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УДК 616-614.2(=1.571.56-81)

ETHNIC AND REGIONAL ASPECTS OF PATHOLOGY IN POPULATIONS OF THE FAR NORTH NATIVE PEOPLE

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Keywords: native people, Far North, indigenous population.

Summary. The review of the literature is based on the critical analysis of 30 sources, taking up questions of pathology of the Far North indigenous population. The role of a natural inhabitancy, a traditional way of life and a feeding character on formation of health parameters of the Arctic populations is shown.

The adaptation of the extremely condition on the Far North is require homeostatic system change [1,2]. This processes providing by the structural injures and functional change and result to chronic diseases [2,3]. Injures of the adaptation mechanism and destabilization of the high nerve system is provide to high spread of the chronic diseases in the population of the Far North [2,4].

Now for the problem of the health condition native people of the Far north is devoted not enough works in the Russian and world's literature. In some works is presents epidemiology diseases that high spread in this population. The basis interesting for the researchers is epidemiology of the cardio-vascular diseases for northern populations. The majority authors is consider that the ischemic hard disease, hypertension detected to the arctic aborigines not often. Consider that these aspects have a genetic basis and connected especially with traditional lives and foods [5-11].

This article present that the health condition of the aboriginal population on the Far North is determined by the genetics and the adaptation to the extremely condition of the North. The life condition and the nutrition north population not inducted some civilization diseases. And in future exchange a life condition, nutrition is result o the increase hard disease and disease of the

gastroenterology systems. The more disease in future is results of the stress to the social and ecological genesis.

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THE CHANGE OF ANTI-INFLAMMATORY CYTOKINES IN PATIENTS WITH PARAINFLUENZA

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The **aim** was to determine the concentration of anti-inflammatory cytokines (IL-1Ra, IL-4 and IL-10) in the serum of patients with parainfluenza. We **examined** 19 patients with moderate parainfluenza aged 15-54 years who have the disease run a positive, without complications. Blood were taken during the acute period of disease and reconvalescent. Served as control blood of healthy donors (n = 18). **Results**. Defined increase in all investigated cytokines in the acute period of disease and during convalescence. **Conclusion.** We set the activation level of anti-inflammatory "cytokine network" throughout the disease, indirectly indicating the high activity of effector cells of blood, synthesizing data cytokines. The results were used to create an expert system "Quick diagnosis and prognosis of ARVI".

Keywords: parainfluenza, interleukin-1 receptor antagonist, interleukin-4, interleukin-10.

Introduction. Anti-inflammatory cytokines - cytokines, which, even at the minimum (picogram) concentrations, inhibit the activity of cells involved in inflammation, resulting in the inhibition of the general inflammatory response. For anti-inflammatory cytokines include IL-4, IL-10, IL-13, TGF-β. In addition, anti-inflammatory have receptor antagonists of pro-inflammatory cytokines, soluble receptors for inflammatory cytokines and antibodies to pro-inflammatory cytokines, blocking their effects. Receptor antagonists of pro-inflammatory cytokines, among which the most studied is the antagonist of IL-1 receptor (IL-1Ra), is structurally similar to pro-inflammatory cytokines, so they bind to corresponding receptors and block the further development of the inflammatory response. Have also described a similar effect soluble receptors to IL-1 (sIL-1R), IL-2 (sIL-2R), IL-6 (sIL-6R), TNF (sTNFR) and antibodies to IL-1 and TNF [4, 8].

Of these the most important biological regulators are IL-1Ra, IL-4 and IL-10. According to the structure they are proteins with a molecular mass of 15-36 kDa. IL-1Ra in the acute phase of inflammation produce predominantly macrophages and monocytes, and neutrophils, fibroblasts, hepatocytes, endothelial cells, dendritic cells. The mechanism of action of IL-1Ra is

a cellular receptor blockade is specific to IL-1α and IL-1β; thus is regulation of the activity of powerful inflammatory cytokine IL-1family in the place of virus implementation and replication, including theadverse effects of the organism in excessive concentration of not only the site of inflammation, but also in the systemic circulation. Thus, it is the optimal balance of IL-1Ra and IL-1 provides an adequate response of the organism to the introduction of a foreign agent, including the virus. But a change in this balance inevitably leads not only to disfunction of cytokine network, but also disfunction of the all immune system [4, 8].

In contrast to IL-1Ra, IL-4 and IL-10 produce predominantly activated Th2-lymphocytes and monocytes, macrophages, B-cells, NK-cells, keratinocytes, mast cells, and others under the influence of TNF-α, IFN-α, IL-1, IL-2, IL-3, IL-6, IL-12, IL-15 and other proinflammatory cytokines. The main function of IL-4 and IL-10 is to modify the immune response from Th1 toTh2 [4]. IL-4 and IL-10 – powerful anti-inflammatory and immunosuppressive factors that inhibit excessive synthesis of proinflammatory cytokines (IL-1β, IL-2, IL-6, IL-8, IL-12, TNF-α, IFN-γ, IFN-α, etc.), activated macrophages and Th1-lymphocytes, which leads to a weakening of the influence of an excess of inflammatory mediators in the human body and to the simultaneous activation of the humoral response of the body, reflected in the progressive increase in the secretion of Ig E and Ig G. At the same time, the production of inflammatory cytokines inhibit the lipopolysaccharide-activated and IFN-γ monocytes [4, 8].

Due to the fact that normally in the human body there is a balance between the activity of Th1- and Th2-lymphocytes, resulting in homeostasis is maintained between the various body systems: immune, hematopoietic, nervous, endocrine and others [1, 4, 8] – , is dysregulated in cytokine-mediated mechanisms of cooperation of T-lymphocyte number of researchers see cause worsening of the clinical picture of various diseases both infectious and noninfectious etiology [5, 8].

Conducted to date, studies of anti-inflammatory cytokine concentrations in acute respiratory infections (ARVI) is sufficiently fragmented. However, many researchers [10-12] indicate that their critical importance in the pathogenesis of ARVI. Thus, elevated levels of major pro-inflammatory cytokines (IL-4, IL-10, IL-1Ra) was detected in nasopharyngeal mucus of young children with severe, but favorable course of respiratory syncytial virus infection [11]. Increasing concentrations of IL-4 in serum was determined in adult patients, not only respiratory syncytial, and adenovirus infection [2]. Increased IL-1Ra and IL-10 in peripheral blood were found in patients with moderate influenza pH1N1, and with severe influenza pH1N1 with the development of acute respiratory distress syndrome [12].

Due to the fact that the available literature we did not encounter studies on the level of anti-inflammatory cytokines in patients with parainfluenza, **aimed this work** was to study the levels of the main anti-inflammatory mediators (IL-1Ra, IL-4, IL-10) in the blood of these patients with explanation of their possible pathogenetic and prognostic role.

Materials and methods. We examined 19 patients with moderate parainfluenza aged 15-54 years who had the disease a positive, without complications. The diagnosis was confirmed by indirect hemagglutination reaction (detection of specific antibodies with increasing titer of 4 or more times).

Blood samples to determine the level of anti-inflammatory cytokines had in the acute period (1-2 days of illness) and the period of early convalescence (for 7-9 days of illness). Cytokine levels were determined in serum by enzyme immunoassay commercial test systems for "Vector-Best", Russia [7]. Control was blood of 18 healthy donors in aged 19-40 years.

Results of clinical and laboratory studies were made in specially designed card of the individual evaluation of patients with subsequent presentation in the form of spreadsheets, Microsoft Excel 2007. Statistical analysis of results of research carried out using the package StatGraphics 15.0.

Normality of variational series (corresponding Gaussian) was checked by goodness of Kolmogorov-Smirnov, Pearson tests and Shapiro-Wilks test, one of the most powerful criteria of normality [3]. When the hypothesis of normal distribution as the point estimate characteristics of the center of the grouping values of a random variable used by the sample mean (Mo). In the case of normal distribution of each of the samples revealed differences between groups with Student's t-test (ST) and Fisher's exact test to compare the variances (F) [3, 6].

The most common distribution of the series did not meet the criteria of normality, which is consistent with published data. Thus, according to some reports [6], only 20% of the distributions of quantitative traits found in biomedical research areapproximate normal. When not performing hypothesis of normality of distribution inaccordance with the recommendations [6] used methods of nonparametric statistics. In particular, as a point estimate characteristics of the center of the grouping values of a random variable using the median (Me) – an indicator of the least subject to influence by individual fluctuations characteristic [3, 6]. Between asample were compared using nonparametric tests: Wilcoxon-Mann-Whitney (WMW) – rank test, well adapted for analyzing small samples and robust to the form of the law of their distribution, as well as two-sample Kolmogorov-Smirnov (KS) [3, 6].

The content of IL-4 and IL-10 in the blood of most patients were below the threshold of sensitivity of laboratory analysis [7], resulting in a sample with the results of laboratory tests had

"0" in most positions. This fact led to a zero value estimates the median (Me = 0) and the impossibility of the comparison sample on this parameter [3]. Given that the content of IL-4 and IL-10 in patients' blood was exponentially distributed (in connection with the performance criteria of the exponential distribution the Shapiro-Wilk [3]), as a point estimate characteristics of the center of the grouping values of these factors, we used selective average (Mo) [3, 6, 7].

The level of significance when testing all statistical hypotheses – p □ 0,05 (confidence level > 0.95).

Results and discussion. In the acute period of parainfluenza revealed an increased concentration of anti-inflammatory cytokines compared with controls (see table): IL-1Ra (WMW, KS p □ 0,05), IL-4 (F, KS p □ 0,001) and IL-10 (WMW, KS p □ 0,01). High levels of anti-inflammatory factors, the data was maintained and did not come back to normal for the period of convalescence: IL-1Ra (WMW p □ 0,05), IL-4 (F, KS p □ 0,001) and IL-10 (KS p □ 0,001). Throughout the illness (compared with acute and convalescence periods) increased levels of IL-1Ra were not significantly changed (ST, F, WMW, KS p > 0,05). At the same time to the period of convalescence, a statistically significant progressive increase in the concentration of IL-4 (approximately two fold) (KS p □ 0,001) and significant reduction of IL-10 (6, 5 times) (WMW, KS p □ 0,01).

Conclusions. In connection with the prevailing local (distant), but not systemic action of the investigated anti-inflammatory cytokines, rapid destruction and/or their binding to specific receptors (10-15 minutes) – all this causes is that their concentration in peripheral blood is not adequately reflects the processes that occur in the area of inflammation. However, the difficulties of research concentration of anti-inflammatory cytokines and activity of the cell populations according to their synthesis in the inflammatory site are responsible for the need to find indirect evidence that characterize the percolation limit the inflammatory response and activation of humoral immunity, in which data cytokines play a keyrole.

According to the results of the study, patients with parainfluenza revealed significant activation of the anti-link "cytokine network" throughout the period of the disease, which indirectly indicates the high activity of effector blood cells: macrophages and monocytes (according to high levels of IL-1Ra) and Th2-lymphocytes (judging by high concentrations of IL-4 and IL-10). An even greater increase in the concentration of IL-4 to the period of convalescence, apparently due to increased activity progradient Th2-lymphocytes due to their increasing participation in the synthesis of antibodies against parainfluenza virus antigen, first of all Ig G. However, the lack of normalization of the level of IL-1Ra, involved mainly in the early phase of immune response and produced mainly by monocytes/macrophages may be indicative

of retention of high activity, and these blood cells. Thus, in patients with parainfluenza not revealed a complete coincidence of clinical and laboratory recovery, which should be considered when a patient discharged from hospital.

The practical significance. Determined the prognostic significance of high levels of anti-inflammatory cytokines in serum and their dynamics in the disease course in patients with moderate parainfluenza. The data obtained on the status of the major anti-inflammatory factors of cytokine network in normal and in patients with parainfluenza formed the basis of an expert system, developed by us, "Rapid diagnosis and prognosis of ARVI" [9].

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TABLE. **Comparative characteristics of anti-inflammatory cytokine concentrations in serum of patients with parainfluenza**

Groups of patients		M (for IL-1Ra) or Mo (for IL-4 and IL-10), range (in parentheses), pg/ml	
Period		*Acute period*	*Convalescence*
Parainfluenza	IL-1Ra	1275,3 (648,4 - 3000)$^{\#}$, n = 17	1371,5 (489,3 - 3000)$^{\#}$, n = 16
	IL-4	0,127$^{\#}$, n = 16	0,223$^{*\#}$, n = 14
	IL-10	44,319$^{\#}$, n = 18	6,808$^{*\#}$, n = 16
Control	IL-1Ra	619,55 (74,7 - 3000), n=16	
	IL-4	0,021 (0 - 0,334), n = 16	
	IL-10	5,970 (0 - 88,951), n=17	

Note:

* – significant differences in the rates of the disease (p □ 0,05).

$^{\#}$ – significant difference from control (p □ 0,05).

n – number of patients studied.

Е.П. Аммосова, Е.Н. Сивцева

Introduction

The localized scleroderma (LS) is characterized by involvement in sclerodermical process of a skin, a hypodermic cellulose, muscles and sometimes an osteal tissue [1,3]. Prevalence of the localized scleroderma among adults is 2,7 cases per 100000 population, about 34%-40% of which are children[1,9]. In children more common are forms of linear scleroderma, which is characterized by an aggressive course with the involvement of soft tissues up to the destruction and deformation of bones [1,3,9]. These serious forms include “en coup de sabre”, linear scleroderma which mainly localized on the extremities. Until now, clinicians consider LS as a dermal disease and extensively use local therapy, which usually does not prevent the progression of the disease [1,3]. In recent years there were many researches on studying of a pathogenesis of LS and many similar with system scleroderma pathogenetic units was found [2]. Thus views on the disease treatment have changed in favor of the necessity of using "disease-modifying" agents, for the treatment of LS.

Till now there is no standard scheme of therapy of a scleroderma. At present in domestic (Russian) medicine one of the most widely used preparations is D-penicillamin (DP). The precondition for using DP is its multilateral influence on a collagen metabolism and first of all its antifibrous effect [5,7,10]. Recently the increasing importance in treatment of a system scleroderma is got by cytostatic immunosuppressants, in particularly a methotrexate (MTX). In spite of wide use of MTX by foreign rheumatologists, there are only five researches, devoted to an evaluation of methotrexate's efficiency in LS therapy [4,6,8,9,11]. It is necessary to notice that the evaluation of efficiency of therapy was spent on small number of patients from 9 to 34 with a maximum period of observation of 2 years.

Aim of the research - to develop the differentiated approach to the basic therapy at the localized scleroderma among children.

Materials and Methods of the research. The efficiency analysis of four treatment schemes of 97 children with LS is carried out: D-penicillamin in doses from 7 to 10 mg/kg/day, MTX in a dose of 10 mg per square meter per week, MTX and DP in combination with glucocorticoids (GC) in a medical dose of 0,5 mg/kg/days for 3 months with gradual reduction to a maintenance dose of 0,1 mg/kg/day. The analysis of efficiency of therapy was estimated clinically with the help of specially developed technique, for separating of pathological process was identified four parameters of dermal process: local activity (LA), fibrosis index (FI), dermal

score (DS) and depth of sclerodermical process. Local activity determined by evaluation of brightness and prevalence of a peripheral crown on 4 point scale. Fibrous process characterized visually and by palpation, for this was made such parameter as index of fibrosis, which was estimated on 4 ball scale. Considering that the fibrosis index not fully reflects depth of a lesion of soft tissues and bone deformation by the moment of observation, that is an important point to characterizing a severity level and aggressiveness of the process, we have developed additional parameter characterizing depth of diffusion of pathological process. It should be noted that the given parameter is dynamically stable as shows already formed process. The depth of sclerodermical process was evaluated visually and by palpation on 3 point scale. For the aggregate analysis of selected 4 signs of the disease and allocation of treatment's efficiency groups used a mathematical method of "recognition of images» (Nejmark J.I., Batalova Z.S., Vasin J.G., Brejdo M. D «Recognition of images and medical diagnostics», M: the Science, 1972). By efficiency of treatment patients were divided into three groups: "good", "moderate" and «no effect» and these patients were estimated every 3, 6, 12, 24 months. The statistical importance of differences and correlation of surveyed signs was determined by nonparametric statistical criteria (Wilcoxon, Kruskal-Wallis). As authentic was considered the significance level of $p < 0,05$.

Clinical characteristic of patients: at the beginning of basic therapy the total duration of disease averaged 21,68 ± 2,6 months. 22 (22,7 %) boys and 75 (77,33 %) girls, the ratio 1:3,5 that corresponds to the literary data. The patients' ages at the beginning of observation ranged from 4-16 years (M ± m - 10,0 ± 3,37). The majority of patients had a linear form of scleroderma 50 (51.54%). "En coup de sabre" was in 15 (30%) patients and 6 (40%) of them at the beginning of treatment had a cosmetic defect of face with various degrees of deformation of the skull bones. Plaque form of scleroderma had 23 (23.7%) patients. Common form had 24 (24.7%) patients.

It should be noted that at the beginning of prescribe of basic therapy search, in 32 (32,9%) of 97 was already formed a rough cosmetic defect or functional insufficiency, associated with the defeat of the musculoskeletal system with the development of a thinning, shortening and formation of periarticular contractures.

Results of the research and discussion. Observation period of the patients varied from 6 to 24 months and on average was 15.8 a16 2,2 months.

The dynamics of the local activity: In all groups significant decrease in the average values of the local activity have been observed at 3 months of treatment, except for the group of patients treated with D-penicillamine monotherapy, significant decrease in the average values of the local

activity was only observed at 6 months of treatment (Fig. 1). Thus, methotrexate has a more pronounced anti-inflammatory effect as compared with D-penicillamine. In the application of combination therapy of methotrexate and D-penicillamine with glucocorticoids in most patients by 3 months of therapy and disappeared reduce the appearance of local activity, in spite of pronounced signs of local activity by the beginning of therapy, reflecting the powerful anti-inflammatory effect of the combination of basic drugs with glucocorticoids.

Dynamics of fibro-sclerotic process: the average value of the index of fibrosis statistically decreased by 6 months of treatment in all groups except for patients with methotrexate monotherapy, which reduced the average values of the index of fibrosis was observed only for 12 months of treatment (Fig. 2). Thus, D-penicillamine as a single agent has a more pronounced effect of antifibrotic compared with methotrexate. Also note that the use of basic drugs with antifibrotic effect is enhanced by glucocorticoids, which reflects the significant decrease in the average values of the index of fibrosis at 6 months of treatment, despite an initially high average value of the index to the top of fibrosis therapy.

The effectiveness of various schemes of basic therapy in a linear form of scleroderma: the proportion of patients with good effect predominates in patients receiving combined therapy with corticosteroids compared with patients treated with a basic compound (Table 1). When comparing the effectiveness of methotrexate with methotrexate in combination with glucocorticoids, and D-penicillamine with D-penicillamine in combination with glucocorticoids received with that combination therapy is effective in monotherapy was statistically confirmed by a Kraskela-Wallis test.

Thus, in the treatment of the linear form of the operating system is more efficient combination of a basic drug with glucocorticoids.

Conclusion:

1. Methotrexate monotherapy has therapeutic effect in patients with localized scleroderma, as evidenced by the cessation of progression of the pathological process, a statistically significant reduction of local activity to 3 and the index of fibrosis at 12 months of therapy. Compared with D-penicillamine has more potent anti-inflammatory effect.
2. Monotherapy with D-penicillamine has a therapeutic effect in patients with localized scleroderma, as evidenced by the cessation of progression pathology process, a statistically significant reduction of local activity, an index of fibrosis at 6 months of therapy. Compared with methotrexate has a large antifibrotic effect.

3. The combination of methotrexate with corticosteroids effective in the treatment of scleroderma Limited linear form involving the deep soft tissues (subcutaneous fat, muscle, fascia, tendons) compared with monotherapy with methotrexate.
4. The combination of D-penicillamine with glucocorticoids effective in patients with the linear form of scleroderma involving the deep soft tissues (subcutaneous fat, muscle, fascia, tendons) compared with monotherapy D-penicillamine.

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Clinical current of an atopic dermatitis at children of Yakutsk living in different ecological conditions

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The atopic dermatitis in modern conditions is a serious medical and social problem that is caused by its prevalence, a chronic relapsing current, possibility of formation of early physical inability, is in most cases accompanied by psychosomatic disturbances and characterized by depression of quality of life.

Keywords: an atopic dermatitis, children, a bionomics, adaptation

Introduction. The atopic dermatitis (BP) is one of the most widespread allergic diseases among children, keeping clinical signs on an extent of many years and sharply reducing quality of life of the sick child and his family [4]. The atopic dermatitis in modern conditions is a serious medical and social problem that is caused by its prevalence, a chronic relapsing current, possibility of formation of early physical inability, is in most cases accompanied by psychosomatic disturbances and characterized by depression of quality of life.

Research objective. To study features of a current of an atopic dermatitis at children Yakutia, living in different ecological conditions.

Materials and research methods.

The clinical current of a BP at children has been studied on the basis of OB Republican hospital №1 - the National Center of Medicine of Yakutsk.

In allergology and immunology unit complex investigation of 155 children from a BP at the age from 1 month till 18 years, from them girls 65(42%), boys 90(58%) is carried. Comparison group have made 30 children comparable on age, sex who didn't have allergic diseases.

Considering the data of annual monitoring about a state of environment [2] and division into districts indicators on V.J. Soldatovoj [3], 3 groups of children living on the given territories (districts) on degree of impurity of environment have been defined. I group - 41 child, living in territory of intensive ecological trouble, II group – average intensity of ecological pollution – 51 child and III group – 63 children living in district of weak ecological pollution.

