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CONTENTS

Leading Article

Tomsky M.I., Nikolaev V.P.

It was 90 years ago

Original Researches

Mestnikova A.Z., Artyushkin S.A., Artyushkina V.K.

Pathogenetic aspects of nasal lesions in patients with chronic hepatitis C

Yarbekov R.R., Sigaev I.Yu., Keren M.A., Nazarov A.A., Kazarian A.V., Starostin M.V.

Effect of glycemia on the complications' development after coronary revascularization in patients with CHD and diabetes

Grebenyuk V. V., Kovtunov K.A., Nazarov A.A., Chumachenko I.V.

Microflora features in patients with surgical sepsis

Yuryeva D.S., Palchik A.B.

The factors influencing the psychomotor development of children with hearing deprivation

Diagnostics and Treatment Methods

Maslyakova G.N., Medvedeva A.V., Aristova I.S.

The diagnostic and prognostic significance of immunohistochemical method of investigation of clear cell renal cell carcinomas of low differentiation

Gulyaeva N.A., Lineva Z.E., Romanova M.V., Gurieva O.I., Andreeva S.K., Zolotareva N.A., Handu M.V., Zakharova N.M.

Efficiency of chemotherapy for adolescent pulmonary TB

Healthy lifestyle. Disease Prevention

Evseeva S.A., Bourtseva T.E., Chasnyk V.G.

The health of children in Yakutsk according to the automated technology of preventive medical examinations (ASPONd-AKDO)

Organization of Healthcare, Medical Science and Education

Bourtseva T. E., Odland J. O., Duglas N.I., Pavlova T. Y., Grigoreva A.N., Chichahov D. A., Baisheva N.S., Vasileva A.A., Chasnyk V.G., Tomsky M. I.

Demographic and health indicators of the obstetric service of the Republic Sakha (Yakutia) Tarabukina S.M., Boyarova Z.A.

On the organization of control over compliance with the licensing regulations in the implementation of pharmaceutical activity in the sample the Republic Sakha (Yakutia)

Nutrition in the North

Resolution of the All-Russian scientific-practical conference with international participation "Nutrition and health of the population in areas with extreme conditions" (Yakutsk, June 25-26, 2015)

Topical Issue

Semenov A.D., Ushnitsky I.D., Rogaleva A.S., Degtyareva A.M., Egorov R.I.

Analysis and evaluation of the need for dental care of residents of Yakutia industrial regions

Gavrilyeva K.S., Handu M.V., Markova S.V., Makharova N.V., Mestnikova E.N.

Features of the hormonal status in young athletes of the Republic Sakha (Yakutia)

Bogachevskaya S.A., Bogachevsky A.N., Kapitonenko N.A.

Assessment by the attending physicians of medical care organization at diseases of the circulatory system in the Far Eastern Federal District

Scientific Reviews and Lectures

Baisheva N.S., Duglas N.I., Pavlova T.Yu., Bourtseva T.E.

Modern view on the causes of preterm delivery

Pavlova E.V., Shatunov A.Yu.

Review of the book "Vilyusk encephalomyelitis" (authors L.G. Goldfarb, V.A. Vladimirtsev, MD

N.M. Renwick, F.A. Platonov)

Clinical Case

Argunova E.F., Alekseeva S.N., Ivanova O.N., Kondratieva S.A., Yadreeva O.N., Sleptsova N.A., Khryukina E.V., Sivtseva A.A.

Congenital syphilis in the composition of mixed infection in a child one month of life

Vladimirtsev V.A., Cherniavsky V.F., Imeneva V.I., Tyulyahova V.S., Nikiforov O.I., Sivtseva T.M., Osakovski V.L., Davydova T.K., Platonov F.A.

Possible concomitant neurological and laboratory control in the prevention of complications after viral neuroinfections (with clinical follow-up)

Experience Exchange

Aristova I.S., Medvedeva A.V.

Comparative analysis of the forms and types of the lower extremities using anthropometric indices Diaghileva T.S., Ignatiev V.G., Mikhailova V.M., Krivoshapkina L.A., Samsonov M.P., Soloviev A.A., Holtosunov I.A.

The hemotransfusion analysis on the example of specialized department of multidisciplinary clinic

Brief Report

Ivanova O.N.

The presence of bacterial, fungal and viral infections in a group of children frequently having ARVI

Events Chronicle

Our Jubiljars - Public Health Officials



ORIGINAL RESEARCHES

A.Z. Mestnikova, S.A. Artyushkin, V.K. Artyushkina

Pathogenetic Aspects of Nasal Lesions in Patients with Chronic Hepatitis C

ABSTRACT

The article reflects the problem of nasal bleeding in patients with chronic hepatitis C. The aim of the study was to determine the presence of HCV fragments in the nasal mucosa, change the local T-cell immunity, identifying morphological changes in the nasal mucosa in chronic viral hepatitis C. At the result we revealed the presence of HCV nonstructural protein NS3, local activation of T-cell immunity and metaplasia of the epithelium of the nasal mucosa.

Keywords: chronic hepatitis C (HCV), virus of hepatitis C (HCV), nosebleeds, NS3 protein of HCV, epithelial metaplasia, hypocoagulation.

INTRODUCTION

With the hepatitis C virus (HCV) around 500 million in the world are infected. In Russia, the number of patients with a chronic form of hepatitis C and carriers reaches more than 2 million people [8].

An early sign of liver cirrhosis with chronic viral hepatitis may be nosebleeds [6,12]. The incidence of nasal bleeding in liver disease varies from 1% to 13.4% [14].

As known, several causes of nasal bleeding in liver disease: the violation of the coagulation system, as in the direction of anticoagulation due to insufficient synthesis function and reduction of vitamin K-dependent coagulation factors II, VII, IX, X, abnormalities in platelet caused by stagnation in the portal vein, including hypersplenism, which are characterized by a decrease in the level of platelets. [5]. So toward hypercoagulable state, the reduction of synthesis of plasminogen hepatocytes and appear tromboplastin and platelet activating substances into the systemic circulation in the syndrome of portal hypertension [7].

For local reasons of epistaxis include the development of degenerative changes in the nasal mucosa (in particular, sub-and atrophic processes), and malformations of the vascular wall (microangiomatosis and varicose) that are observed in the allocation of toxic substances that lead to violation of angiogenesis [3].

However, in chronic viral hepatitis C (CHC) are appeared extrahepatic manifestations of hepatitis C immunocomplex genesis found in 19-56%, which can be determined before the manifestation of the liver. Vasculitis is associated with hepatitis C from the immune complexes affecting small-caliber arteries in the skin of petechiae to necrotic ulcers. It can also affect the



kidneys, joints, peripheral nervous system, salivary glands, sometimes the lungs, gastrointestinal tract and brain [1].

Patients with hepatitis C virus in the blood often determined Ig G to nonstructural proteins NS3 [2], and due to the fact that in previous studies [10] ribonucleic acid (RNA) in the nasal mucosa have not been detected, there was considered the definition of non-structural HCV proteins in mucosal nose.

It is known that the NS3 / 4A protein inhibits the activation of complement component C4 and reduces the activity of the classical pathway of complement activation [13]. Thus, the authors Amr El-Shazly et al. in studying the nasal mucosa did not found C3b, which eliminates the impairment of the immune complexes based on immunological reactions in the nose [11].

PATIENTS AND METHODS

The study involved 42 people aged 25 to 66 years (20 men and 22 women), with hepatitis C, of whom 21 were in cirrhosis. And it was recruited control group of 30 people (18 men and 12 women) with no liver disease and hepatitis C. Patients were divided into 3 groups, in connection with the signs of liver damage and the presence of hepatitis B virus.

Group 1 - Patients with chronic hepatitis C, 21 people;

Group 2 - Patients with viral liver cirrhosis, 21 people;

3 group - the control group, 30 people.

All patients underwent a complete clinical evaluation: an objective examination of the patient, laboratory methods of investigation - blood count, urinalysis, blood chemistry, coagulation. The study included coagulation: ACHTV, PTT, prothrombin by Quick, INR, fibrinogen, platelet count.

The main screening test for hepatitis C virus is the determination of HCV antibodies by ELISA. In the case of confirmation of the diagnosis carried out qualitative determination of HCV-RNA. To confirm cirrhosis performed abdominal ultrasound, EGD, liver scintigraphy, CT of the abdomen, elastography.

ENT examination was carried out by the usual method using videoendoscopy equipment. Endoscopic examination of the nasal cavity was evaluated the following signs: the state of the mucosa of the nasal cavity, the presence of subatrophy areas, symptoms of nasal bleeding, the location of the blood vessels of the nasal mucosa.

Exclusion criteria were: age over 66 years since involutive changes in the nasal mucosa, the presence of HIV, the mixed hepatitis, the presence of autoimmune diseases.

In patients after obtaining informed consent under local application anesthesia 10% lidocaine was carried out biopsy from the inferior turbinate size 3 * 4 mm, opened nosebleeds

stoped after decongest nasal cavity and cauterization with silver nitrate in the form of "pearls". Complications after this manipulation was not obtained in any case. In the control group the fence material during scheduled surgery for nasal septum deviation.

A portion of the nasal mucosa biopsy was fixed in 10% neutral buffered formalin, after which the material passed standard treatment for producing histological and immunohistochemical preparations with thick serial 3-5 micron paraffin sections. Another part of the biopsy material was placed in Eppendorf, containing 0.5 ml sterile solution version (Biolot) to determine the local amount lymphocytes by flow cytometry.

For microscopic studies were stained with hematoxylin and eosin. To identify collagen fibers and assess the degree of fibrosis was used histochemical staining method Van Gison. Using histological examination determined the degree of inflammatory infiltration of the nasal mucosa by lymphocytes, plasma cells, histiocytes, neutrophilic leukocytes, eosinophils, fibrosis and atrophy rate.

Immunohistochemical study included the determination of the expression of NS3 antigen of hepatitis C virus using monoclonal mouse antibody produced by clone MMM33 NovocastraTM in dilution 1:50. Setting three-stage reaction is carried out by indirect enzyme-linked immunosorbent LSAB (Eng. Labeled streptavidin - biotin, DakoCytomation, LSAB 2 System -HRP) imaging technique, detecting peroxidase activity was carried out using 3,3diaminobenzidine, drugs dokrashivali Mayer's hematoxylin.

To determine the local amount of lymphocyte cells from biopsy material obtained using a mechanical disintegrator Medimachine (BD). We used antibodies: HLA DR-FITC, CD4-PE, CD3-ECD, CD56-PC5.5, CD25-PC7, CD8-APC, CD19-APC-AF700, CD45-APC-AF750 (Beckman Coulter). The samples were analyzed by flow cytometry Navios (Beckman Coulter) in multi-protocol.

These clinical results were processed using c system STATISTICA for Windows (version of the Faces. BXXR310F964808FA-V).

RESULTS OF THE STUDY

From the anamnesis of patients significant differences in the incidence of nasal bleeding, depending on the stage of chronic hepatitis C has not been received (Table. 1). However, nosebleeds occur more frequently in patients suffering from liver disease in contrast to the control group (p < 0,001).



	I group, $n=21$	II group, $n=21$	III group, $n=30$
	% (abs. n.)	% (abs. n.)	% (abs. n.)
Patients received wit hepistaxis	24% (5)	14% (3)	0
Patients with usual epistaxis	38% (8)	24% (5)	0
Patient with single epistaxis	38% (8)	33% (7)	0

The frequency of nasal bleeding in patients with CHC and the control group

Endoscopic examination of the nasal cavity (Table. 2) in patients with chronic viral hepatitis and cirrhosis are dominated subatrophic processes mucosa (p << 0,001) compared with the control group; surface vessels located in places bare (p <0,01), crusts in the nose occur with equal frequency in the group with viral hepatitis.

Table 2

These endoscopic examination of the nasal cavity of patients with chronic hepatitis

C	
U	

	I group	II group	III group
	% (abs. n.)	% (abs. n.)	% (abs. n.)
Subatrophy of nasal mucosa	67% (14)	67% (34)	0%
Superficial vessels of the nasal mucosa	43% (9)	43% (9)	7% (2)
Crimped vessels of the nasal mucosa	5% (1)	0%	3% (1)
Crusts in the nasal cavity	62% (13)	57% (12)	10% (2)
Nasal septum deviation	57% (12)	43% (9)	100% (30)

As a result of coagulation investigation (Table. 3) significant differences between patients with chronic hepatitis C and the control group (p >> 0.05) didn't find, so, the function of the coagulation system is not broken.



index	I group	II group	III group	Normal
				values
Prothrombin for				70-120
Quick, %	97,90±3,13	68,08±7,76	101,09±3,16	
Fibrinogen, mg/dl	367,32±24,11	246,45±26,75	415,83±19,39	200-400
ACHTV, seconds	29,35±0,7	32,52±1,1	27,24±0,38	25-33
Prothrombin time,				11-16
sec	12,47±0,2	21,23±6,62	11,83±0,025	
Platelets, x 10^9 g / 1	226,90±29,28	136,10±23,06	253,83±9,43	160-320

The coagulation system in patients

When comparing the patients with cirrhosis of the liver with the control group and viral hepatitis marked reduction of prothrombin Quick and prolonged prothrombin time (p < 0,01), indicating hypocoagulation due to clotting of the external type.. Reducing the number of platelets (p < 0,01) constitutes a violation of the vascular-platelet clotting mechanism. From the data obtained it follows that a violation of coagulation occurs only in the terminal stages of hepatitis C. Data of hypercoagulability has been received.

7 immunohistochemical studies were performed patients with chronic hepatitis and cirrhosis of the liver the presence of NS3 protein, and found in 6 patients the expression of HCV NS3 protein in the cytoplasm in the epithelial metaplasia protein-mucous glands of the lamina propria of the nasal mucosa (Fig. 1, a, 6). What it confirms the presence of HCV non-structural fragments in the nasal mucosa and does not exclude the manifestation of nasal bleeding as a result of extrahepatic manifestations of hepatitis.





Fig. 1. The mucous membrane of the nose. The expression of NS3 antigen: a) metaplasia of the epithelium; b) mucous glands. Immunohistochemical study. The increase of 200.

In determining the amount of the local subpopulation of lymphocytes in the nasal mucosa was obtained (Table 4).



Parameters of cellular immunity in the biopsy in patients with chronic hepatitis C and controls

	patients with CHC,	control group,
Index	M±m, $n=6$	M ± m , <i>n</i> =6
CD3+ (T-limp)	87,8±2,36	85,2±3,96
CD3+CD4+ (T-hel)	26,3±7,31	33,4±1,69
CD3+CD8+ (T-kills)	59,83±8,72	49,8±3,99
CD4/CD8	0,63±0,27	0,67±0,07
CD3+CD56+ (TNK-sell)	8,05±3,49	6,62±1,44
CD19+ (B-limp)	2,22±0,69	5,2±1,77
CD 25+ (IL-2)	1,37±0,68	3,68±1,13
CD3+25+	1±0,48	3,32±1,1
CD3-CD8+ (activ. NK-sells)	1,57±0,77	1,78±0,78
CD3-CD56+ (NK-sells)	8±1,55	8,1±3,06
HLA DR+	35,53±6,64	18,2±2,25
CD3+HLA DR+ (activ. T-sells)	26,6±9,34	11,68±2,29
CD56+HLA DR+ (activ. NK-sells)	6,43±1,54	2,82±0,37

Predominance of T cell composition on B-lymphocytes, confirming the dominance of the cellular immunity over humoral immunity in the nasal mucosa. Increase in viral hepatitis C T-killer cells, CD3 + HLA DR +, CD56 + HLA DR + (p < 0,05), in comparison with the control group, characteristically for later activation of T-lymphocytes with a predominance of T-cell immunity, which is typical for chronic persistent infection, while a decrease in T-helper cells (p < 0,05) indicates the weakening of the regulatory processes of cellular immunity. High-grade chronic HCV infection is associated with low CD4 + and CD8 + T-lymphocytes, poorly immunogenic viral proteins and the ability to mutate [4]. Also, in patients with chronic hepatitis C in comparison with the control group decreased content of CD25 + (p < 0,05) - a marker of the receptor IL-2, which indicates the early activation of cellular immunity.



	In the nasal	In serum, <i>n</i> =8		
Indices	mucosa, <i>n=6</i>			
CD3+ (T-limp)	87,8±2,36	75,38±9,88		
CD3+CD4+ (T-hel)	26,3±7,31	47,38±3,05		
CD3+CD8+ (T-kills)	59,83±8,72	26,36±3,66		
CD3+CD56+ (TNK-sell)	8,05±3,49	9,1±2,33		
CD19+ (B-limp)	2,22±0,69	10,6±1,6		
CD 25+ (IL-2)	1,37±0,68	4,68±0,63		
CD3+25+	1±0,48	3,88±0,58		
CD3-CD8+ (activ. NK-sells)	1,57±0,77	4,88±0,88		
CD3-CD56+ (NK-sells)	8±1,55	12,75±1,99		
HLA DR+	35,53±6,64	21,38±3,53		
CD3+HLA DR+ (activ. T-sells)	26,6±9,34	9,16±2,39		
CD56+HLA DR+ (activ. NK-sells)	6,43±1,54	2,33±0,69		

Parameters of cellular immunity in the nasal mucosa biopsy and serum in patients with chronic hepatitis C

In comparing T-cell immunity nasal mucosa and serum (Table. 3) is determined by the predominance in the first case of T-lymphocytes, T-killer cells, CD56 + HLA DR + (p <0.01), indicating that activation of T-cell immunity, with activation of killer T-cells and NK-cells, and decrease the early activation marker CD25 + CD3 + (p <0.01) in biopsy confirms the presence of the virus and a long persistence in the nasal mucosa. In serum B-cell immunity (p <0,01) more pronounced, however, in view of the fact that there is a constant antigenic variation of the virus develop antibodies to lose its relevance, and thus the virus escapes the control of humoral immune system, so the most important in the study elimination of the virus is the T-cell immunity. Also in the serum increased helper T cell activity (p <0.01), which causes increased sensor detection and regulatory activity, due to a load on the immune system.

Presence NS3 HCV protein and increase of T-killer cells, activated T-lymphocytes and NKcells in the nasal mucosa of viral hepatitis C can be treated as a result of the damaging effect Thelper-1 mediated pathway of the immune response, where the presentation of antigens on the surface of the damaged cell, in this case mucosal epithelium and lamina propria glands, causes the activation of CD8 + T cells [9].



epithelial metaplasia 1 group, n=7**2** group, *n*=7 **3 group**, *n*=6 43% (3) 83% (5) 0 absent DPer 0 14%(1)0 DP1 0 14%(1)72% (5) OP1 43% (3) 14%(1)17%(1)

Evaluation of epithelial metaplasia of the nasal mucosa

Abbreviations: ДDPer – Diffuse transitional cell metaplasia of the epithelium; DPl – diffuse squamous; OPl – Local squamous.

Histological examination in comparison with the control group was found (tab. 6): metaplasia of the epithelium of the nasal mucosa in patients with viral hepatitis (p <0.05), and prevails in stratified squamous metaplasia of epithelium (Fig. 2), which subsequently can lead to atrophic processes mucosa. Atrophic processes (p << 0.01) in 57% (4) cases were weakly expressed in group 1 and pronounced at 43% (3) Group 2 patients. Moderate to severe fibrosis effects (p <0.001) in both groups appear the same in 86% (6) cases. Determined relationship: the more expressed effects atrophy and fibrosis of the mucosa, the smaller vessels in the mucosa. The number of vessels in the mucosa is significantly reduced (P <0.001), in chronic viral hepatitis, and cirrhosis in step. When viral hepatitis C prevails lymph plasmocytic infiltration of the stroma of the mucous membrane (p <0.01).



Fig. 2. The mucous membrane of the nose. Diffuse squamous metaplasia of the epithelium. H & E stain. The increase of 200.

CONCLUSIONS

- 1. Nosebleeds are more common in patients with persistent HCV, regardless of the stage of the disease, in spite of the clotting disorder by type of anticoagulation in the stage of cirrhosis. This fact indicates that the coagulation disorder is not the main cause of nosebleeds.
- 2. In patients with chronic hepatitis and cirrhosis in mucosal epithelium and proteinmucous glands of the lamina propria in the nasal mucosa HCV NS3 proteins were detected, indicating the presence of hepatitis C virus in the nose and it does not exclude secretion in the nasal cavity.
- 3. The presence of a fragment of HCV NS3 contributes local activation of T-cell immunity with increase T-killer cells, NK-cells with viral hepatitis C.
- 4. Metaplasia of the epithelium of the nasal mucosa can be caused by the presence of HCV NS3 protein, resulting in increased T cell activity. A change in the surface layer may lead to superficial vessels of which occur nosebleeds.

REFERENCES

- 1. Baykova T.A. Lopatkina T.N. Mnogoobrazie vnepechenochnyh proyavlenij hronicheskih virusnyh gepatitov B i C, obshchie principy lecheniya [The variety of extrahepatic manifestations of chronic viral hepatitis B and C, the general principles of treatment] Terapevticheskij arhiv [Therapeutic archive], 2013, №4, Pp. 106-107.
- Baranov A.V. Shishkina L.V. Soderzhanie antitel klassa Ig G k NS3, NS4 i NS5antigenam virusa gepatita C i RNK HCV v syvorotkah krovi bol'nyh s latentnym techeniem hronicheskogo gepatita [The contents of class Ig G antibodies to NS3, NS4 and NS5-antigens of the hepatitis C virus and HCV RNA in the serum of patients with latent chronic hepatitis] Materialy konferencij Fundamental'nye issledovaniya [Conference materials Basic research]. Moscow,2008, №1, pp. 98-99.
- Volkov A.G. Boyko N.V. Kiselev V.V. Nosovye krovotecheniya [Nosebleeds]. Moscow: Jagar, 2002, 270 p.
- Dudanova O.P. Kiselev O.I. Hronicheskij virusnyj gepatit S: diagnostika i osobennosti klinicheskogo techeniya [Chronic hepatitis C: diagnosis and clinical features]. Petrozavodsk: Izd-vo PetrGU [Petrozavodsk State University Publishing House] 2013, 12 p.
- Palchun V.T. Nacional'noe rukovodstvo po otorinolaringologii [National manual of otorhinolaryngology]. Moscow: GEOTAR-Med, 2009, 960 p.

- Palchun T.V. Kryukov A.I. Otorinolaringologiya. Klinicheskie rekomendacii [Otorhinolaryngology. Clinical recommendations]. Moscow: GEOTAR Media, 2013, 368 p.
- Petrov V.V. Aktual'nye voprosy patogeneza nosovyh krovotechenij [Actual questions of pathogenesis of nasal hemorrhage] Klinicheskaya medicina [Clinical Medicine]. 2006, V.84. (4), pp.13-17.
- Radchenko V.G. Stelmach V.V. Kozlov V.K. Optimizaciya ehtiopatogeneticheskoj terapii hronicheskogo gepatita C [Optimization of etiopathogenetic therapy of chronic hepatitis C]. St. Petersburg: Tactic studio, 2004, 166 p.
- Osnovy klinicheskoj immunologii: perevod s anglijskogo [Fundamentals of Clinical Immunology: translated from English] Chepel E. [et al.]. Moscow: GEOTAR Media, 2008. 416 p.
- 10. Abbas F. Hepatitis C virus induces nasal epithelial erosion and sub-epithelial rhinitis
 / F. Abbas [et al.] // Rhinology. 2009. Vol. 47 N4. P. 438-443.
- Amr El-Shazly. Characterization of hepatitis C virus-induced nasal mucosa remodelling / Amr El-Shazly [etc.] // Histopathology. – 2010. - Vol. 57. - N3. – P. 488-492.
- 12. Barrio J. Epistaxis as an initial sign of hepatic disease/ Barrio J. [et al.] // An Pediatr (Barc) 2009 Vol. 70. Issue 6. P. 599-601.
- Mawatari S. Hepatitis C virus NS3/4A protease inhibits complement activation by cleaving complement component 4 / Mawatari S. [et al.] // PLoS One. 2013. 8 (12).
- 14. Urvashi Razdan. Epistaxis: Study of aetiology, site and side of bleeding/ Urvashi Razdan, Zada R., Chaturvedi V.N. // Indian Journal of Medical Science -1999 Vol.53. Issue 12. p.545-552.

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17

Yu. Sigaev, R. R. Yarbekov, M. A. Keren, A. A. Nazarov, A. V. Kazaryan, M. V. Starostin

The Effect of Glycemia for Complications Development after Coronary Revascularization in Patients with Coronary Heart Disease and Diabetes

ABSTRACT

The aim of our study was to evaluate the relationship of hyperglycemia and postoperative hospital complications after coronary artery bypass surgery in diabetic patients. The study included 482 patients who underwent coronary artery bypass surgery (CABG) in the period from 2003 to 2008 in The Bakoulev Scientific Center for Cardiovascular Surgery. In our study DM is not associated with an increased risk of major cardiovascular events (death, stroke, myocardial infarction) after CABG. However, the presence of diabetes is associated with an increase in the number of postoperative infectious complications. Hyperglycemia more than 200 mg / dL is a risk factor that increases the risk of postoperative complications such as death, stroke, acute renal failure, arrhythmias, and infectious complications.

Keywords: coronary artery disease, diabetes mellitus, hyperglycemia, coronary artery bypass grafting.

INTRODUCTION

The prevalence of diabetes mellitus (DM) among patients with coronary heart disease has led to a sharp increase in their numbers among the contenders for coronary revascularization. According to the literature, from 30 to 40% of diabetic patients in need of surgical treatment of concomitant coronary artery disease [1].

However, the results of the study suggest that the results of coronary artery bypass grafting (CABG) in patients with diabetes, in general, worse than others [5,6]. Szabó Z. et al. evaluated early and 30-day results of CABG in patients with diabetes (540 patients) and patients without diabetes (2,239 patients). Thirty-day mortality in the group of diabetics was 2.6% and in the control group was 1.6% (p = 0.15). However, the presence of diabetes was accompanied by a 1.9-fold increased risk of long-term mortality compared to patients without diabetes [15]. In recent studies more and more authors began to point to comparable levels of postoperative mortality between patients with and without diabetes mellitus [3, 11]. In addition, it points to an increased risk of neurological, renal complications and increased wound infections [2, 8, 9, 10]. In recent years, the glycemic control during CABG surgery and other cardiac surgery has become the object of intense study. According to most researchers, hyperglycemia that occurs in the postoperative period is

associated with increased morbidity in the postoperative period. Several authors indicated the need for careful control of intraoperative glucose, in order to correct the violations and prevent the adverse effects of hyperglycemia on the cardiovascular system. The **aim** of our study was to evaluate the correlation of hyperglycemia and postoperative hospital complications after coronary artery bypass surgery in diabetic patients.

MATERIALS AND METHODS

The study included 482 patients who underwent coronary artery bypass surgery (CABG) in the period from 2003 to 2008 in the Bakoulev Scientific Center for Cardiovascular Surgery. Patients were divided into 2 groups: group 1 included 282 patients with coronary artery disease with diabetes, the second group (control) - 200 CHD patients without diabetes. In both groups of patients are male dominated. By the number of women groups did not differ. The age of patients in group 1 averaged 57 ± 7.5 years, which is significantly lower than in the control group 2 (62 \pm 11,2 years.), P <0.01. Also, most patients' in-group 1 had a history of myocardial infarction, clinically more severe angina, hemodynamically significant atherosclerosis of brachiocephalic arteries, chronic renal failure. Average EuroScore in Group 1 was 4.2, in comparison with the group 2 was significantly higher (p = 0.019). In addition, patients with diabetes had a higher body mass index, more frequent hypertension and hyperlipidemia. Overall, the survey results indicated an objectively more severe clinical condition of patients in group 1 patients underwent bypass surgery on a beating heart or cardiopulmonary bypass (no significant differences between groups). Index revascularization in group 1 was 2.9, group 2 - 3.0 and was not significantly different. All patients in Group 1 (n = 282) suffering type 2 diabetes. Thus, patients with type 2 diabetes, lung flow (available only on the hypoglycemic diet) were excluded. 31 patients (11%) had a severe course of type 2 diabetes require regular insulin. The remaining 251 (89%) patients with hypoglycemic effect turned out to be using oral antidiabetic drugs, including drugs sulfonylurea -53% biguanides - 34%, thiazolidinediones - 8%, other - 5%. Use of oral hypoglycemic agents in diabetic patients discontinued for 12-48 hours prior to surgery. At the stage of preoperative preparation for readings of planned changes the hypoglycemic therapy and transfer patients to insulin. Excess fasting glucose above 180 mg / dL (10 mmol / L) is an indication for transfer to insulin The average fasting blood glucose level in the diabetic group was 134 mg / dl (7.44 mmol / l), which expectedly higher in comparison with the control group 83 mg / dl (4.6 mol / l), p <0.001. On preoperative criteria for compensation of carbohydrate metabolism as measured by the level of glucose, consistent with 54% of patients, 28% were subcompensation patients. In 18% of

1' 2016 🕋 📉

patients failed to achieve the level of compensation or subcompensation.

For the assessment of postoperative glycemic glucose monitoring was conducted at baseline (before surgery), the day of surgery and for the next 10 days after the operation. Repeated daily blood sampling result is determined by calculating the average daily figure.

The primary study endpoint in the hospital stage was considered fatal outcome, nonfatal myocardial infarction (MI), nonfatal stroke. The secondary endpoints carried infectious-inflammatory complications (including mediastinitis), bleeding, pulmonary complications, acute renal failure, supraventricular arrhythmias, and the duration of postoperative stay.

Statistical analysis of the data

The study used a statistical analysis performed using the software package «Statistica 8.0». For compare two groups of high-quality binary features used double-sided version of Fisher's exact test. For compare two groups in quantity normally distributed attributes used Student's t test. Differences were considered statistically significant at p <0,05. To quantify the probability of the outcome associated with the presence of risk factors was carried out calculation of the relative risk with 95% confidence intervals (CI). Calculation of the confidence interval for the odds ratio was conducted by the method of Woolf.

RESULTS

In group 1 to achieve the primary end point (death, MI, stroke) were observed in 24 patients (8.5%) in group 2 - 14 patients (7%), p > 0.05. In-group 1, the incidence of atrial fibrillation, acute renal failure, and infectious-inflammatory complications was significantly higher in comparison with the control group. The duration of the postoperative period in the group with diabetes was also more. In general, despite the lack of significant differences on major cardiovascular postoperative complications (death, myocardial infarction and stroke), hospital results in patients with diabetes were generally worse than in the control group (Table. 1).



r ostoperative completitions at the hospital period										
	1 group with diabetes	2 group control	р							
Death	8 (2,84%)	4 (2%)	0.3							
Myocardial										
infarction left	5 (1,77%)	4 (2%)	0.5							
CVA	11 (3,9%)	6 (3 %)	0.3							
Atrial fibrillation	25(9%)	10 (5%)	0,035							
Postoperative bleeding	13 (4,6%)	7 (3,5%)	0.1							
Pulmonary complications	10 (3,5%)	6 (3%)	0.5							
Mediastinitis	15 (5,3%)	6 (3%)	0,037							
Any infectious- inflammatory complications *	130(46%)	69(34,5%)	0,01							
Acute renal failure	13 (4,6%)	5 (2,5%)	0,04							
The duration of postoperative	(0. (0.) 50()	00 (1594)								
hospital stay of the day more than 10 days.	69 (24,5%)	30 (15%)	0,001							

Postoperative complications at the hospital period

Note: * superficial wound complications, pneumonia, pleuritis, pericarditis, urinary tract infections, sepsis, mediastinitis.

