3	7,9*	6	15,8
90-97	2	1,7	10	8,7	1	2,6	5	13,2
> 97	2	1,7	0	0	1	2,6	1	2,6

* Differences are statistically significant $p<0,05$.

norm by 2.25 times, and on average by no more than 18% of the norm.

The change in the level of total protein was noted in 19.6% of patients with chronic hepatitis B (30 children). This index in patients with hypoproteinemia averaged 58.9 ± 3.5 g / l in patients with CHB. More often, hypoalbuminemia was noted in 22.9% (35 patients). In these patients, the level of albumin in the blood serum averaged 34.2 ± 2.2 g / l in patients with chronic hepatitis B. The change in fat metabolism is most often manifested by an increase in the level of cholesterol. The frequency of hypercholesterolemia in patients with chronic hepatitis B (HBsAg +) was 18 children (11.7%), the cholesterol ranged from 2.8 to 8.7 mmol/l and averaged 5.2 ± 0.9 mmol/l.

Statistically significant differences between patients of different nationalities were found only in the frequency of hyperbilirubinemia (p <0.05). With respect to some other indicators, a trend towards greater severity among children and adolescents of indigenous nationality has been noted. The increase in ALT levels of more than 1.5 N in indigenous children is twice as common, and the excess of this indicator in 2 N in non-indigenous people was not noted at all. While the frequency of hypoproteinemia is comparable, the decrease in albumin in indigenous patients is 2 times more common (Table 3).

The decrease in the synthetic function of the liver is also indicated by the change in PTI. In patients of indigenous nationality, the decrease in PTI was registered in 6.9% of cases (8 children), in non-indigenous patients - in 5.3% of cases (2 children). Changes in parenchymal organs according to ultrasound were observed in no more than a third of patients with chronic hepatitis B. As a rule, hepatomegaly and splenomegaly were not expressed, the increase in liver size did not exceed 15-20% of the age norm, an increase in the spleen - 10% (Table 4).

Statistically significant differences between patients of different nationalities have been identified by the frequency of hepatosplenomegaly and increased echinostensity of the liver parenchyma. Also, in children of indigenous nationality, the wall of the gallbladder was 2.4 times more common.

Table 3

Biochemical blood test data of patients with chronic hepatitis B of the Mongoloid and Caucasoid race

Index	Patients with chronic hepatitis (n=153)				p
	Mongoloid race (n=115)		Caucasoid race (n=38)		
	n	%	n	%	
AJIT 1,5 N	6	5,2	1	2,6	>0,05
AJIT >2N	1	0,9	0	0	>0,05
ACT 1,5 N	37	32,2	8	21,1	>0,05
ACT >2N	1	0,9	0	0	>0,05
Hyperbilirubinemia	25	21,7	3	7,9	<0,05
GGT >N	1	0,9	0	0	>0,05
Alkaline phosphatase >N	1	0,9	0	0	>0,05
Total protein <N	22	19,1	8	21,1	>0,05
Albumen < N	30	26,1	5	13,2	>0,05
Cholesterol > N	14	12,2	4	10,5	>0,05
β- lipoproteins	5	4,3	0	0	>0,05
Triglycerides	1	0,9	0	0	>0,05

Table 4

Ultrasound of patients with chronic hepatitis B of the Mongoloid and Caucasoid race

Index	Patients with chronic hepatitis (n=153)				p
	Mongoloid race (n=115)		Caucasoid race (n=38)		
	n	%	n	%	
Hepatomegaly	28	24,3	9	23,7	>0,05
Hepatosplenomegaly	9	7,8	1	2,6	<0,05
Inhomogeneous ehostruktura	12	10,4	3	7,9	>0,05
Increase echoplotnosti	15	13	1	2,6	<0,05
Galling of the wall of the gallbladder	11	9,6	3	3,9	>0,05
Strengthening the vascular pattern	12	10,4	5	13,2	>0,05