In work the kliniko-anamnestic method is used, adaptic possibilities, levels of reactance [1], the computer program "Antistress", statistical processing under the program «STATISTICA 6.0» are studied.

Results and discussion. Distribution of quantity of children with an atopic dermatitis on classification offered RAACI (the Russian association of allergists and clinical immunologists,

2002 is spent). Among observable children of 32,9% were with the infantile form of a BP (at the age of 0-2 years), 54,8% - from a nursery (3-12 years), 12,3% - with teenage (13-18 years), that is, the most part of patients was at the age of 3-12 years.

Gender differences with prevalence of a BP among boys (58%) were at infantile (23,2%) and a nursery (27,7%) illness forms, among girls (42%) the children's form (27,1%), then infantile (9,7%) and teenage (5,2%) prevailed.

The current of pregnancy and sorts at mothers of children from the BP living in different ecological conditions (table 1) is analysed.

Table 1

Features of a current of pregnancy at mothers of children from the BP living in different ecological conditions

Complications of a current of pregnancy	Children from a BP (n=155)		
	I district (n=41)	II district (n=51)	III district (n=63)
Early toxicosis	33 (80,5±6,1)*	39(76,4±5,9)	38(60,0±6,1)
Nephropathy	19 (46,3±5,9)	21(41,1±6,8)	30(31,7±5,8)
Threat of an abortion	28 (68,2±7,2)*	37(72,5±6,2)***	24(38,1±6,1)
Anemia during pregnancy	35 (85,3±5,5)	38(74,5±6,1)	52(82,5±4,7)
Chronic pyelonephritis (exacerbation)	26 (63,4±7,5)*	28(54,9±6,9)***	18(28,5±5,6)
Acute respiratory disease during pregnancy	26 (63,4±7,5)*	10(19,6±5,5)**	5(7,9±3,4)
Smoking of mother during pregnancy	8(19,5±6,1)	11(21,5±5,7)	10(15,8±4,5)
Abusing mother alimentary allergens	10(24,3±6,7)*	10(19,6±5,5)	8(12,7±4,2)
Reception of medicines during pregnancy	38(92,6±4,2)*	40(78,4±5,7)***	39(61,9±7,8)
Cesarean section	11(26,8±6,9)	10(19,6±5,5)	17(26,9±5,5)
Hypoxia of a fetus	27(65,8±7,6)*	20(48,7±6,9)	20(31,7±5,8)
Cerebral ischemia	26(63,4±7,5)*	31(60,7±6,8)***	10(15,9±4,5)

*p<0,05 (at comparison of indicators 1 and 3 districts)
** p <0,05 (at comparison 1 and 2 districts)
*** p<0,05 (at comparison 2 and 3 districts)

Among the complicated current of pregnancy in investigated groups of mothers having children from a BP, prevailed: a toxicosis, an anemia, abortion threat, reception of medicinal preparations during pregnancy, a fetus hypoxia, a cerebral ischemia. Between districts have taped authentic differences on frequency of development of an early toxicosis, threat of an abortion, an exacerbation of a chronic pyelonephritis, OP3 during pregnancy, reception of medicines during pregnancy among women of 1 and 2 districts in comparison with 3 district ($p<0,05$) that was reflected on fetus and newborn health.

So, at mothers of 1 district more often, than in 3 district, it was observed a fetus hypoxia, ($p <0,05$), frequency of a cerebral ischemia among newborns 1 and 2 districts authentically differed from 3 districts ($p <0,05$), that is, in ecologically adverse conditions pregnancy is accompanied by its more frequent complications influencing a fetation and health of the newborn (tab. 1).

Among sick children depending on a clinical picture of a lesion of a skin, it agree working classification have allocated kliniko-morphological forms of a BP. The exudative lesion of a skin met at children till 2 years 21 (13,6 %) is more often. It was characterized by an acute inflammation of a skin with an enanthesis of papules and microvesicles with the expressed exudation and an exzema. Localization mainly on the person, an anticnemion, hips. A locating of rashes the symmetric.

Eritemato-squamous lesion of a skin diagnosed at 85 (54,8 %) children which was shown by a hyperemia of cheeks, large cords, papular rashes, an ecdysis, excoriations, at a part of children of is serous-hemorrhagic crusts with primary localization on a face skin, necks, breeches, sometimes on flexor surfaces of extremities, hips, anticnemions, more often for children at the age of 3-12 years. Eritematoskvamoznye changes with lichenization have been taped at 31 (20 %) the child. Dermal pathological process settled down in the field of ulnar and popliteal folds is more often, in the field of radiocarpal and ankle joints, dorsums of brushes and has been presented eritematoskvamoznye by the centers, lichenoid papules and plaques with the expressed infiltration and also cracks, excoriations on a skin of children.

The lichenoid variant isn'ted in 11(4.5%) cases. On a dry skin the dense lichenoid and pruriginous papules of various size merging among themselves with formation of the large centers were observed, settling down on a skin of a neck, ulnar folds, forearms and brushes of arms, popliteal folds, hips and anticnemions, lichenoid and excoriations.

For this variant of a current of a BP it was characteristic: a hyperpegmentation of periorbital area, eyelids with the underlined cords of Dene-Morgana, the general dryness and an ecdysis of perioral area. In the presence of an accompanying respiratory allergy at patients except dermal implications, the itch of eyelids or difficulty of breath becomes perceptible a nose. From above

told follows that as a whole in BP structure the exudative variant of a lesion of a skin more often at the age of 0-2 years (13,6%), is erythematic-squamous and is erythematic-squamous with lichenization at children of 3-12 years (74,8%), lichenoid at teenagers (4,5%) prevails. At 51% of children dependence of gravity of a current of dermal process on a season, more often in winter - an autumn season is taped. 7,7% of children from a BP haven'ted an all-the-year-round exacerbation of dermal process.

Table 2

The periods of illness at observable children from a BP depending on ecological conditions of residing

Current phases	Ecological territory			All (n=155)
	I district (n=41)	II district (n=51)	III district (n=63)	
Acute	19(46,3±7,8)*	12(23,5±7,1)	5(7,9±3,3)	36(23,2±11,4)
Subacute	20(48,8±7,8) *	37(72,6±6,2)	55(87,3±4,2)	112(72,3±11,5)
Remission	2(4,9±3,3)	2(3,9±1,0)	3(4,8±2,6)	7(4,5±1,6)

*p<0,05 (at comparison 1 and 3 districts)

At the analysis of gravity of a current of disease at children depending on ecological conditions of residing, have taped that the acute current of a BP is observed in 5,9 times more often at children living in adverse ecological conditions, in comparison with children, living in satisfactory conditions (tab. 2). A subacute clinical course became perceptible at 112(72,3%) children, and more often at children living in 2 and 3 districts (p<0,05).

Table 3

Gravity of a current of a BP at children depending on residing district

Gravity of a current	I district (n=41)	II district (n=51)	III district (n=63)
Easy	7(4,5±1,7)*	26(16,8±3,0)	43(27,7±3,6)
Moderate severity level	11(7,1±2,0)	22(14,1±2,8)	19(12,2±2,6)
Serious	23(14,8±2,8)*	1(0,6±0,4)	1(0,6±0,4)

*p <0,05 (at comparison of the data of 1 district with 2 and 3)

It is taped that the serious current of disease in 14,8% of cases met in ecologically adverse district whereas the easy current became perceptible in more favorable. The moderate severity level current of a BP almost equally met in 2 and 3 districts of more safe on an ecological background.

Gravity of a current of a BP, frequency of its exacerbations are influenced by an accompanying pathology.

The following pathology of a gastroenteric tract among children from a BP is taped: the dysbacteriosis 82 (52,9 %), a lambliasis of an intestine 40 (25,8 %), an enterobiosis 4 (2,6 %), gastritis at 36 (23,2 %) school age, duodenitis reflux is taped at 10 (6,4 %), a reflux an esophagitis at 6 (3,9 %), a chronic hepatitis B in at 9(5,8%), and at 7(4,5%) children from a BP are diagnosed together a lesion gastroduodenal and liver systems, an intestine, a pancreas.

Dyspepsias of an obscure etiology in the period of the early childhood it is taped at 29(34,1%) children, constipations at children about one year 38(71,7%), an unstable chair at 43(27,7%), frequent regurgitations and vomiting for the first time months of life at 62(40%) children. At studying of complaints, abdominal pains were shown by half of sick children. At the general survey at 23(14,8%) the imposed "geographical" tongue became perceptible. At 15(9,7%) children were taped lesions of a mucosa of an oral cavity in the form of a cheilitis, caries at 89 (57,4%). At a palpation of a stomach at 54(34,8%) children morbidity in epigastric and pancreas areas, augmentation of a liver at 12(7,7%) children became perceptible.

At ultrasonic research of organs of an abdominal cavity at children, it has been taped, anomalies of development of a gall bladder: a S-shaped gall bladder – at 3(1,9%), bubble excesses – 12(7,7%); a dyskinesia of cholic ways – at 34(21,9%) children, inspissation of walls of a gall bladder – 15(9,7%), intensifying of a vascular drawing of a liver and a hepatomegalia at 12(7,7%), augmentation of the sizes of a pancreas at 4(2,6%).

Adaptive possibilities of an organism defined at children with various gravity of a current and the disease period, depending on ecological conditions of residing. Using the hematological data under the computer program "Antistress", have defined types of the adaptic reactions, allowing to judge protectively-adaptive possibilities of an organism.

At patients observed by us in the acute period of a BP pathological reactions of adaptation (the stress, reactivation) aren'ted at 49,0%, reaction of training which, according to L.H. Garkavi testifies to insufficiency of adaptic mechanisms – at 16%. At patients with the infantile form reactivation reaction in comparison with children of advanced age was more often observed.

Antistressornye reactions (the raised and quiet activation) at a BP exacerbation were observed at 35 % (fig. 1). In remission of a BP at children activation reactions over prevailed in 1,5 times.

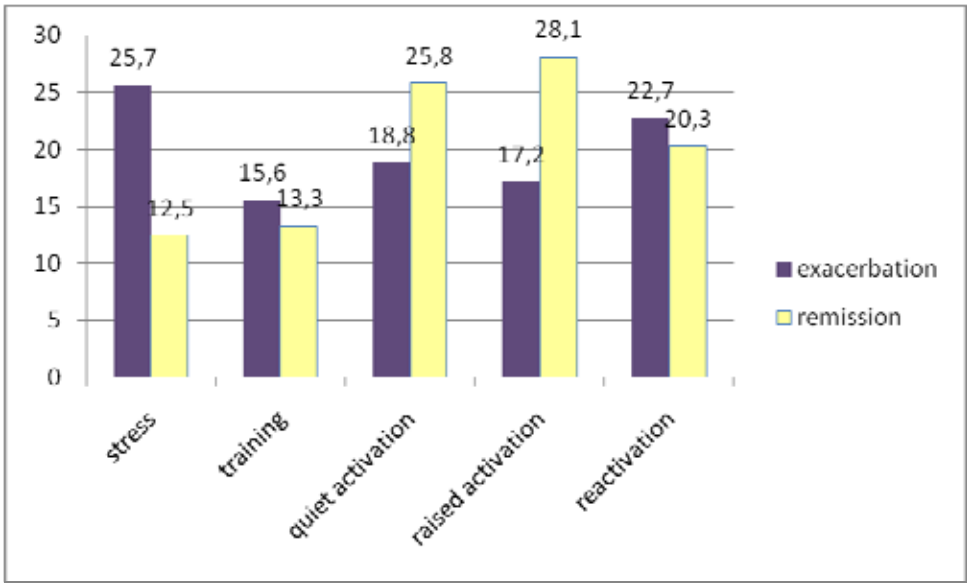

Fig. 1. Adaptic reactions at patients depending on the period of a BP, (%).

It is necessary to notice that in BP remission all five types of adaptic reactions are observed, thus most the failure isn'ted at patients with pathological reactions of stress, reactivation and the trainings observed at 38,2 % of patients. As a whole, in remission stressful reactions were observed at 34 % of children, i.e. their frequency has decreased in 1,4 times in comparison with the acute period. Activation reactions have made 53%, their frequency has raised in 1,5 times in comparison with a disease exacerbation (fig. 1).

Despite prevalence physiological antistress adaptic reactions in the acute and regenerative periods at sick BP the big frequency of low level of reactance is taped. Among patients with the infantile form low level of reactance has made 48,1%, from a nursery - 63,6%, with teenage – 50,1%. Remaining low level of reactance at the period of an exacerbation of illness at the infantile form is noticed at 29,4% of patients, at the children's form at 28%, and at the teenage form at 34,8% that reflects depression of adaptic possibilities of sick BP owing to what the regenerative period is tightened for longer terms.

On character of adaptic reactions: the quiet adaptation, the raised activation, reactivation, training, stress) and to reactance level estimated an adaptation condition as satisfactory (adaptic reaction of the quiet activation, the raised activation), a strain, an overstrain (adaptic reactions of training, reactivation) (unsatisfactory), dysfunctions (adaptic reactions of stress).

At an estimation of indicators of a condition of adaptation at sick BP it is taped that at the infantile form the condition of satisfactory adaptation meets more often in 1,5 times, in comparison with the teenage form. And, on the contrary, the sick BP are more senior, the low level (in 1,7 times) adaptation conditions, characteristic for an overstrain and a decompensation is more often becomes perceptible.

Table 4

Condition of adaptation as reactions and levels of reactance at sick BP depending on residing at different ecological conditions, (%)

Condition of adaptation	I district (n=41)	II district (n=51)	III district (n=63)
Satisfactory	1(2,4)	9(17,7)	21(33,3)
Strains	12(29,3)	14(27,5)	22(34,9)
Unsatisfactory	28(68,3)	28(54,9)	20(31,7)

Researches have shown that at children with unsatisfactory adaptation weighting of a current of a BP was observed. So, at children adapted for stress, the lung and moderate severity level a BP current (accordingly 38,7% and 3,7%) while at children with an unsatisfactory condition of adaptation prevailed, or moderate severity level (57,4%), or serious (88,5%) a disease current took place only. We haven'ted at the patients who have been not adapted for the condition in comparison with adapted children, the big frequency accompanying both allergic, and not allergic pathology, including neurologic and somatic ($p<0,05$).

Analyzing a condition of adaptation of patients depending on residing at different ecological conditions, have noticed that in the most polluted district there is an unsatisfactory condition is more often.

At comparison of a condition of adaptation at children from the BP living in different zones of ecological well-being have taped the following (tab. 4).

In a zone of intensive ecological trouble in 13,8 times satisfactory reaction of adaptation less often becomes perceptible, in 2,2 times unsatisfactory reaction was more often observed.

Thus, there are age features of a current of a BP for children and teenagers not only at its exacerbation, but also in the remission period that is bound to the taped changes in a condition of mechanisms of adaptation, in turn, being under regulating influence of vegetative nervous system.

Table 5

Condition of adaptive possibilities at children from a BP depending on gravity of disease and district of residing, (%)

Gravity of a BP	satisfactory	strains	unsatisfactory
I district			
Easy n=6	1(16,7%)	2(33,3)	3(50,0)
Average n=11	-	7(63,6)	4(36,4)
Serious n=14	-	3(12,5)	21(87,5)

II district			
Easy n=26	9(34,6)	8(30,8)	9(34,6)
Average n=24	-	6(25,0)	18(75,0)
Serious n=1	-	-	1(100)
III district			
Easy n=43	19(44,2)	14(32,5)	10(23,3)
Average n=19	2(10,5)	8(42,1)	9(47,4)
Serious n=1	-	-	1(100)

From table 5, follows that the satisfactory condition of adaptation becomes perceptible more often at easy severity level of a BP and basically at children living in 3 district, i.e. in ecologically more favorable conditions. The unsatisfactory condition of adaptation, on the contrary, becomes perceptible at a serious current of a BP and at children living in 1 district, i.e. in ecologically adverse conditions is more often.

The conclusion. Thus, the carried investigation of children with an atopic dermatitis has taped that, the greatest quantity of children of suffering BP meets in the children's period (3-12 years), is slightly more rare – the infantile form and is even more rare - the teenage form. The BP is clinically aggravated at children with an unsatisfactory condition of the adaptive possibilities living in adverse ecological conditions that it is necessary to consider at carrying out of treatment-and-prophylactic actions.

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ANALYSIS OF VARIABILITY OF CARDIO RHYTHM IN MALE ADOLESCENTS IN DIFFERENT ETHNIC GROUPS, THE INHABITANTS OF TYVA REPUBLIC.

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Abstract. *We analyzed the indices of vegetative nerve system with complex technical program ORTO Valeo in male adolescents (56 Russians and 47 Tyvins), the inhabitants of Saryg-Sep village of Tyva Republic. We revealed varieties in vegetative regulation in adolescents of different ethnic groups at rest and in orthostasis. In Russian boys both at rest and in orthostasis sympathetic influences of VNS prevailed. Baseline vegetative tonus was characterized by domination of regulation of sympathetic type. In the Tyvins the most frequent type of baseline vegetative tonus was vagotony. Eutonia was frequent as well, which proves high efficiency of vegetative regulation processes in them.*

Key words: *the Russians, the Tyvins, vegetative nerve system.*

Health state in children and adolescents is one of the most popular problems in modern medical science because exactly in these ages the intensive morphologic and functional restructuring of all physiological systems takes place [5, 6, 10]. The peculiarities of many Siberian regions are severe climate, remoteness, temperature drops, cold [8]. Tyva Republic matches Extreme North territories by its severe climatic conditions, which govern functional state of local children organisms. Cardio rhythm indices under the processes of growth and development closely depend on gender, age and the stage of adaptation to the environment [12]. It is known that adaptation to the environment in the course of ontogenesis is being controlled by vegetative and hormone mechanisms, which define the norm of adaptation reaction [3]. This determines the necessity of studying vegetative reactions in alien and local population under extreme climatic and geographical conditions.

Materials and Methods.

We examined 103 boys in ages from 13 to 16 years of socially secured families of Saryg-Sep village of Tyva Republic picked up by random as 20% implementing the generator of random numbers. These ages in boys are classified as adolescence (IIV All-Union Conference for Age Morphology, Physiology and Biochemistry of USSR Academy of Pedagogical Sciences, 1965). There were 56 Russians (average age 14.38±0.14 years), born in Tyva Republic and 47 Tyvins (average age 14.6±0.16 years). All schoolchildren belonged to I and II health groups. Examination took place in late September – early October. Cardio rhythm was registered by complex technical program ORTO Valeo (SPE «Life Systems», Kemerovo), in prone and then in orthostasis activities. We evaluated the following: frequency of cardiac beat (**FCB**), median (**M**), mode, (Mode), mode amplitude (**MoA**), variation range (**ΔX**), stress index (**SI**) both in rest and orthostasis, basic vegetative tonus (**BVT**), functional state (**FS**). Distribution normality was determined by Kolmogorov-Smirnov criterion. Median (Me) and lower and upper quartiles (C_{25}-C_{75}) were determined if distribution within samples differed from normal. Hypothesis verification in regard to statistical significance of two samples was carried out by Mann-Whitney criterion. Comparison of the groups with qualitative signs was carried out with χ^2-square test. Research had been made under Russian Humanitarian Scientific Foundation grant № 08-06-18o12e.

Results and Discussions.

Analysis of cardio rhythm variability is the method for estimating the state of mechanisms of physiological functions regulation, ratio between parasympathetic and sympathetic sectors of vegetative nerve system [2].

Frequency of cardiac beat (FCB) was used as unbiased index of organism functional state (cardio vascular system in the first turn) as well as characteristics of shifts under this or that load and is the result of interaction between parasympathetic and sympathetic sectors of autonomous nerve system [1]. Though FCB in rest both in the Russian and the Tyvins stayed within the limits of age norm, in Russian schoolchildren this index was evidently higher than in Tyvin ones (Table 1).

Mode is the most frequent cardio interval meaning within dynamics rank. Russian boys showed significantly lower Mode meaning at rest than Tyvin boys (Table 1). It points to the lowering of parasympathetic influence of vegetative nerve system in them.

Mode amplitude (MoA) reflects stabilizing effect of centralization of cardio rhythm management, which is mainly caused by the stage of activation of regulating sympathetic link. The meaning of this index at rest was higher in group of Russian boys as compared to the Tyvins, but we didn't mark statistically valid differences (Table 1).

Physiological meaning of variation range (ΔX) is usually associated with the activity of parasympathetic sector of vegetative nerve system. In Russian schoolchildren this index was lowered (Table 1), but statistical difference was not reached.

Table 1.

*Meanings of cardiointervalgraphy indices in the examined groups at rest (*Me, C_{25}-C_{75} *)*

index	the Russians (n=56)	the Tyvins (n=47)
FCB	76.3; 68.4 - 84.8 P_T =0.026	71.9; 65.1 - 76.6
Mediana	0.79; 0.71 - 0.88 P_T =0.024	0.83; 0.78 - 0.92
Mode	0.77; 0.69 - 0.85 P_T =0.003	0.82; 0.76 - 0.93
MoA	39.5 ; 26.5 - 56.5	34; 28 - 44
ΔX	0.24; 0.18 - 0.35	0.26; 0.21 - 0.31
SI	107.2; 24.4 - 233.6	68.7; 44 - 104

Stress index (SI) shows the stage of both centralization in managing rhythm and prevalence of regulation sympathetic link over parasympathetic. This index is very sensitive to the strengthening of sympathetic nerve system tonus and moderate load (physical or emotional) increases SI 1.5 – 2 times. At rest SI meaning in Russian adolescents was 1.5 times higher than in the Tyvins, which can indicate the increase of sympathetic influence of VNS, but the difference in not statistically valid.