1' 2016 🕋 🔨

As stated previously, all patients underwent perioperative monitoring of blood glucose at baseline and 1 to 10 days after CABG. Peak lift glucose accounted for 1-2 days after surgery, which is associated usually with a common perioperative stress, the influence of cardiopulmonary bypass, using contra insular hormones and other factors. Perioperative blood glucose among patients in-group 1 in all inspection points was significantly higher (p trend <0.001) in comparison with the group 2. When comparing the dynamics of glycaemia from diabetic patients initially treated with oral hypoglycemic agents and insulin-dependent diabetes patients, it was found that the degree hyperglycemia with insulin dependent diabetes in the perioperative period was greater (p = 0.01) (Fig. 1).





Abbreviations: $C \square - diabetes$, $U H C \square - non-insulin$ dependent diabetes, $U 3 C \square - insulin$ -dependent diabetes.

In identifying the correlation between glucose level and the onset of the primary endpoint was observed that blood glucose above 200 mg / dl during the first 48 hours after surgery in patients with diabetes was accompanied by a significant increase in the number of analyzed complications (Fig. 2).



Figure 2. Correlation of postoperative glucose level (first 48 hours) and the occurrence of postoperative complications (death, stroke, myocardial infarction) in patients with diabetes

We conducted a risk assessment of postoperative complications in patients allocated to CABG in the presence of diabetes (Table. 2, A) and in the presence of hyperglycemia greater than 200 mg / dl (in the first 48 hours after surgery) (Table. 2, B). Statistical analysis confirmed the absence of the correlation diabetes and increases the risk of the primary points in the immediate postoperative period. Also, there was no significant effect of diabetes on the development of acute renal failure, pulmonary complications, supraventricular arrhythmias and bleeding. However, it was found that the presence of diabetes increases the risk of mediastinitis (OR - 1.8, 95% CI 1,3-2,2, p = 0.039), and any infectious-inflammatory complications (OR, 2.3; 95% CI, 1.9-2.8, p = 0.01) and prolonged postoperative hospital stay (OR, 2.2; 95% CI - 1.5-2.7, p = 0.001).



Correlation of diabetes (A) and perioperative hyperglycemia greater than 200 mg / dl (B) and the risk of hospital complications A.

Complications		Diabetes	
	OR	95% CI	p
Mortality	1,4	0,5 - 3,2	128
Myocardial infarction	0,8	0,2-1,7	0,42
Stroke	1,9	1.1 - 6.6	0,063
Acute renal failure	2,1	1.1 - 3.0	0,06
Pulmonary complications	1,2	0,4 - 2,2	0,15
Supraventricular arrhythmias	1,5	0,7 –3,9	0.09
Mediastinitis	1,8	1,3 – 2,2	0,039
Any infectious- inflammatory complications	2,3	1,9-2,8	0,01
Bleeding	1,4	0,7 - 2,4	87
Prolonged postoperative stay	2,2	1,5-2,7	0,01
Б.			
Complications	H	lyperglycemia ≥ 200 mg	/dl
	OR	95% CI	p
Mortality	1,7	1,4 - 2,4	38
Myocardial infarction	2,3	1,2-3,7	0,6
Stroke	2,1	1.5 – 3,0	0,041
Acute renal failure	1,6	0,8 - 2.0	0,033
Pulmonary complications	2,8	0,7 – 4,2	0,26
Supraventricular arrhythmias	1,35	1,2-1,6	0.01
Mediastinitis	2,6	2,0-3,1	0,001
Any infectious- inflammatory complications	4,7	4,16 - 5,2	0,001
Bleeding	2,3	0,2 - 4,4	0.18
Prolonged postoperative stay	2,5	1,9-2,9	0,001

Radically different pattern was observed in the group of patients with postoperative hyperglycemia: the development of hyperglycemia after CABG was associated with significant

1' 2016 24

increased risk of mortality (OR, 1.7; 95% CI 1.4-2.4, p = 0.038), stroke (OR-2 1, 95% CI 1.5-3.0, p = 0.04), acute renal failure (OR, 1.6; 95% CI, 0.8 - 2.0, p = 0.03), supraventricular rate (OR, 1.35; 95% CI 1.2-1.6, p = 0.01), mediastinitis (OR, 2.6; 95% CI 2.0-1.6, p = 0.001, any infectious and inflammatory complications (OR - 4.7, 95% CI 4.2-5.2, p = 0.001), as well as an increase in the duration of postoperative hospital stay days (OR, 2.5; 95% CI: 1,9 2.9, p = 0.001). Thus, the development of hyperglycemia in the immediate postoperative period is more important and significant risk factor than the associated diabetes. Several studies have shown that hyperglycemia is the reason for the growth of morbidity and mortality in all patients undergoing CABG, regardless of the presence of diabetes. Thus, Donts T. et al. in the analysis of clinical outcomes of 6280 patients undergoing cardiac surgery showed that patients with high peak levels of glucose (20 mmol / L) during CABG had the highest rates of morbidity and mortality, regardless of the presence of diabetes [4]. Fish L. et al. discovered the following regularity - an increase of glycaemia in the postoperative period (more than 14 mmol/L) in 10 times increased risk of various complications [7]. Thus, these studies clearly show that, regardless of the presence of diabetes, increased levels of glucose in the perioperative period is associated with an increase in morbidity and mortality.

In our study, despite a comparable incidence of major cardiovascular events (death, myocardial infarction, stroke), immediate results after CABG in patients with diabetes have been worse, primarily due to increased infectious complications. Also, it was shown that postoperative hyperglycemia greater than 200 mg / dL had an increased risk of early cardiovascular events (death, stroke), and also, acute renal failure, arrhythmias, and infectious and inflammatory events (including mediastinitis). Our results are consistent with data presented in other studies [6,12,13,14], where it was shown that uncontrolled intraoperative hyperglycemia is a predictor of hospital mortality and increase the growth of post-operative complications, including infection. Similar results confirming growth complications of hyperglycemia presented and other publications.



CONCLUSION

The presence of diabetes in patients referred to CABG, is not accompanied by an increased risk of major cardiovascular events (death, stroke, myocardial infarction), but is associated with an increase in the number of infectious complications. Hyperglycemia more than 200 mg / dL is a risk factor that increases the risk of postoperative complications such as death, stroke, acute renal failure, arrhythmias, and infectious and inflammatory complications. In patients with insulin-dependent diabetes occurs more severe decompensation of carbohydrate metabolism in the postoperative period compared with patients with diabetes on medication hypoglycemic therapies, and therefore they have a higher risk of postoperative complications. Ensuring careful monitoring of blood glucose levels in the perioperative period reduces postoperative morbidity and improve the immediate results of the operation.

REFERENCES

- Bokerija L. A., Goluhova E.Z., Sigaev I.Ju. [i dr.] Sovremennye podhody k hirurgicheskomulecheniju IBS u bol'nyh s saharnym diabetom [Modern approaches to the surgical treatment of coronary artery disease in patients with diabetes mellitus] Vestnik RAMN, 2012, № 1, p. 20-26.
- Inadequate blood glucose control is associated with in-hospital mortality and morbidity in diabetic and nondiabetic patients undergoing cardiac surgery / R. Ascione, C.A. Rogers, C. Rajakaruna, G. D. Angelini [et al.] //Circulation. 2008; 118: 113–123.
- Diabetic and nondiabetic patients with left main and/or 3-vessel coronary artery disease: comparison of outcomes with cardiac surgery and paclitaxel-eluting stents / A. P. Banning, S. Westaby, M. C. Morice [et al.] //J. Am. Coll. Cardiol.2010; 55 (11): 1067—1075.
- 4. Hyperglycemia during cardiopulmonary bypass is an independent risk factor for mortality in patients undergoing cardiac surgery / T. Doenst, D. Wijeysundera, K. Karkouti [et al.] //Journal of Thoracic and Cardiovascular Surgery. 2005; 130: 4: 1144. el-l 144.e8.
- 5.ACC/AHA 2004 guideline update for coronary artery bypass graft surgery: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1999 Guidelines for Coronary Artery Bypass Graft Surgery) / K. A. Eagle, R. A. Guyton, R. Davidoff [et al.] // Circulation.2004; 110: 340-437.
- 6. Outcomes and Perioperative Hyperglycemia in Patients with or without Diabetes Mellitus

Undergoing Coronary Artery Bypass Grafting / C. A. Estrada, J. A. Young, L. W. Nifong [et al.] //Ann. Thorac.Surg. 2003; 75: 1392–9.

- 7. Value of postoperative blood glucose in predicting complications and length of stay after coronary artery bypass grafting / L. H. Fish, T. W. Weaver, A. L. Moore [et al.] // American Journal of Cardiology. 2003; 92: 1: 74-76.
- 8. Effect of risk-adjusted diabetes on mortality and morbidity after coronary artery bypass surgery / C. Kubal, A. K. Srinivasan, A. D. Grayson [et al.] //Annals of Thoracic Surgery. 2005; 79: 1570-1576
- 9. The Relation Between Hyperglycemia and Outcomes in 2,471 Patients Admitted to the Hospital With Community-Acquired Pneumonia / F. A. McAlister, S. R. Majmdar, S. Blitz [et al.] //Diabetes Care 28: 810 – 815, 2005
- Poor intraoperative blood glucose control is associated with a worsened hospital outcome after cardiac surgery in diabetic patients / A. Ouattara, P. Lecomte, Y. Le Manach, [et al.] //Anesthesiology 2005; 103: 687–694
- The effect of diabetes mellitus on patients undergoing coronary surgery: a risk-adjusted analysis / C. Rajakaruna, C.A. Rogers, C. Suranimala [et al.] // Thorac.Cardiovasc. Surg. 2006; 132: 802–10
- A randomized study in diabetic patients undergoing cardiac surgery comparing computerguided glucose management with a standard sliding scale protocol / L. Saager, G. L. Collins, B. Burnside [et al.] //J CardiothoracVascAnesth. 2008; 22: 377–382
- The association of preoperative glycemic control, intraoperative insulin sensitivity, and outcomes after cardiac surgery / H. Sato, G. Carvalho, T. Sato, [et al.] //J ClinEndocrinolMetab 2010; 95: 4338–4344
- 14. Intraoperative glucose control in diabetic and nondiabetic patients during cardiac surgery / C. E. Smith, N. R. Styn, S. Kalhan [et al.] //J CardiovascVascAnesth. 2005; 19: 201–208
- Early postoperative outcome and medium-term survival in 540 diabetic and 2239 nondiabetic patients undergoing coronary artery bypass grafting / Z. Szabó, E. Håkanson, K. Svedjeholm [et al.] //Ann. Thorac. Surg. 2002; 74: 712-719.



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28

V.V. Grebenyuk, K.A. Kovtunov, A.A. Nazarov, I.V. Chumachenko Microflora Features in Patients with Surgical Sepsis

ABSTRACT

The authors present a retrospective analysis of archival materials of bacteriological laboratories and case histories of patients with surgical infections, hospitalized in the "Municipal Clinical Hospital", Blagoveshchensk and Amur Regional Clinical Hospital from 1985 to 2014.

Microbiological investigation of the material from the surgical and urological patients identified etiologic role mainly of Gram-negative bacteria in patients with surgical sepsis. The role of microbial associations (E. coli with Staphylococcus aureus, Staphylococcus epidermidis and with bacteria of the genus Proteus) went up and the share of Pseudomonas aeruginosa and Candida fungi increased.

The authors concluded a preferred application for empirical antimicrobial therapy of surgical sepsis with cephalosporin group III - IV generation drugs (ceftazidime, cefepime, cefpirome) and carbapenems (meropenem, imipenem, doripenem) after analysis of antibioticogramms.

Keywords: microbial landscape, antibiotic sensitivity, empirical antibiotic therapy, surgical sepsis.

INTRODUCTION

According to the literature currently sepsis in developed countries is 200 - 275 per 100,000 population per year. In the United States recorded 500,000 cases of sepsis to a mortality of 20 - 50%. There are official Russian data on the proportion of sepsis in the structure of hospital-acquired infections, as in 2007, Russia recorded 7738 cases of nosocomial infections in health - care facilities surgical profile, the main share of which are the purulent-septic infections 95.0% [4]. Timely and effective empirical antimicrobial therapy allows 1.5 - 2 times to reduce mortality and prevent the development of septic shock patients [3]. In this regard, the study of the structure and dynamics of antibiotic resistance and sensitivity of micro-organisms allocated in microbiological research submissions from septic patients, in our opinion important. The aim of our study was to investigate the dynamics of the bacterial landscape in the etiology of surgical sepsis and sensitivity of microbes to antimicrobial therapy.

MATERIALS AND METHODS

A retrospective analysis of archival materials bacteriological laboratories and 369 case histories of patients with surgical infections treated in the surgical intensive care unit and in the

1' 2016

"Municipal Clinical Hospital" (building 1 and 3) of Blagoveshchensk and Gause JSC "Amur Regional Clinical Hospital" since 1985 to 2014. The analysis included verified during surgery and confirmed by microbiological methods of surgical infections, appropriate diagnostic criteria for sepsis [1,2]. We have highlighted a group of patients with surgical sepsis, in which studied the causes and place of occurrence, taking into account the severity of the septic process, especially bacterial landscape and its sensitivity to antibiotics, as well as the start of antibiotic therapy, schemes of its implementation, the total duration. In the study of medical records of patients recorded the following complications: suppuration of postoperative wounds, intra-abdominal abscesses and inflammatory infiltrates after surgery, bile leakage of drainage and into the free abdominal cavity, insolvency holedohoduodenalnogo anastomosis, cholangitis, eventration, intestinal fistulas, nosocomial pneumonia, infection of the urinary tract, thrombophlebitis. The analysis of microbiological studies was subjected to: peritoneal fluid, bile (cystic and ductal), discharge of drainage, blood, wound secretions, urine, tissue, and others. Planting material was produced on plates with 5% blood agar, VSA, Endo agar and Saburo. To separate blood culture using a double impact. Identify obligate anaerobes was conducted on Wednesday, Blair Wilson and agar Tseyslera. Bile duct was seeded at a dilution of 1:10, 1: 100, 1: 1000 in a dose of 0.1 ml of inoculum. Incubation was carried out at 37 ° C for 24-48 hours followed by counting the number of colonies and determining the titer of microorganisms isolated in CFU / g (ml). Identification of microorganisms was carried out based on the data microscopy, culture properties, oxidase and catalase activity, and conventional biochemical tests. The sensitivity of the studied strains of microflora with the preparation of the inoculum to individual antimicrobial drugs used in the department for the treatment of septic infections. Statistical analysis of the results of research carried out using the program «Statistica 6.0 for Windows».

RESULTS AND DISCUSSION

Major disease causes abdominal surgical infections were: positive forms of destructive pancreatitis (48 cases), perforated gastric ulcer and duodenal ulcer (30 cases), acute appendicitis (20 cases), bowel ischemia due to intestinal obstruction (24 cases), a destructive cholecystitis (22 cases), insolvency HDA (8 cases), bile leakage into the free abdominal cavity (32 cases), acute obstructive suppurative cholangitis (119 cases); causes of urinary infection - acute pyelonephritis, chronic pyelonephritis, urolithiasis (IBC), benign prostatic hyperplasia (BPH) 2-3 stage, patients with nephrostomy and (or) epitsistostomoy (67).Since 1985, much has changed, and the ratio of gram negative microorganisms. According to the results of microbiological studies of wound material from 1985 to 1996 as a causative factor of negative microorganisms was dominated only when the intestinal form of abdominal sepsis and complicated urinary tract infection (E. coli -

1' 2016 🕋 🔨 📕

62.5%, P. aeruginosa - 24.8%). By 1997, the etiological structure of surgical sepsis incidence of gram-negative organisms has increased. In 2008 indicated an almost equal ratio of the detection rate of gram-positive and gram-negative flora. Since 2009, we registered an increase of etiological significance gram-negative microorganisms. The proportion of Gram-negative organisms has increased due to increase in frequency allocation from the wound contents and other biological fluids of Pseudomonas aeruginosa, Proteus spp bacteria and Klebsiella from 5.5% in the period up to 2004, to 67.8% in 2014, as well as frequency of detection of fungi Candida to 6% (Figure 1). An increasing number of mixed - infection: in the period from 1985 to 2000, the frequency of their isolation varied from 1.7 to 2.5% by 2007, increased to 4.6% of cases in 2014 was 16.1%. Most associations were found with E. coli Staphylococcus aureus - 7.7%. The urine when reseeding intestinal shelves with Pseudomonas shelf - 10%, from fungi of the genus Candida - 6.8%, Klebsiella - 7%. In crops separated from the abdominal cavity, resulting in the first operation, also dominated by Gram-negative flora (E.soli - 34,5%, Proteus spp. -16,5%). Repeating in crops of abdominal registered preferential growth of Pseudomonas aeruginosa (37,2%), Klebsiella pneumoniae (26,3%), Staphylococcus aureus (26,5%).During the period 1997 - 2009 years. Bile studied in 160 patients who underwent surgical treatment of choledocholithiasis (including 60 patients with obstructive suppurative cholangitis severe disease complicated by biliary sepsis). In 70 patients with bile for bacteriological examination obtained intraoperatively (during choledochotomy before operative cholangiography through drainage Halstead - Pikovsky), others 80 - endoscopically. Bacteriological examination of the bile duct, and received intraoperative endoscopy revealed the presence of bakterioholii at 92.7% of the patients. The most frequently detected E. coli, Pseudomonas aeruginosa, Klebsiella pneumoniae as a monoculture (20.2%) or in the form of mixed - infection (73.8%), often in combination with Staphylococcus aureus. The bacterial content ranged from 1,8h103 to 1,27h108 CFU / g. Most seeded bacterial and microbial diversity of landscape found in patients with cholelithiasis complicated with choledocholithiasis, acute suppurative obstructive cholangitis, obstructive jaundice and severe biliary sepsis (60 cases). At the same time, we noted no correlation between the level of bacterial contamination of bile and morphological changes of the gallbladder wall. The microflora of the bile duct is almost always corresponded to the gallbladder bile, monoculture were allocated only 18.0% of cases. Anaerobic flora was found in 1 case (Clostridium perfringens) patient phlegmonous calculous cholecystitis complicated by choledocholithiasis with cicatricial papillostenozom and suppurative obstructive cholangitis. The most common representatives of the bacterial microflora of bile in patients with severe sepsis were biliary (as well as other patients with abdominal sepsis) Gram-negative bacteria: Escherichia coli, Pseudomonas aeruginosa, Klebsiella pneumoniae. Similar results were

1' 2016

obtained in patients with urinary infection [7]. This microbial landscape was detected in the urine of patients primarily with urolithiasis, urodynamics disorders of the upper and lower urinary tract after instrumental and surgical procedures on the urinary system, especially after prolonged drainage of the urinary system. When blood cultures for sterility results were positive in 28% of patients, most often identified by Gram flora: Escherichia coli (28,6%), Pseudominas aeruginosa (25%), Klebsiella pneumoniae (14.0%). Regardless of the blood culture (positive or negative) with the overt clinical manifestations of severe surgical sepsis and septic shock (multiple organ failure, the primary suppurative focus, hypotension, pronounced intoxication syndrome) were treated according to the rules of purulent surgery. We have analyzed antibiotikogrammy pathogens isolated in 1997, 2009. and 2014. A significant part of the strains was resistant to most antibiotics used that reflects the general trend in the department of purulent surgery [5]. The analysis revealed that the most polyresistance showed gram-negative microorganisms: Escherichia coli, Pseudomonas aeruginosa and Klebsiella pneumoniae. Multidrug-resistant E. coli increased from 73.0% in 1997 to 89.6% in 2014, and Ps. aeruginosa from 80.4% to 87.0% respectively. Resistant strains studied spread to previously used antibiotics: ampicillin, oxacillin, gentamicin, cefazolin. In this connection, since 2009 these drugs were excluded from use in septic patients. In the last decade marked a significant change in antibiotic resistance and gram-positive microorganisms. In 2004, staphylococci and enterococci are highly sensitive to vancomycin, carbapenems and amikacin. Beginning in 2009 was an increase in the stability of staphylococci to cephalosporins, fluoroquinolones (especially ciprofloxacin), amikacin, erythromycin. Maximum sensitivity is saved only to the drugs group of carbapenems. Cephalosporin III-IV generation of 70.3% were sensitive isolates of staphylococci. Regarding streptococci (Streptococcus haemolyticus) were also most effective cephalosporins generation III-IV, whereas ampicillin, ciprofloxacin, erythromycin, they exhibited a high resistance. The drugs of choice for this group began to carbapenems and fluoroquinolones (except ciprofloxacin), they found sensitivity of 86.0% of the isolated strains. The most effective currently against pseudomonads were III-IV cephalosporins and carbapenems generation. Enterobacteriaceae susceptible to cephalosporins III-IV generation, carbapenems and amikacin, high resistance enterobacteria registered to cephalosporins I-II generation and gentamicin (Table. 1).

CONCLUSIONS

Thus, in the bacterial landscape of biological fluids of patients with surgical sepsis Gramnegative bacteria (Escherichia coli, Klebsiella and Pseudomonas aeruginosa) dominated. There was noted increased incidence of microbial associations and fungi genus Candida. Susceptibility was noted mainly to drugs of carbapenems (meropenem, imipenem, doripenem) and cephalosporins III - IV generation (ceftazidime, cefepime, cefpirome, cefotaxime).

REFERENCES

1. Konferentsiya Standartyi diagnostiki i lecheniya v gnoynoy hirurgii [The Conference Standards in diagnosis and treatment of purulent surgery] Razdel 3 [Section 3]. Standartyi klassifikatsii, diagnostiki i lecheniya hirurgicheskogo sepsisa [Standards classification, diagnosis and treatment of surgical sepsis]. Hirurgiya, 2002, N 8, pp 67 – 68.

2. Molchanov I.V. Bolyakina T.K. Vlasenko A.V. Klinicheskaya anesteziologiya i reanimatologiya [clinical anesthesiology and critical care medicine], 2008, V 5, 2, pp 17 – 23.

3. Galkin D.V. Optimizatsiya antibakterialnoy terapii sepsisa v mnogoprofilnyih statsionarah [Optimization of antibiotic therapy for sepsis in general hospital] avtoref. dis. kand. med. Nauk. Smolensk, 2005, 26 p.

4. O sanitarno – epidemiologicheskoy obstanovke v Rossiyskoy Federatsii v 2007 godu: Gosudarstvennyiy doklad [On the sanitary - epidemiological situation in the Russian Federation in 2007 State report]. Moskow: Federalnyiy tsentr gigienyi i epidemiologii Rospotrebnadzora [Federal Center of Hygiene and Epidemiology], 2008, 397 p.

5. Sazhin V.P. Rannyaya diagnostika vnutribolnichnoy infektsii na osnove monitoringa ranevoy mikrofloryi v otdelenii gnoynoy hirurgii [Early diagnosis of nosocomial infection based on the monitoring of wound microflora in the department of purulent surgery]. Moskow: Hirurgiya [Surgery], 2007, № 10, p. 32-35.

6. Gelfand B.R., Burnevich S.Z., Gelfand E.B. Antibakterialnaya terapiya abdominalnogo sepsisa [Antibiotic therapy of abdominal sepsis]. Moskow: Vestn. intens. ter.: Sb. Antibakterialnaya terapiya [Antibiotic therapy], 2008, 32-38 p.

7. American College of Chest Physicians/Society of Critical Care Medicine Consensus Conference: Definitions for sepsis and organ failure and guidelines for the use of innovative therapies in sepsis / R.C. Bone, R.A.B. Balk, F.B. Cerra et al. // Crit. Care Med. -2009. - 20; 6. - 864-874.

7. New criteria for selecting the proper antimicrobial chemotherapy for severe sepsis and septic shock / P. Periti, T. Mazzei // Int. J. Antimicrob. Agents. - 2010. - 12; 2. - 97-106.



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Fig. 1.





Susceptibility of abdominal surgical infections to antibiotics,% (2014)

Microorganisms		Staphylococcus spp.		Streptococ- cus spp.		Pseudomonas spp.			Enterobac- teriaceae spp.				
		R	MR	S	R	М	S	R	MR	S	R	Μ	S
ampicillin		90,3	2,4	7,3	-	40	60	70	-	30	71	28,	-
Cephalosp	orins (CA I – II)	2	26	72	30	-	70	23	10	67	9	40	51
CA III - IV		-	33,3	66,7	5	-	95	3-55*	-	45-97**	23	15	62
carbapene	m	6	-	94	11	-	89	7	3	90	-	18	82
nes	Tsiprofloxatsi	62,5	16,7	20,8	60	-	40	23,3	16,7	60	43	32	25
fluoroquinolo	pefloxatsina Norfloxacin Ofloxacin	35,3	-	64,7	4	7	89	6	2	92	35	20	45
aminoglyco (amikacin)	osides)	18,7	75	6,3	-	-	-	20	13,3	66,7	9	12	79
macrolides mycin)	5	75	12,5	12,5	30	30	40	-	-	-	-	-	-
lincomycin	l	56,6	13,3	30,4	-	-	-	-	-	-	60	20	20
Tetracyclin	e (doxycycline)	75	-	25	70	-	30	70	-	30	75	25	-

* Resistance to cefotaxime and ceftazidime 55% to 3% of cefoperazone

** Sensitivity cefotaxime and ceftazidime 45% to 97% of cefoperazone

R - resistant MR - moderately resistant S - sensitive

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1' 2016

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The Factors Influencing the Psychomotor Development of Children with Hearing Deprivation

ABSTRACT

At the State Pediatric City Surdological Outpatient Clinic №1 we observed 100 children (62 males, 38 females) with a confirmed degree or type of hearing loss, and 33 babies (15 males, 18 females) of the control group with normal hearing function. Besides routine somatoneurological and audiological examinations, the children underwent otoacoustic emissions (OAE) – to observe inner ear functions (D. Kemp, 1978), short-latency auditory evoked potentials (D.L. Jewett et al., 1971), impedancemetry with stapedial reflex assessment. Neurodevelopment dynamics was assessed with Alberta Infant Motor Scale (AIMS, 1994), Denver Developmental Screening Test (DDST, 1967, 1992), Griffiths Mental Development Scales (GMDS, 1954).

We found that more than half of the children with sensorineural hearing loss had other disorders of the nervous system, and among them problems with balance function prevailing; among development disorders speech delay prevails normally, comparing to other deviations; total developmental retardation by the sum of all subscales was detected in one third of the cases. This observation of children with hearing deprivation shows a variety of neurological conditions and irregularities of different functions' development, and this material may become the basis for individual programs of medical-social help for these children.

Keywords: children, hearing deprivation, psychomotor development.

INTRODUCTION

Over recent years research has provided ample support for the assumption that psychomotor disturbances in children is one of the main reasons for their medico-social disruption [2]. As A.Damirici et al.[6], M.J.Maenner et al.[10] discovered different forms of deviations of motor, speech and mental development found in 1,2 to 12% of children and are mainly dependent on the design of the survey. Children born with ELBW have speech impairments at the age of 5 in 27% of cases [12].

The delay of neurodevelopment involves a variety of factors, among them a special place occupies the loss or violation in the formation of the main analyzers, in particular, hearing[3].

Epidemiological studies show that the prevalence of hearing loss in children from medium to high levels, including sensorineural hearing loss and conductive hearing loss, is up to 6:1000, with 10 % of children having a profound degree of hearing loss [4, 5, 11, 13, 14].
In this connection there is a methodological problem: determination and separation of destruction and/or underdevelopment of the actual auditory analyzer in neurodevelopment impairment, or primary destruction and/or underdevelopment of the central nervous system and secondary suffering of the acoustic analyzer.

The **aim** of the study was to detect factors affecting neurodevelopment of children with hearing deprivation.

MATERIALS AND METHODS

At the State City Surdological Outpatient Clinic for children with hearing and speech deprivation N_{1} , the neurodevelopment of children from birth to 3 years was studied. A total of 166 observations were undertaken. The study involved 100 children of the basic group (I group) (62 boys, 38 girls) who had confirmed hearing impairment and the comparison group (II group) of 33 children (15 boys, 18 girls), who have confirmed normal function of hearing analyzer at the time of the survey.

Criterion for inclusion in the study were the following: post-conceptual age of the child had to be not more than 36 months at the time of observation; bilateral or unilateral chronic sensorineural hearing loss or deafness and/or the presence of auditory neuropathy, confirmed by objective methods with modern audiological examinations for the core group; the absence of hearing loss, set by the modern objective methods of audiological examination for the comparison group; assessment of psychomotor and speech development of a child with at least two scales from the selection below.

In addition to the routine anamnesis and somatic-neurological examination, audiologic examination carried out in the framework of a standard assessment at the State Pediatric City Surdological Outpatient Clinic No1, which included: a study of the function of the inner ear (cochlea) by otoacoustic emission (OAE) [9]; brainstem auditory (stem), evoked potentials (ABR) [8]; impedance with the assessment of reflexes with a stirrup (stapedial reflexes); subjective methods (behavioral audiometry); determination of the mutation in the gene Connexin 26 (GJB2-gap junction protein, and beta 2, 26kDa) in blood or saliva.

Motor development of children has been studied with the Alberta Infant Motor Scale (AIMS). Neurodevelopment was evaluated with Denver Developmental Screening Test (DDST); Griffiths Mental Development Scales (GMDS, GMDS-ER) (Certificate of completed Course on Griffiths Mental Development Sales (Infant Scales: 0-2 years GMDS-ER: 2-8 years); Association for research in. infant and child development. July 2013 for Diana Yurieva)[7].

The results are processed by the application package Statistica for Windows 10.0 using nonparametric methods (χ 2 test; Spearman rank correlation).

1' 2016



RESULTS

The results of clinical and laboratory examinations of infants in the neonatal period and at the time of the assessment are presented in Table 1.