The conclusion

Thus, based on the presented data, the following conclusions can be drawn. The features of the epidemiological process of chronic hepatitis in children and adolescents in the RS (Ya) include the ethnicity of patients. The prevalence of representatives of indigenous nationalities among patients with chronic hepatitis and the leading role of family contact in the structure of transmission routes indicate the importance of ethnic and social factors in the onset of the disease. Undoubtedly, there is a tendency to more severe impairment of liver function in children and adolescents of indigenous nationalities. This is expressed in a greater frequency of complaints related to impaired liver function, more significant changes in the biochemical blood test and large changes in the liver parenchyma according to ultrasound. In addition to social factors that influence the epidemic process, there are probably genetic factors that determine the frequency and extent of liver damage in patients with chronic hepatitis B. The identification of these factors requires further research.

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THE ACUTE LEUKEMIA EPIDEMIOLOGY IN CHILDREN OF THE SAKHA REPUBLIC (YAKUTIA)

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ABSTRACT

The article presents the analysis of frequency indicators: primary morbidity, mortality in acute leukemia in children of the Sakha Republic (Yakutia) for the period from 2000 to 2016. The incidence of acute leukemia, acute lymphoblastic leukemia, acute non-lymphoblastic leukemia in children's population of the SR are average and comparable with those of other regions of the Russian Federation. In dynamics there is a decrease in mortality from leukemia due to the therapy improvement and the quality of accompanying therapy.

Keywords: leukemia, epidemiology, children, Yakutia.

Introduction

The oncological diseases belong to the category of socially significant diseases in children. Mortality from these diseases in the group of children older than one year in Russia and other developed countries is on the second place, after injuries and accidents [4, 8].

Acute leukemia (AL) is the most frequent oncological disease of childhood, accounting for 31.3% in the structure of malignant tumors in children [8].

During the last 30 years there is an improvement of the AL treatment results and the disease from a fatal became curable for more than 70 % of patients [7]. This was made possible by the introduction of modern methods of diagnosis, high-intensity programs of polychemotherapy, improvement of accompanying therapy. Modern treatment of patients with acute leukemia belongs to the category of high-tech and expensive. The financial costs of treatment depend directly on the morbidity and mortality rate, which requires constant epidemiological monitoring [5].

The Oncology Department of the Pediatric center Republican hospital №1-National Medicine center is the only specialized Department in the Sakha Republic (Yakutia). Since 2003 it participates in the multicenter controlled clinical study of treatment protocols of ALL "Moscow-Berlin". Since 2000, the incidence of AL in the RS (Ya) has been continuously monitored [1].

The purpose of the study: the study of the frequency indicators: disease incidence, mortality in acute leukemias in children of the Sakha Republic (Yakutia) over the period 2000 to 2016.

Material and methods of research

A retrospective epidemiological study of AL in children aged 0 to 15 years living in the territory of Yakutia for the 17-year period (from 01.01.2000 to 31.12.2016) was conducted.

The Sakha Republic (Yakutia) is the largest region of the Russian Federation, its territory is 3103.2 thousand km^2. The population of Yakutia is 964 330 people. The average annual number of children aged 0 to 15 years during the observation period was 233427,5 ± 3170,8. The data for the child population of Sakha Republic (Yakutia) for the years were given in the Federal service of state statistics for Sakha (Yakutia). All nosological forms of acute leukemia (AL) corresponding to the codes of the International statistical disease classification and health-related problems were noted, 10th revision – ICD-10: acute lymphoblastic leukemia – ALL (C91.0), acute myeloid leukemia-AML (c92.0, C92.4, C92.5, C92.7, C92.9, C93.0, C93.3, S94.2).

Medical records were analyzed to obtain information about cases of diseases. A "rough" morbidity/mortality rate was calculated. The calculation of the morbidity rate was carried out according to the formula: Y = n × 105/N, where Y is the morbidity rate (per 100 thousand population of the corresponding age) for the year; n is the number of first – time cases of the disease for the year; N is the average annual population of the studied age group [9].

The calculation of the mortality rate was carried out by the formula: Z = n × 105/N, where Z is the mortality rate (per 100 thousand population of the corresponding age) for the year; n is the number of deaths per year; N is the average annual population of the studied