Changes in cardiointervalgraphy in Russian adolescents, Tyva Republic inhabitants, before activity proves the prevalence of basic sympathetic activity in vegetative nerve system resulted in the decrease of parasympathetic influences. In natives of Tyva Republic at rest cardiointervalgraphy meanings testify the prevalence of parasympathetic influences. Orthostatic probe is one of the most informative methods for revealing latent changes in cardio vascular system and mechanisms of its regulation [1, 15].

Table 2

*Meanings of cardiointervalgraphy indices in the examined groups in orthostasis (*Me, C_{25}-C_{75} *)*

index	the Russians (n=56)	the Tyvins (n=47)
FCB	96.3; 85.2 - 104.0 P_T=0.009	88; 81.4 - 97.2
Mediana	0.624; 0.576 - 0.705 P_T=0.009	0.628; 0.617 - 0.737
Mode	0.62; 0.56 - 0.69 P_T=0.005	0.68; 0.62 - 0.74
MoA	53; 40 - 70 P_T=0.025	43; 34 - 57
ΔX	0.18; 0.13 - 0.22	0.19; 0.14 - 0.24
SI	249.9; 136.1 - 473.3 P_T=0.039	166.1; 95.7 - 315.3

FCB in Russian boys in orthoprobe was evidently higher than in Tyvin ones (Table 2). Mode and median meanings were significantly decreased as compared to comparison group. MoA index in orthostasis was significantly higher in Russian schoolchildren than in natives, which points to stronger influence of sympathetic nerve system on cardio rhythm in orthostasis (Table 2). Cardio rhythm index ΔX in orthostatic position in Russian adolescents didn't differ significantly as compared to the Tyvins (Table 2). SI meaning in orthostasis in Russian boys was higher than in the Tyvins. The highest augmentation of this index in orthoprobe was marked in Russian adolescents as well.

Basic vegetative tonus (BVT) characterizes background activity of structures, which regulate organism functions in the course of adaptation activity and can be considered as one of the features which form the type of organism response to the influence of outer factors. BVT in Tyvin boys was characterized by substantial predominance of vagotony over eutonia and sympathicotonia. We paid much attention on sympathetic variant as predominant BVT type in Russian adolescents (Table 3).

Table 3

Basic vegetative tonus in the examined groups (%)

BVT	the Russians (n=56)	the Tyvins (n=47)
vagotony	41.1	48.9
eutonia	16.1	31.9
sympathicotonia	42.9 (P_T=0.019)	19.2

Sympathicotonia share was evidently higher (P=0.019) in the Russians as compared to Tyvin schoolchildren. The frequency of mixed regulation (eutonia) was higher in natives in comparison with the Russians but the difference did not achieve statistical significance.

Table 4

Functional state in the examined groups (%)

Adaptation variants	the Russians (n=56)	the Tyvins (n=47)
satisfactory	42.9	48.9
stress	35.7	38.8
unsatisfactory	21.4	12.8

Having made the analysis of organism functional state we marked in both examined groups the predominance of satisfactory adaptation variants. In the Russians unsatisfactory adaptation variant was marked more often, though not significantly as compared to the Tyvins (Table 4).

We analyzed the indices of spectrum analysis of cardio rhythm variability. We didn't mark true difference in regard to any of the indices (Table 5). VLF index, which shows activity of oversegmentary VNS level was not evidently changed in any of the groups.

Table 5

Meanings of variability indices of cardio rhythm in the examined groups (Me; C_{25}-C_{75})

Index	the Russians (n=56)	the Tyvins (n=47)
HF	804; 299.5 - 2035	652; 379 - 1259
LF	1349.5; 753 – 2991.5	1417; 820 - 2277
VLF	1551; 786.5 – 3384.5	1556; 898 - 2823

Meanings of low frequency component (LF) were lower in Russian boys than in Tyvin schoolchildren, which points to lower activity of vasomotor center in them. HF-marker values of vagal regulation were higher in Russian schoolchildren, but not considerably.

Conclusion.

Current activity of sympathetic and parasympathetic sectors is the result of the response of multi-circuit multi-level system of blood circulation regulation, which changes its parameters from time to time in order to achieve optimum adaptation response, which reflects adaptation reaction of the whole organism [1]. Vegetative tonus, acting as one of the main signs of child's successful adaptation in a group of boys of Russian nationality was represented by considerable share of subjects with sympathetic trend of vegetative nerve system as compared to the natives. Changes in cardiointervalgraphy indices in Russian schoolchildren at rest prove the prevalence of basic sympathetic activity of vegetative nerve system and as a result the lowering of parasympathetic influences in them. We revealed true increase of cardiac beat number, the lowering of Mode, median, variation scope in the course of wedge-orthostatic probe in the Russians. All these testify on even greater offset of vegetative homeostasis towards the activation of tonus of sympathetic sector of vegetative nerve system. Russian boys were characterized by higher augmentation of SI in orthostasis as compared to the Tyvins, which proves their higher lability. The revealed changes in the group of Russian schoolchildren inform on strengthened sympatho-adrenal influences at rest and under load. They point to considerable stress in organism reserves. It is known that the beginning of schooling, including the first months after holidays is stress situation, which leads to mobilization of resources of children organism and tension in its functional systems [4, 10, 14]. Schoolchildren were examined in the beginning of academic year (late September – early October). The results can prove that Russian boys, the inhabitants of Tyva Republic are more vulnerable at a time when schooling starts as compared to their peers of Tyvin nationality. Adolescent age is accompanied by complicated reconstructions in organism. Disturbance of vegetative regulation reflects the imperfection of mechanisms connected with immaturity of regulatory centers of vegetative nerve system, typical for children in these ages [9, 13]. The revealed changes in vegetative regulation in Russian boys testify on the stress in cardio-vascular system performance, irrational way of supporting homeostasis. IVS in Tyvin natives, belonging to Mongoloid population in the most cases was represented by vagotony and eutony, which indicates higher efficiency of regulation and can be regarded as the result of passive adaptation. This goes in conformity with data from scientific literature [7] stating that the direction of adaptation of Mongoloid populations to extreme conditions of the North is energy consumption reduction. This is serious advantage for the survival under extreme conditions.

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Cardiac arrhythmias and conduction in patients with bronchial asthma.

(Based on the therapeutic department MBUZ Novosibirsk "Hospital № 25")

Background:

Bronchial asthma (BA) - is one of the most common diseases of modern society, and affects between 1 and 18% of the population in different populations [11]. It significantly reduces the quality of life for patients and their families, has a high cost of treatment, and is the cause of death of 250 thousand patients in the world [10].

Cardiac arrhythmias and conduction in patients with asthma seem relevant and largely unexplored kardiopulmonologicheskoy problem. This is associated with a high prevalence of such disorders in asthma, which, according to some authors, are found in 40-90% of patients in this category. According to published data, patients with asthma may have a place in almost all types of heart rhythm disorders, as well as their combination [2,4,6].

Arrhythmias impair the quality of life for patients, the prognosis of the disease and may lead to increased incidence of sudden death [7,8,9].

The main pathogenetic factors leading to the development of arrhythmias and blockades, are:

- to change the rheological properties of blood type hyperviscosity syndrome, which leads to a violation of the pulmonary microcirculation and cardiac

- pulmonary hypertension, increasing stress on the heart, which leads to an increase in myocardial oxygen demand and limit the coronary fraction of cardiac output;

- hypoxemia, causing an imbalance between oxygen transport and needs tissue;

- toxic effects on the myocardium due to chronic inflammation of the bronchopulmonary tree.

All this leads to dystrophic changes in myocardium and appears arrhythmias and conduction [3,5].

Purpose.

The study of frequency and structure of arrhythmias and conduction disturbances of the heart in patients with uncontrolled asthma.

Materials and methods.

Was performed analysis 245 patient records that were hospitalized in the therapeutic department MBUZ Novosibirsk "Hospital № 25". All patients had a diagnosed asthma, which was verified in accordance with the typical clinical picture and data of respiratory function (1). Duration of disease ranged from several months to 40 years. Men were 93 people (38%) in age - 16 to 89 years, average age - 57 ± 2,17 years, women - 152 (62%) in age - 16 to 87 years, average age - 66 ±1,36 year. In accordance with the criteria of GINA in 2002 and 2007 all patients, depending on the severity of the disease, were divided into three groups: first - 28 (11,4%) patients with mild persistent asthma (mean age 41,5 ± 2,75, the average duration of asthma 2.5 ± 0,7 years), second - 122 (49,8%) patients with moderate persistent asthma (mean age 64,0 ± 1,4, the mean duration of asthma 7,0 ± 1,0 years), 3rd - 95 (38,8%) patients with severe persistent asthma (mean age 62,5 ± 2,0, the mean duration of asthma 9,5 ± 1,14 years) . All the patients except the general clinical examination, conducted a study of respiratory function (for spiroanalizatore "Elf Laspek-01" Russia, Novosibirsk), ECG (in a 6-channel electrocardiograph «CARDIOVIT-AT-2, Sweden). The obtained data were processed statistically using licensed mathematical program «SPSS 16,0».

Results and discussion.

Studied frequency and structure of arrhythmias and heart conduction disorders in patients with uncontrolled asthma.

Revealed that 109 patients (54,6%) - arrhythmias are not registered, 64 persons (26,1%) revealed sinus tachycardia, in 18 persons (7,3%) - atrial premature beats, 12 people

(4, 9%) - ventricular premature beats, in 7 patients (2.9%) - atrial fibrillation in 2 (0,9%) - atrial flutter. Associated arrhythmias were observed in 33 patients (13,4%), dominated by a combination of sinus tachycardia and atrial premature beats - 13 (5,3%). Thus, rhythm disturbances were registered in more than half of patients (55,5%).

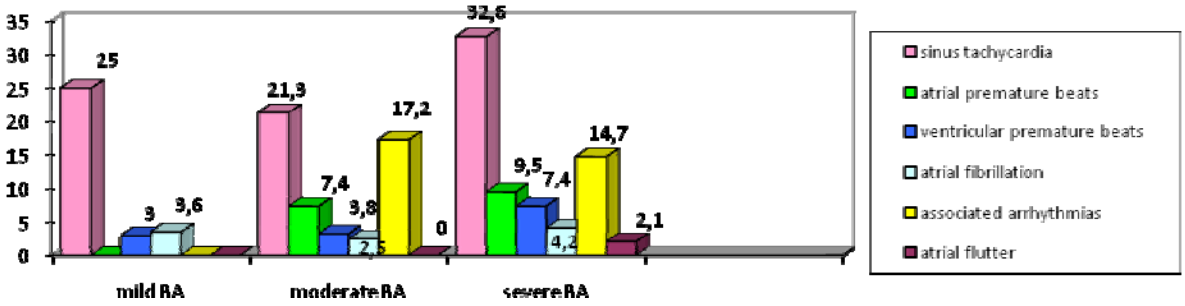

Fig. 1. **The frequency and structure of arrhythmias in patients with asthma, depending on the severity of the disease.**

Among patients with mild persistent asthma are not registered arrhythmias in 20 patients (71,4%) in 7 patients (25.0%) were sinus tachycardia, and 1 person (3,6%) - ventricular premature beats.

Among patients with moderate persistent asthma, cardiac arrhythmias are not detected in 59 patients (48,4%), sinus tachycardia was noted in 26 (21,3%), atrial premature beats in 9 (7.4%), ventricular premature beats in 4 people (3,3%), atrial fibrillation in 3 people (2,5%), combined cardiac arrhythmias in 20 (17,2%).

Among patients with severe asthma in 29 patients (30,5%), arrhythmias were observed, sinus tachycardia was diagnosed in 31 persons (32,6%), atrial premature beats in 9 (9,5%), ventricular premature beats in 7 people (7,4%), atrial fibrillation in 4 people (4,2%), atrial flutter in 2 patients (2.1%), combined cardiac arrhythmias in 13 patients (14,7%).

Thus, with an increase in the severity of asthma increases the frequency of rhythm disturbances and changing their structure (Fig. 1).

In the overall structure of the disturbances conduction prevailed of intraventricular conduction disturbances -76 people (31,0%), conduction intraatrial abnormalities in 13 patients (5.3%), sinoatrial block - in 7 (2.9%), impaired AV conduction - in 3 (1,2%), conduction abnormalities were not recorded in 145 people (59,2%). Revealed that with

increasing severity of asthma increases the frequency and changes the structure of disturbances conduction (Table 1).

Table 1. The frequency and structure of the conduction disturbances in patients with asthma, depending on severity.

Conduction disorders	***The severity of asthma***					
	Mild BA (n=28)		***Moderate BA (n=122)***		***Severe BA (n=95)***	
	abs.	%	abs.	%	abs.	%
not registered	23	82,1	79	64,8	43	45,3
violation of intraventricular conduction	5	17,9	33	27,0	38	40,0
violation of intraatrial conduction	-	-	6	4,9	7	7,3
violation of the SA conduction	-	-	2	1,6	5	5,3
violation of the AV conduction	-	-	1	0,8	2	2,1
violation of intraventricular and intraatrial conduction	-	-	1	0,8	-	-

Conclusions:

1. The analysis suggests that more than half of patients with asthma, we have the irregular heart rhythm, in a structure which dominates the change of automaticity of sinus node (sinus tachycardia).

2. With increasing severity BA, there has been an increase in frequency and structure of the conduction disturbances.

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CLINICAL-MORPHOLOGICAL CHARACTERISTICS OF LICHEN RUBBER PLANUS (LRP) OF THE ORAL CAVITY MUCOUS LINING

The authors have studied clinical and morphological signs of some forms of Lichen rubber planus (LRP) of the mucous lining in the oral cavity that have significant diagnostic value. They have also conducted a comparative analysis of the morphological picture depending on clinical course of the disease.

Key words: Lichen rubber planus, oral cavity mucous lining, morphology, diagnostics.

Introduction. Clinical picture and morphology of Lichen rubber planus on the mucous lining of the oral cavity (LRPOCML) and the morphology of the planus itself are well studied. [1, 2, 9]. At the same time, etiology of the disease is not clear yet. [4, 5, 11].

Clinical manifestations of LRPOCML confirmed by pathohistological studies help reliably diagnose this disease. Combination of a number of pathological and histological signs makes the morphological picture of the process rather clear: pathological presence of granulation layer, parakeratosis, hyperkeratosis, akantosis. On the other hand, the results of many studies give evidence about diversity of morphological changes developing in the mucous lining of the oral cavity in LRP. [1, 2, 3, 6, 7, 8].

The abovementioned facts make it useful to study clinical and morphological manifestations of LRP as it allows assessment of the results and effectiveness of treatment.

The goal of the research – comparative morphological study of bioptates taken from the mucous lining of the oral cavity with LRP and practically healthy lining (control group) that will make it possible to diagnose this disease and determine correlation between pathomorphological picture and peculiarities of clinical course of the disease.

Materials and method. 66 patients with typical 32 (48, 5%) and erosive-ulcerative forms 34 (51, 5%) of LRP of the mucous lining of the oral cavity were examined, out of them 18 males (27, 2%) and 48 females (72, 8%). Mean age was 54, 3±1, 3 years.

Bioptate pathological and morphological study taken from disease foci of the buccal mucosa was performed in 33 patients (14 men and 19 women – 42, 4 and 57, 6% respectively) LRP in OCML with typical clinical manifestations– 17 (51, 5%) and erosive-ulcerative – 16 (48, 5%). Duration of the disease was averagely 1, 8 ± 0, 44 year. The control group included 30 practically healthy people without inflammatory damage of the OCML in 16 (53, 3%) males and 14 (46, 7%) females.

Mucosa bioptates had the sizes 2,0×2,0 mm, having been taken from the buccal mucosa. In patients with LRP dissection of the buccal mucosal fragments was conducted from the zone of damage close to the border with a healthy tissue. Biopsy was performed under local anesthesia (2% lidocane solution)

"Health control" was presented by bioptates of patients without pathological and morphological signs of LRP.

For pathohistological study tissues were placed in 10% solution of neutral formalin on phosphorous buffer pH 7, 5 for 24 hours. After that, they were thoroughly washed under running water, dried in ascending battery of alcohol followed by placing into histowax according to the standard laboratory technique.

The studies were performed on paraffin slices 7 mkm thick, stained with hematoxilin and eosin by a routine method. Microscope was used. (Leica). The preparations were examined at first by small (ocular 7, camera 10), later by a big (ocular 7, camera 40) increase of size. All mucosa bioptates were to be described including those having been taken from the control group. The conclusion was made while describing not less then two slices of each bioptate.

Results and discussion . The main complaints of patients with typical form of LRP at the first visit were discomfort in the mouth, burning, tightening sensation, dryness and unsmooth sensation on certain parts of the oral cavity mucosa. On the contrary, the patients with erosive-ulcerative form complained of tenderness, burning caused by all types of irritants, increasing while eating rough, spicy and acid food as well as changes of taste sensitivity.

During the examination of the oral cavity with typical form of LRP there were symmetrical eruptions in the form of fine (up to 2 mm in diameter) papules of round shape of whitish (whitish-pearl or grey-white) color. Merging they form lines, arches and net picture; in case of a large number of eruptions resembling lace or ferny leaves.

Papules were located at the background of visibly unchanged mucosa rising above the level of the mucous lining that could not be removed by intensive scrapping. On the dorsal part of the tongue eruptions look like large, single white papules up to 1 cm in diameter.

On the red border of the lips, merged papules look like stars or non-interrupted desquamating line. Only low lip was affected.

Erosive-ulcerative form of LRP of OCML was diagnosed based on the presence of erosions, less frequently ulcers of different sizes (from 2 mm to 1 cm in diameter) at the background of exudative-hyperemic manifestations. Along the periphery, erosions were combined with typical papulous elements of whitish color. Erosive elements had irregular form, bleed easily if being traumatized, frequently were covered with fibrous coating on the oral mucosa and bloody crusts on the red border of the lips. Usually erosions persist for a long time and were resistant to therapy.

Erosive-ulcerative form was observed in 51,5% of patients, out of them 14,7% had metabolic syndrome that explains the clinical picture of symptoms complex known as Grinshpan-Potekaev syndrome including erosive-ulcerative form of oral LRP, diabetes mellitus and hypertension. The severity of LRP of OCML reliably depends on severity of hypertension and blood glucose level.

Structural changes of buccal mucous lining in patients with LRP depend on inflammatory process type (typical and erosive-ulcerative) and there were more marked in erosive-ulcerative disease.

The most frequent pathological and morphological signs in the examined material taken from patients with LRP were thickening of epithelial layer of the buccal mucosa due to proliferation of basal and burr cells (akantosis), sometimes akantosis with typical for LRP sharpening of epithelial interpapillary processes going downward (saw syndrome) (Pict. 1), excessive increase of superficial layer (hyperkeratosis) with areas of nuclei preservation in superficial cells of burr stratum (parakeratosis) (Pict. 2, 6).

In 69,5% of cases there was evidence of pathological presence of granulation layer cells (granulation signs) (Pict. 3, 5), diffuse strap-like lymphoid infiltrate, in 78,3% lymphoid infiltrate (Pict. 4) at the junction of epithelium and mucosal palate itself.

In some cases (39,1%) the border between epithelial and subepithelial layers was not very distinct because of infiltrate cells. Horning of mucosa in popular zone (Pict. 3, 4, 5) has been revealed in 78% of patients with LRP in the oral cavity.

In 82,6% of patients hyper and parakerosis were combined with signs of akantosis (Pict . 2, 4, 6). The number of cells in burr and basal epithelial layer was increased. Burr and basal strata were thickened, with epithelial processes being elongated at the same time (Pict. 2, 5).

Certain signs of parakeratosis were noted in 30,4% patients before treatment. At the same time granulation layer was not marked. (Pict. 2, 4, 6). The sings mentioned above can be considered as impairment of cellular division and epitheliocytes differentiation processes.

In oral cavity bioptates of the majority of patients there was presence of inflammatory cellular infiltrate before treatment. Cellular infiltrate was localized mainly around vessels of microcirculatory bed (basically venules and capillaries) (Pict. 4). Less frequently, infiltrate site has no connection with vessels.

Infiltrate was presented mainly by lymphocytes with admixture of macrophages and single granulocytes (mostly, neutrophils). Single eosinophils could be observed. Inflammatory cellular infiltrate was located in the upper part of the mucosa itself.

In 13,1% of patients intensity of cellular infiltration was assessed as severe, in the majority of cases it was moderate (65,2% cases), and in 21,7% it was almost absent. Combination of histological and pathological signs described above was observed in the majority of patients.

Typical form of LRP of OCML has classical morphological signs of the disease: akantosis, hyperkeratosis, parakeratosis, granulation, poorly differentiated borders of infiltrate basal layer consisting primarily of lymphocytes (Pict. 3).

In erosive-ulcerative form of LRP on OCML histological picture was characterized by similar changes resembling those of typical form except a clearly marked edema, dilation of stroma vessels as well as presence of epithelium defects (Pict. 6).

Pathomorphological signs of mucous lining inflammation in the oral cavity were: thickening of buccal mucosa epithelial layer due to basal and burr cells sometimes with sharpening of epithelial interpapillary process going downward, excessive increase of superficial layer with areas of nuclei preservation in the superficial layers of burr layer as well as the pathological presence of granulation cells, and inflammatory-cellular infiltration. It is consistent with literature data [8 , 10].