Table 1

Index				G	oups		
			Ι		II		
Neonatal p	perio	d					
Continuous hyperbilirubinemia			20		8		
Bilirubin > 240mcmol/l			9		4		
Hypoxic-Ischemic			36		6		
encephalopathy (HIE)							
H.B.Sarnat & M.S.Sarnat							
1 stage			18		6		
2 stage			18		0		
Abnormal Cranial Ultrasound			22		4		
Ventriculodilatation			11		1		
Peri-intraventricular			12		0		
haemorrhage (PIVH)							
Periventricular leukomalacia			6		0		
At the moment of	of the	survey					
Sensorineural hearing loss			100		0		
stages	1	2	3	4	0		
unilateral	2	2	2	1	0		
bilateral	6	8	7	72	0		
Auditory neuropathy			11	L	0		

Clinical Data of Assessed Children

Results of the routine neurological examination showed that abnormalities in the neurological status were more frequent in Group I, the significance of the differences were especially high in the infringement of balance functions (37 vs. 0; $\chi 2 = 16.92$; p <0.00001). The estimated rate of neurodevelopment of the observed children is shown in Table 2.



Table 2

Scale	Ι				II			χ2	р	
	n	Delay	Norm	Forestall	n	Delay	Norm	Forestall		
DDST	99				33					
Speech		48	47	4		0	31	2	25.14	< 0.00001
Individual- social		9	82	8		1	29	3	1.30	0.025
Fine motor coordination		18	70	11		6	23	4	0	1.0
Motor coordination		21	66	12		3	26	4	2.44	0.118
AIMS	78	18	54	6	31	3	24	4	2.56	0.11
GMDS	70				17					
Locomotion		7	46	17		2	10	5	0	0.946
Personal- social		12	37	21		0	9	8	3.38	0.066
Hearing and Speech		52	16	2		3	7	7	18.87	< 0.00001
Eye and Hand co- ordination		15	42	13		3	13	1	0.12	0.730
Performance		30	35	5	1	6	10	1	0.32	0.570
Total Age		25	34	10		1	12	3	5.50	0.019

Neurodevelopmental Data of Assessed Children

The results presented in the table indicate that children with hearing deprivation significantly more often have impaired speech development by DDST and GMDS and individual social development DDST. In connection with the intended purpose of the present analysis shows data relating exclusively to factors associated with the pace of neurodevelopment.

Children in the comparison group showed that the level of motor development for AIMS correlates with carrying out in vitro fertilization (IVF), threatening miscarriage, toxemia of pregnancy, the need for cesarean delivery (r = -0.37 - (-0.40), p <0.05); and growth at birth (r = 0.84, p <0.05).

1' 2016

According to DDST there is a marked gross motor performance correlation with weight (r = 0.87, p <0.05) and growth (r = 0.94, p <0.05) at birth. Fine motor skills level negatively associated with delivery term (r = -0.85, p <0.05); positively with the Apgar score at 5 minutes, the presence of fetal hemolytic disease (r = 0.37 - 0.38, p <0.05).

In the study using GMDS personal-social development link with a duration of anhydrous period (r = 0.97, p <0.05). Levels of total and speech development are correlated with maternal age (r = -0.97, p <0.05). Motor development indices associated with IVF, threatening abortion (r = -0.48, p <0.04), cesarean delivery (r = -0.52 - (-0.53), p <0.02), Apgar score at 1 minute and 5 minutes (r = 0.56 - 0.68, p <0.02). Eye and Hand co-ordination parameters correlates with IVF, performing cesarean (r = -0.50 - (-0.63), p <0.05), Apgar score at 5 minutes (r = 0.59, p <0.05). Scale of experience linked with IVF, cesarean (r = -0.52, p <0.05), Apgar scores at 1 and 5 minutes (r = 0.61, p <0.05). The overall level of development associated with IVF, threatened abortion, caesarean section (r = -0.53 (- 0.66), p <0.05), Apgar score at 5 minutes (r = 0.62, p <0.05).

Children with a hearing deprivation marked negative correlation with development scores for AIMS with the severity of HIE, entanglement umbilical cord at birth, PIVH, levels of hyperbilirubinemia, and conducting supportive therapy (r = -0.21 - (-0.24), p <0.04).

The assessment of neurodevelopment using DDST found that the level of development of speech is associated with the identification of maternal cytomegalovirus and hepatitis C virus during pregnancy, entanglement of the umbilical cord at birth, the weight of HIE, the degree of hearing loss on the right and the left, and the intensity and volume of training with experts (r = -0.18 - (-0.37), p <0.05). The level of social development is correlated with the detection of cytomegalovirus during pregnancy and hepatitis C virus, the severity of HIE, entanglement umbilical cord at birth according to ventriculomegaly (r = -0.19 - (-0.27), p <0.05). The development of fine motor skills correlated with the presence of cytomegalovirus infection (CMV) and hepatitis C virus in a pregnant woman, the presence of multiple pregnancy, umbilical cord entanglement, the necessity of stimulating therapy, and the intensity and volume of training with experts (r = -0.18 - (-0.26), p <0.04). Levels of gross motor skills correlate with detection of CMV, hepatitis C virus in a pregnant woman, the presence of multiple pregnancy, and umbilical cord entanglement during delivery (r = -0.18 - (-0.25), p <0.04).

Based on GMDS it showed that the level of motor development negatively associated with the identification of a pregnant CMV, entanglement umbilical cord at delivery, the necessity of stimulating therapy, and the intensity and volume of training with experts (r = -0.22 - (-0.32), p <0.03); positive to the presence of multiple pregnancies and preterm birth (r = 0.25 - 0.28, p <0.02). Social development is correlated with the detection of CMV and hepatitis C during pregnancy,

1' 2016 🕋 🔨

entanglement umbilical cord at delivery, necessity of stimulating therapy, intensity and volume of training with experts, and the presence of a cochlear implant (r = -0.21 - (-0.32), p <0.03). The development of a child's speech is connected with the degree of hearing loss on the right and the left (r = -0.44 - (-0.47), p <0.000006), deaf parents, detection of CMV during pregnancy, and entanglement umbilical cord at delivery (r = -0.24 - (-0.26), p <0.01). Eye and Hand co-ordination is interconnected with CMV during pregnancy, entanglement umbilical cord at delivery, necessity of stimulating therapy, and intensity and volume of training with experts (r = -0.23 - (-0.31), p <0.03). The level of experience subscale correlated with the child's age (r = 0.66, p <0.05).

The overall development of the child associated with an umbilical cord entanglement in childbirth, a degree of hearing loss on the right and the left (r = -0.22 - (-0.30), p < 0.03).

A comparison of the nature of reliable relationships of various medical and social factors with the performance of neurodevelopment in the examined groups showed that the negative impact of IVF, caesarean section, reduced Apgar scores at 1 and 5 minutes was significantly more often observed in the control group ($\chi 2 = 6.47$; p = 0.011) than in the group of children with hearing deprivation.

Children with hearing loss showed significantly more frequent reliable negative correlations with antenatal exposure CMV, cord entanglement during delivery ($\chi 2 = 10.27$; p = 0.001), antenatal exposure of hepatitis C virus, the degree of hearing loss and of stimulating therapy ($\chi 2 = 8.25$; p = 0.004), and intensity and scope of the medical and educational assistance ($\chi 2 = 6.47$; p = 0.011) than that of the compared group of children.

Thus, a comparison of rates of neurodevelopment of children with hearing loss and children with no hearing impairment on standard scales of various medical and social factors showed certain patterns:

1. The rate of neurodevelopment of a comparison group of children correlate the mother's age, the nature of pregnancy and childbirth, IVF and necessity to resolve caesarean section, and Apgar scores.

2. The communication of the main indicators of neurodevelopment according to various standard scales in children with hearing loss significantly varied and expressed a negative correlation with the presence of CMV infection and hepatitis C virus during pregnancy, entanglement umbilical cord during birth, the necessity of stimulating therapy, and the volume and intensity of training with specialists.

3. Violations of-motor development correlated with the severity of HIE and PIVH that is verified on the Alberta Infant Motor Scale.

4. To a greater extent, violations of-speech development depends on the degree of damage to the auditory analyzer that is detected by appropriate subscales of DDST and GMDS.

Therefore, the neurodevelopment of children in general is more associated with the processing of pregnancy and childbirth; in children with hearing loss additional value gain intrauterine exposure of CMV and hepatitis C virus, as well as the nature and scope of educational sessions and therapy. Disorders of fine and gross motor development in children with hearing loss are connected to a larger extent to the defeat of the nervous system in the newborn period (HIE, PIVH); and disorders of speech development with the severity of auditory analyzer. Paradoxical at first, but a negative relationship between the volume and intensity of medical and educational assistance and the rates of neurodevelopment in most subscales of standard questionnaires can be interpreted in two ways.

First, the volume of early intervention may be due to the intensification of efforts to help children with initially more severe damage to the nervous system and hearing. Second, the main drugs used for stimulating therapy (nootropic, hydrolysates medications), as has been previously analyzed, have contradictory effects [1].

The results show the limitations of the effectiveness of exogenous effects on the rate of neurodevelopment of a child.

REFERENCES

1. Palchik A.B., Shabalov N.P. Gipoksicheski-ishemicheskaja jencefalopatija novorozhdennyh [Hypoksic-ischemic encephalopathy of newborns]. Moscow, MEDpressinform, 2013, 288p.

2. Palchik A.B. Osnovnye princypy nevrologii razvitija [The Main principles of development neurology]. J.Pediatr, 2011, V.2. №3, p.90-9.7

3. Palchik A.B., Evstafeeva I.V. Koncepcyja optimal'nosti v perinatologii: ponjatijnye granitsy I diagnosticheskaja tsennost' [Conception of optimality in perinatology: conceptual boundaries and diagnostic value]. J.Pediatr, 2011, V.2. №3., p.90-97.

4 Tarasov D.I., Nasedkin A.D., Lebedev V.P., Tokarev O.P. Tugouhost' u detej [Poor hearing in children]. Medicina, 1984, p205.

5. Undrite V.F., Temkin Y.S., Neyman L.V. Rukovodstvo po klinicheskoj audiologii [Guide in clinical audiology]. Moscow, Med. Literatura, 1962, 324p

6. Demirci A, Kartal M. The prevalence of developmental delay among children aged 3-60 months in Izmir, Turkey. Child Care Health Dev. 2016 Mar; 42(2):213-9.

7. Griffiths R.G. The abilities of babies. High Wycombe, UK: The Test Agency, 1954.

1' 2016

8. Jewett D.L., Williston J.S. Auditory-evoked far fields averaged from the scalp of humans. Brain. 1971;94(4):681–696

9. Kemp D.T. Stimulated acoustic emissions from within the human auditory system. J Acoustic Soc Am 1978; 64: 1386-91.

10. Maenner M.J., Blumberg S.J., Kogan M.D., Christensen D., Yeargin-Allsopp M., Schieve L.A. Prevalence of cerebral palsy and intellectual disability among children identified in two U.S. National Surveys, 2011-2013. Ann Epidemiol. - 2016 Jan 12.

11. Saugstad O.D. Perinatal health in Europe: neonatal aspects. Proceedings of the 5-th World Congress of Perinatal Medicine. Barcelona, 2001. 1-4.

12. Stolt S., Matomaki J., Lind A., Lapinleimu H., Haataja L., Lehtonen L. The prevalence and predictive value of weak language skills in children with very low birth weight-a longitudinal study. Acta Paediatr. 2014 Jun; 103(6):651-8.

13. Windmill I.M. Universal screening of infants for hearing loss: Further justification. J Pediatr. 1998. p318-319

14. Zwierzchowska A., Gawlik K., Grabara M. Deafness and motor abilities level. Biology of Sport, Vol. 2008. 25: 263-274. Katowice, Poland.

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DIAGNOSTICS AND TREATMENT METHODS

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The Diagnostic and Prognostic Significance of Immunohistochemical Method of Investigation of Clear Cell Renal Cell Carcinomas of Low Differentiation

Aim. To analyze the cytokeratin expression profile $(5\6, 7, 8, 10\13, 17, 18, 19, 20)$ at various degrees of differentiation of renal cell clear cell carcinomas. It will help diagnose and prognose the course of carcinomas of low differentiation.

Materials and methods. 358 cases of renal cell clear cell carcinomas have been examined. The analysis of morphological and immunohistochemical methods of investigation has been performed.

Results. The differentiation (G grade) of 358 cases of renal cell clear cell carcinomas by means of morphological and immunohistochemical methods of investigation has been established. Reaction table of cytokeratin antibodies (CK 5\6, 7, 8, 10\13, 17, 18, 19, 20) has been determined for each Grade of renal cell carcinoma with the control of normal renal tissue.

Conclusion. The use of additional immunohistochemical investigation especially at renal carcinomas of low differentiation has been considered to be significant and even required after the standard histological investigation.

Keywords: renal clear cell carcinoma, morphology, Grade, immunohistochemical method, cytokeratin antibodies.

INTRODUCTION

Kidney cancer is among the 10 most common epithelial neoplasms [8]. The fact that the renal cell carcinoma (RCC) incidence rates increase annually in European countries and the United States becomes troublesome for the researchers from the whole world. The estimate is about 2-3%. However in Russia the rise in RCC incidence rates accounts for 6-9% annually [3, 5, 6, 7, 8]. It is stated that the process of kidney cancer development is rather slow and durable. The kidney cancer is characterized by a solitary fibrous capsule formation without extending into the renal pelvis, kidney capsule and organ vessels. Although over some period of time this tumor begins to behave aggressively. It is manifested by the invasion into the kidney structures mentioned above causing metastasis [2, 5, 7, 8].



Table 1

Antibodies	СК	СК 7	СК 8	СК	СК	СК	СК	СК
Material	5\6			10\13	17	18	19	20
N tissue (epithelium of tubules)	2+	0	1+	2+	2+	3+	3+	0
G1	2+	0	2+	2+	2+	3+	2+	2+
G2	1+	0	2+	2+	2+	3+	2+	2+
G3	0	0	2+	0	0	3+	2+	0
G4	0	0	2+	2+	3+	0	3+	3+

Comparative characteristics of cytokeratin reaction due to different degrees of differentiation of clear renal cell

Note: 0 - no reaction, 1+ positive reaction, 2+ moderately positive reaction, 3+ strongly positive reaction.

RCC in a patient may not be detected clinically for a significant period of time. Tumors are usually revealed by the regular check-ups or during the examination in case of the presence of other diseases. When a patient starts to complain of pains in the area of kidneys and hematuria as a rule it points to the severe stage of cancer with the invasion into some kidney structures and the presence of metastases [2, 5, 7]. In such unfavorable oncological conditions it is of great importance to perform complete follow-up examination for early detection and adequate diagnostics of RCC.

The treatment scheme and prognosis of development of kidney cancers are firstly evaluated by the morphological characteristics of the tumor process [1, 2, 5, 8]. The histological method of examination allows determining the degree of tumor differentiation that is mandatory for a prognostic value of a disease course. The degree of differentiation for the commonest clear cell renal cell variant of RCC is identified by grading (G). The grading system of kidney tumor

differentiation ranges from 1-4 according to increasing malignancy: G1 - well differentiated; G2 – moderately differentiated; G3 – poorly differentiated; G4 – undifferentiated.

The introduced 2004 WHO classification of clear cell RCC is based on certain histological signs including the shape and size of nuclei of tumor cells, chromatin distribution, the shape and size of nucleoli and the presence of mitoses [3, 6, 7]. The tumors of higher differentiation grade (lower G – G1) are characterized by smaller and single typed nuclei (less than 10 μ m), undifferentiated chromatin and nucleoli. The tumors of lower differentiation grade (G3, G4) are recognized by larger and more polymorphous nuclei, differentiated chromatin and nucleoli[6,7]. However the degree differentiation of malignant tumors of kidneys by histological method is considered to be of subjective character.

Nowadays the histochemical method of investigation is a key method for detection of tumor histogenesis and differentiation at a maximal degree [4]. This statement is proved by the fact that at RCC of lower differentiation degree epithelial cells lose their characteristic features and become the same as mesenchimal cells. Much attention is currently paid to the aspects mentioned above. We have not found out the researches devoted to the study of dependence between the degree of expression of cytokeratins and RCC differentiation degree. Though it should be of special significance as the differentiation degree determines the malignant potential of a tumor.

The *aim* of our research work is to analyze the cytokeratin expression profile ($5 \mid 6, 7, 8, 10 \mid 13, 17, 18, 19, 20$) at various degrees of differentiation of clear cell RCC. It will help diagnose and prognose the course of carcinomas of low differentiation.

MATERIALS AND METHODS

358 patients were operated in a Clinical Hospital n.a. R.V. Mirotvortzev of Saratov State Medical University n.a. V.I. Razumovsky over the period of 5 years and 5 months (from 2006 till 2011). The analysis of morphological data including the data of immunohistochemical investigation of cytokeratin profile ($5 \ 6, 7, 8, 10 \ 13, 17, 18, 19, 20$) at different differentiation degree (G1, G2, G3, G4) of clear cell RCC was carried out. The expression level of antibodies was determined by the summarized evaluation of expression of stained tumor cells and the general amount of positively stained cells. The case was estimated as positive if the staining intensity accounted over 10% of tumor cells. When the staining intensity accounted less than 10% of tumor cells the result was estimated as zero. The low reaction in more than 10% of tumor cells with the low staining intensity was estimated as $\ll 1+\gg$, with the mild staining intensity in more than 10% of tumor cells - as $\ll 2+\gg$; with the expressed staining intensity in more than 10% of tumor cells -

1' 2016

as «3+». The cytokeratin expression profile was also determined in the normal kidney tissue (epithelium in the kidney tubules) and considered as a comparison group.

RESULTS AND DISCUSSION

The analysis of case histories of 487 patients with various kidney tumors received operative treatment during the period from 2006 till 2011 in the Clinical Hospital n.a. R.V. Mirotvortzev revealed that 459 patients suffered from malignant tumors (94% of all tumors) and the common clear cell RCC occurred in 358 patients (82,5% of RCCs).

Among 358 cases of clear cell RCC 257 patients had signs of invasion, 35 of them experienced the first signs of the beginning of metastasis – tumor emboli, infiltration into the renal hilum and 19 patients of them had metastasis into the lymph nodes or hematogenous metastasis.

According to 2004 WHO recommendations we determined the differentiation degree (grade - G) of all the clear cell RCCs by means of ocular micrometer. We have revealed the following data: G1 renal cell carcinoma has been found out in 53 patients; G2 renal cell carcinoma – in 199 patients; G3 renal cell carcinoma – in 75 patients; G4 renal cell carcinoma – in 32 patients. During the analysis of case histories it has been pointed out that well differentiated and moderately differentiated RCCs (G1 and G2) did not commonly have clinical manifestations and were detected during the regular check-ups or during the complex examination in case of presence of other diseases. In most cases RCC was not characterized by invasive growth and metastasis. However it should be noted that 17 cases with high differentiation degree (G1 and G2) of RCC showed the already presented signs of aggressive tumor behavior with the invasion into the renal capsule or renal pelvis that might give rise to disease progression and deep invasion into the kidney structures and probably metastasis.

All the cases of poorly differentiated and undifferentiated RCCs (G3 and G4) were characterized by the signs of invasion of different degree. In 12 patients the invasion into the renal capsule or pelvis was at the beginning stage or incomplete. The deep invasion, the infiltration into the adipose tissue, adrenal glands and renal hilum and the presence of regional and separate metastasis were observed in 95 cases out of 107.

According to the literature data the cytokeratin antibodies give the positive reaction on epithelial cells while conducting the immunohistochemical analysis. The clear cell RCC gives the positive reaction on CK of high values - CK18, CK19 – according to the foreign and the Russian researches [4,6,7].

While analyzing the immunohistochemical reaction on cytokeratins we have revealed that normal epithelial cells of renal tubules give moderate or expressed positive immunohistochemical reaction on cytokeratins of both low and high values (CK 5\6,10\13, 17, 18, 19), apart from CK7

1' 2016

and CK20. The expression of cytokeratins of low and high values at different grades (G) of clear cell RCCs showed the following tendency (table 1).

All the cytokeratins apart from CK7 were positive at well differentiated G1clear cell RCC with more expressed positive reaction of CK18. At moderately differentiated G2 clear cell RCC expressed positive reaction was observed with cytokeratins of high values, CK 18 was maximally positive, CK 7 was negative, CK5/6 was expressed by mild positive reaction. In the analysis of immunohistochemical reaction of poorly differentiated G3-4 clear cell RCC the following results were drawn: CK 17, 19, 20 were definitely positive, CK 5\6, 7,8,10\13 were slowly expressed or negative. It is worth while noting that at poorly differentiated RCC with sarcomatous element G4 CK18 was negative (table 1). This reaction might be determined by the functional and morphological atypism of poorly differentiated tumor cells. The only immunohistochemical investigation revealed the negative stromal tumor cells. While hematoxylin and eosin staining was not capable to differentiate sarcoma similar tumor elements and stroma. It should be pointed out that CK7 was negative in all cases of clear cell RCCs. However the use of CK7 is possible for differentiated diagnostics between clear cell variant and other variant of RCC (e.g. according to the literature data [4,6,7] CK7 is positive at chromophobe RCC).

The reaction of cytokeratins expression at differentiation grades (G) of clear cell RCCs is proved to be different. Therefore it is practically impossible to determine the grade of clear cell RCC on the basis of cytokeratin antibodies reaction. It is necessary to use the complex system of histological and immunohistochemical methods of investigation.

CONCLUSION

The search for the new methods of diagnostics and prognosis of development of RCC is an actual issue determined by the increased rates of tumor development, late diagnostics, aggressive course and unfavorable prognosis. The immunohistochemical method of investigation may serve as an additional method of diagnostics at poorly differentiated RCCs and as a standard method followed by histological examination. The immunohistochemical method with the use of cytokeratin antibodies allows performing the differentiated diagnostics of sarcomatous RCC with mesenchymal tumors, to determine the tumor variant and in some cases helps identify tumor grade (G). And consequently the method under the consideration helps administer the proper treatment and prognose the course of disease.

REFERENCES

1. Ganzen T.N. Pochechno-kletochnyj rak: morfogenez, kliniko-morfologicheskaya xarakteristika, differencialnaya diagnostika [Renal Cell Carcinoma: morphogenesis,

clinical and morphological characteristic, differential diagnostic] avtoref. diss....d-ra med. nauk [MD thesis abstract]. Moscow, 1993, 29p.

- Zavalishina LE. Molekulyarno-biologicheskie factory invazivnogo rosta i metastazirovaniya raka pri morfologicheskom issledovanii [Molecular and biological factors of cancer invasive grows and metastasis due to morphological examination] avtoref. diss....d-ra med. nauk [MD thesis abstract]. Moscow, 2006, 45p.
- Paltsev M.A., Anichkov N.M. Atlas patologii opuxolej cheloveka [Atlas of pathology of human tumors] Moscow: Meditsina, 2005, 424 p.
- Petrov S.V. Reichlin N.T. (ed.) Rukovodstvo po immunogistoximicheskoj diagnostike opuxolej cheloveka [Manual immunohistochemical diagnosis of human tumors] Izdanie 4e, dopolnennoe i pererabotannoe [4th edition, revised and supplemented]. Kazan, 2012, 624 p.
- Ponomareva U.A. Kliniko-morfologicheskie kriterii prognoza pri rake pochki [Clinical and morphological criteria of prognosis due to renal cancer] avtoref. diss....kand. med. nauk [PhD abstract]. St.-P., 2007, 19p.
- Jurin A.G. Opuxoli pochek (rabochie standarty patologoanatomicheskogo issledovaniya) [Tumors of the kidney (working standards of pathological anatomy examination)] Izdatelstvo Sankt-Peterburgskogo gorodskogo patologoanatomicheskogo byuro [AS St.-P.: Publishing St. Petersburg City Pathological Anatomy Bureau]. 2006, 83 p.
- Eble JN: Pathology and Genetics of Tumors of Urinary System and Male Genital Organs. In: Sauter G, Epstein JI, Sesterhen EA eds. World Health Organization Classification of Tumors. Lion: 5-76, 2004.
- 8. Jemal A. Cancer statistics, 2002. Cancer J Clin 2002; 52: 23-47.

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Efficiency of Chemotherapy for Adolescent Pulmonary TB

ABSTRACT

46 medical histories of adolescents with pulmonary tuberculosis were analyzed to study the efficiency of chemotherapy. It was found that the majority of adolescents were infected with tuberculosis mycobacterium in the early childhood, received preventive treatment, but later because of many factors tubercular process developed in adolescence, more often among adolescent boys. At the same time, in most cases tuberculosis was revealed as a result of FLG examination or tuberculosis diagnostics without complains and in satisfactory condition of adolescents. The absence of apparent contact with tuberculosis infected people among 1/3 adolescents points out the existence of hidden reservoir of tuberculosis infection.

The treatment analysis showed that in case of optimal chemotherapy patients releasing sensitive strains of tuberculosis mycobacterium have faster clinical and X-ray dynamics and less expressed residential changes in pulmonary tissue, than patients with multidrug resistance of tuberculosis mycobacterium. This led to reduction of period of hospitalized treatment and decline of price of treatment courses due to reduction of steady-state period and rational use of antibacterial drugs.

Keywords: TB infection, adolescents, chemotherapy efficiency.

INTRODUCTION

Nowadays, together with decrease of TB infection among adults, the fact of drug-resistant TB among adults and increase of TB infection among teens become warning. In Russia, TB infection among adolescents was 39.9 out of one hundred thousand in 2012, in 2013 it was 38.7. In 2012 the quantity of TB infected adolescents at the age of 15-17 was 32.1 out of one hundred thousand teenagers, in 2013 it was 31.4.

According to state budget institution of the Republic of Sakha (Yakutia) scientific and practical center "Phthisiatry" the epidemiologic situation of tuberculosis infection among adolescents tends to worsen in the Republic of Sakha (Yakutia). Thus, the indicator of TB among adolescents in 2012 was 50.4 for 100thousand population, in 2013 - 60.8, and in 2014 - 63.6. The indicator of tuberculosis infection among adolescents of the Republic of Sakha (Yakutia) in 2012 was 28.5 for 100 thousand of population, in 2013 it was 51.1 and in 2014 it was 43,3 [7]. The high rate of tuberculosis infection among adolescents underlines the necessity of systemized and organized examination of the following group for early determination of tuberculosis because due to their physiologic features connected with hormonal changes of organism adolescents are "risk

1' 2016

group" for tuberculosis infection. At the same time, due to their psycho-emotional features, adolescents pay little attention on changes of their state and have little motivation for treatment [9]. It is known that the base of a sharp rise of tuberculosis infection among grown-ups and the whole population is formed in childhood due to untimely diagnostics, low efficiency of prevention and treatment of the following disease.

Most authors state that tuberculosis among adolescents has torpid, little symptoms of disease. Then the specific process quickly destroys tissues and brings to semination of organism. This is connected with a whole complex of factors, the leading of which are: late detection and late treatment; solidity of the infection (close familiar contact); long duration of the first tuberculosis in childhood, the residual changes of which cause spread infiltrative processes in lungs in adolescent years; inadequate therapy when the disease is detected (low dozes, short courses); poor tolerance of antibacterial drugs; concomitants; social factors (harmful habits of the patients or their parents, poor living and material conditions, lone-parent families and so on); tuberculosis mycobacterium resistance to antituberculous drugs [1,2,2,10].

According to different authors, the drug resistance of tuberculosis mycobacterium of adolescents reaches from 37.5% to 65,8% among people discharging bacteria [4,5], i.e. medicamentous supersaturation of organism brings to drug resistance, development of toxic and allergic reactions. Each of these factors create problems while treating adolescents' tuberculosis, requires individual approach to the patient, clearly organized chemotherapy, and different types of pathogenic treatment [8].

The modern tendencies of tuberculosis chemotherapy are directed to achieve higher results of treatment, to work out more effective schemes of chemotherapy, to reduce hospitalization period and to use antibacterial drugs rationally [6,11].

Consequently, hard clinical course and chronic features of tuberculosis infection require complex approach to the chosen therapeutic actions to increase efficiency of pulmonary TB treatment.

MATERIALS AND METHODS OF RESEARCH

For 2010-2011 we analyzed 46 case histories of patients with tuberculosis of adolescents who were undergoing treatment in the Department of children and adolescents. All the patients were divided into 3 groups: first group – patients with pulmonary TB without bacterial excretion – 14 patients, second group – patients with pulmonary TB with bacterial excretion – 15 patients, third group – patients with multidrug resistance – 17 teenagers.

RESULTS AND DISCUSSIONS

In the first and second groups of examination (patients with pulmonary tuberculosis without bacterial excretion and patients with pulmonary tuberculosis with bacterial excretion) there were mainly teenage boys (70.6% and 66.7% respectively), in the third group the quantity of girls and boys were equal.

The results of epidemiological anamnesis showed that tubercular contact among patients of all three groups was closely familiar -34.8% (16 adolescents), 26.1% (12 adolescents) – free contact, and 39.1% (18) adolescents had no tubercular contact. This may be connected with insufficient information while accepting the patients to hospital or may witness of concealed reservoir of tubercular infection.

The anamnesis showed that all teenagers were vaccinated BCG right after the birth. And secondary vaccination of BCG at the age of 7 received only 10% of teenagers in the 1st group and 16.7% - in the second group. In the third group the patients had not received secondary vaccination because of being infected by tuberculosis mycobacterium.

Consequently, the anamnesis shows that the majority of adolescents was infected by tuberculosis mycobacterium in childhood, was treated in tuberculosis dispensary, received preventive treatment and was discharged from the dispensary. But later the children did not receive proper attention of doctors of general medical net that caused local tuberculosis development.

All the patients of the first group were sent to the scientific and practical center "Phthisiatry" for examination and treatment after the results of tuberculosis diagnostics and FLG examination, were received in satisfactory condition and had no complaint. 50% of the patient had poor general condition, complained of high fatigability, weakness, weight decrease and dry cough.

The adolescents with pulmonary tuberculosis were divided according to clinical forms (chart 1).





Fig. 1. Clinical forms of pulmonary tuberculosis among teenagers

The division showed that in the first group 40% of adolescents had tuberculosis of thoracic lymph nodes, 30% of adolescents had infiltrative pulmonary tuberculosis, 20% had primary tuberculosis complex, and 10% had focal pulmonary tuberculosis. In the second group 50% of adolescents had infiltrative pulmonary TB, 33,3% - tuberculosis of thoracic lymph nodes and 16.7% -focal pulmonary TB. There were no patients with primitive pulmonary tuberculosis in the following group. 100% of teenagers in the third group had infiltrative pulmonary tuberculosis.

At the acceptance to hospital 50% of patients received first regimen chemotherapy; the other half of the patients received the third regimen chemotherapy. Only one teenager received surgical treatment (resection of lungs).

33.3% of patients from the second group received the first regimen chemotherapy; the rest 66.7% received the second B regimen treatment. Three patients received surgical treatment (thoracotomy, resection, exclusion of suppurated upper tracheobronchial lymph nodes). 75% of patients in the third group received the first regimen chemotherapy. After sputum inoculation for susceptibility to antituberculous drugs mycobacterium resistance to streptomycin, rifampicin, isoniazid and ethambutol was revealed. Consequently, the chemotherapy was changed to the fourth regimen. 25% of patients received surgical treatment (three resections and one pleurectomy).

