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ADAPTIVE MECHANISMS OF THE IMMUNE SYSTEM IN CHILDREN IN FAR NORTH

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ABSTRACT

This article is devoted to the probleme of modern Pediatrics pathology of the immune system in children with complicated viral infections. The aim of study was to investigate the immune and cytokine status in children with complicated acute respiratory viral infections. The study included 100 children often ill respiratory virus infections (more than 8 times per year) from age 0 to 7 years, and 30 children with upper respiratory tract infection; no more than time per year-the control group. The standards of indicators developed by the staff of Immunological laboratory Diagnostic center of the Ministry of health Republic Sakha (Yakutia) together with the Institute of health of the Republic Sakha (Yakutia). Statistical calculations made on the basis of applied programs "SAS" and "SPSS" In the analysis of contingency tables (estimates of the correlation of the characteristic and evaluation of significance of differences between groups) used the criterion of 2 (Pearson and likelihood ratio and Fisher's exact test. Comparison of mean values was performed univariate analysis of variance using T-student criterion for assessing the equality of mean F-Fisher test to assess equality of variance.

Extreme climatic conditions of the far North have an impact on immunological mechanisms. In the analysis of changes of the immune status revealed the presence decline in T-cell level and components of complement in children with complications of viral respiratory infections. In children with complicated respiratory viral infections reduced cellular immunity (CD3⁺, CD4⁺, CD8⁺, CD⁺, CD 22⁺). In children with complicated respiratory viral infections decrease levels of cytokines (IFN-γ FNO-α), indicating about the risk of the formation of complications of respiratory viral infections. As a result of drug therapy of broncho-vaxom noted improvement in immune status and the absence of recurrence of respiratory viral infections within the next 3 months after therapy.

Key words: immunity, immunotherapy, viral infection, cytokines, immune status, Pediatrics, children, components of complement, complications, [illegible]

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INTRODUCTION

Complications of viral respiratory infections in children are caused by abnormal immune system. The functional state of immune cells and the ability to form intercellular cooperation determine the possibility of resistance to the immune system. Deficiency of these parts of the immune system develop complications of viral respiratory infections.

Question effective immunomodulation in children with viral respiratory infections attracts the attention of clinicians. The main objective is to reduce the number of viral respiratory infections.

The study of immunomodulation is an important task of contemporary pediatrics [1, 2, 3, 4].

MATERIALS AND METHODS

The study included 100 children are often ill respiratory virus infections (more than 8 times per year) from age 0 to 7 years, and 30 children with upper respiratory tract infection; no more than 1 time per year-the control group. The standards of indicators developed by the staff of Immunological laboratory Diagnostic center of the Ministry of health of Republic Sakha (Yakutia) together with the Institute of health of the Republic Sakha (Yakutia) (tab. I shows the age of children 0 to 7 years).

All studies were conducted in the period of low temperatures (winter).

Determination of subpopulations of T – and b-lymphocytes was performed by flow cytometry using the "Navios" [illegible] monoclonal antibodies.

Determination of immunoglobulins was carried out [illegible] unit immolate.

The level of IL-1, IL-13, FNO, IFN in serum were determined using ELISA method, according to the instructions supplied [illegible] the kits antibodies. Kits for the determination of interleukins by ELISA kits reagents "Pro Con IL-1", "Pro Con IF gamma" (LLC "Protein contour" St. Petersburg). Principles of [illegible] phase ELISA based on the fact that the enzyme horseradish peroxidase, covalently attached to antibodies, while maintaining the biological activity (the ability to interact with the substrate) by binding with immobilized immune complex formed "sensitized" holes, which were incubated your samples [illegible] standard reagents.

Statistical calculations made on the basis of applied programs "SAS" and "SPSS" In the analysis of contingency tables (estimates of the correlation of the characteristic and evaluation of significance of differences between groups) used the criterion of 2 (Pearson and likelihood ratio and Fisher's exact test. Comparison of mean values was performed univariate analysis of variance using T-student criterion for assessing the equality of mean F-Fisher test to assess equality of variance. The relationship between parameters was assessed using coefficients of the linear and [illegible]

Table I. Indicators of immune status in children of Sakha (Yakutia) in children group long-term and frequently sick.