Conclusion. 1. Patients with LRP in OCML have clearly marked morphological changes in epithelium of damage foci of buccal mucosa confirming impairment of horning process:

a) thickening of buccal mucous lining epithelial layer due to proliferation of basal and burr cells, sometimes with sharpening of epithelial interpapillary process going downward;

b) excessive increase of superficial layer with areas of nuclei preservation of burr layer in it;

c) pathological presence of granulation cells (granulation manifestation);

d) marked inflammatory-cellular infiltration in the proper plate of buccal

mucosa.

2. Pathomorphological picture in epithelium of buccal mucosa damaged foci depend on clinical form of the disease. Severity of morphological changes in inflammatory foci of buccal mucosa increases in patients with erosive-ulcerative form and is more pronounced than in a typical form.

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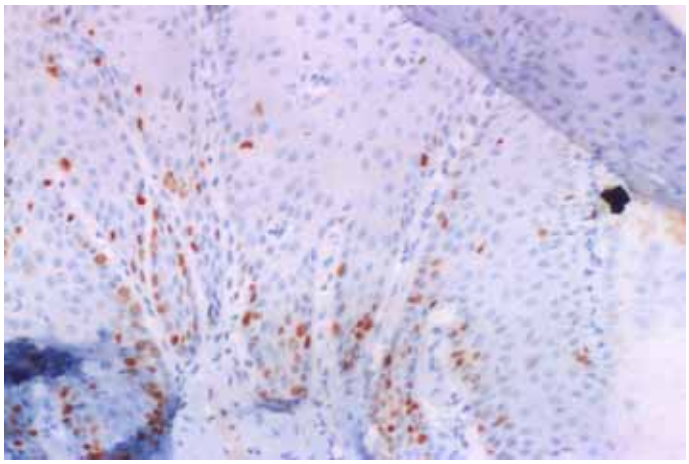
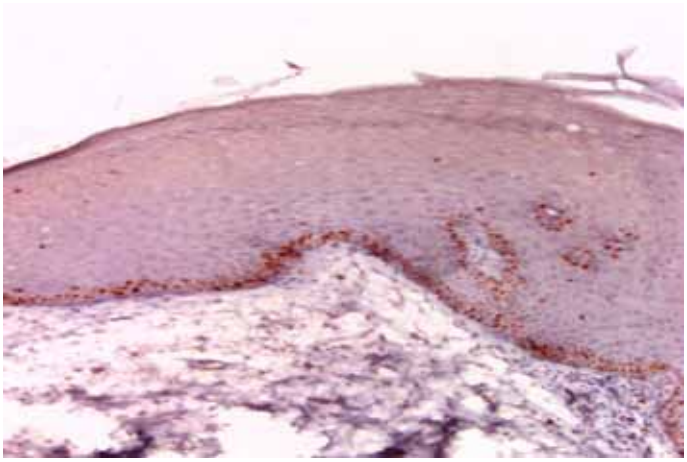
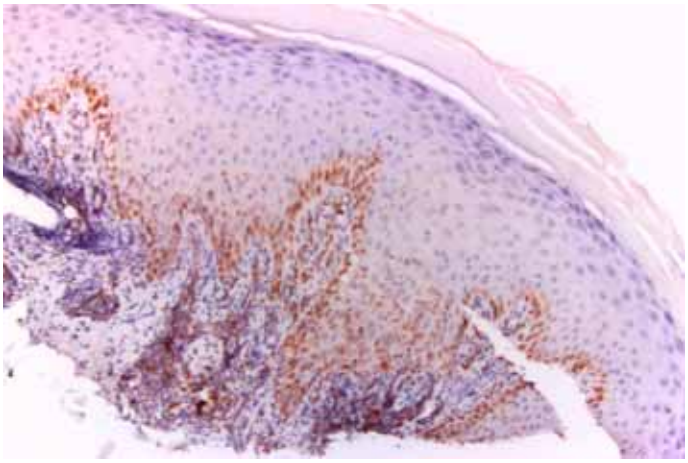


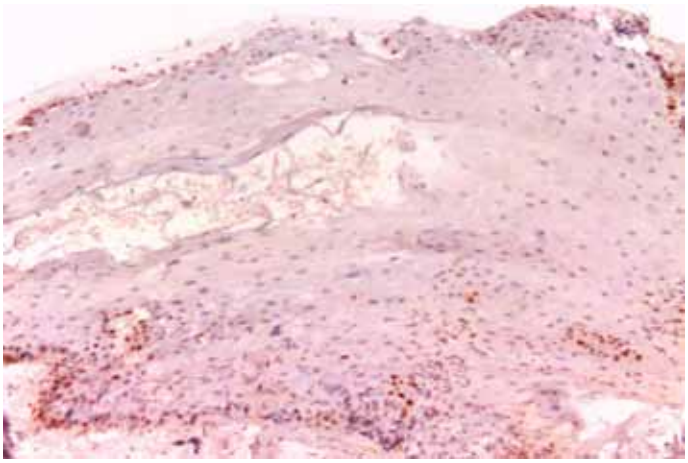
Pict. 1. Patient J, 56 with typical form of LRP on OCML, 4.5 years of duration. Akantosis with sharpening of epithelial interpapillary processes**.** Inc**.** 400.



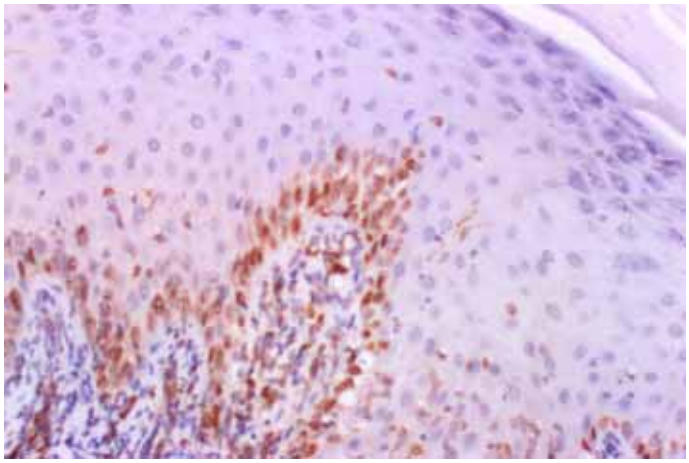
Pict. 2. Patient L, 48 with typical form of LRP on OCML, 5 years of duration. Akantosis, hyperkeratosis, parakeratosis, granulation. **Inc.** 400.



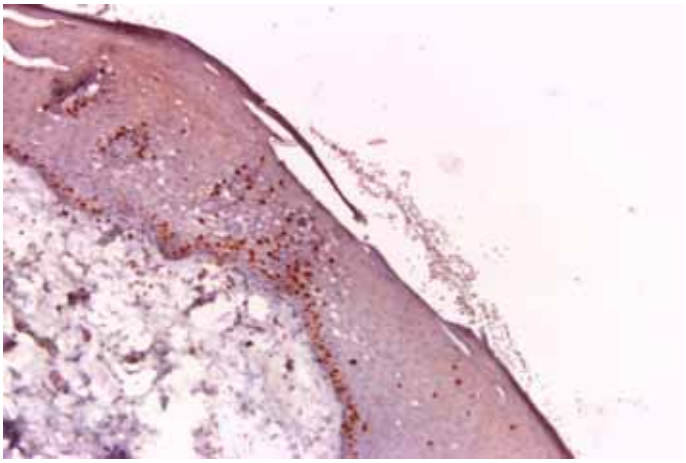
Pict. 3. Patient K. 43 with typical LRP on OCML of 2 years duration. . Akantosis, hyperkeratosis, parakeratosis, granulation, fine cell infiltration. **Inc.** 400.



Pict. 4. Patient L. 60 with erosive-ulcerative form of LRP c 8 years of duration. Akantosis, hyperkeratosis, parakeratosis, granulation. Diffuse strap-like lymphocytic infiltrate. **Inc**. 400



Pict. 5. Patient B. 46 with typical form of LRP of 3 years duration. Akantosis, hyperkeratosis, granulation. **Inc.** 400



Pict. 6. Patient L. 48 with erosive-ulcerative form of LRP on OCML of 5 years duration. Epithelium defect, akantosis, hyperkeratosis , parakeratosis. **Inc.** 400

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ОЦЕНКА В СИСТЕМЕ ГЕМОСТАЗА У БЕРЕМЕННЫХ С АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИЕЙ

Introduction. A hyperpiesis (AH) is examined as a syndrome with different changes in the system of hemostases. A synthesis and metabolism of certain active substances change as a result of formation of placenta, that causes reduction of vessels as locally, so in the whole organism. Permeability of vascular wall changes on this background, activatijn of hemostases takes place [1; 3; 11; 14]. The systems of hemostases of mother and fruit during pregnancy function relatively separately [10]. On the function of spiral arteriol, by means of which the blood supply of placenta comes true, the system of hemostases of maternal organism influences, first of all thrombocyte link. Thrombocytes carry out adjusting of blood stream in spiral arteriols by co-operation of them thromboksynegenerating systems and prostocyclegenerating systems of endothelia [6; 13]. The changes of the coagulant system of blood during pregnancy consist in the permanent decline of fibrinolytic activity and increase of coagulation of blood. These changes have the expressed adaptation character directed, foremost, on the decline of volume of physiological blood lose during childbirth [9; 12; 15].

At physiological flowing pregnancy tension of hemostases is forced and it is well compensated, however and at her development of thrombohemmoragic complications is possible. At the hypertension states for pregnant risk of development of similar complications, including the disseminated inervessel coagulation(DIC) , rises [8].

It is set that pregnancy always flows with the phenomena of hypercoagulability, thus in III trimester and especially before luing-ins there is the expressed predominance of processes of hemopexis above the processes of fibrinolysis. It takes place due to the increase of concentration of Fibrinogenum. The increase of prothrombin index takes place also in the end III of trimester and it is related to the increase of total activity of factors of rolling up [2; 4;].

By the end of pregnancy there is a fall-off of activity of the fibrinolytic system, there is deleting from the of the circulatory system river-bed of fibrin deposits and prevention of formation of fibrin clots [5; 7].

Materials and research methods.

In researches the pregnant took part without a hyperpiesis: it is bored a 141 population, 139 populations of Russians and with a hyperpiesis: 130 the pregnant of population are bored and 130 pregnant of the Russian population. Taking into account, that every trimester of pregnancy the norms are peculiar to, an inspection was conducted in the dynamics of pregnancy on trimesters on the base of the Republican perinatal center Ulan Ude. Middle age of investigating patients are from 25 to 34

For determination of vascular-thrombocyte link of hemostases Fibrinogenum, soluble fibrin-monomere complexes, aggregating with UIA, prothrombin time, activated partial thromboplastine time, thrombin time on the sets of reagents of firm "Technology-standard" (Russia) on the programmable optico-mechanic coagulometer of "Minilab-701"; time of hemopexis (on Lee Whitte) is in the chamber of Goryaev were analysed.

Statistical calculations were conducted by c participation of department of informatics and computer technologies of SES EPE the "Irkutsk state institute of improvement of doctors". The got results are brought in tables in a kind - arithmetical mean ± standard deviation (M±σ) at the attained level of meaningfulness of signs of $p<0,05$.

Results and discussion.

On our researches at the persons of Buryat nationality with a hyperpiesis from data of coagulogram a hypercoagulability is diagnosed due to the increase of procoagulation link. Most essential is an increase of concentration of Fibrinogenum at the end of pregnancy, which exceeds a norm in a group with a hyperpiesis by comparison to a group without AH. Concentration of протромбина in our researches it is indexes of ptothrombine time (IPT) and the international normalized relation (INR) for certain is exceeded in a group from AH, that testifies to activating of external way of hemopexis. By the end of pregnancy there is a fall-off of activity of the fibrinolytic system, there is deleting from the of the circulatory system river-bed of fibrine deposits and prevention of formation of fibrine clots [6; 7]. At the end of pregnancy of the Buryat women with a hyperpiesis has an increase of concentration of derivates Fibrinogenum - exceeding of soluble fibrin-monomesure complexes (SFMC) comparing to the group without hypertension in this population, that specifies on activity of inopexi. Time of hemopexis in a group without AH at the end of pregnancy for certain ($p<0,0005$) higher, than for pregnant from AH, and bleeding duration in the second and third trimesters of gestoses for certain ($p2<0,05$; $p3<0,01$ accordingly) exceeds for pregnant from AH, what in a group without hypertension. Time of aggregating of thrombocytes with the compatible inductor of activating (CIA) for certain exceeds for pregnant from AH in the end of hestation (11,13±3,73), thus this index in a group without AH to the third trimester diminishes. Because of our researches in the Buryat population there are reliable distinctions on the indexes of hemostases between pregnant without hypertension and pregnant with essential hypertension.

It is educed at the analysis of the Russian population, that INR for certain exceeds for pregnant with a hyperpiesis during all hestation, but does not exceed a norm (0,8-1,2). Activated partial thromboplastine time (APTT), which reflects the internal mechanism of hemopexis in the first trimester of both groups is at one level, to the middle of pregnancy there is the reliable exceeding of this index for pregnant without AH are 32,30±4,13 secs., against a 29,06±5,18 sec. in a group from AH, and in the third trimester the reliable diminishing of this index registers in a group without hypertension. APTT for pregnant with a hyperpiesis during all period of hestation remains at one level, and it assists maintenance of activity of internal mechanism of hemopexis practically at one level and is an adaptation mechanism. Fibrinogenum in this population the pregnant with a hyperpiesis practically have at one level and for certain exceeds indexes in the first and second trimesters of pregnancy for women without hypertension, in which an increase of index was by the end of pregnancy. Prothrombine time in the first and second, and thrombine time in the third trimesters of pregnancy observed for certain below in a group without hypertension. Soluble fibrine-monomesured complexes for certain higher in the first trimester for pregnant with a hyperpiesis, thus in this group an index does not change practically. Aggregating with UIA for certain ($p<0,05$) higher for women without hypertension. Time of hemopexis is reliable ($p<0,001$) higher in a group without hypertension, and bleeding ($p<0,01$) duration in a group from АГ. In the Russian population also the indexes of procoagulants for patients with a hyperpiesis exceed indexes for women without hypertension, but for pregnant it is marked from АГ, that parameters of coagulogram are at one level, or go back to the number of the first trimester at the end of pregnancy (table 1).

Conclusion

Thus, in the Russian population there are compensation-adapting mechanisms at a hyperpiesis, which assist maintenance of indexes of procoagulants practically at one level, what is not observed in the Buryat population. Most model in regard to a hyperpiesis in a бурятской population in the first and second trimesters of pregnancy there are data of INR and IPT, at the end of pregnancy changes touch APTT , to aggregating with UIA, time of rolling up and bleeding duration. The height of INR and IPT is also marked at the beginning and to the middle of pregnancy in the Buryat population at hypertension. At the persons of the Buryat nationality with a hyperpiesis from data of coagulogram a hypercoagulability is diagnosed due to the

increase of procoagulation link. Most essential is an increase of concentration of Fibrinogenum at the end of pregnancy, which exceeds a norm in a group with a hyperpiesis by comparison to a group without AH. Concentration of протромбина in our researches it the indexes of протромбинового time and INR for certain exceed in a group from AH, that testifies to activating of external way of hemopexis.

At the end of pregnancy the Buryat women with a hyperpiesis has an increase of concentration of derivates Fibrinogenum - exceeding of soluble of fibrine-monomeasuered complexes comparing to the group without hypertension in this population, that specifies on activity of inopexi.

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Clinical Manifestations of Pneumonia in Servicemen.

Abstract. It was analysed case histories of 1205 servicemen at the age of 16 to 57 with community-acquired pneumonia being treated in the pulmonological department of the Branch № 1 of the Federal State Establishment (FSE) "321 District Military Clinical Hospital (DMCH)" of the Ministry of Defense (MD) of the Russian Federation in Novosibirsk in 2003-2005. Productive cough, painful and asthenic syndromes predominated in the clinical picture of servicemen with community-acquired pneumonia; normal and low grade fever of the body were registered more often. In the majority of the examined patients changes in the percussion sound weren't revealed, on auscultation with the same frequency it was auscultated vesicular, weakened and hard respiration; particularly in the half of cases râles were absent, in their presence there were moist râles and crepitation.

Key words: *pneumonia, servicemen, clinical manifestations*

Introduction. Community-acquired pneumonia is one of the most actual problems for the medical services of the armed forces of the Russian Federation due to a high degree of the morbidity in servicemen, beginnings of the epidemic flare-ups, disturbances in the labor activity and decreasing of fighting efficiency. [2]

According to literature findings community-acquired pneumonia in persons of young age occurs more often in the mild form (72,5%), medium-weight course occurs in 21.5 % of cases and only in 6 % there is a severe course. [1] Usually the onset of disease is acute, rarely – gradual, sometimes the development of pneumonia is preceded with an attack of acute respiratory viral infection or tracheobronchitis. [2]

Various combinations of bronchial and extrapulmonary symptoms are covered to the principal clinical manifestations of community-acquired pneumonia. The most common manifestations of bronchopulmonary symptomatology are cough, breathlessness, pain in the chest, sputum that may be mucous, mucopurulent, sometimes containing blood. Characteristic extrapulmonary symptoms are hypotension, weakness, tachycardia, chill, myalgia, fever, mental confusion, meningism, changes in indexes of peripheral blood. [5,6,7].

According to literature findings in the clinical picture of the disease in servicemen syndromes of bronchitis, intoxication and general inflammatory changes predominate. But in the period of the height of the disease in 41% of the patient there is no temperature elevation of the body. According to literature the syndrome of pleura irritation is revealed more then in the half of the patients. [1] Presence or absence of this or that symptom, its intensity are determined on the one hand by the character of the causative agent, and on the other hand – by the condition of the local pulmonary protection and particularities of reaction of other systems of the organism (immune, system of hemostasis etc.) [7]. At once classical characteristic objective signs of pneumonia are dullness of the percussion sound over an affected part of the lung, local auscultated bronchial respiration, focus of sonorous finely vesicular râles or inspiratory crepitation, increase of bronhophony and vocal vibration, in some patients they may differ or be absent [3,4,5]. For the diagnosis of community-acquired pneumonia X-ray confirmation of the syndrome of lung infiltrate is obligatory. [3,5].

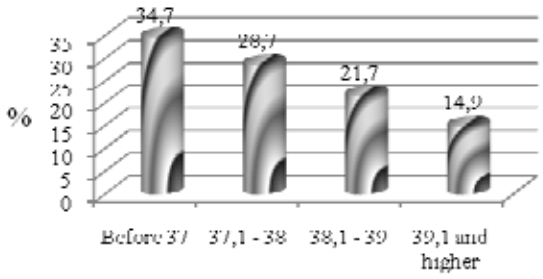
Purpose of research: to study clinical manifestations of pneumonia in servicemen.

Materials and Methods. It was analysed case histories of 1449 patients with community-acquired pneumonia being treated in the pulmonological department of the Branch № 1 of the FSE "321 DMCH" of the Ministry of Defense of the Russian Federation in Novosibirsk in 2003-2005.

1205 persons at the age of 16 to 57 were introduced in this study - (81/3%) from general number of treated patients (except pensioners, family members of servicemen, women of the contract service – 7% from general number of examined and servicemen in whose admission there were no X-ray signs of the syndrome of pulmonary infiltration – 9,8%).

Results of research.

In taking of complaints at the moment of admission to the hospital there was paying attention to: fever, asthenic syndrome, presence and character of cough, presence of the chest pain and breathlessness.



There was normal body temperature in the 34,7% of cases, fever from 37,1° to 38° in 28,7%, from 38,1° to 39° in 21,7% and 39,1° and higher in 14,9% respectively. (pic. 1)

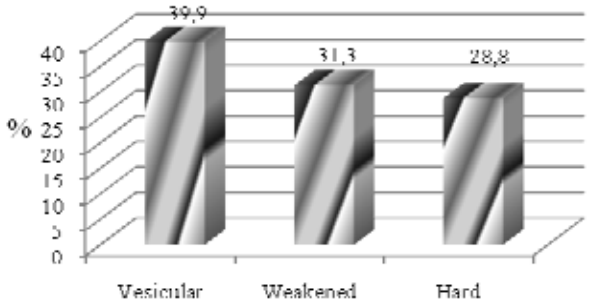
Picture 1. Rate and intensity of fever among examined patients.

Cough was absent in 6,5% of patients with community-acquired pneumonia, productive cough was registered in 73% and non-productive – in 20,5 %.

Pain syndrome was revealed in 58,3% of servicemen with community-acquired pneumonia, asthenic – in 65,3%. 17,6% of patients complained of the breathlessness.

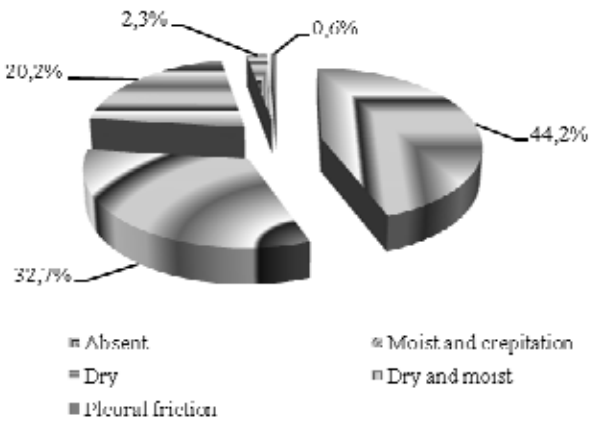
On objective study it was estimated the change of percussion sound, the character of respiration, the presence of râles, the rate of respiratory movements, the rate of cardiac contractions and the level of arterial pressure.