We paid a special attention to studies of efficiency of chemotherapy of patients in all three groups. 100% of patients in the first group showed positive X-ray dynamics in form of resorption of infiltration, inducation, focal calcification, reduction of size of thoracic lymph nodes. Whereas

in the second group of examination bacterial excretion termination was reached after a month, and closure of destruction cavities was reached after 3-4 months.

The analysis of clinical information of patients showed the following: all patients had positive course of treatment in form of bacterial excretion termination, closure of destruction cavities, resorption and inducation of infiltrative nodus, reduction of lymphadenopathy and limited fibrosis of pulmonary tissue, normalization of signs of inflammation in peripheral blood.

In the process of chemotherapy patients of the third group felt better after 1-2 months after the start of complex treatment and depended on tuberculosis process prevalence and motivation degree of the patients. According to X-ray image the resorption of infiltrative changes is reached after two months, closure of cavities- after five months. Termination of bacterial excretion was reached after 1-2 months. After etiopathogenetic therapy the patients showed positive dynamics in form of general state improvement, reduction of tuberculosis intoxication, negative tuberculosis sputum and closure of cavities, but had more expressed residual effects in pulmonary tissue than the patients from the second group. In course of complex treatment besides the chemotherapy the teenage patients also received vitamins, hepatoprotectors, antioxidants, physiotherapy, and dietotherapy and had compulsory protective regime (chart 2).



Fig. 2. Pathogenetic therapy analysis

The chart shows that the patients from the third group needed pathogenetic therapy more than others. 25% of teenagers of this group received antioxidants in the intensive phase of treatment. 25% of patients from the third group and 10% of patients from the first group received physiotherapeutic procedure in the 3-4th months of chemotherapy (phonophoresis with hydrocortisone and lydasa).

1' 2016

Thus, the optimal chemotherapy aims to achieve higher results of treatment that brings to reduction of hospitalization period and price reduction due to reduction of steady-state conditions and rational use of antibacterial drugs.

The following chart shows that the hospitalization period of patients with multidrug resistance (III group) in the steady-state condition was about 171 patient days, and patients without bacterial excretion (I group) - 127,3 patient days.

CONCLUSION

According to our research, the majority of teenagers were infected with tuberculosis mycobacterium in the early childhood, received preventive treatment, but later because of many factors tubercular process developed in adolescence, more often among teenage boys. It was mainly infiltrative pulmonary tuberculosis and tuberculosis of thoracic lymph nodes; rarely – primary tuberculosis complex and focal pulmonary tuberculosis. At the same time, in most cases tuberculosis was revealed as a result of FLG examination or tuberculosis diagnostics without complains and in satisfactory condition of teenagers. The absence of apparent contact with tuberculosis infected people among 1/3 teenagers points out the existence of hidden reservoir of tuberculosis infection.

The treatment analysis showed that in case of optimal chemotherapy patients releasing sensitive strains of tuberculosis mycobacterium have faster clinical and X-ray dynamics and less expressed residential changes in pulmonary tissue (single nodes and limited fibrosis of pulmonary tissue are often noticed), than patients with multidrug resistance of tuberculosis mycobacterium. This led to reduction of period of hospitalized treatment and decline of price of treatment courses due to reduction of steady-state period and rational use of antibacterial drugs.



Fig. 3. Division of patients according to the steady-state period

REFERENCES

- Aksenova V.A. Problemy aktivnogo vyavleniya tuberculeza u detei v Rosii [Problems active identification of TB in children in Russia] Tuberculez u detei I podrostkov v sovremennykh usloviyakh: tezisy dokladov nauch-pract. conf. (Sankt-Peterburg, 2004) [Tuberculosis in children and adolescents in modern conditions: abstracts scientificpractical. conf. (St. Petersburg, 2004)] - SPb, 2004. P. 7.
- Grishin M.N. Svistov V.V. Krivoshein Yu.S. Puti preodoleniya lekarstvennoi resistentnosti u bolnykh tuberculezon legkikh [Ways of overcoming drug resistance in patients with pulmonary tuberculosis]. Problems of tuberculosis, 2002. № 3. pp.16-18.
- Korol O.I. Lozovskaya M.E. Рак F.P. Ftiziatria: spravochnik [Phthisiology: Handbook]. SPb: Piter, 2010. - pp.180-181, pp.184-185.
- 4. Luginova E.F. Effectivnost kompleksnogo lecheniya bolhykh tuberculezom detei I podrostkov, vydelyauschikh LU MBT [The efficiency of complex treatment of patients with tuberculosis of children and adolescents that produce drug-resistant MBT]. Problemy tuberculeza v Yakutii: sb. tr.II (XXV) [Problems of tuberculosis in Yakutia: Sat. tr. II (XXV)]. Yakutsk: triada, 2003. P.137
- 5. Mishin V.Yu. Tuberculez legkikh s lekarstvennoi ustoichivostyu vozbuditelya [Pulmonary tuberculosis drug-resistant pathogen]. GEOTAR-Media, 2009. P. 201.
- O sovershenstvovanii protivotuberculeznykh meropriyatii v Rossiyskoi Federatsii: prikaz MZ RF № 109 ot 21.03.2003g. [On the improvement of TB control activities in the Russian Federation Health Ministry order №109 from 21.03.2003y]
- Ovsyankina E.S. Gubkina M.F. Rusakova L.I. Ob organizatsionno-metodicheskikh podkhodakh k lecheniyu tuberculeza u detei I podrostkov pri roste endemii zabolevaniya [On the organizational and methodological approaches to the treatment of tuberculosis in children and adolescents with growth of endemic diseases]. Problems of Tuberculosis, 2001. № 7. pp.10-13.
- Osnovnye pokazateli protivotuberculeznoi deyatelnosti v Respublike Sakha (Yakutiya): statisticheskii sbornik epidemiologicheskikh pokazatelei po RS (YA) [Key indicators of TB in the Republic of Sakha (Yakutia): the statistical compilation of epidemiological indicators of Sakha (Yakutia)].
- Firsova V.A. Tuberculez u podrostkov [TB in adolescents]. M. : Nauka, 2010. pp.22-28, 136-140, 161.

- 10. Fletcher I.N. Jeburtovich N.V. Novye podkhody k diagnostike I profilaktike detskogo tuberculeza [New approaches to the diagnosis and prevention of childhood TB]. Problems of Tuberculosis, 2002. № 4. pp.3-5.
- 11. Chukanov V.I. Sovremennye podkhody k lecheniyu bolnykh tuberculezom organov dykhaniya [Modern approaches to the treatment of pulmonary tuberculosis]. Tuberculez segodnya: problem I perspektivy: sb.nauch.tr. i materialov conf., posvyashennoi pamyati M.M.Averbakha [Tuberculosis today: problems and prospects: sat. scientific. tr. and materials conf., dedicated to the memory M.M. Averbuch]. M, 2000. pp.97-102.

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1' 2016 59

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HEALTHY LIFESTYLE. DISEASE PREVENTION

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The Health of Children in Yakutsk according to the Automated Technology of Preventive Medical Examinations (ASPONd-AKDO)

ABSTRACT

The article presents the results of the survey of children aged 3-15 years according to the program of computer - dispensary complex ACPEP-ACPME.

It was revealed that a preliminary assessment of the probability of detection of disease and its profiling dispensary examinations using a computer complex ACPEP-ACPME should reduce costs through targeted allocation of health care resources in the Republic Sakha (Yakutia).

Keywords: children, automated systems, health survey.

INTRODUCTION

Personnel deficit on certain medical professions still runs to 40-60% in the most territories of our country. Doubtless the fact that we need circumspect way to make pediatric physicians, highly specialized doctors and school doctors work hand in hand and also to make clear succession in their work [3,4]. Lack of clear arrangement of receiving and aggregation of information, medical data analysis automation and processing is one of the reasons of patients' dissatisfaction of health care delivery in medical center [1].

Considering severe conditions in our Republic, it's very difficult to hold variety of activities that are navigated by Health and Social Development Ministry of Russian Federation, especially in Arctic regions. Particularly it impacts on preventive/clinic examinations.

Basic laws and regulations that are very difficult to be accomplished in our Republic are given below:

1. Russian Federation Ministry of Health and Medical Industry order of 14.03.1995 № 60; regulation of school and pre-school children's preventing examination based on medical-economic standard.

2. "About clinic (preventing) examination standard of children during their first year after birth" order of 28th of April, 2007 N 307.

3. "About carrying out health survey of orphans and children in hardship who are in inpatient facility" order of 3rd of March, 2011 N162n, "About detailed health survey of teenagers" letter of 30th of June, 2011 N 15-2/10/2-6334.

1' 2016

Within this framework, duty of computer technology is presented in the Republic of Sakha (Yakutia) through already used clinic programmes ACPEP-ACPME (automated complex of preventive examination of population and automated complex for prophylactic medical examination). 8177 children have been examined with the help of this complex. Pathology profiles have been built based on the research findings. In such a manner, one of the very present day issues in the Republic of Sakha (Yakutia) is adoption of idea of pathology profile with the help of computer technology for every child, school, kindergarten, village, district and region at large which will help to solve a lot of management, economical and social problems. At present there are clinic information technologies in the Republic of Sakha (Yakutia) which document examined patients' data only. However we need more profound and clear preventive/clinic computer programme which can minimize specialists work or make information aggregation and processing more extensive without involving of highly specialized doctors. As it was told earlier we need to make clear succession in the co-operative work of pediatric physicians, highly specialized doctors and school doctors [2]

The medical centers of Saint Petersburg were the first clinics in Russia, that create and use the Automated Systems for Screening Diagnostic (ASSD). In 1983 against order of the Central office of Leningrad city in healthcare the researchers of Biotechnological Institute began to create software and devices for automated health assessment (AHA). The efficiency of this system was shown by clinical tests. AHA can provide:

- Improvement of healthcare assessments' efficiency in 3-4 times
- Reduction in expenditure of medical services
- Doctors' dispensation from routine "paper" operations
- Fast achievement of results etc.

The truthfulness of diagnostic with AHA was more than 80% against 11% for "traditional" health assessment.

Purpose:

To analyze the results of a survey of children's with the help of computer-dispensary complex ACPEP-ACPME and prove practicability of using children's pathology profile when delivering outpatient care for children in the Republic of Sakha (Yakutia).

MATERIALS AND METHODS

Paediatric population that enters to schools and pre-school institutions of Yakutsk city has been researched in the function of model population for creating pathology profiles. Altogether 8177 children were examined with the help of computer clinic complex ACPEP.

RESULTS

ACPEP office in Yakut Municipal Hospital №3 in Yakutsk city has been working from 2001 to 2005 as part of preschool and school department.

General percent of patients' pathology profiles that were examined through ACPEP during 5 years is presented in the picture (1).





1' 2016 🕋 📉



In the structure of pathology profile 5 leading rank places belong to apparatus system pathology, cardiovasculare pathology, endocrine pathology, alimentary (stomatology, gastroenterology) pathology, excitatory system pathology and psychic field pathology (in common). Specialists who are most required in school and pre-school institution were found out. Based on examination through ACPEP programme, pathology profiles were separated into junior, middle and senior age groups. Pathology profiles in junior age group which is from 3 to 7 ages are presented in the table (1), (n=1726, 858 are boys, 868 are girls).

Table 1

63

Age groups	Altoge	ether	Gender					
	Total	%	Boys	%	Girls	%		
	amount							
	of children							
Junior group from 3	1726	21,1	858	10,5	868	10,6		
to 7 ages								
Middle group from 8	4223	51,6	2086	25,5	2137	26,1		
to 13 ages								
Senior group from	2228	27,3	1077	13,2	1151	14,1		
14 and later								
Total	8177	100	4021	49,2	4156	50,8		

Age groups and total amount of examined people through ACPEP-ACPME programme

Based on the research findings, dominating pathologies in **junior age group** are orthopedics, cardiology and stomatology. Orthopedic pathology is found in the majority of examined children and equals to 68% (73,9% - boys, 62,2% - girls), cardiological pathology comes up to 53,3% (55,6% - boys, 49,1% - girls), dental pathology comes up to 48,5% (49,2% – boys, 47,8% - girls), everything is presented in the table (2). According to our sources, junior group boys' pathology dominates on all the profiles, especially in neurologic and surgical pathology.



Table 2

The most expressed defections in health condition on pathology profiles ACPEP in the

	1		1						
Junior group. Total: 1726	Altoget	her	Gender						
	Total	%	Boys	%	Girls	%			
	amount								
	of children								
Orthopedics	1174	68		73,9		62,2			
Cardiology	903	52,3		55,6		49,1			
Stomatology	837	48,5		49,2		47,8			

junior age group

In the middle age group a lot of children have orthopedic, dental, endocrinologic and cardiologic pathology. Orthopedic pathology amount has increased more than in junior age group and comes up to 79,2%, second place belongs to both dental and endocrinologic pathologies. Dental pathology makes 52,1% (54,3% - boys, 49,9% - girls) and endocrinologic pathology makes 52,1% (52,1% - boys, 52,2% - girls), third place belongs to neurologic pathology which comes up to 49,8% (55,4% - boys, 44,4% - girls). It's presented in the table (3).

Table 3

The most expressed defections in health condition on pathology profiles ACPEP in the middle age group

Middle age group	Altoget	Gender					
Total: 4223	(total: 42	(total: boys - 2086, girls - 2137)					
	Total	%	Boys	%	Girls	%	
	amount						
	of children						
Orthopedics	3343	79,2		85,5		72,9	
Stomatology	2201	52,1		54,3		49,9	
Endocrinology	2202	52,1		52,1		52,2	
Neurology	2105	49,8		55,4		44,4	

In the senior age group there are a lot of children with orthopedic, endocrinologic and cardiologic pathology. Orthopedic pathology makes 83,7% (87,5% - boys, 80,1% - girls), endocrinologic



pathology comes up to 69,7% (70,7% - boys, 68,8% - girls), cardiologic pathology makes 56,2% (57,1% - boys, 55,3% - girls). It's presented in the table (4).

Table 4

The most expressed defections in health condition on pathology profiles ACPEP in the senior age group

	0	-							
Senior group	Altogethe	er	Gender						
Total: (2228)	Total amount	%	Boys	%	Girls	%			
	of children								
Orthopedics	1865	83,7		87,5		80,1			
Endocrinology	1554	69,7		70,7		68,8			
Cardiology	1252	56,2		57,1		55,3			

Also it's possible to observe segment dynamics of the found pathology profiles. It's presented on the pictures (2, 3, 4).

Fig. 2



Segment dynamics of the found pathology profiles

Based on the research findings, on the profiles of orthopedics, endocrinology, ophthalmology, gastroenterology, nutrition, vascular cardiology, rheumatology, dermatology and genetics amount of children with the found pathology is increasing with age.



Fig. 3



Segments that have **decreased** with age: speech training, surgery, phthisiology, immunology, somatic growth, stomatology.



Fig.4

Segments that haven't changed with age: cardiology, nephrology, Ear –Nose-Throat, pulmonology, allergology, cancrology, hematology and neurology.

Dynamic of changes of its individual segments expression with age is the foundation for work planning for highly specialized doctors in the future.

CONCLUSION

This technology with the help of ACPME gives a specialist opportunity not only to replace body of specialists and expand variety of found pathologies, and also to improve medical efficiency for 5-6 times, to forget about "paper documents" technology and to reduce costs for health survey.

On the results of the preliminary and the first steps ACPME programme automatically builds pathology profiles, sets diagnostic programme, analyzes which doctors definite child needs and makes timetables of highly specialized doctors. Highly specialized doctors don't examine indiscriminately, they examine those children who truly need to be examined only and they can help more kids at one appointment. It dictates necessity of preliminary classification of potential patients for planning rational examination procedure. Also work succession of school and preschool doctors, highly specialized doctors and primary care pediatrician improves. Since formed f.30 swipe card of health survey can be exported to all the health facilities.

REFERENCE LIST

1. Vorontsov I.M., Shapovalov V.V., Sherstuk U.M. Sozdanie i primenenie avtomatizirovannyih sistem dlya monitoringa i skriniruyuschey diagnostiki narusheniy zdorovya [Invention and practice of automated systems for monitoring and of health problems screening diagnostic]. St. Petersburg.: izd. «Kosta» "Kosta", 2006, 331 p.

2. Burtseva T.E., Baisheva G.M., Chasnyk V.G., Baishev M.A., Avksentiev V.I., Argunova V.A. New automated technology of children population health survey in the Republic of Sakha (Yakutia) [Novaya avtomatizirovannaya tehnologiya dispanserizatsii detskogo naseleniya v Respublike Saha (Yakutiya)] Yakut medical zhurnal. 4(16) 2006, p. 14.

3. Medic V.A., Uriev V.K. Kurs lektsiy po obschestvennomu zdorovyu i zdravoohraneniyu [Course of lectures about public health and health service].-Moscow, 2003, Ch.2.-456 p.

4. Gadzhiev R.S., Nazaralieva Z.K. Mnenie gorodskogo naselenija ob ambulatornopoliklinicheskoj pomoshhi [Opinion of the urban population of outpatient care] Health service of Russian Federation. -2003, №1, p.27-29.

1' 2016

1' 2016 68

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ORGANIZATION OF HEALTHCARE, MEDICAL SCIENCE AND EDUCATION

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Demographic and Health Indicators of the Obstetric Service of the Republic Sakha (Yakutia)

ABSTRACT

The article presents an analysis of demographic and health indicators of the obstetrics service in the Sakha Republic (Yakutia) in the light of the development of optimal schemes of pregnancy and childbirth routing. Problems, similar to the problems of our northern region, are very relevant and marked in all countries of the circumpolar region; in recent years they are discussed at the international level within the circumpolar congress.

Keywords: birth rate, infant mortality, maternal mortality, Republic Sakha Yakutia).

INTRODUCTION

This study was carried out in the Republic Sakha (Yakutia), which occupies the largest territory in Russia and refers to the territories in the far North of the country with low population density.

The Republic of Sakha (Yakutia) is the subject of Russia, by its natural and spatial conditions unparalleled on our planet. The Republic is situated in the North-Eastern part of the Eurasian continent, the total area of the continental and insular (Island Lyakhovsky, Anjou and De long, members of the Novosibirsk Islands of the Arctic Ocean) territory of Yakutia is 3.1 million sq. km. Over 40% of the territory is above the Arctic Circle.

According to the national population census conducted in 2010, the permanent population of the Republic Sakha (Yakutia) (Yakutia) was 958.5 thousand people, of whom 466 492 – Yakuts, 353649 – Russian, 21008 – Evenki, 15071 – Evens, 1281 –Yukaghir, 1906 – the Dolgans, 670 - Yukaghir. The results of the census show that the country has not retained the status of a region of one million people. In the previous census of 1989 the population of the Yakutia was 1094.1 thousand people.

The formation of specific life support systems of the population in the far North contributes to the large number of sparsely populated settlements, located at a considerable distance, both administrative and medical centers, as well as a fairly weak and difficult at the same time the development of modern transport infrastructure. The main problems of the organization of the

1' 2016 🕋 🔨

health system of the Republic Sakha (Yakutia) as a whole are due to territorial characteristics. It is the presence of small-size medical institutions to ensure the availability of medical care; high demand for emergency medical, including specialized and sanitary-aviation assistance in the organization of on-site medical care, both primary and specialized; high level of hospitalization of the population (Borisov, E. E., 1990, Bannikov V. R., 1995, Alexandrov V. L., 2003, Lyskovic A. Cs., 2004). This dictates the need to develop differentiated regional mechanisms for the implementation of public health policy and health development in the Russian Federation.

In 2002 the Law of Republic of Sakha (Yakutia) № 429-II "On the list of hard-to-reach and remote areas in the Republic of Sakha (Yakutia)" was legislated. In the list of remote and hard-to-reach areas there were 29 of the 34 districts in which there are 169 settlements, 15 urban settlements, 233 village and township, 163 production site. Territorial remoteness and scattered settlements (e.g., in the Verkhoyansk district, settlement Suoardakh is at the distance of 402 km. from the center of the area; in Kobjajsky settlement Seban-Quel – 460 km. etc.), underdevelopment of the transport infrastructure in the period of spring flood and the mud most of the settlements on 4-5 months of being cut off from communication ground (water) transport – all these factors significantly affect the organization of medical care, emergency assistance features. Thus, the planned and emergency Advisory medical aid to the population, especially children and pregnant women, the Far North of the Russian Federation is associated with significant difficulties (Borisov E. E., 1990, Bannikov V. R., 1995, Alexandrov V. L., 2003, Lyskovic A. Cs., 2004, Tyrylgin M. A., 2008, Chichahov D. A., 2010, 2011, Duglas N. And., 2011, Samsonova M. I., 2013).

In this regard, the analysis of data of official medical statistics of the service delivery is the basis for development of adequate regional mechanisms for improving the quality of medical care to pregnant women, new mothers and newborns in the Republic Sakha (Yakutia).

MATERIALS AND METHODS

We analyzed data of official medical statistics of obstetric service in the Republic Sakha (Yakutia), 2003-2014.

RESULTS

According to the national census, conducted in 2010, the resident population of the Republic Sakha (Yakutia) totaled 949.4 thousand people, of whom: 466,492 - Yakuts, 353649 - Russian, 21008 - Evenki, 15071 - Evens, 1281 – Yukagirs, 1906 - Dolgan, 670 - Yukagirs. As of 01.01.2015, the population of the republic is 956.8 thousand people, including 491,349 female population, including 248,115- women of childbearing age, teenage girls - 18793, 106232- girls (Table 1). Thus, the Yakutia has not retained the status of the region of a million people. One of the features of the Republic of Sakha (Yakutia) is a historically large proportion of the rural

population in the total number of inhabitants (35.8% with an average - 8% in other northern regions of Russia). And in rural areas predominantly indigenous population - the Yakuts, and a traditional lifestyle, indigenous peoples of the North: Evens, Evenki, Chukchi, Yukagir, Dolgan.

Table 1

Government Report on the health status of Sakha (Yakutia), 2014)													
Incidence	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	948,	949,	950,	949,	950,	951,	949,	949,	958,	955,	955,	954,8	956,8
population,	6	0	7	9	0	4	8	4	0	5	6		
thousand													
pers.													
Urban	611,	613,	610,	610,	613,	619,	621,	622,	614,	620,	620,	622,7	624,7
population,	1	3	8	0	1	5	7	2	4	5	5		
thousand													
pers.													
Rural	337,	335,	339,	339,	336,	331,	328,	327,	343,	335,	335,	332,1	332,2
population,	5	7	9	9	9	9	1	2	6	0	1		
thousand													
pers.													

Dynamics of the population of the Republic of Sakha (Yakutia) (Samsonova M.I., 2013, Gov. Report on the health status of Sakha (Yakutia), 2010; Government Report on the health status of Sakha (Yakutia), 2014)

In the Republic of Sakha (Yakutia) Obstetric Service is represented by the following medical institutions: 30 maternity units in the central district hospitals, 6 urban maternity wards and perinatal center in the city of Yakutsk. Total 379 hospital beds for pregnant women and mothers, 408 - pregnancy pathology beds, 503 - bed for gynecological patients. Of obstetricians - 5.0 per 10,000 female population. Provision of obstetric beds - 31.2 per 10,000 women of childbearing age.

The birth rate in the Republic of Sakha (Yakutia), and is relatively stable in recent years higher than in the Russian Federation (Russian Federation) (Table. 2). So, in 2013- 16704 baby was born, in 2014 - 17074. Traditionally, in the Republic of Sakha (Yakutia), the birth rate in rural areas is higher than cities, during the decade under study, this trend continues. The highest fertility rates in 2014. in rural areas reached 24,3 ‰ in Zhigansky area and 26,7 ‰ in mountain areas and the lowest rates - in the cities: 11,7 ‰ in Neryungri, 16,1 ‰ in Yakutsk.

1' 2016 🕋 📉



Table 2

The dynamics of the birth rate in the Republic of Sakha (Yakutia) (Samsonova M.I., 2013, Gov. Report on the health status of Sakha (Yakutia), 2010; Government Report on the health status of Sakha (Yakutia), 2014)

Incidence	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
of birth rate												
Yakutia,	15,0	15,5	14,3	14,4	16,1	16,2	16,8	16,8	17,1	17,5	17,5	17,8
per 1000												
Urban	14,5	15,0	13,8	14,1	15,1	16,0	16,7	16,5	15,6	16,6	15,5	15,3
Rural	15,8	16,3	15,0	14,8	17,5	16,0	16,7	17,4	19,9	19,9	21,1	22,4
Russia,	15,0	15,5	10,2	10,4	11,3	12,1	12,4	12,5	12,6	13,3	13,2	13,3
per1000												

Analysis of the total fertility rate has shown once again that it is in the village at 1 woman falls on the kind of 2-3. So, in 2013 in urban areas - 1.78; in rural areas it was 3.15 (tabl. 3). The index of total fertility rate of 3.15 is enough replacement level. Thus, in rural areas the fertility rate is still sufficient for a simple replacement of generations of parents to children. For comparison, in Russia the same period amounted to 1.75 in 2014.

Table 3

Dynamics of the total fertility rate in the Republic of Sakha (Yakutia) (Samsonova M.I., 2013, Gov. Report on the health status of Sakha (Yakutia), 2010; Government Report on the health status of Sakha (Yakutia), 2014)

Total	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
fertility												
rate												
Yakutia	1,87	1,91	1,73	1,72	1,91	1,90	1,97	2,00	2,06	2,17	2,17	2,25
	1,66	1,71	1,58	1,61	1,72	1,82	1,88	1,86	1,77	1,89	1,78	
Urban												
	2,35	2,36	2,01	1,97	2,31	2,08	2,18	2,30	2,68	2,81	3,15	
Rural												
Russia	-	-	-	-	-	-	-	-	1,58	1,69	1,71	1,75
In the Republic Sakha (Yakutia), according to official statistics in the dynamics of the number of births increased substantially and accordingly, in comparison with 2003 (more than 2-fold) increased number of normal births. So, if in 2003 the proportion of normal births was only 28.8%, while in 2013, 16,578 births, of which 9136 normal deliveries (55.1%), in 2014g.-16948, including normal childbirth - 8971 (52.9%) (Table 4). This is the result of good management of pregnant women in hospitals of the country.

Table 4

73

Dynamics of births in the Republic of Sakha (Yakutia) (Samsonova M.I., 2013, Gov. Report on the health status of Sakha (Yakutia), 2010; Government Report on the health status of Sakha (Yakutia), 2014)

Inciden	200	200	200	200	200	200	200	201	201	201	201	201
ce	3	4	5	6	7	8	9	0	1	2	3	4
the	141	146	136	136	151	151	158	161	164	169	165	169
number	71	13	56	10	47	92	48	09	02	98	78	48
of births												
the	28,8	37,7	42,8	43,9	50,5	50,1	48,8	50,0	46,5	52,3	55,1	52,9
proporti												
on of												
normal												
births,												
%												

The maternal mortality rate in the country for the period 2003-2014 was not stable. In 2014 index excluding late maternal mortality rate has increased by 1.6 times to 18.0 per 100 thousand live births (3 cases) in 2013. to 29.4 (5 cases) in 2014. (table 5).



Table 5

Trends in maternal mortality

In the Republic of Sakha (Yakutia) (100 thous. Live births) (Samsonova M.I., 2013, Gov. Report on the health status of Sakha (Yakutia), 2010; Government Report on the health status of Sakha (Yakutia), 2014)

Incidenc	200	200	200	200	200	200	200	201	201	201	201	201
e of	3	4	5	6	7	8	9	0	1	2	3	4
maternal												
mortality												
Yakutia	56,2	47,6	22,1	36,6	26,2	19,5	12,5	24,8	12,2	29,4	18,0	29,4
Russia	31,9	23,4	25,4	23,6	22,0	20,7	22,0	16,5	16,2	11,5	11,3	10,8

In the Republic of Sakha (Yakutia) maternal deaths mainly occur in Level II hospitals - 62.5% and Level I - 37.5%. It obstetrics Level I and II have underestimated the severity of the condition, which leads to the development of critical condition. The causes of maternal mortality rate of 61.5% was driven causes such as haemorrhage, sepsis, eclampsia. Also, in the structure of the reasons for the development of severe obstetric complications, 61.5% were controlled by cause (severe preeclampsia, bleeding).

Infant mortality according to 1940 of Tatarstan amounted to 237.4 ‰ (State Statistics Committee of Russia, 1998). During the study period 2003-2014 there is a dynamic decrease in the infant mortality rate. So, in 2014 the figure was 8.0 per 1,000 children born alive, as in the whole of Russia, this indicator reached the level of 7.4 (tabl. 6).



Table 6

Trends in infant mortality in the Republic of Sakha (Yakutia) (per 1,000 live births)

(Samsonova M.I., 2013, Gov. Report on the health status of Sakha (Yakutia), 2010; Government Report on the health status of Sakha (Yakutia), 2014)

Incidence	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
of infant												
mortality												
Yakutia	13,2	13,5	10,6	10,6	10,4	9,1	8,9	7,2	6,3	9,6	9,6	8,0
Russia	12,4	11,6	11,0	10,2	9,4	8,5	8,1	7,5	7,3	8,6	8,2	7,4

A significant contribution to infant mortality, still, makes neonatal mortality ($60,3 \pm 7,1\%$ of the total number of cases). Most of the children ($44,0 \pm 7,8\%$) die in hospitals, $33,4 \pm 3,9\%$ of babies dying in children hospitals, the death rate in the third place at home - $17,8 \pm 4,4\%$.

The structure of the causes of neonatal mortality for the 2003-2014: the first place is occupied by conditions originating in the perinatal period - $75,7 \pm 5,4\%$ of cases, followed by congenital malformations - $21,2 \pm 5,4\%$ cases. In analyzing the conditions arising in the perinatal period, which were the cause of neonatal death, revealed that the respiratory distress syndrome was the leading cause of mortality in second place - hyaline membrane disease, in third place - intrauterine pneumonia.

Among the conditions arising in the perinatal period and the cause of death of newborns in the first week of life, the first place in the Republic of Sakha (Yakutia) took the newborn respiratory disorders. Every year hospitals Yakutia die from this cause $43,7 \pm 4,8\%$ of all deaths of newborns. The second place ranking for all the studied decade belongs to deaths in hospital as a result of asphyxia and hypoxia. According to the frequency of occurrence of a diagnosis there are no differences in rural and urban areas. This figure, of course, refers to the controllable causes of neonatal mortality and entirely dependent on the skill of midwives and choosing the right tactics of childbirth. The third place ranking in frequency of deaths at the hospital takes intrauterine pneumonia ($17.6 \pm 2,5\%$), the frequency of this diagnosis in rural hospitals in 2 times higher than the republic-wide performance.