Indicators	The performance Standards indicators of Sakha (Yakutia) for children (n = 300) M ± m	Group children with respiratory tract infection (n = 100), M ± m	Children are rarely ill respiratory tract infection (n = 30) M ± M
CD3+	52,6 ± 1,7	21,3 ± 1,02*	26,1 ± 1,2*
CD4+	26,3 ± 0,7	13,2 ± 0,9*	24,4 ± 0,2
CD8+	22,5 ± 0,23	15,2 ± 1,1	21,1 ± 1,2
CD16+	23,2 ± 0,54	7,6 ± 1,1*	19,4 ± 1,3
IRI	1,18 ± 0,64	0,8 ± 0,02	1,1 ± 0,02
IgA	2,34 ± 0,69	1,4 ± 0,3*	1,9 ± 0,2*
IgG	13,3 ± 0,16	10,2 ± 0,7	12,4 ± 1,3
IgM	1,6 ± 0,03	1,2 ± 0,09	1,06 ± 0,03*
CD22+	19,8 ± 0,16	10,9 ± 1,9	12,98 ± 1,54
C3	0,67 ± 0,12	0,21 ± 0,02*	0,42 ± 0,06
C4	0,34 ± 0,05	0,12 ± 0,02*	0,28 ± 0,04
CIK	96,8 ± 0,132	198,2 ± 1,5*	160,1 ± 2,4*
IL-1	0,52 ± 0,03	0,41 ± 0,001	0,34 ± 0,09*
IFN-γ	0,53 ± 0,02	0,16 ± 0,01*	0,48 ± 0,03*
FNO-α	1,12 ± 0,04	0,3 ± 0,01*	1,26 ± 0,008

* 0.05 between the standards and indicators obtained in each group.

Table II. Indicators of immune status in children of Sakha (Yakutia) in children group long-term and frequently sick after children with complication of respiratory infection drug therapy of broncho-vaxom.

Indicators	Indicators of Children group with respiratory viral infection before the drug therapy of broncho-vaxom (n = 30) M ± M	Indicators of Children group with respiratory viral infection after the drug therapy of broncho-vaxom (n = 30) M ± M
CD3+	21,3 ± 1,02*	34,1 ± 1,2*
CD4+	13,2 ± 0,9*	27,4 ± 0,2
CD8+	15,2 ± 1,1	19,1 ± 1,2
CD16+	7,6 ± 1,1*	19,4 ± 1,3
IRI	0,8 ± 0,02	1,1 ± 0,01
IgA	1,4 ± 0,3*	1,6 ± 0,23*
IgG	10,2 ± 0,7	17,4 ± 1,32
IgM	1,2 ± 0,09	1,06 ± 0,03*
CD22+	10,9 ± 1,9	18,98 ± 1,54
C3	0,21 ± 0,02*	0,42 ± 0,06
C4	0,12 ± 0,02*	0,28 ± 0,04
CIK	198,2 ± 1,5*	90,1 ± 2,4*
IL-1	0,41 ± 0,001	0,64 ± 0,09*
IFN-γ	0,16 ± 0,01*	0,52 ± 0,03*
FNO α	0,3 ± 0,01*	1,25 ± 0,008

* 0.05 between the standards and indicators obtained in each group.

relation. To assess the relative risk of each of the indicators risk factors and their distant shades, as well as to select the meaningful combinations of risk factors used logistic ression (univariant analysis for each of the characteristics rately and multiple step-by-step method for the totality of ptom).

RESULTS AND DISCUSSION

Extreme climatic conditions of the far North have an impact on immunological mechanisms. In the analysis of changes of the immune status (table 1) revealed the greatest decline in T-cell level and components of complement in children with complications of viral respiratory infections. Average

concentration of the components of complement C3 and C4 in children with complications of acute respiratory viral infections, lower than in healthy children of the control group. In children with complicated viral respiratory infections, above the level of the CIK than in healthy, reduced the content of IFN-γ FNO-α. The IgA level decreased in the group of children with complications of viral respiratory infections. The level of IgM, IgG did not differ significantly in compared groups Similar changes: the decrease in the level of IFN-γ FNO-α shows a decline in antiviral defense.