Percussion sound was not changed in 86,6 % of the patients, the shortening of the percussion sound was marked in 13,4% of cases.



Vesicular respiration was auscultated in 39,9% of cases, weakened – in 31,3% and hard – in 28,8%. (pic. 2)

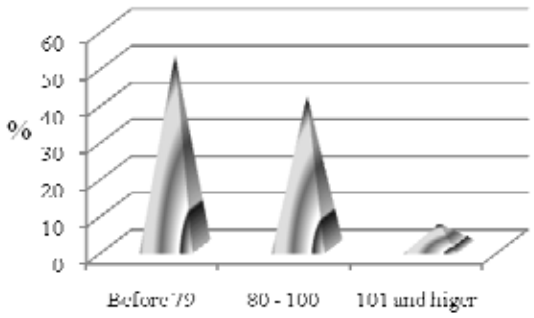
Picture 2. Type of respiration in examined patients.



On auscultation râles were not revealed in 44,2% of cases, moist râles and crepitation were marked in 32,7% of patients, dry – in 20,2%, combination of dry and moist râles in 2,3% and pleural friction was in 0,6%. (pic. 3)

Picture 3. Character of râles in examined patients.

The rate of respiratory movements in normal range was registered in 83,5% of cases, the rate of respiratory movements from 20 to 24 was in 12,9% and from 25 and higher – in 3,6% of patients.



Rate of cardiac contraction in normal limits was registered in 52,4% of patients with community-acquired pneumonia, 80-100 beats per minute – in 41,2% and 101 and higher – in 6,4% of patients. (pic. 4)

Picture. 4. Rate of cardiac contraction in examined patients on admission

Level of systolic arterial pressure in normal limits was 97,4% of cases and diastolic arterial pressure was 97,8%.

Conclusions: 1. In the clinical picture of community-acquired pneumonia in servicemen productive cough, pain and asthenic syndromes predominated, breathlessness was registered rarely.

2. Normal or lower grade fever were marked more often.

3. In the majority of the examined patients there were no changes in percussion sound, on auscultation with the same frequency there were vesicular, weakened and hard respiration, particularly in the half of all cases râles were absent, in case of there presence moist râles and crepitation predominated.

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COMPLEX APPROACH TO THE TREATMENT OF ESOPHAGEAL CANCER

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Summary

Results of checkups and treatment of 71 patients with esophageal cancer were analysed. Clinical symptoms of illness, results of instrumental methods of research, immediate and long-term results of surgical treatment (31 (72%) patient underwent extirpation of esophagus with plasty of posterior mediastinum with gastric tube and extensive lymph node dissection. 1 (2%) patient underwent subdermal plasty with gastric tube, 9 (21%) patients underwent large intestine plasty, 2 (5%) patients underwent small intestine esophagoplasty), and data about complications of immediate post-operational period, immediate and long-term results of operative therapy are provided.

Keywords: esophageal cancer, surgical treatment.

Introduction

According to the data from literature, in the majority of oncologic diseases of digestive tract esophageal cancer is in the top division. In last two decades there were no sign of decrease in incidence rate of esophageal cancer. Among other cancerous diseases, fatality rate of esophageal cancer amounts to 5-6% [3].

In Russia, esophageal cancer holds the 14th place in illness patterns and the 7th place in morbidity patterns among malignant newgrowths [2]. General number of afflicted with esophageal cancer in Russia annually reaches 7000 occurrences, 75% of tumors are found in men. Peak of disease incidence is in those older than 60 [3]. Based on the fatality rate from malignant tumors, Yakutia can be counted a territory of "hazardous oncological risk"[1].

Factors that directly influence result of esophageal cancer treatment are distribution and size of process, appearance of metastasis, involvement of proximate organs, patient's age and occurrence and state of concomitant illnesses.

It is still an actual problem to pick type and amplitude of operation, combined or complex treatment methods and this gives reason to continue researching optimal treatment method of patients with esophageal caner.

Methods and materials.

71 patients with esophageal cancer were in care in surgical department RH № 1 – NCM during the time of research.

55 (75.5%) of them were male, 16 (22.5%) - female patients; 60 (84%) patients from the indigenous population and 11 (16%) patients of other different nationalities; their age ranged from 40 to 81 (table 1).

Table 1

Patients distributed by age

40 – 50 years		50 – 60 years		older than 60 years	
total	%	total	%	total	%
10	14	29	41	32	45

All patients underwent complex examination, from which basic were: esophagus fluoroscopy, gastrofibroscopy with biopsy for histological verification of tumor. Ultrasound investigation and computed tomography were used to specify presence of metastases and location of tumor spread outside the esophagus.

Results and discussion.

Dysphagy is first evidence of disease because of which patients seek medical attention hospital (82% of cases) (table 2).

Table 2

Clinical symptoms in patients

Clinical symptoms	total	%
Dysphagy	58	82
Pain and substernal discomfort	13	18
Sudden weight loss and weakness	13	18
Other symptoms	3	4

As it is evident from supplied table, disease also manifested in pain and substernal discomfort in 13 (18%) cases, severe weight loss and weakness in 13 (18%) cases and other symptoms, such as regurgitation, salivation, voice hoarseness in 3 (4%) cases.

Esophageal fluoroscopy shown narrowing of esophagus lumen in 67 (94%), defect of esophagus filling in 54 (76%) and rigidity of esophagus parietes in 63(89%) cases.

Fiberoptic EGD shown next changes in esophagus: narrowing of esophagus lumen 67(94%), infiltration in esophagus parietes 69 (97%), rigidity of esophagus parietes 68(96%), contact angiostaxis of esophagus parietes 52 (73%), ulceration of esophagus parietes 37(52%), swelling of esophagus pariety 6 (8%), tumor in form of whitish bosselation 3(4%) and tumor in form of bosselated surface.

Computed tomography shows next changes: narrowing of esophagus lumen 67 (94%), intumescence of esophagus pariety 69 (97%), induration of esophagus pariety 71 (100%), tumorous lump 70 (98%), enlargement of regional lymph nodes 23 (32%) and growth into proximate organs 18 (25%) cases.

After the aforementioned methods of examination, early cancer T_1, N_0, M_0 was diagnosed in 3 (4%) patients, tumor growth in all layers of esophagus and regional metastasis T_{2-3}, N_1, M_0 in 43 (61%) of patients, tumor growth into neighboring organs with distant metastasis into liver, lungs and sub- and supraclavicular lymph nodes T_4, N_x, M_1 in 25 (35%) of patient. Esophageal cancer usually localized in middle third of esophagus of 32 (45%) patients, lower third of 18(25%) patients, cardioesophagial cancer in 11(16%) patients and upper third in 10(14%) patients.

On the basis of research results, radical surgery was performed on 43(61%) of 71 examined patients (table 3).

Table 3

Operation methods depending on dislocation of esophageal cancer

Operation methods		Localization of esophageal cancer			
		Upper third of pectoral part of esophagus	Middle third of pectoral part of esophagus	Lower third of pectoral part of esophagus	Cardioesophagial localization
Extirpation of esophagus with one-stepped plasty with gastric tube	Savinih's transhiatal approach	-	15	8	-
	Triple approach	5	4	-	-
Extirpation of esophagus with one-stepped plasty with large intestine	Savinih's transhiatal approach	-	3	3	2
	Triple approach	1	-	-	-
Extirpation of esophagus with one-stepped plasty with small intestine	Savinih's transhiatal approach	-	-	-	1
	Triple approach	-	1	-	-

As it is seen from this table, 31 (72%) patient underwent extirpation of esophagus with plasty of posterior mediastinum with gastric tube and extensive lymph node dissection. 1(2%) patient underwent subdermal plasty with gastric tube, 9(21%) patients underwent large intestine plasty, 2(5%) patients underwent small intestine esophagoplasty esophagoplasty. During those operations, incisions were Savinih's transhiatal approach in 74% (32 patients) and triple approach n in 26% (11 patients) of cases.

There were no occurences of intraoperational complications during radical surgery.

Postsurgical period of 30(70%) patients went smooth. Nasogastric probe was removed in 4-5 days after the operation. Stitches were removed on the 10-13 day after the operation. Patients were released on 12-17 day after the operation.

Immediate postsurgical period of 5 (12%) patients was complicated by overlay of pulmonary pathology, 2(5%) patients developed mediastinitis, failure of thoracicanastomosis sutures was found in 2(5%) patients, vocal cords paresis in 1(2%) patient, 1(2%) fatal case due to colo-duodenal anastomosis dehiance, meadiastinitis, tracheal fistula.

In case of pneumonic complications, prolonged artifical lung ventilation, sanitation of tracheobronchial tree and respective therapy were conducted.

In case of mediastinitis, mediastinal drainage, intense antibacterial and anti-inflammatory therapy were conducted.

Due to failure of thoracic anastomosis sutures, gastric feeding tube was applied to 1 patient. 3 patients did not require operative treatment, dehiance eliminated with endoscopic method.

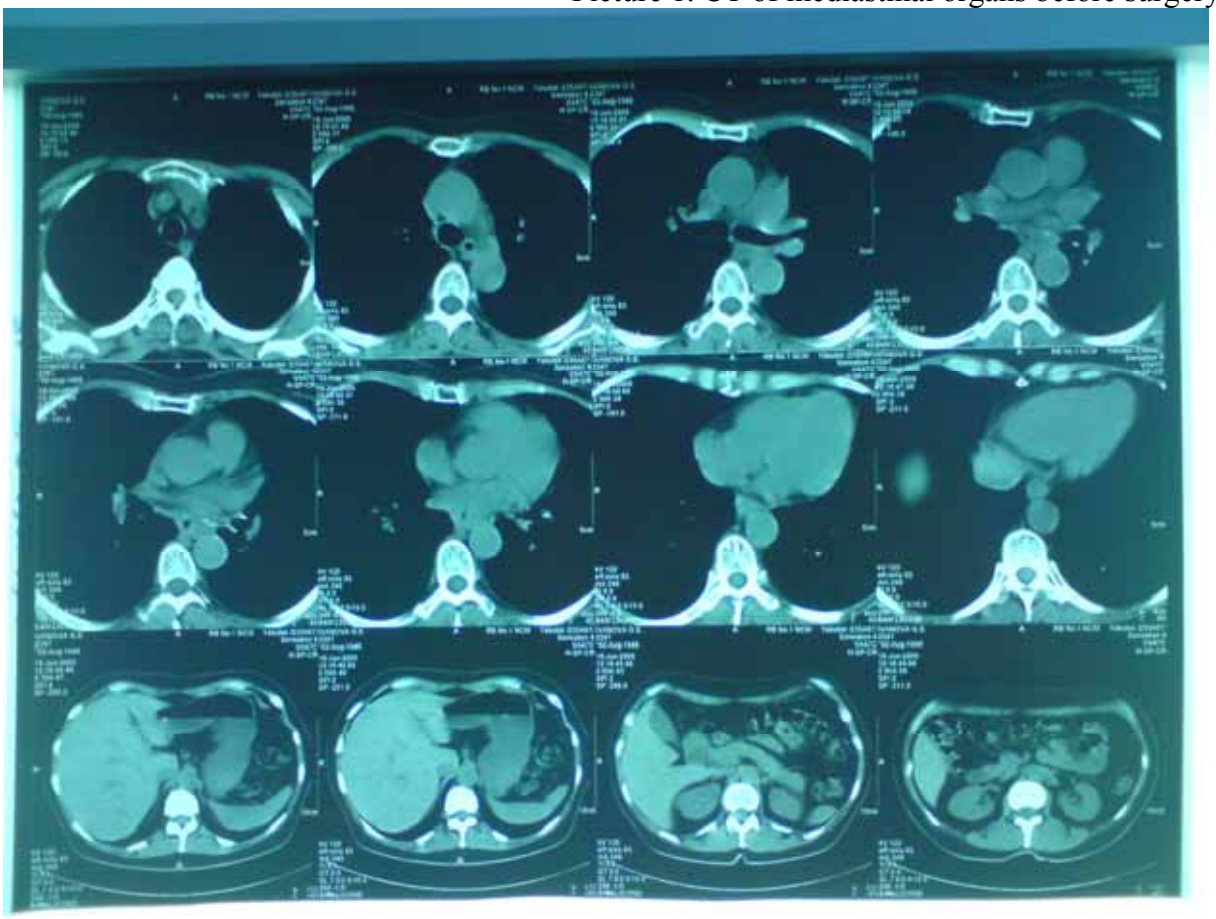
During pre- and postoperational period all patients were subjected to radiation and chemotherapy.

Long-term results were traced in 15 patients during 1 - 1.5 year without retrocessions or metastasis.

One of the brightest examples is patient I., born 1946. She was seeking medical attention due to complications with swallowing food and substernal pains radiating to the back. During month since first visit to hospital, moderately differentiated squamous cell carcinoma $T_3N_0M_0$ III ст. III of middle third of esophagus was diagnosed.

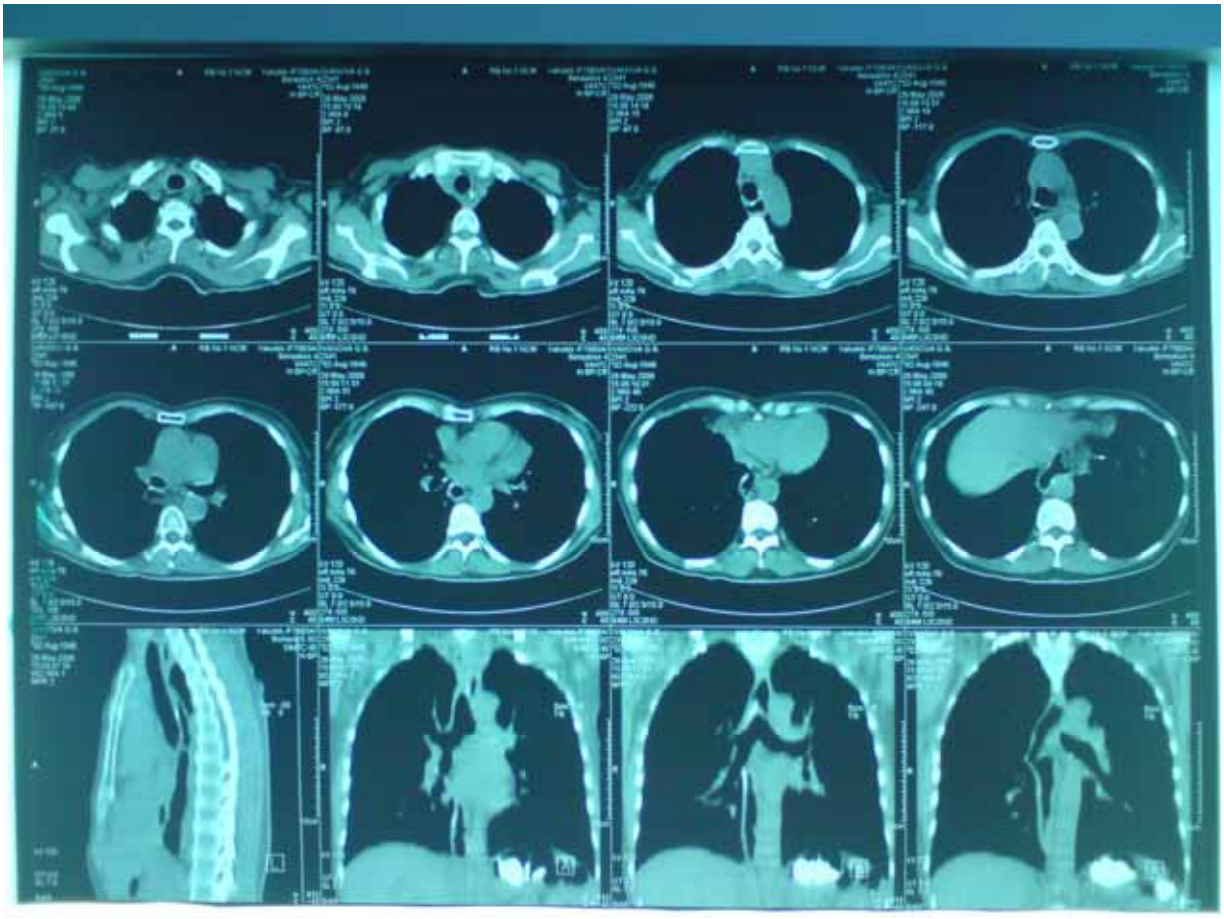
On that moment tumor was estimated as inoperable (Picture 1).

Picture 1. CT of mediastinal organs before surgery.



After a course of radiation therapy, tumor's size reduction from 10-12 cm to 5 cm was noted. Next stage of treatment was esophagus extirpation through right thoractomic incision in VI intercostal space and single-step esophagoplasty by isoperistaltic gastric tube. Result of cytological research was high differentiated squamous cell carcinoma with invasive growth into submucosal and muscular layers with inflammatory invasion in muscular layer. No malignant growth was found in resection margins. Immediate postoperational period went without complications (picture 2).

Picture 2. CT of mediastinal organs after surgery.



Complications with food transition appeared in patient in first few months after the operation. Conducted examination via esophagoscopy, fluoroscopy of esophagus diagnosed cicatrical stricture of esophageal anastomosis in subcompensation stage. A course of esophagus bougienage to 1.5 cm was conducted.

Last examination after four years found no signs of retrocession.

Strategic goal of surgeon is improvement of survival rate and life quality of patients. Choice of operative surgery method depends on presence of co-occurring somatic diseases, condition after other operations, presence of diseases and traumas of stomach, small or large intestine. Surgical treatment must be one-stepped.

We think that the optimal access is operation with triple incisions, which gives us an opportunity to appropriately remove regional lymph bassins and safely resect esophagus under direct vision. Surgical treatment of esophageal cancer must be followed by extensive 2 or 3-field lymph node dissection.

Isoperistaltic gastric transplant is one that responds to high standards of safety and quality of life and is used most frequently. If there is a situation, when it is impossible to use stomach to make connection with remaining part of esophagus, then we should treat colonic esophagoplasty as optimal..

Conclusion

1. Esophagial cancer is most often found in the middle pectoral part of esophagus - 45%, less frequently in lower pectoral part of esophagus - 25% cardioesophagial cancer - 16% and upper pectoral part of esophagus - 14%.
2. First evidence of disesase upon which patients seek medical advice is dysphagia - 82% without relation to site of esophagial cancer, which is evidence of significant generalization of process.

3. Most optimal method of radical surgical treatment of esophagial cancer is extirpation of esophagus with one-step plasty of posterior mediastinum with gastric tube and exstensive lymph node dissection through transhiatal Savinih's incision.

4. Combined cancer treatment with preoperational and postoperational radioactive and chemotherapy allows to improve long-term results of surgical treatment.

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PERFECTION OF ANTIBACTERIAL THERAPY INFECTED FORMS OF PANCREATIC NECROSIS IN A VERSATILE SURGICAL HOSPITAL

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Introduction. The most significant directions of scientifically-practical researches in urgent pancreatology last decade there is a studying of an aetiology, various links pathogenic, perfection of methods of diagnostics and treatment of patients pancreatic necrosis (PN) [11]. Against as avalanche increasing disease of a acute pancreatitis there is practically invariable a relative density of patients with destructive forms of the disease making 20-30 % [1,7,8,11]. Thus, data are disturbing, what even in large specialised clinics it is not marked tendencies to decrease the in the general and postoperative lethality, especially at the infected forms PN, reaching 30-40 % and more than [2,3,6].

Now, a leading direction in complex treatment of infected forms PN and its complications, along with adequate surgical intervention is antibacterial therapy (ABT) [3,4,5,6,12]. The given circumstance is caused by high frequency infected pancreas gland (PG) and parietal peritoneum (PP) at PN, and also development various exstraabdominal is purulent-septic complications which get a dominating role among causes of death of patients [11,12,13,14,16,17,18]. In this connection the researches directed on optimisation ABT at PN have the important practical value.

Research materials. The presented work is based on the analysis of results of complex conservative and surgical treatment of 50 patients with the infected forms pancreatic necrosis (IPN), were on treatment in surgical branches of Republican hospital №2 - the Center of emergency Republics of Sakha (Yakutia) during the period with 2008 for 2011

Diagnosis PN and development of its complications is verified on the basis of the complex inspection including: clinical data, laboratory researches (including a level estimation endogenic intoxications (EI) under the maintenance of substances of low and average molecular weight (AMW) by M.J. Malahova technique [9] and oligopeptides (OP) on Loury [10] in plasma, erythrocytes to blood and urine with allocation of 5 phases EI: 1st phase – the latent; 2nd phase - accumulation of toxic products; 3rd phase – the time of decompensation systems and bodies detoxication; 4th phase - irreversible decompensation systems and bodies detoxication; 5th phase -

terminal, and also the control and the account of the important biochemical markers necrosis PG and parietal peritoneum, system inflammatory reaction (CBP) and infected PN (LDG, C-reactive protein, PCT)). Tool methods of diagnostics included ultrasonic and X-ray contrast computer scanning of bodies of a belly cavity, parietal peritoneum spaces, a video laparoscopy, medical-diagnostic punctures of liquid formations PG, a belly cavity and parietal peritoneum spaces under the control of ultrasound with the subsequent microbiological and cytologic analysis of the received material. The estimation of weight of the general condition and expressiveness organ insufficiency at patients PN was spent with use of integrated systems-scales, Ranson [19], APACHE II [15] and SOFA [13].

For carrying out of microbiological research crops of biomaterials, cultivation, allocation of pure culture of microorganisms spent by the standard techniques. Identification of the allocated is conditional-pathogenic microorganisms (CPM) spent classical methods with test system API use (bioMerieux, France).