Thus, data on infant mortality in the Republic of Sakha (Yakutia) confirm their high preventability means of modern medicine, as well as the introduction of adequate routing schemes pregnancy and childbirth during transport from remote, inaccessible villages.

CONCLUSION

According to official health statistics Republic of Sakha (Yakutia) for the 11-year period regional peculiarities of health and demographic indicators obstetric service of the Republic of Sakha (Yakutia) are accounted:

- A consistently high birth rate
- Relative increase in the proportion of normal births
- Reducing maternal mortality
- Reduction of the infant mortality rate.

The findings suggest the need to implement adequate routing schemes pregnancy and childbirth during transport from remote, difficult to access areas that will improve the quality of essential health care maternal and neonatal.

Problems similar to those of our northern region, marked in all countries of the circumpolar region of the world and in recent years as part of the Circumpolar Congress discussed at the international level, it is very important to share experiences and develop joint international programs and protocols for pregnant women in the circumpolar countries.

REFERENCES

1. Alexandrov V.L. Organizacija vysokotehnologichnyh centrov specializirovannoj medicinskoj pomoshhi v uslovijah Krajnego Severa (po materialam Respubliki Saha (Jakutija)) [Organization of high-tech centers of specialized medical care in the Far North (based on the Republic of Sakha (Yakutia))]: Abstract of the Doctoral thesis, Moscow, 2003, 35p.

2. Bannikova R.V. Social'nye uslovija i demograficheskie processy v Arhangel'skoj oblasti [Social conditions and demographic processes in the Arkhangelsk region]. Arkhangelsk, 1995, 108p.

3. Borisov E.E. Obraz zhizni i zabolevaemost' korennogo sel'skogo naselenija Krajnego Severa (na primere Jakutii) [Lifestyle and morbidity indigenous rural population of the Far North (by the example of Yakutia): Abstract of the PhD thesis, M., 1990, 25 p.

4. Gosudarstvennyj doklad o sostojanii zdorov'ja naselenija Respubliki Saha(Jakutija) [State report on the state of health of the Republic of Sakha (Yakutia)]. Ministerstvo zdravoochranenia Respubliki Sakha (Yakutia) [Ministry of Health Rep. Sakha (Yakutia)] GI "Yakut Rep Med Inf Analyt Centre". Yakutsk,Offset, 2010, 120 p.

5. Gosudarstvennyj doklad o sostojanii zdorov'ja naselenija Respubliki Saha(Jakutija) [State report on the state of health of the Republic of Sakha (Yakutia)]. Ministerstvo zdravoochranenia Respubliki Sakha (Yakutia) [Ministry of Health Rep. Sakha (Yakutia)] GI "Yakut Rep Med Inf Analyt Centre, 2014, 120 p.

7. Lyaskovik A.Ts. Nauchnoe obosnovanie koncepcii organizacii medicinskoj pomoshhi detskomu naseleniju, prozhivajushhemu v regionah Krajnego Severa s nizkoj plotnosť ju naselenija [The scientific substantiation of the concept of medical care for children's population living in the Far North regions with low population density]. Abstract of the Doctoral thesis, SPb., 2004,40 p.

8. Naselenie Rossii za 100 let (1897-1997): Stat. sb. [The population of Russia for 100 years (1897-1997): Stat. Sat.]. The State Statistics Committee of Russia. Moscow, 1998, 136 p.

9. Samsonov M.I., Chichahov D.A., Burtseva T.E., Uchakina R.V., Kozlov V.K. Zdorov'e detej i podrostkov Respubliki Saha (Jakutija) [Child and Adolescent Health of the Republic of Sakha (Yakutia)]. Yakutsk:Ofset, 2013. 223p.

10. Tyrylgin M.A. Problemy ohrany zdorov'ja naselenija Krajnego Severa (na primere regiona Jakutija) [Public health problems of the Far North (by the example of the region Yakutia)]. Novosibirsk: Nauka, 2008, P. 303-304.

11. Chichahov D.A. Nauchnoe obosnovanie anesteziologo-reanimacionnogo obespechenija detskogo naselenija regiona (na primere Respubliki Saha(Jakutija) [Scientific substantiation anesthetic and intensive care to ensure the child population in the region (on the example of the Republic Sakha (Yakutia)]: Abstract MD thesis: SPb., 2011, 35 p.

12. Chichahov D.A. Aprosimov L.A. Detskoe naselenie Respubliki Saha (Jakutija): problemy sokrashhenija predotvratimyh poter' [The child population of the Republic Sakha (Yakutia): problems of reducing preventable losses]. Yakutsk: Ofset, 2011, 174 p.

13. Chichahov D.A. Verbitskaya L.I. Detskaja smertnost' v Respublike Saha (Jakutija) [Child mortality in the Republic Sakha (Yakutia)]. Far East Medical Journal, 2010, №4, P. 62-66.

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S. M. Tarabukina, Z. A. Boyarova

On the Organization of Control over Compliance with the Licensing Regulations in the Implementation of Pharmaceutical Activity in the Sample the Republic Sakha (Yakutia)

ABSTRACT

Federal law No. 61 –FZ of 12 April 2010 "On Medicine Circulation" sets priorities of the public regulations reliability, quality and efficacy of medicines in their treatment.

Licensing of separate kinds of activity is carried out in order to prevent prejudice to the rights, lawful interests, life or health of citizens, environment, objects of cultural heritage (monuments of history and culture) of peoples of the Russian Federation, defense and security of the state, application of which involves the exercise of legal entities and individual entrepreneurs certain types of activities.

Pharmaceutical activity is licensed activity. In this regard, studies of the content control in the form of planned inspections of observance of rules of licensing of pharmaceutical activity in the Republic of Sakha (Yakutia) for 2012-2014. Defines the role of licensing controls as necessary elements of state control in the field of medicines. Studied and classified, detected during scheduled inspections violations by type of work and services which constitute pharmaceutical activity. The necessity of making all types of works and services which constitute pharmaceutical activity in the provision defining the procedure for the frequency of scheduled inspections in the field of healthcare, including in pharmacy organizations.

Keywords: licensing of pharmaceutical activities, licensing requirements, inspection report, violation of the licensing requirements.

INTRODUCTION

Pharmaceutical activity as a sphere of entrepreneurial activity on the one hand, on the other, like a sphere, which is quite a high social component, require the mandatory participation of the state in the form of regulation, regulation and control. One means of regulation and regulation is the state control in the field of medicines. The main purpose of state control in the sphere of circulation of medicines is the human rights to health. Therefore, the issues of improvement of legal and methodological base of state control are very important. Over the past 10 years developed theoretical and organizational and methodical approaches of the legislative framework of state control, including in the field of medicines. The studies examined existing scientific approaches, rules and provisions of the law of state control, including licensing controls.

violations of licensing requirements in the field of medicines in the Republic of Sakha (Yakutia) was carried out. This determined the aim and objectives of the study.

The purpose of the study: the study contents organization of control over observance of licensing rules of pharmaceutical activity in the form of scheduled inspections and systematization of the revealed violations by type of work and services which constitute pharmaceutical activity.

MATERIALS AND METHODS

The study involved sixteen of pharmacies, which revealed violations of licensing requirements by the Department of licensing of medical and pharmaceutical activity of the Ministry of health of the Republic of Sakha (Yakutia), the Regulation on licensing, licensing applications, certificates of checks of observance of license requirements pharmaceutical activities, reports and reports of authorities carrying out licensing of pharmaceutical activity. The study used a systemic and comparative analysis, the survey. Used in the analysis were 16 acts scheduled inspections of pharmaceutical institutions of the Republic of Sakha (Yakutia) for 2012-2014, of which 12 are from the city of Yakutsk, 1 - Mirny district, good, 1 – Lensky district, Lensk, 1 – Neryungri, 1 – Megino-Kangalassky region, village of Maya.

RESULTS AND DISCUSSION

Licensing control, on the one hand, is a function of public administration, in relation to which it acts as a tool to implement policy. On the other hand, the license control can be considered as a management activity with its own methods, ways and forms of implementation. [3]

Licensing control is an integral part of state control (supervision). [5]

Thus, in the normative documents regulating the procedure of the license control in the field of medicines is not fixed term license control. In different scientific research licensing control is interpreted in different ways: as a control of compliance with license conditions, legal and administrative procedure aimed at the prevention or identification of possible violations, monitor the implementation of licensing requirements implemented by the licensing authorities.

To the relations connected with the implementation of the licensing control, the provisions of the Federal law from December 26, 2008 N 294-FZ "On protection of rights of legal entities and individual entrepreneurs in the exercise state control (supervision) and municipal control" taking into account peculiarities of organization and conducting inspections.

In the Republic of Sakha (Yakutia) in accordance with Federal law of 29.12.2006 № 258-FZ "On Introducing Amendments to Certain Legislative Acts of the Russian Federation in the context of improving delineation of authority " and the decree of the President of the Republic of Sakha (Yakutia), dated 04.07.2008 No. 1019 "On measures for implementation delegated authority

of the Russian Federation in the field of health protection of citizens of the Republic of Sakha (Yakutia)" Executive authority of the Republic of Sakha (Yakutia), authorized to exercise the transferred powers of the Russian Federation on licensing of pharmaceutical activities, is the Ministry of health of the Republic of Sakha (Yakutia).

Department of licensing medical and pharmaceutical activities of the Ministry of health of the Republic of Sakha (Yakutia) provides legal entities and individual entrepreneurs of state services for licensing of pharmaceutical activities and also carries out the state function of licensing control of pharmaceutical activities.

Only the Department of licensing of medical and pharmaceutical activity of the Ministry of health of the Republic for 2012-2014 conducted 217 inspections, of which planned inspections are 43, i.e. 19,8%, the rest are unscheduled inspections. We studied 16 cases of scheduled inspections – 37,2%, in compliance with licensing requirements in the pharmacy organizations of different ownership forms in the Republic by the licensing Department of the MOH of the Republic of Sakha(Yakutia) for 2012-2014.

The inspections were conducted in the framework of planned inspections in accordance with the Federal law from 4.03 2011 №99-FZ "About licensing of separate kinds of activity". The frequency of routine verification activities in the field of health, including the retail sale of medicines and manufacture of medicines in pharmacies at intervals of not more than 1 time per year, sets the Resolution of the Government of the Russian Federation No. 944 of 23 November 2009.[2]

The RF Government Resolution No. 1081 of 22 December 2011, as appended to the regulation on licensing of pharmaceutical activities, approved the following list of performed works, rendered services which constitute pharmaceutical activity:

In the sphere of circulation of medicines for medical use:

- 1. Wholesale trade of medicines for medical application
- 2. Storage of medicines for medical application
- 3. Storage of medicines for medical application
- 4. Transportation of medicinal products for medical use
- 5. Transportation of medicinal preparations for medical use
- 6. Retail trade of medicinal products for medical use
- 7. Dispense drugs for medical use
- 8. The manufacture of drugs for medical use [1]

In the analysis of revealed violations of license requirements for 16 acts scheduled inspections at pharmacies, breach of us classified by types of performed works and rendered

services which constitute pharmaceutical activity in the Russian Federation Government Decree No. 1081 of December 22, 2011. It should be noted that these types of works and services, except retail sale of medicines and manufacture of medicines in pharmacy institutions not given in the Decree of the government of the Russian Federation No. 944 of 23 November 2009 regulating the frequency of inspection in the sphere of healthcare, including in pharmacy organizations.

In the analysis of results in 2012-2014 checks pattern a licensees similar violations of license requirements and conditions: - compliance with the established limits retail markups to the actual selling prices of producers on the medicines included in the list of vital and essential medicinal products; rules of storage of medicines for medical use; failure to comply with the minimum range of medicines.

It should be noted that the current minimum assortment of medicinal preparations for pharmaceutical organizations is regulated by other normative act, but at the time of scheduled above the order of MH of the Russian Federation. inspections acted Revealed violations of licensing requirements, mentioned in the acts, works and services which constitute pharmaceutical activity in accordance with the Government Decision No. 1081 of 22 December 2011:

Storage of medicines for medical use:

- violations of storage of medical products for medical application with regard to temperature and require protection from the effects of increased temperature;

- violations of the storage of medicinal products for medical use, in accordance with the requirements for storage specified on the secondary (consumer) packaging of the specified medicinal product;

- the lack of devices registering parameters of air coolers;

- the absence of a daily record of air in refrigerators and air;

- does not keep records of medicines with a limited shelf life (paper or electronic archiving);

- not submitted the order on the procedure for the assessment of medicines with a limited shelf life (clause 11 of the Order of MH and CP of the Russian Federation dated 23.08.2010 No. 706н);

- not organized specially designated (quarantine) area.- is not granted the passport for hygrometer- expired calibration of the device for measurement of air parameters (type of hygrometer VIT-1).

1. Retail trade of medicinal products for medical use

- Is not adhering to the minimum range in pharmacies – order of MOH and CP from 15.09.2010 №805н;

1' 2016 🕋 🔨

- medications prescription of the doctor, stored in the trading room on display;

- laboratory - packaging magazine for drugs with impairment of secondary assumption of the original packing is not conducted.

- no cosmetic repairs of pharmacy: the inner surface of the wall material in the room is a violation of the integrity of the coating, is not available for carrying out wet cleaning

2. . Dispense drugs for medical use

- Pharmacy provides prescription dispense drugs.

3. The manufacture of medicinal preparations for medical use

- There is no checking of the center of Metrology and standardization at RL3 Refractometer.

The most common violations are:

1. Violations of the temperature regime in pharmacies (75%);

2. Not the minimum of the range in pharmacies(68,75%); (figure 2)

From 16 verified pharmacies (acts) in 12 of the pharmacies identified violations of the temperature regime, including the ownership of pharmacies: SP-4(34%), MUP-1(8%), JAPAN PC-1(8%), OOO-6(50%). (Fig1).



Fig.1. Form of ownership of pharmacies, which revealed violations of storage of medical products for medical application with regard to temperature and require protection from the effects of increased temperature.



Only violation was stored with regard to temperature and require protection from the effects of increased temperature 133 drugs. (Fig 2)





CONCLUSION

In the study of acts 16 checks in pharmacies of different ownership forms in the Republic of Sakha (Yakutia) for 2012-2014 the most frequent violations are violations in the implementation of these types of performed works, rendered services which constitute pharmaceutical activity, as the storage of medicines and products for medical use and retail trade of medicinal products for medical use, dispensation of medicinal products for medical use (the minimum range). Thus, the Decree that determines the order of frequency of inspection activities in the field of health, only types of regulated retail trade in medicines and manufacture of medicines in pharmacy institutions. Thus, it is necessary to make all types of performed works, rendered services which constitute pharmaceutical activity: storage of medicines for medical use, storage of medicines for medical use, dispensation of medicinal products for medical use, transportation of drugs for medical use, dispensation of medicinal products for medical use.



REFERENCES

1. Postanovlenie Pravitel'stva RF № 1081 ot 22 dekabrya 2011g O licenzirovanii farmacevticheskoj deyatel'nosti [The RF Government resolution No. 1081 of 22 December 2011 On licensing of pharmaceutical activities].

2. Postanovlenie Pravitel'stva RF № 944 ot 23 nojabrja 2009g Ob utverzhdenii perechnja vidov dejatel'nosti v sfere zdravoohranenija, sfere obrazovanija i social'noj sfere, osushhestvljaemyh juridicheskimi licami i individual'nymi predprinimateljami, v otnoshenii kotoryh planovye proverki provodjatsja s ustanovlennoj periodichnost'ju [Decree of the Government of the Russian Federation No. 944 of 23 November 2009 On approval of the list in health care, education and the social sphere, carried out by incorporated and unincorporated businesses as for programmed check are carried out at appropriate intervals].

3. Purcakin V.G. Ob organizacii kontrolja za sobljudeniem pravil licenzirovanija farmacevticheskoj dejatel'nosti [On the inspection arrangement control over observance of rules of licensing of pharmaceutical activities] Vestnik akademii [Bulletin of the Academy], 2014. 1 – pp. 143-147.

4. Federal'nyj Zakon ot 12 aprelja 2010 goda №61-FZ Ob obrashhenii lekarstvennyh sredstv [Federal Law of 12 April 2010 №61-FL On Medicine Circulation].

5. Federal'nyj Zakon ot 4 maja 2011 goda №99 –FZ O licenzirovanii otdel'nyh vidov dejatel'nosti [Federal Law dated 4 may 2011 No. 99 –FL Concerning the Licensing of Certain Types of Activities].

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TOPICAL ISSUE

A.D. Semenov, I.D. Ushnitsky, A.S. Rogaleva, A.M. Degtyareva, R.I.Egorov

Analysis and Evaluation of the Need for Dental Care of Residents of Yakutia Industrial Regions

ABSTRACT

The results of investigation describe high prevalence of common dental diseases among the residents of industrial areas of the Republic of Sakha (Yakutia). In the age group of 3 years old children the temporary teeth caries susceptibility characterizes that every 4th child has the pathological processes of hard dental tissues with demineralization formation. But at the same time, every child of the preschool years has a dental caries. Dental caries in permanent teeth was detected in every surveyed school-age child; the level of caries intensity is characterized as a high. The frequency of pathological processes of periodontal tissue in 15-year-old kids is interpreted as a high level. Significant increase in indicators of pathological periodontal pocket pockets is shown in the structure of CPI components, that shows inflammatory and destructive process of periodontal tissues and the clinical picture of periodontal disease is defined as expressed. Meanwhile, the intensity of caries lesions is defined as high among people aged 35-44 years, but in the mouth of people aged 65-74 years there are only up to 5 teeth due to the complications of dental caries and periodontal disease.

Keywords: dental caries, dental defects, removable and non-removable dentures, periodontal disease, industrial areas, dental care needs.

INTRODUCTION

Nowadays the development of national economy mostly depends on industrial enterprises [1, 2, 3, 8]. Thus, special attention is given to the development and exploration of the Northern territories. The special importance on this background has the health care system improvement which is based on knowledge of clinical-epidemiological peculiarities and level of population need of medical care [4, 7, 11, 12].

The Republic of Sakha (Yakutia) has specific regional living conditions which are connected with the huge territory, difficult transport scheme, lack of ultra-violet, long cold winter period, low level of mineralization of the main sources of drinking water. Besides, close arrangement of permafrost layer often promotes the development of catarrhal diseases during the

summer period [5, 6, 8, 9, 10]. The mining industry of gold, tin, coal, silver, etc. is developed in the region. The examination of the population of Central, Vilyuysky, Northern and Southern regions of the republic characterize various levels of prevalence of pathological processes of organs and tissues of the oral cavity among various age groups of the population. Thus there are no data of diseases of the population of industrial regions of Yakutia. Taking it into account, we've made the complex clinical-epidemiological research.

Research aim. To determine the level of need of the dental help of inhabitants of industrial regions of Yakutia on the basis of results of clinical-epidemiological research.

MATERIAL AND METHODS

Clinical-epidemiological research of 1840 people aged from 3 till 93 years old living in Tomponsky, Oymyakonsky, Nyurbinsky and Anabarsky regions of the Republic of Sakha (Yakutia) has been done. Thus, according to the WHO classification the following key age groups were created: 3, 6, 12, 15, 35-44 and 65-74 years old. The assessment of the dental status was carried out with the use of standard indexes and WHO criteria. A special card recommended by WHO (1997) was used for examination. Studying of teeth caries was carried out by indicators of prevalence and intensity of caries. Intensity of damage was determined by the CFE indexes and CF where all filled, extracted and affected with caries teeth were considered. The arithmetic-mean value of CFE and CF were defined while examining groups. Level of dental help was determined by the technique offered by P.A. Leus (1987). The condition of parodontium tissues was defined on the basis of indicators of the public dental plaque CPI (1995) index. Indicators of prevalence and intensity of parodontium diseases were estimated by the criteria developed by WHO experts.

The orthopedic status included existence or lack of dentures. The available removable and fixed dentures have been analyzed, estimated by types, number and condition of abutment teeth, functional and esthetic conditions of dentures, production materials of dentures, terms of use, cause of their replacement, and need of orthopedic treatment.

Statistical processing of clinical material was carried out with application of standard methods of variation statistics with calculation of average size, mean square mistake by means of packages of the applied programs "Microsoft Excel" 2007 (Microsoft Corporation). The received results were grouped in a set of identical signs. The critical significance value when checking statistical hypotheses was $p \le 0.05$.

RESULTS AND DISCUSSION

The received research data have revealed some features of a clinical course of the main dental diseases among examined age groups of the population. Thus, the indicator of frequency of pathological processes of hard tissues of temporary teeth of demineralizing character was at the level of 37.21+0,63% among children of 3 years old where each child was defined up to 2,31+0,06 carious and filled teeth on average, and 6 year-old children have -97,53+0,60% and 3,43+0,22 respectively.

It should be noted that in age groups of school children and adults the high level of prevalence of teeth caries which fluctuates ranging from 97,53+0,60 to 100% has been noted. In this regard the average level of prevalence of caries of teeth among children of school age and adult population was 99,51+0,62%, the average level of intensity 13,44+0,19. It should be noted that in these key age groups like 12 years old the intensity of teeth caries damage was up to standard 5.45+0,23, and in age group of 35-44 years – 19,72+0,21 which were interpreted as high and very high levels.

It is necessary to emphasize that the variability of the received results was defined in structure of the components of the CFE indexes and CF. Thus, 3-year-old children had data of carious teeth where the indicator was 74.45+0.74%, at that time the indicator of the filled teeth averaged to 25.55+0,75%. The component "K" (49.62+0.87%) prevailed among children of school age, and values of components "P" and "U" respectively were at the level of 40.95+0,94% and 9,43+0,98%. Adult population of 35-44 years had a high level of indicator "K" (45,63+0,86%), and data of components of the filled and extracted teeth were 33,94+0,64% and 20.43+0,75%. Meanwhile in the age group of 65-74 years old substantial increase of the extracted teeth (79.78+1.03%) where carious and filled teeth was only 15,61+1,05% and 4.61+0,93%. Such situation among patients of this age group is connected with the loss of teeth concerning complications of teeth caries and diseases of parodontium.

Frequency of pathological processes of parodontium tissues of inflammatory- destructive and exchange - dystrophic character testifies to its high level (tab. 1). So, the average level of prevalence of pathological processes of parodontium tissues among examined age groups of the population was 82,87+0,30%. In age group of 65 and older there is a decrease of cases due to the natural processes connected with the loss of teeth. Meanwhile, 15-year-old teenagers have a frequency data "Bleeding of gums" (40,17+0,85) and "Supra- and subgingival calculus" (50,73+0,68) which are characterized as the average level. The increase of frequency of dental sextants and pathological periodontal pocket is defined with the age in data of intensity of parodontium tissues damage that testifies to severity of parodontium diseases of inflammatory and destructive character. Thus 15-year-old teenagers have data of intensity of parodontium tissues damage the components "Bleeding of Gums" (2.30+0,04) and "Supra- and subgingival calculus" (2,85+0,03) which are interpreted as high levels.



Table 1

Prevalence and intensity of parodontium diseases among population

Age groups	Prevalence,	CPI, %							
	%	Healthy	Bleeding	Supra- and	Pathological				
				subgingival	periodontal pocket				
				calculus					
15	88,89 <u>+</u> 0,11	6,64 <u>+</u> 0,97	40,17 <u>+</u> 0,85	50,73 <u>+</u> 0,68	2,46 <u>+</u> 0,95				
(n=312)									
35-44	98,31 <u>+</u> 0,38	1,73 <u>+</u> 0,94	18,14 <u>+</u> 0,82	44,33 <u>+</u> 0,66	35,80 <u>+</u> 0,92				
(n=332)									
65 and older	61,43 <u>+</u> 0,42	0,12 <u>+</u> 1,10	12,68 <u>+</u> 0,96	29,95 <u>+</u> 0,77	57,25 <u>+</u> 1,07				
(n=257)									
Total	82,87 <u>+</u> 0,30	2,83 <u>+</u> 1,00	23,66 <u>+</u> 0,87	41,67 <u>+</u> 0,70	31,84 <u>+</u> 0,98				

It should be noted that indicators of need in one type of denture and combined denture was

Age groups	CPI (sextant)									
	Healthy	Bleeding	Supra- and	Pathological	Unaccounted dental					
			subgingival	periodontal	sextants					
			calculus	pocket						
15	0,37 <u>+</u> 0,06	2,30 <u>+</u> 0,04	2,85 <u>+</u> 0,03	0,47 <u>+</u> 0,04	0,01 <u>+</u> 0,01					
(n=312)										
35-44	0,07 <u>+</u> 0,05	1,08 <u>+</u> 0,05	2,34 <u>+</u> 0,07	2,24 <u>+</u> 0,03	0,27 <u>+</u> 0,06					
(n=332)										
65 and older	0,01 <u>+</u> 0,07	0,15 <u>+</u> 0,06	0,61 <u>+</u> 0,06	2,6 <u>+</u> 0,05	2,63 <u>+</u> 0,04					
(n=257)										
	0,15 <u>+</u> 0,06	1,18 <u>+</u> 0,05	1,93 <u>+</u> 0,05	1,77 <u>+</u> 0,04	0,97 <u>+</u> 0,04					
Total										

65,89+ 0,67 and 16,96+1,15% respectively among patients of 65 years and older. Thus, only 17.15+0.87% of people of senile age didn't need dentures. These facts characterize needs in the orthopedic dental help.

CONCLUSIONS

The received results of research have shown adverse situation of caries incidence and pathologies of parodontium tissues, the insufficient level of medical help and high level of need

of dental help of the population in industrial regions. It dictates need of carrying out further researches for studying of biological and environmental risk factors of the development of pathological processes of organs and tissues of the oral cavity among residents of these areas for improvement of the dental help.

REFERENCES

- Golubenko A.V. Ob effektivnosti gornoy dobyichi v Respublike Saha [About the Efficiency of Mining in the Republic of Sakha] Gornyiy informatsionno-analiticheskiy byulleten [Mining Informational and Analytical bulletin]. 2008, №1, p.12-16.
- Zyiryanov B.N. Rastvorimost emali v patogeneze kariesa zubov u detey Kraynego Severa Dalnego Vostoka [Enamel Solubility in the Pathogenesis of Dental Caries in Children of the North of Far East] Institut stomatologii [Institute of Dentistry]. 2014, №2, p. 82-83.
- Lazareva A.K. Ekologo-ekonomicheskie aspektyi osvoeniya Arktiki i znachenie prirodnyih resursov Respubliki Saha (Yakutiya) [Ecological and Economic Aspects of Arctic Development and Importance of Natural Resources in the Republic of Sakha (Yakutia)] Problemyi sovremennoy ekonomiki [Modern economy issue]. 2001, №2, V.54, p. 265-268.
- Vahova N.S. Haustov V.I. Lomteva L.M. [i dr.] O sovershenstvovanii okazaniya meditsinskoy pomoschi pozhilyim patsientam [About the Medical Care Improvement of Elderly Patients] Klinicheskaya gerontologiya [Clinical Gerontology]. 2007, №9, p. 94-96.
- 5. Petrova P.G. Rol nespetsificheskih i immunologicheskih pokazateley rezistentnosti organizma v mehanicheskih adaptatsiyah naseleniya Yakutii k ekstremalnyim usloviyam Kraynego Severa [The Role of Nonspecific and Immunological Parameters of the Organism Resistance in Mechanical Adaptations of Population of Yakutia to Extreme Conditions of Far North]: avtoref. dis. ... dokt. med. nauk [Abstract of PhD thesis]. Mosk. gosud. akademiya im. I.M. Sechenova [Sechenov State Med. Academy]. Moscow, 1995, 42 p.
- Petrova P.G. Ekologo-fiziologicheskie aspektyi adaptatsii cheloveka k usloviyam Severa [Ecological and Physiological Aspects of Human Adaptation to the Northern Conditions]. Yakutsk: «Dani Almas», 2011, 272 p.
- 7. Ushnitskiy I.D., Nikiforova E.Yu., Ammosova A.M. [i dr.] Sovremennyie aspektyi problemyi stomatologicheskih zabolevaniy u detey s displaziey soedinitelnoy tkani

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[Modern aspects of dental diseases in children with connective tissue dysplasia] Yakutskiy med. zhurnal [Yakut medical journal]. Yakutsk, 2015, №2 (52). p. 85-91.

- Starikov A.V. Efremov A.P. Vasilev P.N. Kontseptualnyie tehnologicheskie podhodyi osvoeniya perspektivnyih ugolnyih mestorozhdeniy Yuzhnoy Yakutii [Conceptual Technological Approaches of Promising Coal Deposits Development in South Yakutia] Gornyiy informatsionno-analiticheskiy byulleten[Mining Informational and Analytical bulletin]. 2001, №1, p.1-4.
- Ushnitskiy I.D. Kliniko-fiziologicheskie aspektyi sostoyaniya organov i tkaney polosti rta u naseleniya Respubliki Saha (Yakutiya) [Clinical and Physiological Aspects of Organs State and Oral Cavity Tissues of in Population of the Republic of Sakha (Yakutia)]: dis. ... d-ra med. nauk [Doctoral thesis]. Arhangelskaya gos. med. akademiya, Arhangelsk, 2001, 262 p.
- Ushnitskiy I.D. Zenovskiy V.P., Vilova T.V. Stomatologicheskie zabolevaniya i ih profilaktiki u zhiteley Severa [Dental Diseases and their prevention in the North residents]. Moscow: Nauka, 2008, 172 p.
 - Darcey J. Primary dental care periodontology / J. Darcey, A. Qualtrough // British Dental Journal. – 2013. – Vol. 214. – P. 439-451.
 - Periodontal diseases and type I diabetes mellitus in children and adolescents / M. Pinson,
 W.H. Hoffman, J.J. Garnick [et al.] // J. of Clinical Periodontology. 1995. Vol.22. –
 P.23-28.

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K.S. Gavrilyeva, M.V. Handu, S.V. Markova, N.V. Makharova, E.N. Mestnikova Features of Hormonal Status of Young Athletes in the Republic Sakha (Yakutia)

ABSTRACT

In the process of adaptation of an athlete in high training loads there happens the activation of hormonal control link adaptation process. Simultaneous study of testosterone and cortisol in the blood and index calculation anabolic reflect the level of adaptation of the athletes' organism, and its decrease indicates overtraining sportsman. The purpose of this study was to compare the average of the hormonal status of young athletes and adolescents not involved in sports.

Materials and methods. 54 youths aged 16-17 were investigated. 25 of these are young athletes, professional athletes. Control group consisted of 29 healthy peers not involved in sports. The studies were conducted during the recovery phase of the annual training cycle athletes on the basis of recreational and rehabilitation center of the Center of Sports Medicine and Rehabilitation of the State budget institutions of the Republic of Sakha (Yakutia), high school of sports. We investigated hormones testosterone and cortisol, calculated anabolism index, assessed the level of anxiety and stress of young men.