The analysis of the level of cytokines revealed the greatest reduction in the level of IFN-γ FNO-α in children with complicated acute respiratory viral infections, indicating that the decrease in antiviral defense.

30 of the surveyed children long-term and frequently sick children with complication of respiratory viral infection medication used broncho – vaxom representing liofilizat of bacteria that inhabit bronchial tract. Therapy was carried out by a ten day course (1 caps per day), for three months. Upon completion of the course of therapy of broncho-vaxonom conducted monitoring immune status and revealed the following results.

As a result of drug therapy of broncho-vaxom marked improvement in immune status and the absence of recurrence of complicated respiratory viral infections within the next 3 months after therapy.

CONCLUSIONS

1. In children with complicated respiratory viral infect... reduced cellular immunity (CD3⁺, CD4⁺, CD8⁺, CD⁺, CD 2... In children with complicated respiratory viral infect... decreased levels of cytokines (IFN-γ FNO-α), indicating tha... decrease in antiviral defense and about the risk of the forma... of complications of respiratory viral infection.

2. As a result of drug therapy of broncho-vaxom mar... improvement in immune status and the absence of recurr... of respiratory viral infection within the next 3 months ... therapy.

REFERENCES

1. Balabolkin I. I. Dermo-respiratory syndrome in children / Balabolkin I. I // Ch... doctor.-2000.-№2.-P. 24-26.
2. Nigmatullina G. N. Virus-induced diseases of the respiratory system / Nigmatu... N., Enikeeva E. G. // Proc. Dokl. 13th National Congress on respiratory diseases ... – 2003.
3. Vogralik M. V. Secondary immunodeficiency States. Immune blood disease ... Vogralik, L. V. // Educational-methodical manual. – Bitter, GMI them. S. M. K... 2000.-S. 25-67.
4. Markova T. P. // A Practical guide to Clinical Immunology and Allergology. -M. -20... 31-45.

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THE PREVALENCE OF CHRONIC VIRAL HEPATITIS IN CHILDREN AND ADOLESCENTS IN YAKUTIA

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ABSTRACT

Chronic hepatitis in children represents a serious health and social problem. Under the conditions of the high prevalence of viral hepatitis in Yakutia epidemiological process has a number of peculiarities. In children chronic hepatitis often occurs with minor clinical manifestations, which complicate diagnosis. The study of the epidemiological, clinical and laboratory data is an important task. The aim of the study was to investigate the epidemiological characteristics of chronic hepatitis in children and adolescents living in hyper-endemic region. Materials and Methods: the study included 1568 patients' data, registered in the dispensary with a diagnosis of chronic hepatitis in the period from 2000 to 2012. Epidemiological history data of 304 patients with chronic hepatitis were analyzed. The data from official statistics were used for epidemiological analysis. Processing of clinical and laboratory studies was performed using the statistical package IBM SPSS STATISTICS 19. Result: CH epidemiological features were identified, including the prevalence of HBV-infection in etiological structure, the high incidence of the disease among the indigenous population, a high risk of intra-familial infection with hepatitis B virus , high frequency of perinatal infection with hepatitis C virus. It was proposed to maximize screening tests for markers of viral hepatitis and to improve quality control of vaccination. Conclusions: The epidemic process of viral hepatitis in children and adolescents in Yakutia is characterized by domination of HBV-infection in the structure of chronic hepatitis. The predominance of the indigenous nationalities among patients with chronic hepatitis B and the leading role of family contact in the routes structure of infection transmission indicates the importance of ethnic and social factors in contraction of the disease.

Key words: hepatitis, children, adolescents.