Antibiotic sensibility defined a disco-diffuzion a method on Muller-Hinton agar with use of a set of standard disks with antibiotic preparations, according to the standard techniques and according to standards of National committee on clinical laboratory standards - NCCLS 2002, 2003, 2004 (National Committee for Clinical Laboratory Standarts, USA) and to methodical instructions Ministry of health the Russian Federation 4 from 04.03.2004). Revealing ß-laktamazy of the expanded spectrum (ESBL) at culture Enterobacteriaceae spent fenotopic methods (a method of "double disks»). For revealing producing metallo-ß-laktamaz (MBL) cultures used «HODGE-test», «a method of double disks with sodium salt ethylendiaminvyniger acids (ADTA)». At sensitivity definition used the standardised qualitative disks of firms Bio-Rad™ and BD™ (USA).

Internal quality assurance carried out with use international referens-culture Staphylococcus aureus ATCC 25923, Pseudomonas aeruginosa ATCC 27853, Enterococcus faecalis ATCC 29212, Escherichia coli ATCC 25922.

Input, statistical processing and the analysis of the given microbiological researches was made by means of software package Microsoft Excel for Windows 2000 and software WHONET 5.4.

Considering variants of development of the pathological process, all patients with IPN have been divided into three groups, depending on kliniko-patomorfology forms pancreatic infections, weights of the general condition, expressive organ insufficiency on integrated systems-scales Ranson, APACHE II, SOFA, and also to phases EI.

Group "A" patients with formation pancreatic abscess (PA) - 9 (have made 18%) patients.

Value of indicators of weight of the general condition at them has made on scales Ranson <3 points, APACHE II <9 points and SOFA less than 4 points. Level EI, as a rule, corresponded I-II to phases. Group - "B" - patients with infected pancreatic necrosis (IP) - 17 (34%) patients. Values of indicators on integrated scales Ranson> 3, APACHE II> 9 and SOFA more than 4 points. Level EI corresponded III-IV-V to phases. Group - "C" - 24 (48%) patients with infected pancreatic necrosis in a combination with pancreatic abscess and infected pancreatic necrosis (IP+PA). Value of indicators of weight of the general condition at them has made on integrated scales Ranson> 3, APACHE II> 9 and SOFA more than 4 points. Level EI corresponded III-IV-V to phases.

Statistical processing of a clinical material is made with use of software package Stat Plus 2007 for Windows XP. At an estimation of all set average values (μ) and a standard deviation (σ) were calculated; the factor of reliability of differences was defined under test Mana-Uitni.

Results and discussions. By results of our researches PA development is noted at 9 (18%) patients of group "A", thus 5 (55,6%) are executed by the patient traditional external drainage abscess cavities, 4 (44,4%) patients have been operated by the technique improved by us consisting in opening of a cavity of an abscess and imposing of drainage-washing system using minilaporotomy with elements of an "open" laparoscopy by means of the complete set of tools "miniassistant". Lethal outcomes and complications in this group it is noted.

Such form pancreatogenic infections as IP (group "B"), is revealed during research at 17 (34%) patients. This patients needed performance stage endoscopic sanitation or transition on wide laparotomy with subsequent use of modes of operative intervention "on demand" or «under the program», that depended on a concrete clinical situation. Has thus died 2 (11,7 %) patients.

Combination IP to the PA is revealed by us in 24 (48%) cases (group "C"). As a rule, occurrence of such form pancreatogenic infections was marked on the expiration of the second week from the moment of the beginning of disease, and corresponded to evolution widespread sterile pancreatic necrosis, that also has demanded use in surgical treatment of operative modes "on demand" or «under the program» depending on displays of pathological process. Has thus died 5 (20,8%) patients.

For a substantiation and the control spent antibiotic therapies at 50 patients with pancreatogenic infection are spent 126 microbiological researches. The microflora is found out in 110 (87,3%) tests. It is allocated and identified 196 cultures CPM. In 75 (59,5%) researches the monoculture, in 51 (40,5%) - microbic associations is allocated. Two-componental microbic associations are allocated in 29 (23,1%), three-componental - in 17 (13,5%), four-componental - in 5 (3,9%) tests. Results of bacteriological researches are presented to tab. 1.

Table 1

Sources of allocation of microorganisms at patients IPN

Biological material	Quantity the investigated tests		Quantity of tests with growth	
	Absolute value	%	Absolute value	%*
Wound the separated	39	31,0	38	97,4
Exudates belly cavity	50	39,7	48	96,0
Bile	18	14,2	14	77,7
Blood	11	8,8	7	63,6
Urea	5	3,9	2	40,0
Phlegm	3	2,4	1	33,3
Total	126	100	110	87,3

The note: * - it is presented sow in separate biomaterials

Apparently from tab. 1, the greatest sow microorganisms was observed in wound separated - 97,4% and exudates a belly cavity - 96,0% of positive results of researches. In bile and blood of patients microorganisms are revealed in 77,7 and 63,6% of tests, in urine, phlegm - in 40,0 and 33,3% of tests accordingly.

Studying of specific structure of the allocated microorganisms has shown, that at pancreatogenic infections the flora which has made 69,3% from all allocated cultures prevails gramnegative. Among gramnegative bacteria prevailed not fermenting gramnegative bacteria (GNB): Pseudomonas aeruginosa - 31,1%, Acinetobacter spp. - 7,1%, family Enterobacteriaceae: Klebsiella pneumoniae - 13,8% and Escherichia coli - 10,2%.

Grampositive the flora is revealed in 27,0% of researches. Prevailing agents among grampositive bacteria were sort activators enterococcus, in particular, E. faecalis - 11,2 %, E. faecium - 8,2% and coagulasonegative culture (CNS): S. epidermidis - 3,6% and S. saprophyticus - 1,5%. The fungoid infection basically has been presented Candida spp. Also (tab. 2) is found out in 3,0 %.

Table 2

Specific structure of microorganisms allocated at patients IPN

Species of microorganism	Quantity cultures	
	Absolute value	%
Gramnegative microorganisms	**136**	**69,3**
Including GNB	**77**	**39,3**
Acinetobacter spp.	14	7,1

Pseudomonas aeruginosa	61	31,1
Flavobacterium spp.	2	1,0
Including Enterobacteriaceae	**59**	**30,1**
Enterobacter spp.	9	4,6
Escherichia coli	20	10,2
Klebsiella pneumoniae	27	13,8
Citrobacter spp.	3	1,5
Grampositive microorganisms	**53**	**27,0**
Including Enterococcus	**38**	**19,4**
Enterococcus faecalis	22	11,2
Enterococcus faecium	16	8,2
Including Staphylococcus	**2**	**1,0**
S. aureus	2	1,0
Including (CNS)	**10**	**5,1**
S. saprophyticus	3	1,5
S. epidermidis	7	3,6
Including Streptococcus	**2**	**1,0**
Str. pneumoniae	1	0,5
Str. viridans	1	0,5
Grampositive coccus	**1**	**0,5**
Corynebacterium spp.	1	0,5
Anaerobics	**1**	**0,5**
Clostridium perfringens	1	0,5
Fungis	**6**	**3,0**
Candida spp.	6	3,0
Total:	**196**	

The presented spectrum of microorganisms gives representation about the basic activators, characteristic for IPN. Thus, analyzing data of bacteriological researches in dynamics, it is noticed, that with increase in terms of treatment in branch of resuscitation and intensive therapy (ITS) (basically it is patients at which was available widespread character of defeat PG and PP it was necessary for them to use modes of operative intervention "on demand" or «under the program»), against spent ABT the microflora structure varied. In the treatment beginning in exudates a belly cavity prevailed E. coli (6,1%), in the subsequent it was possible to notice increase in a share of

hospital, "problem" microorganisms. It was most often found out P. aeruginosa - at 26 (56,0%) patients. Eventually (7-10 days) essential value got CPM: Acinetobacter spp., Klebsiella spp. Are allocated in 4,0 and 8,1% of researches, accordingly, possessing high resistance to the majority of modern antibiotics. Besides, at a long finding of the patient in ITS occurrence of the mixed microflora - 2, 3 and more componential, and also contamination organism CPM (positive results of crops are revealed at research phlegm, urine, bile) was marked. Bacteriaemia it is revealed in 64,3% of researches of blood at patients with clinical signs of generalisation pancreatogenic infections. Most often in blood found out E. coli (69,5%). Thus, as a rule, the specific parity of activators in blood not always corresponded to microflora peritoneal exudate.

The analysis antibioticsensibility has shown, that high activity concerning E.coli (it is tested 20 cultures), Kl. pneumonia (27 cultures) it is marked at meropenem, sensitivity has made 100%. Production ESBL has been established for cultures E.coli, Kl.pneumonia with frequency of 65% (13 cultures) and 66,6% (18 cultures), accordingly. Cefoperazon/sulbaktam was active concerning 84,6% (11 cultures) ESBL-producing cultures E.coli and 83,3 % (15 cultures) ESBL-producing cultures Kl.pneumonia.

From allocated 61 cultures P.aeruginosa it is revealed 24 carbopenemresistens cultures (39,3 from all allocated P.aeruginosa). Fenotipic (the test with ADTA and «HODGE-test») production MBL is revealed at 9 cultures (37,5% from carbopenemresistens cultures P.aeruginosa). Production MBL of a part isoletion is confirmed by means of multiplex polymiraz by the chain reaction, spent in scientific research institute of antimicrobic therapy (Smolensk). MBL-positive cultures concerned to VIM - to type (gene presence blaVIM). 30 cultures (49,1 %) P.aeruginosa were resistance to ciproflozacinum and cefoperasonum, to amycacinum - 36 %.

Thus, the characteristic of a microbic spectrum, data on dynamics of its structure during treatment confirm complexity of problem ABT. Considering possible lacks of empirical stage ABT: incorrect selection of antibacterial preparations during treatment in other treatment-and-prophylactic establishments of Yakutsk and Republics Sakha (Yakutia), uncontrollable the doctor reception of antibacterial preparations by the patient at a pre-hospital stage, an economic component of concrete treatment-and-prophylactic establishment and being based on results of continuous bacteriological monitoring at pancreatogenic infections, in treatment by us were used following advanced schemes ABT in which basis schemes ABT the chairs of faculty surgery of the Russian state medical university offered by employees of N.I.Pirogova [3] (tab. 3) are put. Defining factors at a choice of starting antibacterial preparations were: Weight of the general condition of the patient and expressiveness polyorgans insufficiency estimated on integrated systems-scales Ranson, APACHE II, SOFA, phase EI, specific structure of microorganisms by

results of bacteriological research, volume, type of an antibacterial preparation and duration previous ABT, duration of a finding of the patient in a hospital and-or ОРиИТ, and also presence of the fact developed exstraabdominal infectious complication.

Table 3

Schemes ABT recommended to the patient with IPN

Schemes ABT	Indications to application
1 scheme ABT **Monotherapy** Cefoperazone	1) Ranson < 3, APACHE II < 9, SOFA<4 points 2) I-II phases EI 3) Negation of reception of antibiotics at the moment of hospitalisation and-or duration of treatment in a surgical hospital (ITS) less than 5 days 4) Absence of septic complications
2 scheme ABT **The combined therapy** CS III + Metronidazole Pefloxacin/Levofloxacin+Metronidazole	1) Ranson <3, APACHE II <9, SOFA <4 points 2) I-II phases EI 3) Negation of reception of antibiotics at the moment of hospitalisation and-or duration of treatment in a surgical hospital (ITS) less than 5 days 4) Absence of septic complications
3 scheme ABT **Monotherapy** Imipenem cilastin Aertapenem Meropenem	1) Ranson> 3, APACHE II> 9, SOFA> 4 points 2) III-IV-V phases EI 3) ABT in the anamnesis and-or duration of treatment in a surgical hospital (ITS) more than 5 days 4) Presence of septic complications 5) Repeated receipts in ITS
4 scheme ABT **The combined therapy** Cefepim/Metronidazole	1) Ranson> 3, APACHE II> 9, SOFA> 4 points 2) III-IV-V phases EI 3) ABT in the anamnesis and-or duration of treatment in a surgical hospital (ITS) more than 5 days 4) Presence of septic complications 5) Repeated receipts in ITS
Modes ABT at an infection caused by "problem" microorganisms (Without dependence from weight of a condition and phase EI)	
P. aeruginosa	Meronem>Ceftazidim> Imipenem cilastin>Ciprofloxacin
MRSA	+Vancomicin or linezolid
E. coli, Klebsiella spp. (ESBL) Indirect sign of production ESBL - intermediate sensitivity to any of CS III	CS I-IV not to appoint/cancel The most reliable mode - Meronem, Imipenem/cilastin

Candida spp.	+Fluconazole, at resistance-amfoterecin either Kaspofungin or Varoconazole

The indication to appointment of 1st and 2nd schemes ABT were: weight of the general condition and expressiveness polyorgans insufficiency on integrated scales Ranson <3, APACHE II <9 points, SOFA <4; I-II phases EI; negation of reception of antibiotics at the moment of hospitalisation and-or duration of treatment in a surgical hospital (ITS) less than 5 days; absence of septic complications.

The indication to appointment of 3rd and 4th schemes ABT were: weight of the general condition and expressiveness polyorgans insufficiency on integrated scales Ranson> 3, APACHE II> 9, SOFA> 4 points; III-IV-V phases EI; ABT in the anamnesis and-or duration of stay in a surgical hospital (ITS) more than 5 days; presence of septic complications; repeated receipts in ITS.

Apparently from tab. 3, as the basic starting preparations for ABT the preparations possessing the greatest efficiency concerning the majority of activators, both abdominal joined, and nosocomialy infections, the microbiological situation in a concrete versatile surgical hospital thus was necessarily considered. So 1st scheme is applied at 4 (8%), 2nd at 5 (10%), 3rd scheme at 29 (58%) and 4th scheme at 12 (24%) patients. Thus the basic way of introduction of antibacterial preparations was intravenous, at 11 (22%) patients applied intraarterial introduction.

The positive clinical effect is received at application of all 4 presented schemes ABT at patients with IPN. Efficiency spent ABT, before reception of bacteriological data, was estimated on clinical data, major of which were: dynamics of development of the infectious centre and intensity of inflammatory reaction of an organism (regress of symptoms of system inflammatory reaction (on integrated scales Ranson, APACHE II, SOFA), temperature reaction, indicators of efficiency of functioning of bodies of blood circulation and breath, indicators an intoxication index. Result correctly picked up ABT was decrease in the basic indicators of system inflammatory reaction within 3-5 days of treatment. Objective acknowledgement of validity ABT were data of bacteriological researches. After allocation of the activator and definition of its resistance, main principle ABT was transition to chemotherapy the most effective preparation.

Thus, by results of research it is possible to draw following **conclusions**: 1. At a certain stage of development pancreatogenic infections, pancreatogenic a sepsis there comes, inherently, struggle with nosocomial and the is conditional-pathogenic infection, differing high resistance to antibiotics. 2. Efficiency ABT and accordingly increase of probability of a favorable outcome of disease in many respects depends on correct use of the information on a microbiological situation in a concrete surgical hospital. 3. Monitoring data nosocomial florae and its resistance to

antibacterial preparations will allow to provide, first of all, the proved and adequate mode empirical ABT. 4. Researches have shown, that the most effective antibacterial means in treatment pancreatogenic infections (on an example of a concrete surgical hospital) are group preparations carbopenems and cefalosporinum III generations (ingibitorprotections). 5. Certainly, resistance of microbic agents to antibiotics raises eventually, therefore indispensable condition ABT is timely replenishment of the hospital data card by effective antibacterial preparations.

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Morphological changes of cornea after intrastromal implantation amnion with endothelial-epithelial dystrophy of the cornea in the experiment.

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Summary

Presentthe results of the morphological changes in the cornea by intrastromal implantation of amnion in an experimental model of endothelial epithelial corneal dystrophy in the rabbit.

Key words:cornea, keratopathy, amnion.

Introduction. Treatment of secondary epithelial- endothelial dystrophy (EED) of the cornea continues to to be one of the most difficult problems in modern ophthalmology. The disease is consequence of inflammation, injury of the eyeball. Most of group of secondary dystrophy form postoperative dystrophy. Trigger the development of the pathology of the cornea is damaged it endothelial layer. In damaged cells is disturbed production of cytokines responsible for collagenogenesis that leads to a progressively increasing hydration of the stroma corneal degeneration keratotsitov, detachment of the epithelium and the appearance of corneal syndrome. Last circumstance makes the painful lives of patients due to permanent and no pain in the eye removed, blepharospasm, and lacrimation. [3] According to some authors, frequency of EED, as a complication after ophthalmic interventions in general ranges from 0.6 to 13% [4]. In Therefore, the problem of prevention and treatment EDD is an extremely urgent.

All existing methods of treatment are divided into EED conservative and surgical [3]. Conservative therapy, despite the use of modern drugs, physical therapy exposure (helium-neon laser stimulation, magnet), gives a temporary effect, as no eliminates the cause of pathological transformation of corneal [3,4,5].

Today the clinic is widely used selective replacement abnormal areas of the cornea, with prompted many modifications penetrating keratoplasty: mushroom, kriokeratoplastika, speed keratoplasty, intrastromal implantation of the implants polymers, Descemet membrane transplantation, etc.[3,4,5,6,7].

In recent years increasingly become the treatment of EED use of amniotic membrane. Some authors have offer to cover the surface of the cornea to protect the epithelium and its speedy recovery. Other implanted amnion under the conjunctiva to suppress excessive inflammatory response in the treatment of EED [1,2,5,6,7].

As is known, the mechanism of therapeutic action is based amnion on improving and maintaining the normal epithelialization epithelial morphotype, inhibiting the formation of coarse scar tissue. The advantage of the amniotic membrane is its biological inertness of antigenic

[1,2,6,7]. In this regard, is quite justified the use of intrastromal implantation of amnion treatment stages dalekozashedshih keratopathy.

The aim of this work was to study the morphological changes in the cornea after implantation intastromalnoy amnion with endothelial-epithelial dystrophy cornea in the experiment.

Research objectives:

1. Studies on the effect of amniotic membrane structural elements of the cornea with a simulated endothelial-epithelial dystrophy in the experiment.
2. Conduct a quantitative assessment of morphological changes in the cornea and amniotic membrane in its intrastromal implantation model of endothelial- epithelial corneal dystrophy.

Materials and methods

In carrying out this phase of the study observed all norms of humane treatment of experimental animals, the conditions of detention and to work with them, USSR Ministry of Health established the Order № 755 of 12.08.1977, and European Convention ETS №-123 (Strasbourg, 18/03/1986year). Appraised Ethics Committee State Educational Institution Amur State Medical Academy, obtained permission to conduct this work.

The experimental part is based on the results study 20 rabbits (40 eyes), chinchilla weighing 2.5-3.5 kg at the age of 6 months. Rabbits were divided into 4 groups. The first group, control, included five rabbits (10 eyes) with simulated EED, fence the eye was performed 7 days after the start of the experiment. The second group, were simulated with the rabbits and the EED intrastromal implanted amnion 5 rabbits (10eyes), a fence eyes held 1 week afterimplantation of amnion. The third group, made up of rabbits EED and simulated implanted intrastromal amnion 5 rabbits (10 eyes), eyes held the fence 4 weeks after implantation of amnion. In the fourth group consisted of five rabbits (10 eyes) with simulated EED and intrastromal implanted amnion, fence eyes performed 12 weeks after implantation of amnion.

Stage 1. The 40 eyes of experimental animalsperformed simulations endothelial- epithelial corneal dystrophy. The method proposed in the 1971 staff Moscow Scientific Research Institutemicrosurgery of the eye and lies in the introduction of the solution 0.2-0.5% of sodium fluoride into the anterior chamber. (Inventor's Certificate SU 1463284). When viewed through the 24 hours in animals occurred blepharospasm, lacrimation, edema of all layers of the cornea. These changes are persisted throughout the observation period.

Stage 2. After 10 days of 30 eyes after the simulation EED intrastromal implantation was performed amniotic membrane. The operation was performed under intravenous anesthesia (10% hexenal at the rate of 10-15 mg / kg body weight). Eyelids blefarostatom fixed the eyeball- fixation with tweezers, grasping limbal conjunctiva. Under control of the operating microscope, using disposable tools, the first step is peeling and removal of the corneal epithelium changed. Then at the top half of the corneal incision is carried to the rear

boundary plate along the limb, 1-2 mm from it. Then foliate the corneal stroma within the area disc implanted amnion. Pre-implant treated with an antibiotic solution - gentamicin and forceps for the implantation of an intraocular lens is wound up in the corneal pocket. Location implant permanently corrected with a spatula. The edges of the corneal wound adapted double-row suture 10-0. After operation for 14 days in the conjunctival cavity 6 times a day instilled a solution of ciprofloxacin 0.3%, and the solution diclofenac 0.1%.

The operation used by native amniotic membrane person.

All rabbits was carried out post-operative examination with a hand slit lamp HEINE HSL 150 (Germany) with photographic recording. Withdrawal from the animal experiment conducted under the rules set out in Annex Number 4, "The order of euthanasia," Order of the Ministry of Health of the USSR № 755 on 12.08.1977year. In a large ear vein was injected the airat the rate of 3 ml³ of 1 kg rabbit.

Enucleated eyes were fixed in 10% neutral formalin. Serial sections were stained with hematoxylin and eosin, Van Gieson, toluidine blue. Painted drugs were studied in fotomikroskope (Opton, Germany) with increasing×100. The data obtained were treated by computed morphometry.