Results. Most athletes anabolic index 56.3% is in the range of less than 5, in 12.3% of subjects anabolism index was below 3 established a significantly higher concentration of testosterone (p < 0.001) in athletes with respect to youths not involved in sports 33.7% (p < 0.001). As the level of reactive anxiety occurs fairly significant increase in cortisol levels (p = 0.004) and testosterone (p = 0.026). It should be noted that increasing the level of cortisol reflects training stress in athletes, thereby developing them resistant to stresses.

Conclusions. In 56.3% of subjects athletes prevails catabolic metabolism, including 12.3 percent of them are in a state of overtraining. Athletes set higher levels of cortisol (p < 0.001) and testosterone (p < 0.001) than in non-athletes. With increasing degree of reactive anxiety significantly increased cortisol levels (p = 0.004) and testosterone (p = 0.026). Most athletes (64.6%) are stress-resistant (p = 0.001) types of people.

Keywords: athletes, testosterone, cortisol, anabolic index.

INTRODUCTION

Intense physical activity, typical of the current training process, characterized by constant body growing requirements of young athletes, which inevitably leads to overstress systems. [5,7].

One of the most important problems of sports training of young athletes is to evaluate the adaptive capabilities of the growing organism in the period of the endocrine system [4,9]. In the process of adaptation of an athlete in high training loads there happens the activation of the hypothalamic-pituitary-adrenocortical and sympathy - adrenal system - hormonal control link of the adaptation process [2,10]. Changes in hormonal status reflect the degree of training stress in athletes [1,8]. Simultaneous study of testosterone and cortisol in the blood and index calculation anabolic reflect the level of adaptation of the athletes' organism, and its decrease indicates overtraining sportsman [3].

The purpose: the study of the hormonal status of young athletes in the recovery phase of the training cycle.

MATERIALS AND METHODS

The study involved 54 boys, divided into two groups. The first group consisted of 25 young athletes - young men aged 16-17 years old, professional athletes, the amount of training load which is equal to 18 hours a week. The second group (control) included 29 healthy peers not involved in sports.

The studies were conducted during the recovery phase of the annual training cycle athletes on the basis of the Center of Sports Medicine and Rehabilitation of the State budget institutions of the Republic of Sakha (Yakutia), high school of sports. Blood collection was carried out in the rest of the veins in the morning from 8:00 to 9:00 am. The level of testosterone and cortisol were determined on automated photometric analyzer immunofluorescence ChemWell ELISA manufacturing Awareness Technology, Inc. (USA).

According to the results was calculated anabolism index (AI) according to the formula IA = testosterone / cortisol x 100, expressed as a percentage. Reducing the value of IA below 3% was seen as a state of overtraining [12]. We estimated the psychological status of young men. Assessing the level of anxiety of young men was carried out using a methodology for determining the level of reactive and personal anxiety, the proposed C.D. Spilberger, adapted and standardized YL Khanin [11].

To determine the resistance to stress using a technique such as perceptual evaluation of stress [6].

Statistical analysis was performed using the application package SPSS Statistica.19.0. For the statistical analysis of the data were used nonparametric Mann-Whitney and Kruskal-Wallis test for independent samples with a 95% confidence level (p <0.05). Young athletes and their peers not involved in sports, participated in the study on a voluntary basis. It provided written informed consent from the subjects.

RESULTS AND DISCUSSION

Our results show that athletes, even at rest, there are differences in the average values of concentrations in blood testosterone, cortisol, and thus anabolism index, in contrast to their peers who did not participate in sports. Analysis of the data showed the index of anabolic no significant differences between the study groups (Figure 1), however there is a tendency to reduce this figure by 6.8% in athletes with respect to non-athletes. It should be noted that the majority of athletes anabolic index 56.3% is in the range of less than 5, in 12.3% of subjects IA was below 3, indicating that the prevalence of catabolic over anabolic processes and is considered by us as a sign of overtraining.

At the same time it sets a significantly higher concentration of testosterone (p < 0.001) in athletes with respect to youths not involved in sports by 33.7% (p < 0.001), due to its anabolic effect on the synthesis of contractile proteins in the muscles during exercise compensatory and start the process of stimulation releasing factor, thus accelerating the synthesis of testosterone (Figure 3). Cortisol levels in athletes also significantly higher than that of the non-athletes at 39.5%, which is a response to systematic physical activity, which is a daily action of stress factor that stimulates the production of cortisol (Figure 2).

The study athletes and non-athletes in the level of hormones were divided into 3 groups: 1) high cortisol levels over 700 ng / ml; 2) average cortisol level of 350-700 ng / ml; 3) low cortisol levels - less than 350 ng / ml. As a result, high levels of cortisol, no one has been registered, the average level of cortisol was detected in 58.3% of the athletes compared with 4.9% among young men not involved in sports (p = 0.001).

Increased cortisol levels corresponding to chronic physiological and psychological stress. But in the study of the psychological status of young men found that the level of cortisol, testosterone also affects the degree of anxiety. Thus, if raising the reactive anxiety occurs fairly significant increase in cortisol levels (p = 0.004) and testosterone (p = 0.026). Increased personal anxiety also increases the concentration of these hormones, however, the results have statistical significance (Picture 4.5).

It should be noted that increasing the level of cortisol reflects training stress in athletes, thereby developing them resistant to stresses. The results indicate that the majority of athletes (64.6%) belongs to the stress resistance type B (p = 0.001), people of this type clearly define their goals, seek to cope with the difficulties themselves, can work for a long time with great exertion. [6]. These results indicate that elite sport is mobilizing human and develops resistance to stress (Figure 7).



CONCLUSIONS

In 56.3% of subjects athletes prevails catabolic metabolism, including 12.3 percent of them are in a state of overtraining. Athletes set higher levels of cortisol (p <0.001) and testosterone (p <0.001) than in non-athletes. With increasing degree of reactive anxiety significantly increased cortisol levels (p = 0.004) and testosterone (p = 0.026). Most athletes (64.6%) are stress resistance-(p = 0.001) types of people.

REFERENCES

1. Gogotova V.L. Smirnov I.E. Kucherenko A.G. Osobennosti gormonalnogo statusa plovcov 13–17 let v zavisimosti ot kvalifikacii [Features of the hormonal status of swimmers 13-17 years depending on qualifications] Medicinskij vestnik Severnogo Kavkaza. [Medical Bulletin of North Caucasus], 2010, № 3, pp. 107–108.

2. Danilova N.N. Krylova A.L. Fiziologiya vysshej nervnoj deyatelnosti [Physiology of higher nervous activity], Rostov-on-don: Fenix, 2002, P. 479.

3. Didenko S.N. Aleksanyanc G.D. Osobennosti gormonalnogo statusa yunyh gandbolistov [Features of the hormonal status of young handball players] Pedagogiko-psihologicheskie i mediko-biologicheskie problemy fizicheskoj kul'tury i sporta. [Pedagogical-psychological and medico-biological problems of physical culture and sports], 2014, №4 (33), pp. 42-46.

4. Zhukov Yu.Yu. Uroven kortizola kak marker hronicheskogo stressa i ego vliyanie na organizm sportsmen [Cortisol as a marker of chronic stress and its influence on the athlete's body] Uchenye zapiski universiteta imeni P.F. Lesgafta [Scientific notes of P. F. Lesgaft University], 2009, №9 (55), pp. 33-38.

5. Kostina L. V. Dudov N.S. Osipova T.A. Osobennosti adaptacii nejroehndokrinnoj sistemy u sportsmenov vysokoj kvalifikacii pri podgotovke k otvetstvennym startam [Features of adaptation of the neuroendocrine system in athletes of high qualification in preparation for responsible starts] Vestnik sportivnoj mediciny Rossii [Bulletin of sport medicine of Russia], 1999, T. 24, № 3, P. 33.

 Kupriyanov R.V. Kuzmina YU.M. Psihodiagnostika stressa: praktikum [Psychodiagnostics of stress: a workshop] M-vo obraz. i nauki RF, Kazan. gos. tekhnol. un-t. [Ministry of education and science of the RF, Kazan. state Indus. Univ.]. Kazan: KNITU, 2012, P. 212.

7. Lebedev K.A. Ponyakina I. D. Immunnaya nedostatochnost [Immune insufficiency] Lower Novgorod: Izd-vo Nizhegorodskoj gos. med. akademii, 2003, P. 443.

Pavlov S.E. Kuznecova T.N. Adaptaciya i stress v sporte [Adaptation and stress in sports].
 Moscow: Fundamentalnaya medicina, 2007, pp. 198–215.

9. Tajmazov V.A. Afanasieva I.A. Sindrom peretrenirovannosti u sportsmenov: ehndogennaya intoksikaciya i faktory vrozhdennogo immuniteta [The overtraining syndrome in athletes: endogenous intoxication and factors of innate immunity] Uchenye zapiski universiteta imeni P.F. Lesgafta. [Scientific notes of P. F. Lesgaft University], 2011, №12, pp. 24-30.

10. Fiziologiya shchitovidnoj zhelezy, obsledovanie pacientov pri ee zabolevaniyah. V kn: Endokrinologiya po Viliyamsu. Zabolevaniya shchitovidnoj zhelezy [Physiology of thyroid gland, examination of patients with the disease. In the book: Endocrinology by Williams. Thyroid diseases] Perevod s angl. pod red. I.I. Dedova, G.A. Mel'nichenko. [Translated from English. ed. by Dedov I. I. Melnichenko G. A.]. Moscow: «GEHOTAR-Media», 2010, pp.19–103.

11. Hanin YU.L. Stress i trevoga v sporte: Mezhdunarodnyj sb. s 84 nauchnyh statej. [Stress and anxiety in sports: an international collection of 84 scientific articles]. Moscow: Fizkultura i sport, 1983, P. 288.

12. Testosterone, cortisol, and testosterone- cortisol ratio in saliva of young middle-aged sportsmen in triathlon / S. K. Chang, H.F. Tseng, N.F. Tan, Y.D. Hsuuw, J. Lee-Hsieh // Biology of Sport. - 2005. - Volume 22, No 3. - P. 227-235. 12. Edwards, D.

Authors:

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1' 2016



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Bogachevskaya S.A., Bogachevsky A.N., Kapitonenko N.A. Assessment by the Attending Physicians of Medical Care Organization at Diseases of the Circulatory System in the Far Eastern Federal District ABSTRACT

This article presents a study of the attending physician's opinion about the availability and quality of medical care for cardiovascular diseases in the institutions of the Far East Region which is based on sociological research in the 2013-2015 (174 respondents). The local level of care had the largest share of negative assessments, the federal level received the maximum number of satisfaction rate (p < 0.05; CI: 95.0%). More than a third of physicians indicate the difficulties in patient diagnostic, almost half of the respondents recommend developing of preventive direction. Problems of patient rehabilitation and territorial remoteness were underestimated. The majority of respondents feels the need for additional information of the cardiovascular system diseases diagnostic and treatment, as well as endorses the idea of the appointment of advanced cardiology courses. Few respondents approve the new system of continuous education.

Keywords: availability and quality of medical care, the problems of medical care for cardiovascular diseases, a system of continuing medical education.

INTRODUCTION

According to some authors, the specialized medical care monitoring should include not only statistics data, but also consumer and other stakeholders satisfaction [1,4,6]. As the key to health care settings, patients often have no opportunity to compare the quality of services in the practical absence of a choice of services [3]. So, free access to all health services has a crucial importance for the citizens of the Far East Region (FER). Organization of health care services has a secondary importance. The professional quality of the staff and the results of care are in last place [2].

It becomes obvious that the choice of venue surveys and the composition of representative groups is crucial important for the organization of the study [7]. It seems that the assessment of the various aspects of health care services by physicians will allow approach more competent to the overall assessment of health care.

MATERIALS AND METHODS

We used materials of sociological research (174 respondents) in 2013-2015. Doctors practicing in different territorial regions of the FER were the object of study. Medical care for cardiovascular diseases (CVD) inquiry forming the FER became the subject of research. The poll

1' 2016 🕋 🔨 📕

of doctors was conducted in the workplace, on thematic advanced courses and retraining through anonymous questionnaires. Inquiry form in accordance with official guidelines and legal documents included blocks of questions related to access to medical care, the quality of services and awareness of specialists under diagnosis and treatment of CVD1. Respondents completed a questionnaire on their own, including the maximum possible number of closed questions and fivepoint scale of indicators assessment. Statistical processing was performed using Microsoft Excel Statistics package. Statistical significance was based on the results of reliability indices due to error of representativeness of intensive indicator and confidence intervals of the relative data of the universal set. Indicators were evaluated as valid at the level of statistical significance of p < 0.05(CI: 95.0%).

The aim of this study was to investigate the opinion of doctors about the availability and quality of cardiovascular medical care in the FER, as well as identification of organization problems from the perspective of the attending physicians.

RESULTS

Doctors from 7 of 9 territorial subjects of the FER took part in this study. Men were presented 21.8% and women were 78.2% among the total number of respondents. Respondents of pre-retirement (51-60 years - 32.2%) and retirement (older than 60 years - 6.9%) age were the most numerous groups. Representatives of the regional institutions accounted for more than half of all respondents (51.7%), 41.4% ones were from the local institutions and 6.9% ones were from federal institutions. Physicians (39.0%) and cardiologists (21.8%) turned out the largest groups of responders. One-third of respondents had1-9 years' medical experience (33.3%), a quarter of respondents (24.1%) had 30-39 years' experience in additional.

More than half of respondents (52.9%) did not have a competence category; the highest category was only in fifth (18.4%) of experts. Moreover, almost two thirds (71.3%) of respondents did not leave the FER for professional courses or retraining in their specialty.

All levels of CVD care in the FER received $\geq 2/3$ of positive responses (3-5 points) with the most of them (82,8 ± 2,9%) at the federal level (Table1).

¹"On approval of the recommendations of the "Organization of the population opinion poll (survey) about satisfaction with the availability and quality of medical care in the implementation of compulsory health insurance": an Order of CHIFF from 29.05.2009 № 118.



Table 1

The level of medical care	The care satisfaction scores								
	1	2	3	4	5	Difficult to			
						answer			
In local outpatient departments, %	6,9±1,9	9,2±2,2	44,2±3,8	28,7±3,4	3,4±1,4	6,9±1,9			
in local therapeutic hospitals, %	3,4±1,4	9,2±2,2	27,6±3,4	39,1±3,7	10,3±2,3	10,3±2,3			
in specialized therapeutic hospitals,%	-	1,2±0,8*	12±2,5	48,3±3,8	18,4±2,9	20,7±3,1			
In cardiac surgery hospitals, %	2,3±1,1	3,4±1,4	9,2±2,2	35,6±3,6	27,6±3,4	21,8±3,1			
in a center for cardiovascular surgery,	-	1,2±0,8*	2,3±1,1	32,2±3,5	48,3±3,8	16,1±2,8			
%									

Satisfaction with the organization of care for CVD estimated by doctors in FER

Note: p <0.05 (CI: 95.0%); * P <0.05

According to $47.2 \pm 3.8\%$ of the respondents, the state of medical care services for the CVD in the FER has the current level and only $11.5 \pm 2.4\%$ of them don't agree with it. Only a third of the respondents were satisfied with the care organization ($31.0 \pm 3.5\%$), the same amount of them ($29.9 \pm 3.5\%$) aren't satisfied with the situation. These issues have caused difficulties to answer for $41.4 \pm 3.7\%$ and $39.1 \pm 3.7\%$ of the respondents, respectively.

More than a third of physicians $(35.6 \pm 3.6\%)$ indicated the difficulty with diagnostics. The ability of cardiac ultrasound in the workplace was available among $85.1 \pm 2.7\%$ of the respondents, vascular ultrasound was $67.8 \pm 3.5\%$ of cases and only $10.3 \pm 2.3\%$ of the respondents noticed the availability of transesophageal ultrasound. Exercise testing (treadmill, bicycle ergometry) was held almost half of the cases ($47.2 \pm 3.8\%$ against $41.4 \pm 3.7\%$ of cases this research is not carried out). The personnel problem concerned only $11.5 \pm 2.4\%$ of the respondents. The territorial (long distance) issue and the problem of rehabilitation and correction of treatment after surgery was marked only $2.3 \pm 1.1\%$ of the respondents; $4.6 \pm 1.6\%$ of them answered they had had no problems with this group of patients.

The majority of respondents ($62.1 \pm 3.7\%$) believed that since the opening of the Federal Center for Cardiovascular Surgery in Khabarovsk (FCCSKh) the quality of care has changed for the better. One-third of respondents could not answer this question ($33.3 \pm 3.6\%$).

Almost half of the respondents noted that to direct patients to FCCSKh for surgery was easier (48.3 \pm 3.8%), than in the other institutions of the country and the FER. More than half of respondents (50.6 \pm 3.8%) noticed that they have no problems with the direction of patients in FCCSKh for consultation or treatment. Half of 13.8 \pm 2.6% of physicians, who had reported the organizational problems, noted long time of waiting surgery due to the insufficient of quotas for the region.

1' 2016 🕋 🔨

The need for new information on modern methods of diagnosis and treatment for CVD has increased to $64.4 \pm 3.6\%$ of cases since the functioning of the FCCSKh. The same respondents $(85.1 \pm 2.7\%)$ approved an offer to direct physicians to advanced cardiology courses. More than half $(55.2 \pm 3.8\%)$ of the respondents reacted negatively the introduction a system of continuing medical education, and a third of them $(29.9 \pm 3.5\%)$ couldn't to answer the question. And only $14.9 \pm 2.7\%$ of respondents gave a positive review.

Among the proposals to reduce the mortality from CVD in the closed questions respondents noted: the development of preventive care (44.8 \pm 3.8%), the development of the medical examination (19.5 \pm 3.0%), the availability and timeliness of care (10.4 \pm 2.3%), good diagnostic equipment and the availability of the diagnostics for the patients (8.1 \pm 2.1%), preferential provision of medicines and improve the welfare and quality of life (both 3.5 \pm 1.4%). In order to improve the organization of the physicians in the pre-hospital stage of care responders proposed: to improve the qualifications of personnel in CVD and specialists training process – 23.0 \pm 3.2%; to improve staffing and eliminate their deficit - 16,1 \pm 2,8%; to support local service (including salary increase) - 10,4 \pm 2,3%; to conduct a valuation of the working time of a physician – 9.2 \pm 2.2%.

DISCUSSION

Each of the care levels for CVD in the FER have got not less than 2/3 of satisfactory comments, but only a third evaluated positively the organization of the care process as a whole (31.0%).

There is a clear dependence of the number of satisfactory and unsatisfactory ratings on the level of medical care: the local (outpatient and inpatient) level has got the largest share of negative evaluations and minimum positive ones with reverse proportion to the federal level (Table 1).Half of respondents sad that interaction with FCCSKh simplify the work with patients having a "surgical" pathology of the cardiovascular system. Only one seventh of the respondents (13.8%) indicated on the problems in cooperation with FCCSKh, which is considerably less than in the whole of the region (35.6%).

The territorial problem and the problem of rehabilitation of patients and correction of treatment after surgery are underestimated by the respondents (only 2.3% of the respondents), although it is the territorial issue is most closely linked to difficulties in diagnostics of these patients (the problem was noticed as leading 15 times more). It is possible that the solution of organizational problems seems to be too difficult for physicians. Thus, to discuss these issues with managers (health organizers) could be more competent.

1' 2016 🕋 🔨

Predominantly negative evaluation of the planned reforms (introduction of continuous medical education system), in the opinion of respondents, the system is not fully developed and there is not enough information about it. There were fears the destruction of the existing system of education on the background inefficiency of new one. The result of consideration of education as a problem and responsibility of the state like an employer is rejection of continuous education system. In addition, more than 85% of doctors indicated the need for new information on diagnosis and treatment of CVD, and more than a quarter of them (at least 27%), feeling this need, didn't take active measures to obtain information and new knowledge, which together with the general level of qualifications and conditions of the training process might also indicate indirectly the crisis of current education. However, the transition to new system of education may be one of the reasons for the significant reduction in the number of working pensioners, which could create with it an even greater shortage of personnel in health care [5].

CONCLUSIONS

It was noted a discrepancy between the degree of the doctors' assessment of satisfaction with medical care with CVD at the various levels (over 85%) and the organization of its process (31%). In most cases, the practitioner has difficulties in assessing organizational issues (territorial problem and the problem of rehabilitation of patients are clearly underestimated by respondents), which requires the involvement in research opinion of health organizers.

The examination of patients with CVD became the leading issue due to the lack of diagnostic equipment in most institutions of the FER, in physicians' opinion.

The process of medical care to patients with CVD should be systematized and easy applied to work of primary care, which requires access to new information on diagnosis and treatment of CVD, in particular on the thematic cardiology courses. The planned transition to a system of continuing education allows risks worsening the problem of staff shortages in health care.

REFERENCES

- Vserossijskoe sociologicheskoe issledovanie mnenija naselenija o dostupnosti i kachestve medicinskoj pomoshhi [The All-Russian sociological study of public opinion on the accessibility and quality of medical care]. 2010 URL: http://www.zdrav.ru/articles/practice/detail.php?ID=79106 (accessed in 11 December 2015). (In Russian).
- Kirik Ju.V. Kapitonenko N.A. Organizacija i razvitie medicinskoj pomoshli na Dal'nem Vostoke Rossii po dannym sociologicheskih oprosov naselenija [Organization and development of medical care in the Russian Far East according to opinion polls]

Tihookeanskij medicinskij zhurnal [Pacific Medical Journal]. 2015, № 1, pp. 51–55. (in Russian).

- Kochkina N. N. Krasil'nikova M. D. Shishkin S. V. Dostupnost' i kachestvo medicinskoj pomoshhi v ocenkah naselenija [The availability and quality of medical care according to the population assessment] Moscow: Izd. domVyssheyshkolyekonomiki, 2015, 56 p. (in Russian).
- Medik V.A. Osipov A.M. Obshhestvennoe zdorov'e i zdravoohranenie: medikosociologicheskij analiz [Public health and health care: medical and sociological analysis]. Moscow: RIOR; INFRA-M, 2012, 358 p. (in Russian).
- Semenova T.V. Kupeeva I.A., Son I.M. Nesvetailo N.Y. Danilov N.V. Gazheva A.V. [et al.] Kadrovye resursy uchrezhdenij zdravoohranenija [Human resources for health care institutions]. Moscow, 2014, 80 p.
- Seregina I.F. Lindenbraten A.L. Grishina N.K. Rezul'taty sociologicheskogo issledovanija mnenija naselenija Rossijskoj Federacii o kachestve i dostupnosti medicinskoj pomoshhi [The results of sociological study of Russian population opinion on the quality and accessibility of medical care] Problemy sotsial'noy gigieny, zdravookhraneniya I istorii meditsiny. 2009, №5, pp. 3-7 (In Russian).
- Siburina T.A. Barskova G.N. Laktionova L.V. Metodicheskie podhody k issledovaniju udovletvorennosti pacientov vysokotehnologichnoj medicinskoj pomoshh'ju [Methodological approaches to the study of patient satisfaction with high-tech medical care] Sotsial'nye aspekty zdorov'ya naseleniya. 2013, № 1 (29), URL: http://vestnik.mednet.ru/content/view/454/lang,ru/ (checked in 12 June 2015) (In Russian).

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SCIENTIFIC REVIEWS AND LECTURES

Modern View on the Causes of Preterm Delivery

N.S. Baisheva, N.I. Douglas, T.Yu. Pavlova, T.E. Bourtseva

ABSTRACT

Among the most important problems of modern practice of obstetrics, one of the most acute problems is premature birth. After all prematurity is the leading cause of perinatal morbidity, mortality and disability of children. The article presents an overview of current research done in the world to outline the causes of premature birth.

Keywords: preterm labor, amniotic fluid, morbidity, infant mortality.

INTRODUCTION

Since 2012, according to WHO recommendations, Russia has moved to a new standard of live births and the problem of premature birth has become one of the most important in the medical and social aspects. According to the latest definition of the World Health Organization considered premature births that occurred in the period from 22 to 37 weeks, the fruit of 500 or more grams. The intensive care unit of the country joined the very preterm babies with extremely low birth weight, require enormous resources on nursing, treatment and further rehabilitation. Children's health as the future of the nation, is an important matter for each state and only the prediction of preterm birth and a rational choice of tactics in complicated pregnancy and childbirth can positively affect the outcome.

The share of premature babies up to 70% of early neonatal and infant mortality rates of 65-75%. Still births in preterm labor in 8-13 times more than the timely delivery. [3] The incidence of preterm birth, according to local experts, ranging from 10 to 12%. [1] According to various reports of foreign authors their frequency varies from 5 to 18 % in different countries. In the US, approximately 12% of all live births are born prematurely, of which 25-50% subsequently suffer neurological disorders, 70% and 36% of neonatal infant mortality is due to premature birth. [12] A retrospective analysis of the infant mortality rate is extremely preterm infants in Sweden, showed considerable variations between different medical institutions and directly dependent on the level of medical care. [9] In France and the United States among infants born alive at less than 34 weeks of pregnancy, higher mortality was revealed in born with stunted growth. [6] By the same the conclusion reached by Japanese scientists, where the extremely preterm children with growth retardation are marked as the most prone excl risks of mortality and diseases, such as chronic lung disease, retinopathy of prematurity, sepsis, necrotizing enterocolitis. [11]

In Russia, in 2013, put into practice a clinical protocol for the prevention and management of preterm labor, which are defined and announced numerous risk factors, such as complications of obstetric and gynecological history, low socio-economic standard of living, drug addiction and smoking, multiple or induced pregnancy, cervico-vaginal infection, severe extragenital pathology and others. [2] But in spite of all the work being done, the number of premature births in Russia is growing, as well as throughout the world.

Studying the numerous recent studies in the field of premature birth, it becomes clear that the search for solutions to this problem took a planetary scale, and can take a lot of time. Indeed, despite the recent advances in obstetric and neonatal service, the number of premature births in the world is increasing. [19] The reason for this multifactorial etiology of preterm labor, where about half of the cases is idiopathic. Idiopathy - from the greek idios - own, pathos - disease, the origin of which is difficult to understand. Spontaneous preterm delivery occurred against a background of complete well-being, the search for new encounters predictors, multiple duplication of studies in different countries, the use of a non-invasive and invasive methods, conducting experiments using animals as a model.

In this respect, scientists have placed great hope in the discovery of new biochemical markers that act as a reliable predictor of preterm birth that will allow time to conduct targeted therapies and medical interventions to improve outcomes for the fetus and the mother. All human body fluids, including the amniotic fluid, urine, saliva, cervical fluid and blood are a rich source of various proteins, various pathophysiological biomarkers suspected pregnancy disorders, including premature birth. This is especially true for the prediction of preterm delivery and intraamniotic infection. [13] One of these biomarkers may perform proteins detected during pregnancy in human cervix-vaginal fluid (CVF cervical-vaginal fluid proteins), which are a reflection of the local biochemical environment of the vagina condition, cervix and adjacent overlying fetal membranes. The prognostic significance of these proteins has become even more promising with the opening of their resistance to vaginal flora and semen. Research and search for these proteins goes on, some of them have already been successfully isolated and demonstrated the relationship with premature birth. [10] A thorough study of the composition of cervico-vaginal fluid (CVF cervical-vaginal fluid) revealed high levels of interleukin-6 in cases of subclinical chorioamnionitis at the whole sac. Production and implementation of rapid test on cervicovaginal interleukin-6 may be useful in the diagnosis of chorioamnionitis most likely to justify amniocentesis or transfer the pregnant woman on a higher level of care. [8]

Studies on the molecular mechanisms underlying spontaneous preterm birth showed that DNA methylation change of fetal umbilical cord can be used as a marker. DNA samples of umbilical cord blood obtained by cordocentesis, are an easy source of material for research. Violation of methylation plot strand of DNA coding for myosin light chain 4 is a reliable prognostic factor for idiopathic preterm labor. [18]

By etiological factors could be considered a higher risk of preterm birth for various environmental variables, such as air pollution, increased noise and high air temperature in the big city on the example of Madrid. A retrospective analysis of all cases of premature birth in Madrid showed a slight increase in the number of spontaneous preterm birth in the daytime, in 14chasov 30min, in the period of maximum increase of noise, smoke and temperature. [17]

The American College of Obstetricians and Gynecologists Research revealed several controversial facts. Studies have shown that there is no clear connection between proven cervical shortening and binding premature termination of pregnancy. Careful assessment of multiple risk factors in women, in order to avoid unnecessary hospitalizations and possible iatrogenic effects, in particular the use of corticosteroids. cervical shortening is practical and prognostic significance only in conjunction with a test for fetal fibronectin. [7] The quantitative analysis on fetal fibronectin in the period from 18 to 21 weeks of gestation is valuable in predicting spontaneous preterm labor very early. Various concentrations allow you to choose one or the other tactics pregnant. [14] Alternatively, the risk threshold is 10 ng / mL or less, and the concentration of 200 ng / ml indicates an increased risk of spontaneous preterm birth, which is especially important for asymptomatic women with a short cervix [15].

Research scientists in Pakistan have revealed that one of the leading risk factors for preterm birth was iron deficiency anemia in pregnant women. During pregnancy, there are high demands to the woman's body on the synthesis and patients with iron deficiency anemia have been compromised by a high risk of birth weight infants, preterm birth and perinatal mortality [5].

Careful examination of medical history of patients with preterm labor revealed a greater likelihood of preterm birth in women who themselves were born from spontaneous preterm birth [16].

Thus, premature birth is an actual problem of modern health care. The number of premature births has no tendency to decrease, and late diagnosis leads to large economic and social costs to society due to the high risk of morbidity and disability in children. Joint research scientists in the world in search of reliable predictors will improve preterm birth outcomes for mother and child. And it is to this issue, I want to quote from Socrates: "The more I learn, the more I realize that I know nothing ...».
LIST OF REFERENCES

 Ajlamazjan Je. K. V. I. Kulakov V. E. Radzinskij G. M. Savel'eva. Akusherstvo. Nacional'noe rukovodstvo [Obstetrics. National leadership]. Moscow: GeOTAR-Media, 2015, 250-258 p.

2. Klinicheskij rotocol MZ RF «Prezhdevremennye rody» ot 17.12.201Zg №15-4/10/2- 9480 [The Russian Ministry of Health Clinical Protocol "Premature birth" from 17.12.2013. №15-4 / 10 / 2- 9480]

3. Sidel'nikova V.M. Antonov A.G. Prezhdevremennye rody. Nedonoshennyj rebenok [Premature birth. Premature baby]. Moscow: GeOTAR , Media 2006, 448 p.

4. A core outcome set for evaluation of interventions to prevent preterm birth. / Van 't Hooft, Janneke MD; Duffy, James M. N. MD; Daly, Mandy MSc et al. // Obstetrics & Gynecology: January 2016 _ Volume 127 Issue 49-58. _ 1 _ р Doi: 10.1097/AOG.000000000001195.