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INTRODUCTION

Viral hepatitis (VH) is a socially significant disease of a human being and is a major cause of chronic liver disease. According to the World Health Organization (Inf. Bull. № 164, WHO, 2012) there are more than 500 million people infected with hepatitis B virus and approximately 150 million - with hepatitis C virus [3,4,10]. Emphatic success in the treatment of chronic hepatitis (CH), especially chronic hepatitis C (CHC) has been achieved [8, 9]. Despite considerable progress in diagnosis, treatment and prevention of hepatotrophic viral infections, this problem is far from being solved [1, 2, 11].

Only a few studies were devoted to the problem of the prevalence and factors of chronic viral hepatitis among native and alien population of the Republic of Sakha (Yakutia) (RS (Y)). CH problem In children has not been studied at all [5, 6, 7]. **The aim** of this study was to investigate the epidemiological features of CH in children and adolescents living in hyper-endemic region on the example of the Republic of Sakha (Yakutia).

MATERIALS AND METHODS

The studies were conducted on the basis of the Pediatrics Clinic of Republican Hospital №1 of National Center of Medicine and MH of Republic Sakha (Yakutia), "Children's City Clinical Hospital №2». The study included data of 1568 patients who were in the dispensary with a diagnosis of chronic hepatitis in the period from 2000 to 2012 Epidemiological history data of 304 patients with chronic hepatitis were analyzed. The group of patients with chronic hepatitis B (CHB) made 50.3% (153 children), of whom in 122 patients HBsAg was allocated ,in 31 patients (9.9%) in the presence of a-NVsor and DNA HBV, HBsAg and a-HBsAg were not detected . The group with chronic hepatitis C included 116 patients (38.4%). The group of patients with mixed-hepatitis included 35 patients, accounting for 10.9%. Of these CHB + C was set in 18 patients (6%), CHB + D in 15 (5%) CHB + C + D in 2 (0.7%). For epidemiological analysis we used data from official statistics of the Territorial Rospotrebnadzor of Sakha (Yakutia), the Federal State Health Care "Center for Hygiene and Epidemiology in the Republic of Sakha (Yakutia)". When the diagnosis was made we took into account the epidemiological, clinical, biochemical data, serological and molecular biological markers of viral hepatitis. Processing of clinical and laboratory studies was performed using the statistical package IBM SPSS STATISTICS 19.

RESULTS

The Republic of Sakha (Yakutia) always belonged to the hyper-endemic regions. The incidence of viral hepatitis in Yakutia population of all the years of observation exceeded that of the national average. In recent years there has been significant reduction in the incidence of viral hepatitis, especially

acute forms. However, long term epidemiological disadvantage formed a significant layer of the chronically ill patients, who are a constant source of infection due to the fact that CH is a long lasting chronic disease that goes unnoticed for many years. The prevalence of the disease, especially among adolescents remains unclear. On the basis of indirect evidence it can be judged as sufficiently high risks of CH infection in children and adolescents. Thus, the proportion of pregnant women with HBs-antigenemia for 2000-2011 was 3.29%, while the dynamics was not tended to decrease. The frequency of infection with hepatitis C virus was 1.1% [11]. In childhood there is an extremely high risk of perinatal infection transmission. A large spread of CH in the adult population of Sakha (Yakutia) (from 120.1 per 100 thousand of population in 2003 to 88.4 per 100 thousand of population in 2011) indicates about the broad contacts of children and adolescents with these sick people.

In our study we identified several problems of early diagnosis of VH in pediatric practice. These include primarily minimal clinical disease manifestations in the early stages. In most cases, the diagnosis was made by chance, when examining a patient with another disease - in 189 patients, accounting for 62.6%. In 57 cases (18.9%) diagnosis was put during the examination of the child's contact with the CVH sick person. The survey, scheduled on the complaints of a patient,revealed CH in 56 patients (18.5%). A serious problem is a weak diagnostic base in the districts of the Republic. Hepatitis viral marker analysis often detects only HBsAg. This may explain much larger number of new cases of CHV under examination in the Medical and Preventive Treatment Facilities compared with CHB (15.3% and 46.8%, respectively). In addition, in our study we have shown that the inclusion of a-HBcor screening can detect patients with HBsAg-negative CHB. According to our data the proportion of such patients is 6.8% of all patients with CHB. The absence of a specialty "Children's Infectious Disease Physician" leads to the fact that children with chronic hepatitis are not subjected to regular medical check-up in a dispensary and are not observed properly. This is especially characteristic of Arctic and Subarctic regions of the country, where a number of objective factors (low population density, remoteness and small size of settlements, a complicated transportation scheme, often nomadic or semi-nomadic way of life) make it difficult for people to access, not only to the specialist, but also in general to health care institutions. This conclusion is confirmed by the analysis of the distribution of patients with chronic hepatitis who are registered with a doctor-hepatologist, by region of residence. In the regions of the Arctic and Subarctic on[illegible] of patients lives (Table. I).