Morphological studies were conducted at the Department of Pathology Course of Forensic Medicine Amur State Medical Academy.

Results and discussion.

Table 1 shows the number average quantitative assessment of morphological changes of the cornea with intrastromal implantation of amniotic membrane.

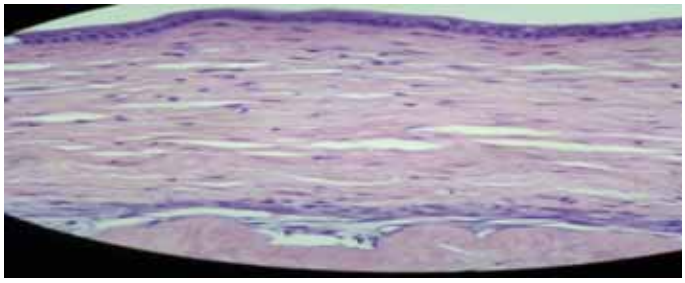
Table number 1 Quantitative evaluation of morphological changes in the cornea during implantation of intrastromal amnion.

Histological elements	1 group (control) (10 eyes)	2 Group 1 Week (10 eyes)	3Group 4Week (10 eyes))	4Group 12Week (10 eyes)
The cells of the corneal epithelium with signs of degeneration	20±1,13	20±4,65*	1,5±0,28*	0,7±0,005*
The thickness of the surface epithelium (mkm.)	33,06±0,75	33,3±1,59*	30±2,1*	25,6±2,5*
Keratotsity	245±6,29	248±25,23*	15±1,27*	13±1,32*
Tissue stroma of the gap (mkm. ²)	1372±150,1	1190±180,5*	465±159,3*	195±44,1*
The thickness of the		71,9±6,02	82,3±6,01	63±4,62

amnion (mkm.)				
The thickness of the cornea (mkm/)	835,07± 74,07	860,3±26,62*	422,8±17,54 *	390,4±43,26 *

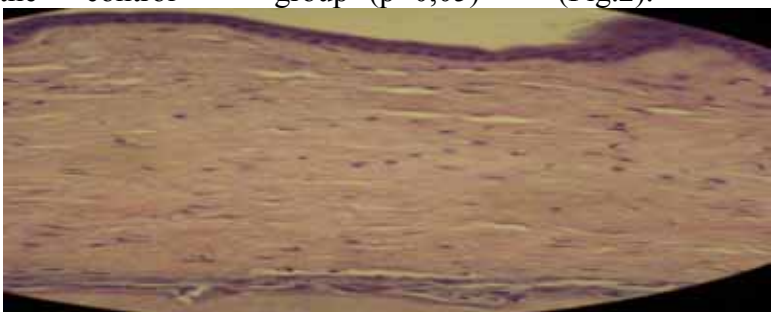
Note: *---P <0,05 - reliability of differences in relative to the control group.

For morphological study of corneas in the control group observed changes characteristic of endothelial epithelial dystrophy. Epithelium is stratified, in able balloon dystrophy. The number of cells able to dystrophy, 20 ± 1,13 m on 100000². The boundary between epithelium and stroma clearly traced. Stroma presented hydrated collagen fibers, among which there are a large number of cavities (Tissue cracks), occupying an area of 1372 ± 150,1 m ² on 100 000 mm ². Descemet's membrane consists of a dense network arranged thin collagen fibers. Endothelium represented by a single layer of flattened cells. Thickness Corneal 835,07±74,07 m. In the observation of the second group receivedthe following data: during the first 7 days after implantation of intrastromal amniotic membrane in experimental animals died down phenomenon corneal syndrome: decreased blepharospasm, lacrimation, remained perikornealnaya injection significantly reduced the severity of corneal edema for 2-3 days began epithelialization. By 7 days in all rabbits occurred complete epithelialization of the cornea.
Amnion clearly contoured in the stroma of the cornea.
Histological examination of drugs, 10 eyes, showed that by this time epithelialization of the cornea over. Stratified epithelium is able to balloon dystrophy, the cells with hyperchromic nuclei, cytoplasm moderately vacuolated. The number of cells with signs dystrophy, 20±4,65m on 100000², with respect to the group comparisons (p <0,05). The boundary between the epithelium and underlying stroma indistinct. Strom represented by collagen fibers with signs of edema. Among them there a significant number of cavities of different sizes, partially lined keratotsitami having an elongated form with hyperchromic nuclei. The cavities occupy 1190 ± 180,5 m ² on 100000 mm², with respect to the group comparisons(p<0,05).Amniotic membrane is represented by avascular stromal matrix, with a pronounced peripheral cellular response to the presence of modified fibroblasts, the thickness of 71,9±6,02mm.(Fig.1). Stroma Descemet membrane closer to the represented by thick collagen fibers. Descemets membrane consists of a dense network arranged thin collagen fibers. Endothelium represented by a single layer of flattened cells. Thickness Corneal 860,3±26,62mm, compared with the control group (p<0,05).



In Fig. 1.
Edema of the epithelium, stroma. Cluster keratotsitov on the border with amnion. 1 week after intrastromal implantation of amnion. Stained with hematoxylin and eosin. SW. ×100.

In the third group there was almost complete subsided inflammation. There was no injection of an eye apple, significantly decreased corneal edema, bullous changes in the epithelium. Amnion clearly contoured in the stroma the cornea. In the study of histological preparations 10 eyes, the cornea becomes thinner, as compared to the previous period due to reduction of stromal hydration. In epithelial cells decreases vacuolization of the cytoplasm. Reduces the number of cells with phenomena balloon dystrophy 1,5±0,28 mm² to 100000compared with the control group ($p < 0,05$). Becomes smaller cavities between the collagen fibers, reduced their size and area of 1372±150,1m² in the control group to 465±159,3 m² ($p < 0,05$) on the 100000 mm² in the main, indicating that reducing the degree of hydration. Less pronounced cell reaction around the amniotic membrane. Sam amnion becomes more homogeneous, there is edema, swelling and razvoloknenie stromal matrix. Its thickness increases of 82,3 ± 6,01mm. Decreases corneal thickness 422,8 ± 17,54 mm compared to the control group ($p<0,05$) (Fig.2).



In Fig. 2. Decreased hydration of the corneal stroma. 4 weeks after intrastromal implantation of amnion. Color hematoxylin and eosin. SW. × 100.

In the fourth group there were no effects of the inflammatory reaction of the eyeball. Cornea shiny, smooth, continues to increase its transparency. Amnion is not clearly contoured in the stroma of the cornea due to its

razvolokneniya. In the study drug, 10 eyes, significantly decreased the number of cells with signs balloon degeneration compared with the control group with 20±1,13 to 0,7±0,005 per 100,000 mm² ($p<0,05$). Collagen fibers are tightly prilezhat to each other that shows a significant decrease in excess hydration of the corneal stroma. Amnion is reduced in volume, compacted, tightly adherent to the surrounding material. There is no phenomenon of cellular reaction around it. His thickness is 63±4,62mm. There were isolated keratotsity in the stromal matrix of the amnion. Thickness cornea was statistically decreased in Compared with the control group up to 390,4±43,26 mm ($p<0.05$). (Fig.3). After 3 months of the dynamics in the state of the cornea and amnion was not observed.

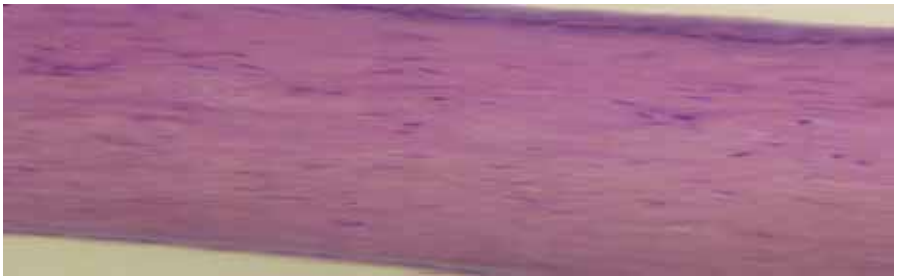


Figure 3 significantly decreased hydration of the stroma corneal keratotsity evenly distributed in the stroma, there are single cells (keratotsity) in the amnion. 12 weeks after implantation of intrastromal amnion. Stained with hematoxylin and eosin. SW. ×100.

On the basis of studies have indicated good survival rate of the amnion. Morphologically this is manifested active cellular response involving the region graft cells fibroplasticheskogo series - keratotsitov. In the future, there is a reduction of cell infiltration, stromal hydration and recovery the surface epithelium. Transplant itself is completely integrated into the stromal elements of the cornea and it becomes difficult to differentiate. In connection tissue is not observed any structural changes characteristic of tissue subjected to rejection or hypoxic influence. The number of transplant connective tissue fibers is different from the stroma the cornea. When stained with toluidine blue only isolated areas showing signs of metachromasia, which shows degenerative changes, but rather on the mucoid swelling - fully reversible stage in the amnion. Data changes are minor and completely eliminated from the time. Feature of the inflammatory response, we associate weak antigenic properties of amniotic membrane placed in the new "environment".

Findings

1. The data obtained from histological study, evidence of successful integration amniotic membrane in corneal stroma, the reductioninflammatory

reaction, hydration of the stroma, the acceleration epithelialization of the cornea with intrastromal implantation amnion.
2. Amniotic membrane is subjected to transformation in the translucent connective tissue.

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Titanium nickelide implants in surgical treatment of osteogenesisimperfecta in children

This article defines urgency of the problem of brittle bones. It describes approaches of surgical correction of this pathology in children, offers original method of surgical treatment of clinical aspects of brittle bones using titanium nickelide materials. The advantage of materials consists in bioinertness and high resistibility. Use of titanium nikelide implants in brittle bones treatment process reduces recovery period and improves quality of life of patients.

Key words: brittle bones, usual fractures, regeneration, titanium nickelide.

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ANALYSIS OF ADOLESCENTS MORTALITY FROM EXTERNAL CAUSES IN THE REPUBLIC SAKHA (YAKUTIA)

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Abstract: The health condition and social development is largely determined by the level of adolescents population health who have a significant influence on the health of the nation as a whole, and shape the cultural, intellectual, industrial and reproductive potential. For any country, the death rate in adolescents is a significant socio-demographic problem and its trends, causes and age-sensitive subject of intense study. At this article the analysis of deaths causes in the Republic of Sakha (Yakutia) is presented. Revealed the leading role of external factors as causes of death. Analyzed by age, gender and social differences.

Keywords: Adolescent, and death, external causes, accident, suicide.

Introduction. Adolescence - one of the critical stages of human life. The main place in the structure of adolescent deaths external causes are take. Among them are a serious problem occupied by suicidal behavior, road traffic injuries, domestic violence, both physical and psychological. The last is often the cause of suicide in adolescents (Baranov A.A., Albitsky V.U., 2009).

WHO defines the boundaries of adolescence from 10 to 19 years, that was the determination to use the lower bound adolescent of 10 years, and the upper limit of 19 years.

According to the report, UN Children's Fund, the suicide rate among Russian teenagers is one of the highest in the world. Over the past 10 years, the number of suicides of children and adolescents has nearly doubled. According to WHO criteria, the rate of suicide for more than 20 per 100 thousand people talking about a severe crisis in the country. In Russia this figure is exceeded by 2.5 times (Abrosimova M.U., Albitskiy V.U., 2007).

The next most common cause of death are accidents, which account for more than 50% of adolescents deaths aged 10-19 years.

In the Russian Federation in 2009, according to preliminary data, there were 9,260,943 teenagers from 15-19 years, accounting for 6.5% of the total number of population. Died during the same period - 8667 people (6038 males and 2629 females).

Many authors have indicated multivalency of risk factors. It is a direct correlation between suicide and adverse climate in the family and school problems of child. Vulnerability of children from many of the negative social impacts, lack of attention from parents, family conflicts pushed out into the street more and more children. This increases the risk of auto-

aggressive behavior of adolescents and reduced resistance to psychological trauma, which promotes the formation of their negative personality traits, which leads to depression, anxiety, self-doubt.

Based on the socio-psychological criteria set forth A.G. Ambrumova and L.Y. Zhezlova [1973] autoaggression (suicide) is one of the four main types of deviant behavior. Alcohol and drug use, is rapidly growing during adolescence, also have a negative influence.

In the Republic of Sakha (Yakutia) in long-term notes unfavorable situation with a reserve of mortality at all ages. The main causes of republic population mortality in 2010, as in previous years, are diseases of the cardio-circulatory system (47.9%), external causes (19.9%) and cancer (12.3%). The mortality rate from accidents, poisonings and injuries by 28.8% higher than in Russia, and the mortality rate from diseases of the cardio-circulatory system - 1.7 times lower.

In the Republic of Sakha (Yakutia) in 2010, according to preliminary data, there were 44500 teenagers from 15-17 years, that accounting for 4.64% of total republic population. Died during the same period - 129 people (1.6 per 1000 us); the mortality rate of boys and girls was 2.4 and 0.8, respectively, for 1000 of hole population/

Minimization of mortality due to the decreasing of child mortality will depend on the effectiveness of preventive measures to prevent the deaths of children and adolescents from external causes. The proportion of deaths from external causes was 73-80% in adolescents from 10-19 years. The maximum mortality rates prevailing in the group of adolescents 15-19 years of age.

The structure of the external causes of variation in the different age groups. In the group of adolescents 10-14 years, the leading position occupied by drowning and suicide. The main external causes of death among adolescents aged 15-19 identified suicides and murders.

Mortality of adolescents 15-19 years of injury and poisoning, compared with other groups expressed significantly, the greatest growth occurred in the group suicides, homicides, drownings, falls and hypothermia.

The purpose of the study - to analyze the cause of death from external causes adolescents in the Republic of Sakha (Yakutia) in the period 2005-2010.

Materials and Methods. The work was done on the basis of analysis of adolescents deaths who were registered in the State, "Bureau of Justice Ministry of Health medical examination of Republic Sakha (Yakutia)" in the period 2005-2010. Data of Federal State Statistics Service, the territorial authority of the Federal State Statistics Service of the Republic of Sakha (Yakutia), the State's health report of the Republic of Sakha (Yakutia) in 2009.

The results. In 2010, RS (Y) mortality of child population was 100.5 per 100000 population. Mortality from respiratory diseases was 7.3, from infectious and parasitic diseases 4.4; of 2.9 tumors per 100000 population. In the group of causes of death from accidents, poisonings and injuries, the figure is 35.0 per 100 000 population. Thus, the number of children who died of external causes is 5 times greater than the number of deaths from respiratory diseases, ranks first among causes of death from medical illness.

Given the structure of mortality, were analyzed 202 deaths from external causes adolescents registered in the State, "Bureau JM HME of RS(Y)" from 2005-2010.

Among children aged 10 to 19 years, the number of deaths is different. So, from 2005-2010, the number of deaths of adolescents aged 16 to 19 years was 78.7% of total deaths. In second place the number of children who died between the ages of 13-15 years - 15.3%, third place - children 10-12 years (5.9%). Attention is called to increase the number of deaths among teenagers in 2006 and a decrease in 2007. In our opinion this is not due to the influence of exogenous factors that contributed to the reduction of mortality among adolescents. Data on the distribution of deaths by age adolescents are presented in Fig. number 1

The number of deaths from unnatural causes among young men is almost 3 times greater than that of girls. Perhaps this is due to psychological and physical gender characteristics of adolescents.

The main factors determining the level and trends in teenagers mortality were socio-economic factors. The dominance of low socio-economic conditions of rural population to an increase in the number of deaths to 54%. In contrast to Yakutsk, where the comparable figure was 33%, and in the suburbs of Yakutsk - 13%.

From an analysis of deaths cases in the territorial jurisdiction (Fig. 2) the largest percentage accounted for districts of the republic, where the majority of Yakut aborigen population live.

The causes leading to the death of teenagers are divided into exogenous and endogenous. The first group includes inadequate living conditions, education, care. Endogenous causes are as physical condition (congenital abnormalities, disease of the nervous system, malignant neoplasms and cardiovascular disease) and "symptoms, signs and inaccurately marked state". According to the authors Albitsky V.U, Ivanova A.E. and others, "inaccurately marked state" largely camouflage external causes of death, often violent.

Mortality trends in young people of the Russian Federation in terms of their distribution in urban and rural adolescents is as follows: total mortality among rural adolescents significantly higher than among urban (as well as mortality in all other age groups). It should be noted that the

excess mortality among adolescents of the rural population over the number of deaths among urban adolescents is not a specific feature of Russia. A similar situation is observed in most developed countries.

Our analysis shows a greater frequency of deaths from external causes among young men in rural areas. But at the same time, when comparing urban and rural girls, we found no definite pattern. Indicator of the number of deaths in urban and rural girls was of inconstant character in different years.

According to Russian researchers in 2008, the difference frequency of deaths from injury and poisoning, and of tumors (occupying in the structure of death cause the 2nd place) was 18 times greater in males and 8.1 times in girls. The main external causes of death among teenagers is traffic injuries, which account for more than a quarter of all injury deaths in this age group (Salahov E.R., Kakorina E.P., 2004; Barkanov V.B., 2005). At the same time marked gender differences. In young men the level of the transport mortality in 2007 is identical to those indicators of 40-year-ago data (30.6 on 31.1 per 100,000). The girls do the same index increase more than twofold (15.0 to 7.4 per 100,000). Most likely, the increase in mortality from traffic causes among women due to the increased intensity of traffic and motorization at young female.

The second major cause of teenage traumatic deaths are suicide. In contrast to road traffic accidents, suicide mortality dynamics of adolescents during the period 1991-2008 increased in boys about 23.2%, in girls - 28.1%.

Table number 1 shows the structure of causes of children and adolescents death during analyzed years in the Republic of Sakha (Yakutia).

According to our data rate of death due to suicide was 48.5% and is a major determinant of the causes of death from exogenous factors in Yakutia. Of them, 28.2% - a mechanical asphyxia by compression of the airway, 9.4% - acute poisoning. In second place by the weight of the causes of death are road crashes - 16.3%, drowning - 6.4%, a falls - 3.9%, the impact of natural low temperatures - 4.4%.

In Yakutsk in the same period was recorded 66 adolescents deaths from external factors, it is 33% of all cases in the Republic of Sakha (Yakutia). In 2010 there were 5 cases of suicidal deaths, such as mechanical asphyxia by compression of the respiratory tract and acute poisoning, it was 7.5% of the total teenage deaths in Yakutsk.

Analysis of the documentation of the place of death occurrence shows that over 92% of deaths are recorded outside from hospitals.

Conclusion. Analysis of adolescents deaths in the RS (Y) revealed that the leading positions are occupied by deaths from external causes.

Suicides and accidents are the leading cause of teenagers death in the Republic Sakha (Yakutia), whereas in Russia and the countries of Europe the leading cause of death from external causes are road traffic injuries. Significant gender differences are revealed - the teenagers death from external causes more often occur among male adolescents living in rural areas.

The high mortality rate of teenagers is largely due to reasons medical and social problems.

Level and living conditions are undoubted dominant in shaping the health and mortality of the Russian population under contemporary conditions, particularly in adolescents. Poverty creates an increased risk of infections, increase rates of smoking, alcoholism, substance abuse, high levels of physical illness, poor diet and other things that could be the direct cause of teenagers death.

Factors of social deprivation and teenage youth disadvantage compounded by insufficient quality of prevention of health, education, social welfare, as well as reduced health-role of the educational function of the modern family.

Serious problem in the field of child and adolescent health in all regions of Russia are injuries and violence, and this is a consequence of the interaction of a number of environmental factors. Particularly high burden of road traffic accidents and domestic violence, both physical and psychological. Psychological abuse is difficult to statements, as opposed to physical, and lead to long-term mental health problems such as depression and low self-esteem, suicidal behavior.

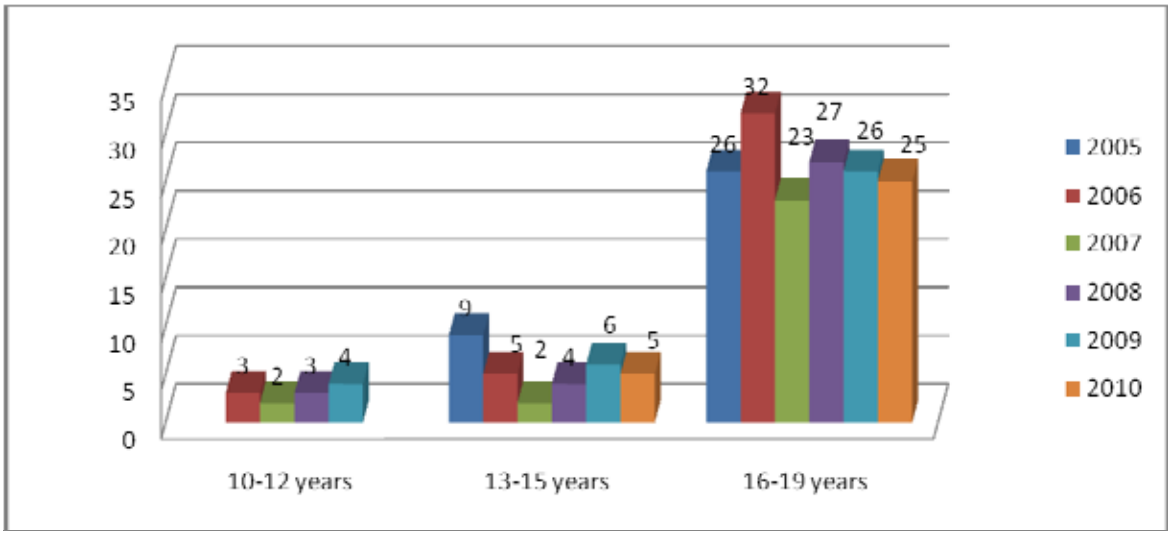
Conclusions:

1. The age structure of deaths from external causes predominate adolescents 16-19 years of age.

2. In the cause of death among adolescents, suicide is the leading cause, followed by traffic accidents, the third and fourth place share acute poisoning and contact with sharp objects.