5. Anemic patients; relationship of frequency and severity of iron deficiency anemia with preterm labor and eventual perinatal outcome. / Majeed, Tayyaba, Adnan, Rabia, Mahmood, Zahid et al. // Professional Medical Journal. 2015, Vol. 22 Issue 12, p1550-1554. 5p. 6 Charts.

6. Cause of preterm birth as a prognostic factor for mortality. / Delorme, Pierre MD; Goffinet, François MD, PhD; Ancel, Pierre-Yves MD, PhD et al. // Obstetrics & Gynecology: January 2016 – Volume 127 – Issue 1 – p 40–48. Doi: 10.1097/AOG.00000000001179

7. Corticosteroid use in the face of threatened preterm labor. / Cabbad, Michael Frederick MD; De Los Heros, Daniel MD; Baltajian, Kedak Zovac MD et al. // Obstetrics & Gynecology: May 2015. Doi: 10.1097/AOG.0000463737.77543.37. Sunday, May 3, 2015

8. Detection of microbial invasion of the amniotic cavity by analysis of cervicovaginal proteins in women with preterm labor and intact membranes. / Combs CA; Garite TJ; Lapidus JA et al. // American Journal Of Obstetrics And Gynecology 2015 Apr; Vol. 212 (4), pp. 482.e1-482.e12. Date of Electronic Publication: 2015 Feb 14.

9. Express study shows significant regional differences in 1-year outcome of extremely preterm infants in Sweden. / Serenius, Fredrik Sjörs, Gunnar Blennow, Mats et al. // Acta Paediatrica. Jan2014, Vol. 103 Issue 1, p27-37. 11p.

Human cervicovaginal fluid biomarkers to predict term and preterm labor. / Yujing
 J. Heng, Stella Liong, Permezel, Michael et al. // Frontiers in Physiology. May2015, Vol. 6, p1 18. 18p.

11. Itabashi, Kazuo. / Mortality and morbidity risks vary with birth weight standard deviation score in growth restricted extremely preterm infants. / Itabashi, Kazuo, Kusuda, Satoshi.

// Early Human Development. Jan2016, Vol. 92, p7-11. 5p.

12. Obstetrics & Gynecology. 127(1):190-191, January 2016. Practice Bulletin No. 159 Summary management of preterm labor.

Predicting preterm labour: current status and future prospects. / Georgiou, Harry M., Di Quinzio, Megan K. W., Permezel, Michael et al.// Disease Markers. 6/15/2015, Vol. 2015, p1-9. 9p

 Quantitative fetal fibronectin at 18 weeks of gestation to predict preterm birth in asymptomatic high-risk women. / Hezelgrave, Natasha L. BSc; Abbott, Danielle S. BSc; Radford, Samara K. BSc et al. // Obstetrics & Gynecology: February 2016 – Volume 127 – Issue 2 – p 255– 263. Doi: 10.1097/AOG.00000000001240

15. Quantitative fetal fibronectin to predict preterm birth in asymptomatic women at high risk. / Abbott, Danielle S. MBBS; Hezelgrave, Natasha L. MBBS; Seed, Paul T. MSc et al. // Obstetrics & Gynecology: May 2015 – Volume 125 – Issue 5 – p 1168–1176. Doi: 10.1097/AOG.00000000000754

16. Risk for preterm and very preterm delivery in women who were born preterm. / Boivin, Ariane PhD; Luo, Zhong-Cheng MD, PhD; Audibert, François MD, MSc et al. // Obstetrics & Gynecology: May 2015 – Volume 125 – Issue 5 – p 1177–1184. Doi: 10.1097/AOG.0000000000813

17. Short term effect of air pollution, noise and heat waves on preterm births in Madrid (Spain). / Arroyo, Virginia, Díaz, Julio, Ortiz, Cristina et al // Environmental Research. Feb2016, Vol. 145, p162-168. 7p.

The idiopathic preterm delivery methylation profile in umbilical cord blood DNA.
 / Fernando, Febilla, Keijser, Remco, Henneman, Peter et al. // BMC Genomics. 9/30/2015, Vol. 16
 Issue 1, p1-12. 12p.

19. Transplacental transfer of azithromycin and its use for eradicating intra-amniotic ureaplasma infection in a primate model. / Acosta, Edward P., Grigsby, Peta L., Larson, Kajal B. et al. // Journal of Infectious Diseases. Mar2014, Vol. 209 Issue 6, p898-904. 7p.

1' 2016

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CLINICAL CASE

E. F. Argunova, S. N. Alekseeva, O. N. Ivanova, S. A. Kondratyeva, O. V. Yadreeva, N. A. Sleptsova, E. V. Khryukina, A. A. Sivtseva Congenital Syphilis in the Composition of the Mixed Infection in a Child One Month of Life

ABSTRACT

This article deals with the clinical case of early congenital syphilis in the 1 month child, admitted to the Oncology Department of the Pediatric center of Republican hospital N_{21} – National Center of Medicine and the Children's City Hospital N_{22} . Complaints on admission to the hospital were rashes all over the body, yellowness of the skin, general weakness. The child was diagnosed with a congenital mixed infection: early syphilis, cytomegalovirus, herpes, chlamydia, mikoplazma.

The patient was examined by specialists: a neurologist, a hematologist and dermatologist. Dermatologist recommended treatment with penicillin in a dose 100 thousand kg/day, divided into 6 injections over 28 days. In addition, neocytotect intravenously in age dose according to the scheme, immunovenin within 3 days. Also there was conducted hemocomponent substitutional, symptomatic therapy and albumin. On the background of such treatment the child's condition has improved and he has no longer a temperature, put on weight.

Keywords: syphilis, newborn, anemia, Mycoplasma infection, Chlamydia, herpes, thrombocytopenia.

INTRODUCTION

In Russia and other countries, after a period of relatively low and stable in the incidence of syphilis in the 1980-ies, it was observed a steady tendency of its growth since 1990 [1, 2]. The persistence of high rates of syphilis can be explained by the influence of a number of factors: the deterioration of the socio-economic situation, the transformation of sexual culture and behavior of the population, changes in the system of clinical supervision and identify contact persons [1, 4]. Serious health problem remains congenital syphilis, acquired syphilis in children and adolescents, syphilis infection in pregnant women. Violation of fetal development on the background of intrauterine infection, usually combined with a reduction in adaptation of the newborn in the neonatal period, impaired physical and intellectual development of children in the postnatal period

[5, 6]. According to official statistics the number of children suffering from early congenital syphilis (PBC) in 2005 was 325 persons, in 2006 – 321, in 2007, 325 in 2008. – 249, in 2009 – 190 [3].

The actuality topical issues: of timely diagnosis and adequate therapy of this disease. In the process of diagnosis of PBC is of great importance in the differentiation of the latent form of the disease from the symptomatic.

The aim of this article: to show the peculiarities of the course of congenital syphilis on clinical example

THE RESEARCH RESULTS

The clinical case of early congenital syphilis in the child 1 month. Boy A. S. at the age of 1 month. 12 days was admitted to the Oncology Department of the pediatric center of Republican hospital $N \ge 1$ – National center of medicine (RB $N \ge 1$ – NCM) from ulus with a referral diagnosis of severe anemia, thrombocytopenia and acute leukemia. Complaints on admission to the hospital with rashes all over the body, yellowness of the skin, General weakness.

The child's mother is 19 years old. The boy is from the 1 pregnancy, desirable. The first and second half of pregnancy proceeded with toxicosis, anemia. Childbirth in the period of 40 weeks, natural delivery without complications. During pregnancy the mother of the child was registered, but on obstetric examination was not regularly. Reaction of microprecipitation (RMP) RW the mother during pregnancy with the words was negative. Body weight at birth – 3050 g, length – 48 cm, chest circumference – 34 cm, head circumference – 33 cm Estimation on Apgar scale 8/9 points, cried at once, screaming loud. To put the breast in the delivery room, sucking actively. Umbilical remnant fell on the 5th day in the hospital. On day 7 was discharged home. From birth on breastfeeding. Immunizations by age (BCG, the vaccine against hepatitis b) made in the nursing home. Reactions to vaccinations were not.

According to his mother from the moment of birth the child is marked ikterichnost, pale skin. At 3 weeks of age the mother noticed an increase the volume of the stomach. At the age of 1 month. 10 days got a rash on the body, which appealed to a district clinic. On the same day the child was hospitalized in children's Department of the Central ulus hospital. In the complete blood count at admission revealed lymphocytic leucocytosis, normocytic normochromic severe anemia, accelerated erythrocyte sedimentation rate (33,7 leukocytes x 109/l, erythrocytes of 1.29 x 1012/l, hemoglobin 50 g/l, stab neutrophils 9 %, segmented neutrophils 21 %, lymphocytes 60 %, monocytes 10%, ESR 71 mm/h). On the second day of hospitalization the boy by ambulance aircraft delivered in the Republic of Sakha №1-NMC Pediatric center in the Department of Oncology. In such grave condition was hospitalized to the intensive care unit. The condition is

1' 2016

regarded as serious. The body temperature of 37.5°C. Skin is pale yellow in color, rash on the face, all over body erythematous-papular in nature (Fig. 1). The rash fades when pressed. The sclera and visible mucous membranes icteric and pale. Peripheral lymph nodes were not enlarged. Musculoskeletal system without visible pathology. Breathing through the nose free, groaning. Puerile breathing, wheezing no, NPV 50 min. thorax cylindrical shape. Heart rate 124 per minute. Pulse rhythmic, satisfactory filling. The boundaries of the heart are not changed. Heart sounds are clear. Systolic murmur at the apex. Tongue moist. The abdomen is soft, painless, swollen. The liver acts from under the costal margin to 5.0 cm, densely-elastic consistency, smooth edges, the spleen acts – 5.0 cm thick. In the hemogram on the day of hospitalization remains leukocytosis, severe anemia, thrombocytopenia, accelerated ESR (leukocytes 31,6 x 109/l, erythrocytes of 1.36 x 1012/l, hemoglobin of 45 g/l, MCV 101,0 FL, MCH of 33.0 PG, MCHC is 32.8 g/DL, RDW-CV of 18.5 %, RDW-SD of 67.6 fl; platelets 25 x 109/l; metamyelocytes 1,0 %, stab neutrophils 9,0 %, segmented neutrophils 24 %, eosinophils 1.0 per cent, lymphocytes 54,0 %, monocytes 11.0% and normoblasts by 16.0% Erythrocyte sedimentation rate 88 mm/hour). In the biochemical analysis of blood – hypoproteinemia, hypoalbuminemia, hyperbilirubinemia at the expense of both factions, increased levels of transaminases, lactate dehydrogenase (total protein of 44.7 g/l, albumins 18.7 g/l, urea 8.3 mm/l, creatinine 38,9 mm/l, bilirubin total 243,1 µm/l, direct bilirubin 90,3 mm/l, ALT to 125.9 u/l, AST 520 u/l, LDH 1139,5 u/l, glucose of 4.45 mm/l). In General, the analysis of urine proteinuria small to 0.3 g/L. In General, the analysis of cerebrospinal fluid: a small increase in the protein level. RMP RW positive ++++the titer of 1:128, found in the blood of antibodies to Treponema pallidum Ig G and Ig M titer to 11.35. The mother of the RMP RW positive ++++the titer of 1:32 is detected in the blood of antibodies to Treponema pallidum Ig G and Ig M titer 7,44. IFA of cerebrospinal fluid on syphilis: Ig M - 1:640, Ig G - 1:640, RPGA ++++, RMP RW ++++, a caption 1:64. In blood on IFA on pre-natal infections Ig M to a cytomegalovirus are found. In the child's urine are found by polimerazno-chain reaction DNA of a virus of simple herpes, a cytomegalovirus, Chlamydia trachomatis, Mycoplasma hominis, Mycoplasma pneumonia.

1' 2016 115



Fig.1. Patient with a congenital syphilis

Thus, at the child the congenital mixed-infection is stated: early syphilis, cytomegalovirus, herpes, chlamydia, mikoplazma.

The child is examined by experts: neurologist, hematologist, dermatovenerologist. The dermatovenerologist treatment by penicillin in a dose of 100 thousand unit for kilogram is recommended. The pieces/kg/days divided into 6 introductions within 28 days. Besides are appointed intravenously neocitotek in an age dose according to the scheme, immunovenin within 3 days. Also haemocomponent replacement, symptomatic therapy was carried out, albumine was entered. Against such treatment the condition of the child improved, ceased to temperaturit, put on weight. At an extract from a hospital (I carried out to DGKB No. 2 35 of hospital-days) a condition of the child the heavy stable. The health of the child especially doesn't suffer, isn't in a fever. On artificial feeding, sucks actively. Icteric coloring of skin and the visible mucous is less intensive. The stomach palpation painless, by the sizes of a liver and spleen is noted positive dynamics (a liver of +5,0 cm, a spleen of +3,5 cm). For the 28th day from the beginning of an antibiotikoterapiya in blood of the boy of an antibiody to Treponema pallidum Ig M negative, Ig G 1:320, RW a caption 1:16, RPGA +++++. In a hemogramma before an extract leukocytes 9,5 x

109/l, erythrocytes 3,68 x 1012/l, hemoglobin of 102 g/l, p.b. of 2,0%, with / I am the 20th %, lymphocytes of 75%, monocytes of 1%, eosinophils of 1%, platelets 199 x 109/l, SOE of 32 mm/h. In biochemical blood test bilirubin of 104 microns/l, direct fraction of 77,6 microns/l, ALT of 206 Pieces/l, nuclear heating plant of 190 Pieces/l.

Thus, authors gave a striking example of the mixed infections: early congenital syphilis, tsitomegalovirusny, herpes, chlamydial, mikloplazmenny. At this patient the clinic of early congenital syphilis with symptoms, different from the classical description was prevailing that is perhaps connected with stratification of other pre-natal infections.

REFERENCES

I.E. sifilis. Kliniko-jepidemiologicheskie 1. Torshina Vrozhdennyj osobennosti, jepidemiologicheskie aspekty i optimizacija organizacionno-profilakticheskih meroprijatij v sovremennyh uslovijah [Congenital syphilis. Kliniko-epidemiologichesky features. epidemiological aspects and optimization of organizational and preventive actions in modern conditions]. Smolensk, 2010,168 p.

 Zatorskaya N.F. Sovremennaja diagnostika i lechenie rannego vrozhdennogo sifilisa [Modern diagnostics and treatment of early congenital syphilis]: dis. ... kand. med. nauk. Moscow, 2011, 91 p.

3. Zaharova L.A. Varianty, porazhenija serdechno-sosudistoj sistemy u novorozhdennyh, rozhdennyh zhenshhinami s sifilisom [Options, defeats of cardiovascular system at the newborns born by women with syphilis]: dis. ... kand. med. nauk. Moscow, 2010, 132 p.

4. Loseva O.K. Malyigina N.S. Varianty, porazhenija serdechno-sosudistoj sistemy u novorozhdennyh, rozhdennyh zhenshhinami s sifilisom [Options, defeats of cardiovascular system at the newborns born by women with syphilis] J Epidemiologiya i gigiena, 2010, N¹.

5. Ovchinnikova A.A. Perinatal'naja patologija nervnoj sistemy u detej; rozhdennyh zhenshhinami, inficirovannymi sifilisom (principy rannej diagnostiki [Perinatal pathology of nervous system at children; given rise by the women infected with syphilis (the principles of early diagnostics)]: dis. ... d-ra med.nauk, Perm, 2000, 255 p.

6. Mavrov G. Clinical and epidemiolodical features of syphilis in pregnant-women: the course and outcoume pregnancy / G. Mavrov // Gynecol. Obstet. Invest. 2001. - Vol.52. - № 2, P. 114-118.

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Possible Concomitant Neurological and Laboratory Control in the Prevention of Complications after Viral Neuroinfections (with Clinical Follow-up)

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T. M. Sivtseva, V. L. Osakovsky, T.K. Davidova, F. A. Platonov ABSTRACT

The article reports the clinical case of severe acute meningoencephalitis out of the epidemic. We identified serological titer of 1:128 influenza A (H1N1) 09 in the patient with severe acute meningoencephalitis out of the epidemic, which had been reducing from 1:32 to negative in the period of reconvalescence. Taking into the consideration a pandemic situation of influenza A (H1N1) 09 currently it is recommended organization of dispensary observation of patients with viral neuroinfections of any etiology in the Sakha Republic to identify progressive forms of torpid encephalopathy, due to the unpredictable potential effects of the viral interference, not only in the former, unstable foci of Vilyui encephalomyelitis, but also outside of them.

Keywords: meningoencephalomyelitis, torpid encephalopathy, persistence, viral interference, population immunity, dispensary observation, grading assessment of organic neurological micro symptoms.

Abbreviations: VEM – Vilyui encephalomyelitis; ONMS – organic neurological, micro symptoms.

INTRODUCTION

In the Resolution of the Chief state doctor of the Russian Federation 04.08.2009 N \ge 50 (9) epidemiological modern period is characterized, among other features, typical for the region of Yakutia: -development of an influenza pandemic caused by a strain of the virus A/H1N1/09: the identification of new previously unknown infectious agents of humans and animals, - the emergence of rare infectious diseases (legionellosis, psittacosis), activation of the epidemiological process of returning infections (tuberculosis), natural focal infections (HFRS, rabies CCHF), an uncontrolled release or spread of organisms, especially genetically modified, with unknown mechanisms of impact on ecosystems.

Taking into account the recommended measures of prevention and development of treatment of the planned monitoring for communicable and non-communicable diseases, development and functioning of the system of environmental monitoring should take into account regional features of biological ecosystems. In the Republic of Sakha, in our opinion, it is necessary to pay attention to the state of population immunity of the indigenous population. At the population

1' 2016 🕋 🔨

level examines the role of immunity as a selective factor determining genetic polymorphism and adaptation of populations to infectious conditions of the danger zone of life (5). In this sense, it is impossible not to take into account the "secular" formation of the immune system of the Sakha people, as well as representatives of indigenous peoples of the North (evens, evenks and others) in extremely harsh climatic conditions, lack of food, suffering from many infectious diseases (4,7). In terms of the formation of the multidimensional and multifunctional computer database, analyzing not separate isolated biological event or biological factors, and their actual quantitative relationships and interactions in medical and environmental systems (1), you should consider multi-year biomedical development, which to date has not been given due attention.

In particular, this applies to the "disappearing" disease of the Vilyui meningoencephalomyelitis (VEM), the epidemic which swept across many regions of Yakutia in recent times (6). To the reasons of failing the isolation of an infectious VEM agent, which according to morphological studies defined as the persistent virus (7), as well as the gradual self-destruction of the VEM epidemic , you can, among other assumptions, to include the mechanisms of viral interference in combination with increased intensity of population immunity.

Interference may occur between strains of the same virus (homologous interference), and between viruses of different in immunological respect (heterologous interference) that is used in the development of new approaches in combating dangerous viral infections (10). Interfering activity, and sensitivity to the interfering action have almost all infectious viruses. It is reasonable to assume that the reduction in the incidence by the VEM deaths cases during spreading of the disease by migrants from the Vilyuy district to a more favorable life conditions of the Central regions of Yakutia (6) occurred against the backdrop not installed yet natural viral interference or the background throughout prevaccination introduced population. This seemingly positive development may be unsustainable against the background of modern influenza pandemics as it is most often severe, reliable acute VEM has developed on the background of flu-like conditions.

The study of the state system of interferons as well as intrathecal synthesis of immunoglobulin IgG in VEM (6,8) focused on the diagnosis of a current of inflammatory process in the CNS of the patient of chronic VEM and to identify predisposition to the disease in patients at risk. The latter include practically healthy persons from social environment authentic VEM patients, and persons with detectable so-called torpid encephalopathy (TE) (2,3,6). Recommendations scoring of severity of TE organic neurological micro symptoms (ONMS) is used as following subchronic and latent clinical manifestations of the VEM, and in the dynamics of observation of patients after acute neuroinfections of unknown etiology. This methodology, although focused mainly on establishing the functional component of the neurological clinical

diagnosis, however, allows to identify relevant, gradually progressing TE ONMS with 3-4 degrees of severity, to prevent the development of progressive forms of subacute, chronic and fatal stages of slow infection VEM (2,3).

Clinical and epidemiological observations Vladimirtsev A. I. (1986) showed the possibility of development of authentic VEM TE up to 27 years for 4.3% of registered patients with ONMS risk. Observations of the last 3 decades have identified 20 such patients with increasing ONMS to pathologic state similar to reliable, chronic VEM.

With this in mind, we recommend you to apply the methods of grading assessment of ONMS in patients undergoing acute serous meningoencephalitis of unknown etiology in stable and unstable foci of VEM.

ONMS algorithm, described in detail in our previous work (3), may consist of the manifestations of the Cerebro-asthenic syndrome and psychovegetative disorders with their symptoms, drillable standard battery of neuropsychological tests. The existence of vestibulopathies, pyramidal, cerebellar syndromes, movement disorders it is convenient to clarify the generally accepted scale of Lindmark (11).

ONMS-1, can be characterized by the presence of two or more easily expressed symptoms (impairment of one of the XII pairs of cerebral nerves, even the brisk reflexes, rare singular pyramidal signs) alltogether do not fit within an explicit syndrome; but ONMS-2 – several symptoms (often pyramidal), lively up to 2 -3 degrees of symptoms that characterize the mild syndrome with the presence of non-permanent complaints asthenic content; the increase in the intensity of complex syndromes from ONMS-3 to ONMS-4 marked disorders from mild to noticeable. When ONMS-4 possible the appearance of dysarthria, dysphagia, asymmetric increase of the deep reflexes, increase of the latent paresis of the extremities (syndromes Barre-Mingazzini, automatic pronation of the hand), variance of muscle tone in the extremities, change from slightly disorders of walking to ataxia, spasticity, frontal dysbasia. The appearance of pathological extensor and flexor reflexes (symptoms Babinski, Rossolimo, etc.), reflexes of oral automatism, pyramidal spinal homo - and/or heterolateral phenomena like Balducci's, central disorders of urination, constipation should be alerted.

The severity of encephalopathy from OHMC3 to ONMS-4 is determined not only by severity of individual symptoms, but a combination of complex syndromes.

For torpid encephalopathy VEM more typical is the gradual increase of bilateral pyramidal syndrome, with the shimmer observations in the dynamics of other syndromes. However, the accuracy of the diagnosis of VEM, especially at the stage of TE is determined by the process of

elimination of post-traumatic, vascular, somatogenic encephalopathies, tumors, brain aneurysm, TIA, antiphospholipid syndromes and other diseases.

The functional component of the neurological diagnosis at such a detailed dynamic monitoring allows you to monitor the effectiveness of assigned courses of treatment with antioxidants (mexidol, cytoflavin, noben), neuro - and vascular protectors (cerebrolysin, ceraxon, tanakan, ginkgo biloba), tranquilizers, nootropics (tenoten), vitamin B1, B6, E, C; immunomodulators.

In order to demonstrate the effectiveness of this event here is an extract from a medical card of the patient who suffered acute viral meningoencephalitis severe, revealed a high serological titre of influenza A(H1N1)09.

An extract from a medical card of the stationary patient No. 673.

Name: SAA. Date of birth: 08.03.1997/ 18 yrs old;

Residence: Suntarsky district, v. Suntary

Clinical diagnosis (primary): Acute meningoencephalitis of unknown origin, severe severity, stupor.

Related: Acute respiratory disease with an acute nasopharyngitis.Vegetovascular Dystonia with paroxysmal disorders due to psycho-emotional load at the time of the Unified State Exam.

From the anamnesis of disease: Acute disease onset from the 04.06.2015.

04.06.15. in the morning it was good health and spirits; during the day, while the exam in the school she turned to the nurse with complaints of weakness and dizziness, observed temperature rise to 38.2° C, BP=110/80 mm.Hg. Then she lost consciousness, was observed convulsions; foam from the mouth, bite the tongue was not. By ambulance she was taken to the medical ward with a diagnosis of situational conditions, anemia. In the Therapeutic Department cerebral symptoms were revealed –stiff neck is up to 3-4 cross fingers;repeatedtonic-clonic seizures (20 times), she did not recognize relatives, was hallucinating. With suspicion on a serous meningitis she was transferred to the Department of resuscitation and intensive therapy.In General analysis of blood leukocytosis $14 \times 10^{9/1}$ In CSF analyses without pathology.

Her disturbed consciousness up to sopor in the morningon 05.06.2015, she did not recognize relatives, was disoriented in place, time.Muscle tone of extremities increased periodically, rigidity of muscles of neck continued. The leukocytosis increased to 32 x10 ^{9/1}. The bacterial inoculationfrom the CSF wasnegative on 05.06.2015. Treatment (including zovirax) conducted on the recommendation of the correspondence consultations of main specialists of Yakutsk. Against the background of treatment without improvement, therefor her sent by an air ambulance to the Emergency Department of the Republican Hospital No. 2. She was transferred to the Department

1' 2016 122

of infectious diseases in Yakutsk City Hospital where they spent further examination and treatment with 6.06.2015 on 22.06.2015 with a diagnosis of viral meningo-encephalitis unspecified etiology.

Table 1

Date	Protein	Cell count	Glucose		
	(mg/l)	(per 1 mm3)	(mmol/l)		
05.06.2015	33,0	1	-		
06.06.2015	0,099	5	3,6		
10.06.2015	50,0	2	3,88		
26.07.2015	-	10	3,1		

Dynamics of indicators of the General analysis of cerebrospinal fluid of the patient SAA

Conclusion EEG from 11.06.2015: Moderate diffuse changes in the activity of cortical neurons with signs of involvement diencephalon-stem structures of the brain. Epileptiform activity was not detected.

Brain MRI from 08.06.2015: In both frontal lobes are defined by small foci of leuckopathy sizes up to 0.3 cm. Conclusion: MRI signs of residual encephalopathy.

During treatment, despite a positive dynamics has been a violation of the sleep phases . The double vision passed. Stool after enema. Meningeal symptoms were registered before 15.06.15. Hypertonicity of the muscles of the right leg decreased 16.06.15, movement in the leg appeared (lifts one leg in bed).Stiff neck,Kernig symptoms from 16.06.15 became negative. Remained bradylalia, appeared tactile and painful sensitivity in the right leg. 17.06.15. consulted by a neurologist, recommended to prepare for transfer to reabilitation treatment in the neurological Department. However, at the insistence of the mother of the patient and the patient was discharged with improvement 22.06.15., recommendations treatment with nootropics, vitamins of group B.

T he patient was actively called for a consultation three weeks later. When viewed from 15.07.15. complained of fatigue, decreased background mood, loss of memory (forget all the formulas in physics, mathematics), weakness, insufficient sleep, constipation, no period.

In neurological status from 15.07.2015 – Only the mild failure of convergence of the eyeball to the right and a small deviation tongue to the right. Called proboscis reflex, Marinescu-Radovici from both sides, mandibular reflex.Determined ONMS 3 degrees in the form of pyramidal syndrome with extremity paresis. Neuropsychological examination revealed moderately expressed depression, lightly mnestic-cognitive disorders. The patient was again hospitalized for examination and treatment in the infectious diseases Department from 22.07.15 to

27.07.15. In General and biochemical blood tests, urine tests without deviation from the norm. A positive result of serological titer A(H1N1) 09 was received by the time of re-admission of the patient to the infectious Department.

In the first serum blood from 08.06.15 - A(H1N1) 09 - negative; II serum (17.06.15) titer of 1:128; serum;III titer - 1:32; in the serum .IV - negative.

The results of PCR for identification of influenza strains (A, b, A (HINI), A(HINI)v, A(H3N2), A(H5N1) negative.

Health has improved on the background of the treatment. In neurological status from 24.07.15 were not registered syndromes Barre, muscle tone normal, power is 5 points in all the joints of the limbs. In the future, the patient could prepare for the entrance exams and entered the financial-economic faculty; however, after 2 months, dropped out, there were problems with memorization of the material, the phenomenon of lumbar radiculopathy with pain syndrome was recorded, an anxiety attack was registered too. Continues to be monitored by a neurologist on a residence with ONMS -3.

In connection with the identification of the titre of antibodies to influenza A(H1N1) 09, a survey was conducted in the nidus according to the place of residence of the patient at contact classmates, the result was negative.

DISCUSSION

In this case during dispensary surveillance of the patient lasting more than 6 months, who previously treated for severe viral meningoencephalitis 16 patient-days, encephalopathy with ONMS 3 severity degrees was identified after 6 weeks of the onset in the form of pyramidal insufficiency with extremity paresis. Identifying the strain of influenza A(H1N1) 09 have assumed that the patient SAA was the virus carrying of this strain which became more virulent under the influence of hypothermia and stress syndrome (surge). The history of the problem registers sporadic cases of influenza this form during seasonal epidemics. This case should alert in the current situation, the emerging pandemic of this strain of influenza, complications of which with lethal outcomes more often is pneumonia.

Judging by the anamnesis and the results of the brain MRI, the patient had weakness of the Central nervous system in the form of residual (somatogenic) encephalopathy with foci of leukohpathy. The reason o the encephalopathy could be of the patients glomerulonephritis which manifested from age of three years, then the girl was treated for more than 6 years. The development of acute severe meningoencephalitis with coma, stupor, and epileptic seizures characterizes the strain A(H1N1) as possible with the skills of long-term persistence after a latent infection, worsening with the defeat of the Central nervous system of the patient, especially on the

background of premorbid encephalopathy. If in this case there is a recovery with residual effects in the form of ONMS-3, it is unknown what impact possible on the background of torpid encephalopathy the nature of the VEM.

In the Resolution of the Chief state doctor of the Russian Federation 04.08.2009 № 50 "On measures to implement powers of a single Federal Centralized system of state sanitary and epidemiological supervision in the sphere of ensuring biological and chemical security"

CONCLUSIONS, PROPOSALS

This case adjusts to necessary medical examination of patients suffering from acute postinfluenza and other viral meningoencephalitis according to the method of graded assessment OHMS in the torpid encephalopathy of different etiology:

- 1. In identifying patients with ONMS, progressing from 2 to 3-4 the severity of the observation is not to stop for at least 3 years, at intervals of 3, 6, 12, 24, 36 months.
- 2. When identifying such a patient from the sustained VEM focus, we recommend more long-term (possibly lifelong) follow-up even in case of stabilization of progradience.
- 3. It also reveals the increasing epidemiological factors: laboratory decoding for 2015 from 430 cases of influenza strain A(H1N1) was detected in 24 (5,58%) and in 2016 according to PCR data from 171 in 34 (19,8%), similar evidence of growth of epidemic risk does not preclude the creation of conditions of possible formation of complications on the Central nervous system of the patient, as shown in the example under discussion the occasion. In these conditions, as an additional criterion necessary to continue use of the clinical examination of the titre of antibodies in serological tests, PCR data, oligobands IgG, interferons, bearing in mind the impact of viral interference and some mechanisms of persistence of the pathogen.