Significant morbidity among adults in Alaykhovsky [illegible] with CHB - 601.3‰, with CHC - 556.20‰; Bulunsky [illegible] with CHB - 259.90‰, with CHC - 183.30‰; Nizhny K[illegible] district with CHB - 179.3‰, with CHC - 200.4‰, [illegible] incidence of primary liver cancer in the region (16,05‰) [illegible] a high level of hepatotrophic viruses infection in popul[illegible] But due to the objective situation people seek treatme[illegible] when there are serious health problems. At the same time [illegible] of chronic hepatitis in children and adolescents in these d[illegible] have not been identified.

In many regions of the country, thanks to the introd[illegible] of hepatitis B vaccine into the national immunization sch[illegible] the incidence and forms of acute and chronic HBV-int[illegible] were significantly reduced. This trend is observed in our c[illegible] (Fig. 2), but despite good immunization coverage of ch[illegible] under 14 years (since 2006 more than 90%) and a decr[illegible] the number of new cases of hepatitis B in the Sakha Re[illegible] (Yakutia), CHB is diagnosed in more than half of childr[illegible] adolescents with chronic hepatitis (67.1%).

In analyzing the distribution of patients with chronic he[illegible] B, chronic hepatitis C and mixed hepatitis according to a[illegible] revealed a statistically significant difference ($p < 0.05$). In the [illegible] of mixed hepatitis the proportion of patients older than 1[illegible] was significantly lower than mono-hepatitis. The distrib[illegible] of patients by sex was similar for all hepatitis and statist[illegible] significant differences were detected ($p > 0.05$) (Table. II

The special features of the epidemiological process [illegible] in children and adolescents in the Republic of Sakha (Ya[illegible] are undoubtedly include the ethnicity of patients. Statist[illegible] significant differences in the frequency of detection of [illegible] CHC and mixed-hepatitis in patients of different ethni[illegible] ($p < 0.05$) (Table. III) were revealed.

The table shows that in most cases the patients with CH[illegible] representatives of the indigenous nationalities. According t[illegible] latest census the proportion of indigenous peoples (the Ya[illegible] and the Indigenous small - numbered peoples of the Nor[illegible] the RS (Y) does not exceed 47%, but among children with ch[illegible] hepatitis, it is 71.1% of cases. CHB is much more comm[illegible] children and adolescents of the indigenous nationality - in [illegible] of cases. Whereas, with a comparable frequency of CHC de[illegible] in children and adolescents, and indigenous and non-indig[illegible] 58.7% and 41.3%, respectively. This indicates the presen[illegible] ethnic epidemiological peculiarities of viral hepatitis.

Table I. The distribution of patients with chronic hepatitis b, chronic hepatitis c, hepatitis b and mixed by region of residence.

	CHB (n = 153)				CHC (n = 116)		Mixed-hepatitis (n = 35)	
	HBsAg (+)		HBsAg (-)					
	n	%	n	%	n	%	n	%
Arctic	11	9.1	1	1.6	4	3.4	0	
Subarctic	11	9.1	1	1.6	8	6.9	2	[illegible]
Far North	100	37.9	29	11	104	39.4	33	9[illegible]

Table II. The distribution of CH patients by age groups.

Age	CHB (n = 153)				CH C (n = 116)		Mixed-hepatitis (n = 35)	
	HbsAg (+)(n = 122)		HbsAg (-) (n = 31)					
	n	%	n	%	n	%	n	%
Up to 1 year	2	1/6	0	>0.05	5	4.3	2	5.7
1-3 years	7	5.7	1	>0.05	3	2.6	6	17.1
4-6 years	6	4.9	5	16.1	18	15.5	2	5.7
7-10 years	22	18	3	9.7	18	15.5	6	17.1
11-14	27	22.1	8	25.8	27	23.3	15	42.8
Older than 14 years	58	47.5	14	45.2*	44	37.9	3	8.5*

* difference is statistically significant p <0.05.

Table III. Distribution of patients with chronic hepatitis B, chronic hepatitis C and mixed hepatitis by nationality.

Nationality	chronic hepatitis B (n = 153)				chronic hepatitis C (n = 116)		Mixed-hepatitis (n = 35)	
	HbsAg (+) (n = 122)		HbsAg (-) (n = 31)					
	n	%	n	%	n	%	n	%
Yakut (n = 195)	86	70.5*	22*	71*	64	55.2*	24	68.5*
Russian (n = 77)	24	19.6*	8	25.8*	36	29.6	9	25.7
Indigenous (n = 11)	7	5.7	0	0	4	3.4	0	0
Others (n = 20)	5	4.1	1	3.2	12	10.3*	2	5.7*

* difference is statistically significant p <0.05.

In the analysis of the possible ways of infection the leading [illegible] of family contact was determined. The presence of the [illegible]H in the patient's family was noted in 41.4% of children and [illegible]lescents with chronic hepatitis. There is a direct correlation [illegible] family contact depending on the child's age (p <0.001) and [illegible] etiology of the process (p <0.05) (Table. IV).

CH is often diagnosed in adolescents in the age group over [illegible] years – 45.4%. At this age the highest number of patients [illegible]nosed for the first time CHB was recorded.

[illegible]SCUSSION

This study is the first one devoted to the research of the [illegible]valence and factors of chronic viral hepatitis in children and [illegible]lescents in the Republic of Sakha (Yakutia). These incidence [illegible] VH prevalence of VH markers among blood donors and [illegible]gnant women in the complex, allow sufficiently objectively [illegible]ess the epidemiological situation of CH among the adult [illegible]pulation. Evaluation of the same frequency of VH among [illegible]ldren and adolescents is carried out only on the basis of [illegible]gnoses registration, which creates objective difficulties in the [illegible]alysis of the epidemiological situation. However, taking into [illegible]count the direct and indirect data, we have identified some [illegible]demiological peculiarities of CH in children and adolescents [illegible]ng in Yakutia. These include a large share of HBV-infection in [illegible]e structure of chronic hepatitis. There is the predominance of [illegible] indigenous nationalities among patients with chronic hepatitis. [illegible]cording to the latest census the proportion of the indigenous [illegible]ples (the Yakuts and the Indigenous small-numbered peoples of the North) in the RS (Y) does not exceed 47%, but among children with chronic hepatitis, it is 71.1% of cases. Also, it was defined that the family contact occupied the leading place in the structure of routes transmission. The maximum number of chronic hepatitis cases was found in adolescents. The risk of infection dramatically increases in adolescence, due to the spreading of infection tract. Smoking, piercing, tattoos, sex are added to usual childhood blood-borne infection path in later period of life. In addition, at the age of 16 young men had thorough medical examination including serological diagnosis during the Commission before military conscription. The results showed the value of ethnic and social factors in causing the disease.

CONCLUSION

1. The epidemiological process of chronic hepatitis in children and adolescents in the Republic of Sakha (Yakutia) at present has a number of peculiarities. CHB is still the most frequent diagnosis in children and adolescents with chronic hepatitis, accounting for 67.1%. A significant role in the structure of CH transmission paths in children and adolescents plays a family member. The frequency of family contacts of patients with chronic hepatitis B was 43.8% ,with CHC – 33.6% and mixed-hepatitis – 57.6%. There were significant differences in the structure of CH in children and adolescents of different nationalities. The proportion of indigenous nationalities among patients with chronic hepatitis B is 75.2%, CHB + D – 93.3%. The most common disease of CH is detected in adolescence.