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REFERENCES

1. BelyakovV. D. Semenenko T. A. Shraga M. Kh. Vvedeniye v epidemiologiyuinfektsionnikh I neinfektsionnikhzabolevaniytsheloveka [Introduction to epidemiology of infectious and non-communicable diseases].Moscow: Medicina, 2001, pp. 5-36.

2. Vladimirtsev A. I. Kliniko-epidemiologicheskiyenablyudeniya v ochagakhvilyuiskogoentsefalita[Clinical and epidemiological surveillance in foci of Vilyuisk encephalitis] Avtoref., diss.,kand., med.,nauk. [Author Diss. candidate med.,sciences], Novosibirsk, 1986, 20 P.

1' 2016

3. Vladimirtsev V. A. Otsenka sostoyaniya epidemicheskogo iinfektsionnogo protsessov vilyuiskogo entsefalomielita po rezultatam patomorfologicheskoy ekspertizy [Assessment of the status of the epidemic and infectious processes of the Vilyui encephalomyelitis by the results of pathomorphological examination] Zh-l Sibir-Vostok [Siberia-East], 2002, No. 5, pp.3-7.

4. Vladimirtsev V. A. Sivtseva T. M. Davydova T. K. Osakovsky V. L. Karganova G. G. Platonov F. A. Vliyanie menyayushchichsya sotsialno-bytovych usloviy I charaktera pitaniya aborigennogo naseleniya na dinamiku epidemicheskogo protsessa viliuyskogo entsefalomyelita[The impact of changing social conditions and diet of the indigenous population on the dynamics of the epidemic process of Vilyui encephalomyelitis] Jakutskij medicinskij zhurnal [Yakut medical journal]. 2015, No. 3 (51), pp. 61-64.

5. Galaktionov V. G. Immunologiya. - 3-e izd.,ispr., I dopoln. [Immunology – 3- ed., rev. & enl.] Moskva: Akademiya, 2004; P. 522,1 p.

6. Goldfarb L. G. Vladimirtsev V. A. Renwick N. M. Platonov F. A. Vilyuyskiy meningoencephalomyeli / monographiya [Vilyuyskymeningoencephalomyeltis /monography/] Severo-Vostochniy Federalnyj Universitet im M.K. Ammosova. Nauchno-issledovatelskiy institute zdorovya. [The North-Eastern Federal University named after M. K. Ammosov; Research Institute of health]. Novosibirsk, 2014, P.256.

7. Kolpakova T. A. Epidemiologicheskoe obsledovanie viliuyskogo okruga YASSR [Epidemiological survey of Vilyui district of the Yakut ASSR] ANSSSR. Trudy soveta po izucheniy u proizvoditelnych sil. SeriyaYakutskaya. Vipusk 12. Red., prof., A.A. Vladimirov. [AS USSR. Proceedings of Council on study of productive forces.Series Yakut] Isd. AN SSSR, Leningrad, 1933, P. 292.

8.Osakovsky L. V. Sivtseva T. M. Krivoshapkin V.G. Immunopathologiya viliuyskogo entsefalita
[Immunopathology of the Vilyui encephalitis] Neuroimmunologiya, 2012, V. X, № 3-4, pp. 22-27.

9. Postanovlenie glavnogo gosudarstvennogo vracha RF "O merach po realizatsii polnomochiy edinoy Federalnoy Tsentralizovannoy sistemy gosudarstvennogo sanitarno-epidemiologicheskogo nadzora v oblasti obespecheniya biologicheskoy I chimicheskoy bezopasnosti [The resolution of the Chief state doctor of the R F. 04.08.2009 № 50 "On measures to implement powers of a single Federal Centralized system of state sanitary and epidemiological supervision in the sphere of ensuring biological and chemical security"] Zh-l Sanitarniy vrach, No. 1,2010.pp. 45-50.

 Seibel V. B. Malyshkina L. P. Problema likvidatsii polyomielita kak infektsii trebuet inogo resheniya [The problem of eradication of poliomyelitis as infection requires a different solution] Meditsinskaya virusologiya, 2014, Vol XXVIII (1), pp. 30 – 37.

11. Skoromets A. A. Skoromets A. P. Skoromets T. A. Nevrologicheskiy status i ego interpretatsiya [The neurological status and its interpretation] Medpress-inform; 2009, P. 240.

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1' 2016

EXPERIENCE EXCHANGE

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Comparative Analysis of the Forms and Types of the Lower Extremities Using Anthropometric Indexes

ABSTRACT

In order to conduct a comparative analysis of linear longitudinal, transverse and girth dimensions of the lower extremities and determining patterns proportionality of their structure in various forms of the girls at the age from 17 to 20 of the Saratov region morphometric research was carried out. The basic variants of the anatomical configuration of the free lower limbs; indexes limb proportions depending on their shape; indexes lower limb proportions to the total length of the body depending on their shape; the incidence of various forms of lower limb at brachi -, meso - and dolihomorphic types.

Keywords: lower extremities, morphometric research, the shape of the lower extremities, anthropometric indexes.

INTRODUCTION

Today man has become the object of study of many natural and social sciences. The necessity to study the wave-individual variability of the huge mass of the body shapes of the population determined by the processes of acceleration and retardation, particularly regarding the young age when most of the anthropometric indicators stabilized, knowledge of which is essential for evaluating the prognostic significance of the demographic situation in Russia, clinical medicine and sociology, and finally formed human somatic [1,2,4,5,9].

For a reasoned judgment about the individual characteristics of the lower extremities, including age information about the proportionality of their structure is extremely important. To determine the proportions of the individual segments of the lower limb proportions usually expressed their size as a percentage of the total length of the limb.

The purpose of the research was to investigate the variability of linear longitudinal, transverse and girth dimensions of the available lower limbs and defining patterns of the proportionality of their structure of girls at the age from 17 to 20 years of the Saratov region.

MATERIALS AND METHODS OF RESEARCH

Body morphometry with in-depth study of the metric parameters of free lower limb was conducted among 148 girls at the age from 17 to 20, components the Slavic ethnic group.

1' 2016

For a comparative analysis of the basic sizes and shapes of the lower limbs was determined their full length and the length of the individual segments [6]. To determine the ratio of the individual parts of the body size (aspect ratio) used the most common and available to the general practice - technique index. We studied the following indices:

1) (The length of the lower limb x 100) / length of the body;

2) (The length of the hip x 100) /The length of the body;

3) (The length of the shin x 100) / Thelength of the body;

4) (The length of the foot x 100) / The length of the body;

5) (The length of the hip x 100) / The length of the lower limb;

6) (The length of the shin x 100) / The length of the lower limb;

7) (The length of the foot x 100) / The length of the lower limb.

Depending on the ratio of the legs' length/ body length of the entire contingent surveyed divided into 3 groups: women with dolihomorphic (M+ σ), mesomorphic (M± σ) and brachymorphic (M- σ) types of lower limbs.

THE RESULTS OF RESEARCH

The research showed that the ratio (the length of the hip x 100 / the length of the body) consist of 51,4% (Table 1). The difference of this indicator among girls with different forms of lower limb is small - only 1,2% (50,7% - 51,9%). The minimum value (the length of the shin x 100) / the length of the lower limb) occurs among girls with a valgus knee clearance form of lower extremities (39,7%), and the maximum - among girls with valgus interfemoral clearance form of lower extremities. The ratio of the foot length to the total length of the lower extremities varies from 25,8% among women with valgus interfemoral clearance form of lower extremities to 27,1% in the group of girls with a valgus knee clearance of lower extremities . The ratio of the lower limb length in the range of 79,9% to 82,6%, with a mean of 81,4% of this value.

1' 2016 129

Table 1

	Indicators														
The shape of	the le	ength c	of the	the le	the length of the the length				of the the length of the				the length of		
the lower	hip	the le	ngth	shin / the length			foot / the length			upper limb /the			thebody/the		the
extremities	of the lower			of	of the lower			the lov	ver	length of the			length of the		
	limb,				limb,			limb,		lo	wer lin	nb,	lo	wer lin	ıb,
		%			%			%			%			%	
	X	σ	Cv	X	σ	Cv	X	σ	Cv	X	σ	Cv	X	σ	Cv
	±		%	±		%	±		%	±		%	±		%
	m			m			m			m			m		
Straight	51,3			40,9			26,5			81,5			57,4		
	±	2,0	3,8	±	2,1	5,1	±	0,8	3,0	±	3,0	3,6	±	2,8	4,8
	0,3			0,4			0,1			0,5			0,5		
Straight with	51.2			/11			260			80.6			56.8		
an	+	19	37	+1,1	15	36	20,0	11	42	+	28	34	-+	25	ΔΔ
interfemoral	04	1,7	5,7	03	1,0	5,0	02	1,1	7,2	06	2,0	5,7	06	2,0	т,т
clearance	0,7			0,0			0,2			0,0			0,0		
Valgus	51,9			40,0			26,6			81.2			57,2		
	±	1,4	2,6	±	1,6	4,0	±	0,9	3,3	+05	3,6	4,4	±	4,2	7,3
	0,2			0,2			0,1			±0,0			0,6		
Valgus	507						258			799			554		
with an	+	15	29	41,5	14	33	+	10	39	+	25	31	+	59	106
interfemoral	04	1,0	2,7	±0,4	1,1	5,5	03	1,0	5,7	08	2,0	5,1	18	0,7	10,0
clearance	0,1						0,0			0,0			1,0		
Valgus with an	51,9			39,7			27,1			82,6			56,6		
knee	±	1,2	2,3	±	0,9	2,2	±	0,7	2,5	±	4,0	4,8	±	8,7	15,3
clearance	0,4			0,3			0,2			1,3			2,9		
Varusrhomboi	50,8			40,9			26,9			82,0			58,7		
d	±	1,7	3,3	±	1,8	4,4	±	1,1	4,0	±	2,6	3,1	±	4,4	7,4
	0,3			0,3			0,2			0,4			0,7		
Varustrapezoid	51.1			41,2			27,0			81,6			57,3		
al	+07	1,7	3,3	±	2,0	4,8	±	1,0	3,7	±	2,2	2,6	±	1,4	2,4
	±0,7			0,9			0,4			0,9			0,6		
Total	51,4			40,6			26,6			81,4			57,3		
	±	1,7	3,3	±	1,7	4,4	±	1,05	3,6	±	3,1	3,8	±	4,3	7,6
	0,1			0,1			0,08			0,2			0,3		

Indexes of the lower limbs in proportions depending on their shape

For general comparative characteristics of lower limb proportions of the individual dimensions of their segments are expressed by us on the conventional method as a percentage of the total body length (Table2).

Table 2

		Indicators										
The shape of the	The	length	of the	The le	ngth of	f the	The le	ngth of	f the	The le	ngth of	f the
lower extremities	lower l	lower limb/ length of			ength o	f the	shin / l	ength c	of the	foot / length of the		
	the	e body,	%	bc	ody, %		bo	ody, %		bc	ody, %	
	X ±	σ	Cv%	X ±	σ	Cv	X ±	σ	Cv	X ±	σ	Cv
	m			m		%	m		%	m		%
Straight	53,6± 0,1	1,0	1,9	27,5± 0,2	1,2	4,3	21,9± 0,2	1,2	5,4	14,2± 0,07	0,3	2,1
Straight with an interfemoral clearance	53,8± 0,2	1,1	2,0	27,5± 0,3	1,4	5,0	22,1± 0,1	0,7	3,1	14,0± 0,1	0,4	2,8
Valgus	53,7± 0,2	1,5	2,7	27,9± 0,1	1,1	3,9	21,5± 0,1	1,2	5,5	14,3± 0,06	0,4	2,7
Valgus with an interfemoral clearance	54,7± 0,6	1,9	3,4	27,8± 0,4	1,4	5,0	22,6± 0,3	1,2	5,3	14,1± 0,1	0,4	2,8
Valgus with an knee clearance	52,6± 0,4	1,2	2,2	27,3± 0,2	0,7	2,5	20,9± 0,2	0,8	3,8	14,2± 0,04	0,1	0,7
Varusrhomboid	53,3± 0,2	1,5	2,8	27,1± 0,2	1,3	4,7	21,8± 0,1	1,1	5,0	14,3± 0,08	0,4	2,8
Varustrapezoidal	53,4± 0,3	0,6	1,1	27,3± 0,4	1,1	4,0	22,0± 0,4	1,0	4,5	14,1 ± 0,1	0,3	2,1
Total	53,6± 0,1	1,4	2,6	27,5± 0,1	1,2	4,5	21,8± 0,09	1,1	5,4	14,2± 0,03	0,4	3,0

Indexes proportions of the lowe	limbs to the total length of the	body depending on their shape
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The ratio of the lower limbs to the total length of the body practically does not differ from women with different forms of feet (52,6 - 54,7%), as well as the ratio of the length of the hip to the total length of the body (27,1% - 27,9%). The maximum value of the index ratio of the length of the shin to the total length of the body occurs among women with valgus interfemoral clearance form of lower limbs (22,6%), and the lowest in the group - with valgus knee clearance form of

legs (20,9%). The ratio of the length of the foot to the total body length among girls with different forms of the lower extremities equally (14,0% - 14,3%).

The incidence dolihomorphic types of lower extremities was 14,8%, mesomorphic types - 84,4% and brachymorphic types - 0,6% (drawing 1).

Dolihomorphic type of lower extremities equally frequent to found at straight form of lower limbs, valgus, valgus with interfemoral clearance and varusrhomboid shaped legs (18.2%) (Table 3). Mesomorphic type - often under the form of valgus (32.0%), and the type of brachymorphic lower extremities is observed only in the varus rhomboid shape.



	The le	ngth of th	e lower li	mb/ leng	th of the bo	dy	
The shape of the lower extremities	Dolihom	orphic	mesom	orphic	Brachimorphic types		
	type	es	typ	es			
	(>55	5)	(50-	55)	(<50)		
	абс.	%	абс.	%	абс.	%	
Straight	4	18,2	23	18,4	0	-	
Straight with an interfemoral clearance	3	13,6	14	11,2	0	-	
Valgus	4	18,2	40	32,0	0	-	
Valgus							
with an interfemoral	4	18,2	6	4,8	0	-	
clearance							
Valgus with an knee	0		10	8.0	0		
clearance	0	-	10	8,0	0	-	
Varusrhomboid	4	18,2	28	22,4	1	100	
Varustrapezoidal	0	-	4	3,2	0	-	

The incidence of various forms of lower limb at brachi -, meso - and dolihomorphic types

CONCLUSION

Thus, for women with different types of leg shapes characterized by certain patterns of lower limb structure proportionality. Average value (the length of the hip x 100) / the length of the lower limb) - 51,4%; (the length of the shin x 100) / (the length of the lower limb)- 40,6%; (the length of the foot x 100) / the length of the lower limb) - 26,6%; the length of the upper limb x 100) / (the length of the lower limb) - 81,4%; (the length of the body x 100)/(the length of the lower limb) - 57,3%. The most common type of mesomorphic lower extremities - 84.4%, type of dolihomorphic lower extremities - 14.8%, and type of brachymorphic lower extremities - 0.6%.

The practical significance of the analysis of variability of linear longitudinal, transverse and girth dimensions of the free lower limbs and the definition of proportionality laws of their structure among girls at the age from 17 to 20 years of the Saratov region will allow to diagnose some diseases; determine the degree of fitness for a particular profession; it will be useful for arts and crafts designers and artists in the study plastic anatomy; for practical anthropology. Information obtained by you may be used in physical education when choosing a sport; on fitness classes for targeted figure correction. Add information about interstate standardization of the population, the results of which are required for the designing clothes in the textile industry [3,7,8].





Fig. 1. The incidence of various forms of lower limb at brachi -, meso - and dolihomorphic types (%)

References

- Alekseev A.A. Nikolaev V.G. Antropometricheskie parametry I proporcional'nost' teloslozhenija devushek 16-20 let s raznymi formami osanki [Anthropometric parameters and body proportionality of girls 16-20 years with different forms of posture] Siberian medical obozrenie [Siberian Medical Review], 2009, Vol. 60, no.6, pp. 35-39.
- Batyasov Y.I. Batyasov V.Y. Ahtjamova R.K. Fizicheskoe razvitie studentov tehnicheskogo vuza [Physical development of students of a technical college] Kazanskij medicinskij zhurnal [Kazan Medical Journal], 2002, no.2, pp. 140-141.
- Belousov A.E. Plasticheskaja, rekonstruktivnaja I jesteticheskaja hirurgija [Plastic, Reconstructive and Aesthetic Surgery]. St. Petersburg: Hippocrates, 1998, 774 p.
- 4. Bekov D.B. Izuchenie individual'noj anatomicheskoj izmenchivosti odna iz zadach sovremenno jmorfologii [The study of individual anatomical variability - one of the problems of modern morphology] Arhivanatomii, gistologiiijembriologii [Archive of Anatomy, Histology and Embryology], 1991, no.7, pp. 85.
- 5. Borodin Y.I., Hrebtova O.M., Mashakah A.N., Izranov V.A. Antropometricheskie pokazateli reproduktivnogo zdorov'ja devushek I zhenshhin ot 13 do 35 let [Anthropometric indicators of reproductive health of girls and women from 13 to 35 years] Morfologicheskie vedomosti: tezisy 5 Obshherossijskogo s#ezda anatomov, gistologov, jembriologov [Morphological statements: abstracts V All-Russian Congress of anatomists, histology, embryology]. Moscow: Berlin, 2004, no.1-2, pp. 15-16.
- Bunak VV Metodika antropometricheskih issledovanij [Technique of anthropometric studies] Uchebno-pedagogicheskoeizdatel'stvovonarkomprosa RSFSR [Educational and pedagogical publishing RSFSR People's Commissariat]. Moscow, 1941, 98 p.

1' 2016

- Nikolaev V.G., L.V. Sindeeva, Nikolenko V.N. Orlov I.I. Antropologicheskoe obosnovanie formirovanija profilakticheskoj sredy v prakticheskom zdravoohranenii [The anthropological study of formation of preventive protection in medical practice] Materialy mezhdunarodno nauchno-praktichesko jkonferencii Problemy sovremenno jmorfologii cheloveka [Proceedings of the International scientific and practical conference Problems of modern morphology cheloveka]. Moscow: RGUFKSMiT, 2013, pp. 23-24.
- Nikolaev V.G., Yusupov R.D., Nikolaev N.N., Orlova E.E. Jetnicheskie osobennosti teloslozhenijanaselenijaVostochnojSibiri [Ethnic peculiarities of constitution of the population of Eastern Siberia] Sovremennye problem nauki I obrazovanija [Modern problems of science and education], 2013, no 4, pp. 1-14.
- Nikityuk B.A. Akseleracija razvitija (prichiny, mehanizmy, projavlenijaiposledstvija) [Acceleration of development (causes, mechanisms, manifestations and consequences)] Itogi nauki I tehniki. Antropologija [Results of science and technology. Anthropology]. Moscow: VINITI, 1989, Vol. 3, pp. 5 - 76.

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The Hemotransfusion Analysis on the Example of Specialized Department of Multidisciplinary clinic

ABSTRACT

The analysis of the carried-out hemotransfusion in coloproctological department of multidisciplinary clinic has shown stable need for the following components of blood: erythrocyte containing environment and fresh frozen plasma.

Development tendencies are transfusion of quarantine fresh-frozen plasma, the erythrocyte containing environment which was exposed to leukofiltration.

Keywords: hemotransfusion, transfusion of components of donor blood, erythrocyte containing environment, fresh frozen plasma, transfusion volume.

INTRODUCTION

Nowadays high efficiency of hemotherapy of purposeful use of cellular and protein components of blood in the patient depending on treatment tactics is obvious. Besides, such tactics gives the chance to use the preserved blood bank rationally [1]. According to the data of the staff of National Centre of Medicine and Surgery named after N. I. Pirogov, the rational expense of transfusion environments promotes the increase of efficiency of health care costs, medical clinics' efficiency, saving national resource of donor blood [2].

According to requirements of applied medicine, the organization of component donorship and fractionation of blood into components, the centralized accounting of the blood components ordered by the treatment-and-prophylactic establishments (MPI) – the most important problems of establishments of blood bank services. MPI keeps obligatory account of the received used and unused components of blood [3].

Research objective. In this article we provide the analysis of hemotransfusion in specialized department of multidisciplinary clinic of Republic hospital №2, Republic center of the emergency care in 2008-2013.

Research material. The coloproctological department (CD) of republic hospital №2 (RH№2) of the center of the emergency care (RCEC) is the only specialized department in the Republic of Sakha (Yakutia) for hospitalization of patients with various diseases of large intestine, anal canal and perinea. Nowadays this department performs operations of different complexity

1' 2016 🕋 🔨

(from I to VI). Operations of high complexity are followed by transfusion of components of donor blood. The name and volumes of the transfused blood components are presented in table 1 for the analyzed period.

Table 1

Name of components	Years									
	2009	2010	2011	2012	2013					
Erythrocyte concentrate	47,568	50,729	36,370	23,777	19,518					
Erythrocyte concentrate,			1,986	16,689	20,964					
filtrated										
Washed erythrocytes	600	566	3,146	2,231	9,748					
Total	48,168	51,285	41,502	42697	50,230					
Fresh frozen plasma	115,578	287,244	127,238	82,591	63,990					
Fresh frozen plasma,			5,470	12,903	1,445					
inactivated virus										
Total	115,578	287,244	132,708	95,494	65,435					
Platelet suspension				3828	750					
Total				3828	750					

The volume of the blood components transfused for the analyzed period, liter

Table 1 data testify that the main used haemotransfusion environments in the department are erythrocyte concentrate and fresh frozen plasma. Growth of volumes of the transfused erythrocyte concentrate is caused by the increased transfusion volumes of the erythrocyte concentrate filtered and washed erythrocytes. The twice decrease of transfused fresh frozen plasma volume has been noted by the end of the analyzed period.

The quantity dynamics of the haemotransfusion environments has been presented in table 2 for the analyzed time.



Name of components	Years									
	2009	2010	2011	2012	2013					
Erythrocyte concentrate	219	230	163	104	92					
Erythrocyte concentrate,		9	9	55	64					
filtrated										
Washed erythrocytes	2		16	10	31					
Total	221	239	188	169	187					
Fresh frozen plasma	195	360	355	198	149					
Fresh frozen plasma,			21	64	3					
inactivated virus										
Total	195	360	376	262	152					
Platelet suspension				6	3					
Total				6	3					
Total	416	599	564	437	342					

The number of hemotransfusions for the analyzed period

The table 2 analysis has shown twice decrease of number of fresh frozen plasma transfusion for the analyzed period, at the same time the number of erythrocyte concentrate transfusions also tends to decrease.



Year	Sex				Ag	e			
		18-29	30-44	45-59	60-74	75-90	90 ↑	Total	Total
2009	М	5	16	38	20	8		87	161
	F	6	9	17	30	11	1	74	
2010	М	6	7	23	26	5		67	137
	F	4	12	22	23	8	1	70	
2011	М	8	9	38	25	9		89	155
	F	5	5	19	21	16		66	
2012	М	7	10	17	30	11		75	146
	F	1	9	22	27	11	1	71	
2013	М	6	23	26	22	11	1	89	172
	F	3	22	22	26	10		83	
Τα	otal	51	122	244	250	100	4	771	771

The distribution of recipients by sex and age

MAIN RESULTS

As you can see, the main haemotransfusion environments are the erythrocyte concentrate and fresh frozen plasma for the analyzed time period.

The increase of transfused volume of erythrocyte containing environment is caused by the gradual transfusion increase of erythrocyte concentrate filtered and washed erythrocytes despite of the decrease of erythrocyte concentrate volume twice.

For the analyzed time period, fresh frozen plasma transfusion was reduced in volume and number almost twice. Besides fresh frozen plasma transfusion inactivated virus had been introduced by 2013.

The greatest number of recipients are elder patients (60-74 years) - 250 and middle age (45-59 years) - 244 for the analyzed years.

The ratio of volumes of fresh frozen plasma transfusion and erythrocytes (table 4) for the last 3 analyzed years remains lower than 2:1.



Name of components	Years									
	20	09	20	10	20)11	20	12	20	13
	Vb	Nh	Vb	Nh	Vb	Nh	Vb	Nh	Vb	Nh
Erythrocyte concentrate	47,	219	50,	230	36,	163	23,	104	19,	92
	568		729		370		777		518	
Erythrocyte concentrate,				9	1,	9	16,	55	20,	64
filtrated					986		689		964	
Washed erythrocytes	600	2	566		3,	16	2,	10	9,	31
					146		231		748	
Total	48,	221	51,	239	41,	188	42,	169	50,	187
	168		285		502		697		230	
Volume of erythrocyte	217,95		214	214,58),75	252,64		268,60	
containing environment per 1										
transfusion										
Fresh frozen plasma	115,	195	287,	360	127,	355	82,	198	63,	149
	578		244		238		591		990	
Fresh frozen plasma,					5,	21	12,	64	1,	3
inactivated virus					470		903		445	
Total	115,	195	287,	360	132,	376	95,	262	65,	152
	578		244		708		494		435	
Volume of fresh frozen	597	,70	797	7,90	352	2,94	364	1,48	430),49
plasma per 1 transfusion										
Fresh frozen plasma:	2,7	:1	3,	7:1	1,6:1		1,4:1		1,	6:1
erythrocyte containing										
environment										

The ratio of volumes of fresh frozen plasma transfusion and erythrocytes

Notes: Vb - volume of the blood components transfused for the analyzed period in the department, liter; Nh - Number of hemotransfusions for the analyzed period.

Indications for transfusion therapy were:

1) extensive surgical operations of tumors and damages of large intestine (IV-VI category

of complexity);

2) reconstructive and recovery operations of large intestine (IV-VI category of complexity);

3) intestinal bleeding in inflammatory bowel disease, diverticular disease, polyps of large intestine;

4) 37 (4,8%) patients from the total number 771 for the analyzed period, the transfusion of erythrocytes has been administered before surgical treatment of the chronic anemia (decrease of hemoglobin level lower than 60-70 g/l) caused by the chronic hemorrhoids complicated by hemorrhoid bleeding.

CONCLUSION

Thus, the analysis of the carried-out hemotransfusion in coloproctological department of multidisciplinary clinic has shown stable need for the following components of blood: erythrocytes containing environment and fresh frozen plasma.

From the total number of recipients 250 (32,43%) are elder people (60-74) and 244 (31,64%) – middle age (45-59).

37 patients (4,8%) were administered hemotransfusion in decrease level of the hemoglobin lower than 60-70 g/l caused by the chronic hemorrhoids complicated by hemorrhoid bleeding.

The ratio of volumes of the transfused fresh frozen plasma and erythrocytes for the last 3 analyzed years remains lower than 2:1.

Development tendencies are transfusion of quarantined fresh frozen plasma, the erythrocytes containing environment which was exposed to leukofiltration.

REFERENCES

1. Vorobyev A.I., Gorodetsky V. M., Shulutko E.M., Vasilyev S. A. Ostraya massivnaya krovopoterya [Acute massive blood loss]. Moscow: GEOTAR-MED, 2001.

2. Selivanov E.A., Danilova T.N., Degtyarev I.N., Grigoryan M. Sh. Sluzhba krovi v Rossii: Sovremennoe sostoyanie i perspektivy razvitiya [Blood service of Russia: modern state and prospects of development] Transfusiology, 2010, No. 4, P. 4-31.

3. Filina N.G., Zhiburt E.B., Klyueva E.A., A.V. Bechmarking Spisaniya v Klinike eritrisitov s istekshim srokom khraneniya [Benchmarking debit in clinic of erythrocytes with the expired period of storage] Transfusiology, 2010, No. 3, P. 28-36.

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BRIEF REPORT

O. N. Ivanova

The Presence of Bacterial, Fungal and Viral Infections in the Group of Children Frequently Having ARVI

ABSTRACT

The article is devoted to an actual problem of modern pediatrics - children, frequently having acute respiratory viral infections. The analysis of the detection of IgG, IgM to the Ebshtein-Barr (EBV) virus, Cytomegalovirus, to HSV, to Mycoplasma pneumonia, Chlamidia pneumonia in the group of children, frequently having acute respiratory viral infections, is done. In the studied group compared with healthy children an increased antibody titer is revealed.

Keywords: cytomegalovirus, Ebstein-Barr virus, chlamydia, mycoplasma, herpes simplex virus.

One of the most representative groups of the child population, requiring attention of a pediatrician, is a group of frequently ill with respiratory infection children. They account for 50 - 60% of all recorded diseases. At large representative statistical material using the method of percentiles is justified, designed and recommended for use following age criteria to define groups of frequently ill respiratory infectionchildren: 0 - 12 months. - 4 or more acute illnesses per year; on the 2nd and 3rd year of life - 6 or more; 4th - 5; 5th and 6th - 4 and more; at the 7th year of life and older 3 and more diseases [1,2].

The **aim** is to study antibodies to the virus Ebstein-Barr (EBV) IgG, IgM, Cytomegalovirus IgG, IgM, IgG antibodies, IgM herpes simplex virus, Mycoplasma pneumoniae, chlamydia pneumoniae in the group of frequently ill respiratory with infection children.

MATERIALS AND METHODS

We conducted a survey of enzyme-linked immunosorbent assay (ELISA) of blood frequently ill with respiratory infection children (more than 12 times per year) (n=200) and 100 healthy children, the clinic of Medical Institute of North-Eastern Federal University named after M. K. Ammosov.

THE RESULTS OF THE STUDY

We detected in the blood antibody titers of the virus Ebstein-Barr (EBV) IgG y 45% of the surveyed frequently ill with respiratory infection children, Ebstein-Barr (EBV) IgM 15.2%, 44% detectable antibodies to Cytomegalovirus IgG, and 18% had Cytomegalovirus IgM. At 19.4% frequently ill respiratory infection children identified IgG antibodies to herpes simplex virus, in

1' 2016 143

16% of frequently ill respiratory infection patients detected IgM antibodies to herpes simplex virus. It has often been noted antibodies to Mycoplasma pneumoniae IgG (56%), chlamydia (46%) in the group of frequently ill respiratory infection children. In the group of healthy children increased in antibody titer significantly lower (antibodies to the virus Ebstein-Barr (EBV) IgM 3.3% and 8% of the detected antibody to Cytomegalovirus IgG, 5% IgM Cytomegalovirus). Conclusions: Thus, the damaging effect on the immune system bacterial-viral infections may have (cytomegalovirus, herpes, Mycoplasma infection).

REFERENCES

1. Balabolkin I. I. Dermo-respiratornyj sindrom u detej [Dermo-respiratory syndrome in children] Detskij doktor [Children's doctor]. 2000, №2, p. 24-26.

2. Nigmatullina G.N. Enikeeva E.G Virusinducirovannye zabolevanija organov dyhanija [Virus-induced diseases of the respiratory system] Tez.dokl. 13-go Nacional'nogo kongressa po boleznjam organov dyhanija [Proc. of the 13th National Congress on respiratory diseases]. SPb., 2003, 106 p.

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