Table IV. Family contact and the age of patients with chronic hepatitis.

Age		Family contact				P
		With mother	With father	With siblings	with several members of the family	
Up to 1 year	n	4	0	0	0	<0.001
	%	57.1	0	0	0	
1-3 years	n	10	0	0	3	>0.05
	%					
4-6 years	n	76.9	0	0	23.1	>0.05
	%	8	3	3	1	
7-10 years	n	26.7	10	10	3.3	>0.05
	%	7	1	1	1	
11-14 years	n	15.9	5.2	5.2	2.9	>0.05
	%	10	10	10	2.9	
Older than 14	n	22	22	22	13	<0.05
	%	27.7	16.1	16.1	9.5	

CHB in 69.9% of cases, chronic hepatitis C - 61.2%, the mixed hepatitis - 82.9%.

2. To ensure the availability and quality of care for children and adolescents with chronic hepatitis it is necessary for improvement of CH primary prevention quality in children to put into practice CHB vaccination of family members of patients with newly diagnosed chronic hepatitis B in out-patient departments at the level of primary health care; to improve the quality of secondary prevention of CH in children and adolescents research on BBM must be included into medical examinations, to make it mandatory for planned and emergency hospitalization in various fields. To expand the screening by including a-HBcor and a-HBs.

REFERENCES

1. Ponomarenko T.N. Clinical and laboratory features of acute hepatitis C in people of middle age. / Ponomarenko T.N. // World of viral hepatitis. 2009; 1: 26.
2. Zhdanov K.V. Saint-Petersburg. / Zhdanov K.V., Gusev D.A. Lobzina Y. Viral Hepatitis. // Ionie; 2011. 304 p.
3. Baranov A.A. Incidence of chronic viral hepatitis in the child population of the Russian Federation for the period 2003-2012. / Baranov A.A., Namazova- Baranova L.S., Volynets G.V. [et al.]// M.: "Ultra Print"; 2012. 46 pp.
4. Uchaikin V.F. Cirrhosis of the liver in children. / Uchaikin V.F. Chuelov S.B., Rossina [et al] //Pediatrics. 2008; 87 (1): 11-19p.
5. Kirillova T.A. Risk analysis of vertical transmission of hepatitis C in children. / Kirill... T.A., Grobovetskaya N.A. Khabudaev V.A [et al.] // Infectology Journal. 2011; 3, Appe... N 3: 54-55p.
6. Elisofon S.A., Hepatitis B and C in children: current treatment and future strategi... Elisofon S.A., Jonas M.M. // Clin. Liver Dis. 2006; 10 (1): 133-148p.
7. Sokal E.M. Management of chronic hepatitis B in childhood: ESPGHAN clinical prac... guidelines: consensus of an expert panel on behalf of the European Society of Pedi... Gastroenterology, Hepatology and Nutrition. / Sokal E.M., Paganelli M., Wirth S. [et ... // J. Hepatol. 2013, 59 (4): 814-829p.
8. Strokova T.V. The natural course of chronic HBV + HCV infection in childre... Strokova T.V., Slashutan I.V., Sentsova T.B. [et al.]//Clin. Gastroenterology. 2... 1: 29-33.
9. Semenov S.L.// Epidemiological features and clinical characteristics of viral hepati... C and delta in the Republic of Sakha (Yakutia): Abstract. Dis. .... Doc. Med. Sciences. 2007. 48 pp.
10. Fedoseyeva, L.K. . Clinical and epidemiological characteristics of hepatitis B viru... pregnant women in the Republic of Sakha (Yakutia). : Author. Dis. .... PhD. Med. Scie... M.; 2008. 23 pp.
11. Sleptsova S.S. Peculiarities of chronic viral hepatitis in Yakutia. / Sleptsova S.S., Tikhon... N.N., Samsonova V.K., Djachkovskaya F.S. // J. Infectious Diseases. 2011; 9: 343p.

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