3. In 72% of all deaths from unnatural causes of teenage boys predominate.

4. In most cases, death was recorded among young people in rural areas.



In Fig. 1. **Distribution of deaths among adolescents ages**

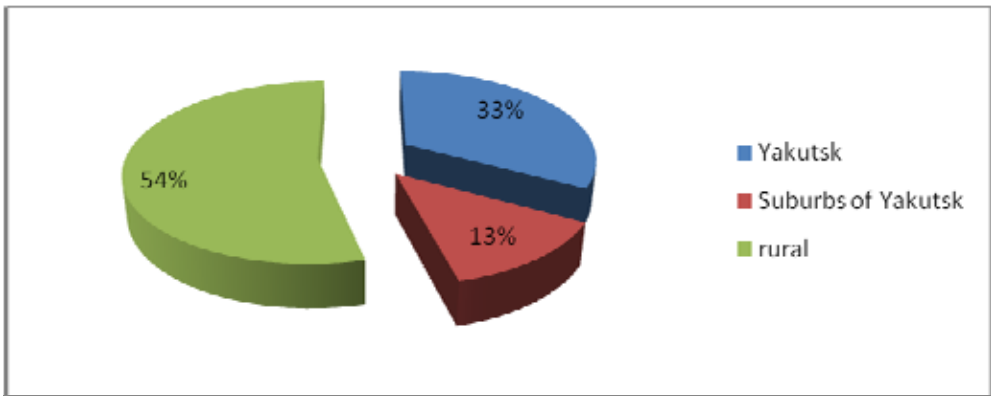
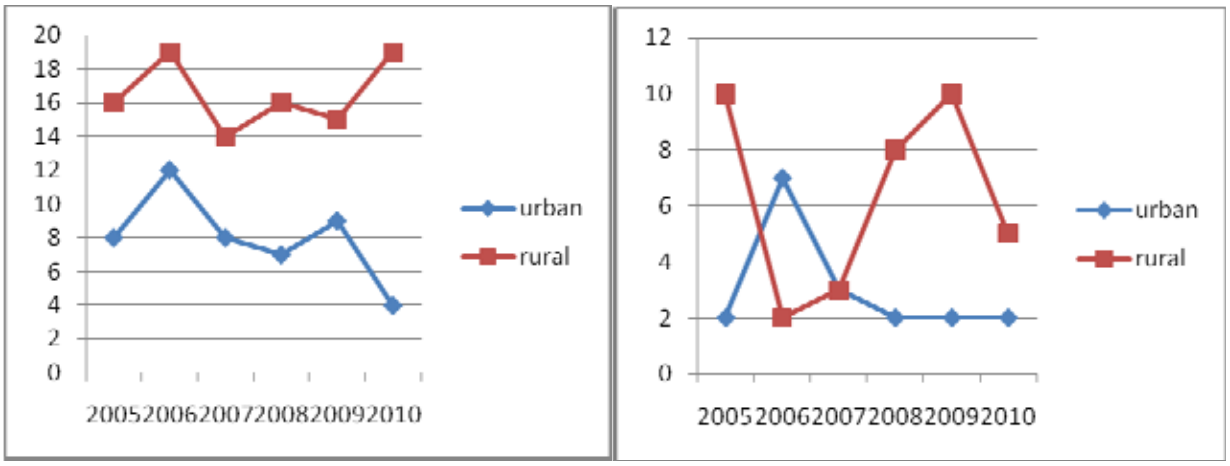


Fig. 2. Disturbance of adolescents dearth cases by territorial jurisdiction in 2005-2010 year period



Male Female

Figure 3. **Adolescent deaths from external causes in urban and rural settlements in Repulic of Sakha (Yakutia) in 2005-2010**

Table 1.

The structure of adolescents death causes from external causes (202 cases) in 2005-2010.

cause of death	2005		2006		2007		2008		2009		2010	
hanging	11	30,5	10	25	8	29,6	8	24,2	11	30,5	9	30
acute poisoning	3	8,3	2	5	5	18,5	1	3,03	4	11,1	4	13,3
accident	5	13,8	7	17,5	4	14,8	8	24,2	4	11,1	5	16,6
gunshot wound	3	8,3	3	7,5	-	-	4	12,1	2	5,5	2	6,6
Sudden cardiac death	1	2,7	1	2,5	-	-	-	-	1	2,7	1	3,3
Contact with sharp object	2	5,5	5	12,5	5	18,5	3	9,1	3	8,3	1	3,3
Contact with blunt object	3	8,3	1	2,5	-	-	2	6,06	-	-	1	3,3
drowning	1	2,7	6	15	2	7,4	1	3,03	-	-	3	10
fall	-	-	2	5	-	-	1	3,03	3	8,3	2	6,6
The impact of extremely low temperatures	2	5,5	1	2,5	-	-	3	9,1	3	8,3	-	-
Attack by strangling	-	-	1	2,5	1	3,7	-	-	2	5,5	-	-
abundant blood loss	1	2,7	1	2,5	1	3,7	-	-	1	2,7	1	3,3
closed craniocerebral injury	1	2,7	-	-	-	-	-	-	-	-	-	-
contusion	1	2,7	-	-	-	-	-	-	-	-	-	-
impact of electric	2	5,5	-	-	-	-	-	-	-	-	-	-
unspecified damages	-	-	-	-	1	3,7	2	6,06	2	5,5	1	3,3
Total:	36	17,8	40	19,8	27	13,3	33	16,3	36	17,8	30	14,8

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Reinfusion of autoblood by means of Cell Saver 5 apparatus during Caesarean section

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Summary. One of the main causes of maternal mortality are obstetric hemorrhage. A feature of obstetric hemorrhage is sudden and their massiveness. In recent years, new technologies are introduced to conserve blood in clinical practice. This paper describes the first clinical experience, during which the method of reinfusion of autoerythrocytes by using apparatus Cell Saver 5 is used for Caesarean section for a patient with an extremely high risk of bleeding in a Perinatal Center of the National Medical Center in Yakutsk.

Keywords: autoerythrocyte mass, central placenta previa, obstetric hemorrhage.

Introduction. One of the important problems in obstetrics has been and remains the treatment of obstetric hemorrhage. Primary role for especially massive bleeding gets infusion-transfusion therapy (ITT). Often, to compensate for the loss of blood it is required holding transfusion, and during it, there is a real risk of transmission of bloodborne infections and development of severe autoimmune reactions and complications (1,2,3). The solution of this problem may be the use of safe autologous using modern membrane technology (4,5).

Material and methods. Our experience is the first clinical use in a Perinatal Center of the National Medical Center (HRC NCM) Cell Saver 5 machine for reinfusion of autologous blood during a surgical delivery.

E. The patient, 28 years old with a diagnosis of pregnancy 35 - 36 weeks, cephalic presentation. Complicated obstetrical and gynecological history. Central placenta previa, admitted to the Department of Pathology pregnant HRC, with the threat of premature births and high risk of bleeding, since detachment centrally located placenta.

After preoperative preparation, routinely 8/31/11 under general anesthesia, with a preliminary central venous catheterization and preparation of transfusion media, operative delivery is held by Cesarean section. Duration of operation is 35 minutes, intraoperative blood loss was 1000 ml. Infusion-transfusion therapy during surgery was 1800 ml of these: crystalloids

- 800 ml; fresh frozen plasma transfusion donor - 700 ml; autoerythrocyte reinfusion using the apparatus of Cell Saver - 300 ml.

The results of the study. For studying an effect of hardware reinfusion of autoerythrocytes, dynamics of complete blood count, coagulation, acid-base status and blood gases, functional integrity of erythrocytes, as well as microbiological testing of erythrocyte mass is explored.

Comparison of the blood count (Table 1) and koagulogramma (Table 2) before and after reinfusion of autoerythrocytes showes that the rate of red blood cells (erythrocytes, hemoglobin, hematocrit, MCV, MCH, MCHC) remains practically in the same figures, but the changes of blood coagulation is not significant and does not extend beyond the normal range.

An exploration of acid-base balance (acid-base balance) and the electrolyte composition of the patient's blood is held by studying the dynamics of these indices in arterial and venous blood before and after autotransfusion for indirect estimation of oxygen-transfused usefulness of transfused autoerythrocytes. From the Table 3 one can see that after the transfusion of autoerythrocytes patient’s indicator of base deficit and the severity of metabolic acidosis is decreased, that indicates the positive effect of transfused autoerythrocyte mass to the level of microcirculation and metabolism.

To assess the functional integrity of autoerythrocyte, microscopy slides with Romanowsky stain before and after centrifugation is held. And it is traced that the degree of hemolysis of autoerythrocytes is small and does not exceed 10% of the autoerythrocyte mass.

To confirm the sterility of autoerythrocyte mass, bacteriological examination is held, which confirms the absence of microbial growth and sterility provodennoy procedure.

Conclusion. Thus, the use of reinfusion of autoerythrocytes with a new generation of modern machines of Cell Saver 5 in obstetric practice is safe and effective method of replacing blood loss. Further implementation of this method in the walls of the HRC NCM will have to expand indications for reinfusion of autoerythrocytes by using the apparatus of Cell Saver 5 (conservative myomectomy during Caesarean section, multiple pregnancy, complicated obstetric - gynecological history, etc.), which will improve the results of treatment of obstetric hemorrhage.

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Table 1. blood count before and after autohemotransfusion

	before autohemotransfusion	*after autohemotransfusion*
erythrocytes (10^{12})	3,5	3,6
hemoglobin (г/л)	123	122
hematocrit (%)	30	31
MCV (average volume of autoerythrocytes) N= 80 – 100 мкм3)	87,3	88
MCH (the average content of hemoglobin in erythrocytes) Norm: 26 – 34 пг	33	34,3
MCHC (the average concentration of hemoglobin in erythrocytes) Norm: 310 -360 г/л)	381	390

Table 2. koagulogramma before and after autohemotransfusion

	before autohemotransfusion	*after autohemotransfusion*
PT (%)	9,3 – 124	10,9 – 106
ФГ (г/л)	4,8	4,3
ТТ (сек)	18,5	21,4
АЧТВ (сек)	33	30
PLT platelets	265	252
Clotting time by Lee - White (min)	4, 4	5,1
Duration of bleeding in Duque to 3 minutes.	0,3	1,0

Table 3. Acid-base status and blood electrolytes during autohemotransfusion

	before autohemotransfusion		*after autohemotransfusion*	
	artery	vein	artery	vein
pH	7,37		7,4	7,3
pO_2 (мм.рт.ст.)	88		88	48,1
pCO_2 (мм.рт.ст.)	33		27,8	37,5
HCO3 (ммоль/л)	19,2		19,6	20,4
tCO_2 (ммоль/л)	20,2		20,5	21,5
ABE	-4,7		-2,9	-4,1
potassium (ммоль/л)	3,4		3,0	3,1
sodium (ммоль/л)	137		138	137

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Methodological aspects of Quality of Life Research

Zakharova RN, Mikhailov AE, VG Krivoshapkin

The study of quality of life - a reliable method of assessing health and general well-being [15]. A study to evaluate QOL, physical, psychological and social well-being, and the evaluation of these components is carried out by the individual.

The study of QoL is generally accepted in international practice, a highly sensitive and economical method for assessing the health of the population as a whole, and individual social groups. The method allows to quantify the characteristics of multi-component of human life - physical, psychological and social functioning [19].

Coordination of work on the methodology and the study of QoL in medicine holds the International Society for Study of Quality of Life (International Society for Quality of Life Research - ISOQOL) and the Russian Research Center Transnational QOL (MTSIKZH), established in St. Petersburg in 1999

The general scheme of population-based study of quality of life of the adult population has carry out the following steps.

A. Development of study protocol.

Two. Approval of the protocol by the Committee on Bioethics of the Ministry of Health.

Three. Conducting a pilot study to determine the minimum amount of a representative sample.

4. Data Collection.

Five. Formation of a computer database of quality of life.

6. Scaling (recoded) data questionnaire.

7. Analysis and interpretation of data.

The first and basic step - the development of QOL study protocol. QOL research protocol - a document that develop before the start of the study and who did not change during the study. During the design phase study protocol solve such problems as the evaluation of sample size, definition of research tools, verification of inclusion criteria, etc. [16, 20, 22, 23].

The main tools for assessing QOL questionnaires are standardized. The current assessment of quality of life questionnaire developed by experts the world's leading clinical centers, and consistent with the principles of evidence based medicine and the requirements of Good Clinical Practice (GCP).

Questionnaires can be both general and specific. General questionnaires measuring a wide range of functions of perception of health and can be used to assess the quality of life of patients suffering from various diseases, as well as to assess the quality of life of the population. One of the most widely used questionnaires to assess the overall quality of life is the Short Form Medical Outcomes Study (SF-36) [4, 5, 6, 7, 8, 19].

SF-36 allows you to assess the quality of life for patients over the past four weeks. Russian version of the SF-36 was adapted and validated Multinational Quality of Life Research Center in St. Petersburg. In the study of its psychometric properties have been confirmed by the reliability, validity and sensitivity of the survey.

SF-36 meets all these requirements and is the most frequently used in population studies [22, 26].

In this regard, the SF-36 QOL assessment tool is selected in conducting population-based studies in the International Quality of Life Assessment Project [9, 11, 24, 25].

Important characteristics of the questionnaire include its psychometric properties:

• Reliability;

• Validity;
• Sensitivity to change.

Reliability - the extent to which the variable is evaluated on a scale reflects the true score, ie accuracy [17]. There are two types of reliability:

• The internal consistency;
• The reproducibility.

The internal consistency of the questionnaire can be estimated in several ways [1]:

• Cronbach's coefficient α;
• Reliability Split-half;
• Reliability Inter-rater;
• interclass correlation coefficients.

The most common way to assess the internal consistency of the questionnaire is the calculation of Cronbach's coefficient α. The values of Cronbach's α coefficient above 0.7 indicates a fairly high reliability of the scale for cohort studies [18].

Reproducibility was assessed by test-retest (test-retest). Repeatability describes the temporal stability (persistence time), that is, the degree of correlation between scores on repeated assessments.

Validity of the questionnaire (validity) - the ability to reliably measure the questionnaire that the main characteristic that it should be measured. There are several options for validity, however, the study of each of them aimed at solving the same problem - assessing the reliability performance scales of the questionnaire [25]:

• External;
• Content;
• Criterion (current and forward-looking);
• Constructive (convergent and discriminant).

The most important is the assessment of construct validity, which determines how the structure of the questionnaire can reliably measure what it should be measured [21, 22, 2, 3]. In assessing construct validity construct some hypotheses, which are based on various factors (eg psychological, social factors or clinical characteristics), and in the process of research, these theoretical assumptions prove or disprove. If the hypothesis is not confirmed, it may be difficult to validate the questionnaire or the issues of theoretical justification of the study.

Construct validity may be convergent (convergent validity) or discriminant (discriminant validity), and in both cases it requires study to evaluate the relationship of the scale with specific characteristics [25].

In assessing the convergent validity of the results of two methods for measuring a characteristic should correlate with each other.

Discriminant validity implies that the results of measurements of different characteristics are not related [12, 13, 18].

Among the methods for assessing construct validity of a method of "known groups". Respondents were divided into groups depending on the presence or absence of any factor. It has been the most likely hypothesis for the distribution of their factors and analyzes the relationship of indicators based on the factor being studied. The most obvious and simple example is the study of QoL in relation to age: For example, in many population studies using common questionnaires been suggested significant differences between the indicators of physical health in different age groups. In all cases, these assumptions have been confirmed: the respondents of older age groups, showed a lower QoL than younger respondents [21].

The sensitivity of the questionnaire - is its ability to detect changes in QOL according to possible changes in the status of the respondent (eg, in the treatment of patients) [14, 19, 20].

Thus, when conducting any research QOL, including population, the choice is an important component of the questionnaire and to determine its psychometric properties [10, 12].

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Methodological aspects of Quality of Life Research

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IMMUNOHISTOCHEMICHAL METHOD IN TUBERCULAR LYMPHADENITIS DIAGNOSTICS

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The authors studied possibilities of application of immunohistochemical method in diagnostics of peripheral lymph nodes tuberculosis, and it was found out that the method allowed to increase frequency of mycobacterium tuberculosis revealing in comparison with the other methods in 2 times.

Keywords: peripheral lymph nodes tuberculosis, mycobacterium tuberculosis, diagnostics, pathomorphological pattern, immunohistochemical method.

Topicality. The most widespread extrathoracal localization of a tubercular infection contamination is the lesion of peripheral lymph nodes (LNTB), which in the structure of extrapulmonary tuberculosis occupies 1-3 place and with it to 80 % of patients are detected in the late stages of disease, therefore questions of its early diagnostics remain the most actual till now [1,3].

Difficulties of LNTB diagnostics in early stages of development are connected with the disease belonging to the big group of granulomatous illnesses (more than 70 nosologies). It is known that granulomas, unlike a vulgar inflammation are displayed by initially productive reaction and consequently at this stage verification of hyperplasia genesis of lymphoid tissue becomes more complex or even not resolved diagnostic problem. In similar cases the basic diagnostic criterion of tubercular disease is revealing of mycobacterium tuberculosis (MTB) in an investigated material. At LNTB diagnostics these are the extracted lymph node or its punctate, purulent secrete of fistulas.

Nowadays MTB in the investigated material is revealed by a microscopic method by means of classical Ziehl–Neelsen stain, cultivation of mycobacterium culture, luminescent microscopy with auramine stain and by a polymerase chain reaction method (PCR). Modern immunohistochemical mycobacterium detection method has been applied at cavernous and disseminated forms of tuberculosis of lungs, skin and becomes the most effective, raises quality of histological diagnostics of tuberculosis [6]. Thus in the accessible domestic and foreign literature practically there are no works mentioning application of the given method in tubercular lymphadenitis diagnostics.

It is necessary to note that last years reduction of cases of MTB revealing from material of lymph nodes takes place. If in 1953 in caseous lymph nodes bioptates by a method of direct bacterioscopy and culture MTB have been revealed in 100 % cases [2], then in 1977 they are revealed only in 35,8 % [4]. Our researches have confirmed a similar tendency - MTB have been revealed to 26 % of cases [5].

In this connection, the research **objective** was to assess results of immunohistochemical method application in peripheral lymph nodes TB diagnostics.

Patients and methods. 30 patients with suspicion on LNTB which have undergone to diagnostic surgical intervention have been chosen among patients with lymphadenopathy, surveyed in various treatment-and-prophylactic institutions. The pathomorphological description of lymph nodes bioptates and MTB definition by application of immunohistochemical method was made in laboratory of morphological researches of the Republican hospital №2 – National Medical centre Ministry of Healthcare Republic Sakha (Yakutia).

Immunohistochemical MTB revealing is done with application of system of visualization PolyVue Mouse/Rabbit HRP Kit (Diagnostic BioSystems, USA) according to firm-manufacturer instructions. Antigen unmasking was made within 2 minutes in cytrate buffer pH 6.0. Primary MTB antibodies NCL-MT (clone 1.1/3/1) («Novocastra», Great Britain) were incubated at 37 ° C within one hour. Reaction result was visualized by diaminobenzidine (DAB kit «Pharmengen», USA).

Results and discussion. In 16 (53.33 %) from 30 cases pathomorphological research of lymph nodes bioptates has shown presence of tubercular process (Fig.1), in 14 (46.67 %) - hyperplasia, proliferation of a lymphoid tissue without clear signs of granuloma formation. According from that, immunohistochemical research was made on two basic groups of patients. 16 patients with pathomorphological pattern characteristic for caseous LN tuberculosis have been included in the first group. The second group - 14 patients at routine histological research with the nonspecific lesion of a lymph node (lymphadenitis, hyperplasia), without granuloma formation.

At the analysis of the research data it was found out that in the first group of patients MTB have been found by immunohistochemical method from 16 in 10 (62.5 %) cases, in 3 (18.75 %) - the result was doubtful, and in the others 3 (18,75 %) - negative. From the same 16 in 5 (31.25 %) cases MBT have been revealed by a microscopic method on Ziehl–Neelsen (Fig. 2), luminescent microscopy and culture. A little unexpected there was result of immunohistochemical research of bioptates from patients of the second group. From 14 cases in 11 (78.57 %) by immunohistochemical method tuberculosis causative agents have been revealed (Fig. 3) and only in 3 - the result was negative. Thus by other methods of research (luminescent) MTB have been found in the lymph nodes bioptates in one patient that compounds 7.14 %.

Thus, application of immunohistochemical method in caseous stage of a tubercular lymphadenitis has allowed a MTB revealing in 2 times more often, than all other methods of research, and at presence of a lymphoid tissue hyperplasia regarded as «the nonspecific lesion» category - more than on 71.43 %.

Conclusion. The authors consider that their research demonstrates possibilities of a modern method, its high efficacy and the importance in diagnostics, differential diagnostics of tuberculosis, and also is the most perspective direction of implementing of molecular-genetic methods in practical work. The received results of immunohistochemical research testify to complexities of diagnostics of a specific inflammation of lymph nodes in early stages that demands continuation of profound research of the problem.

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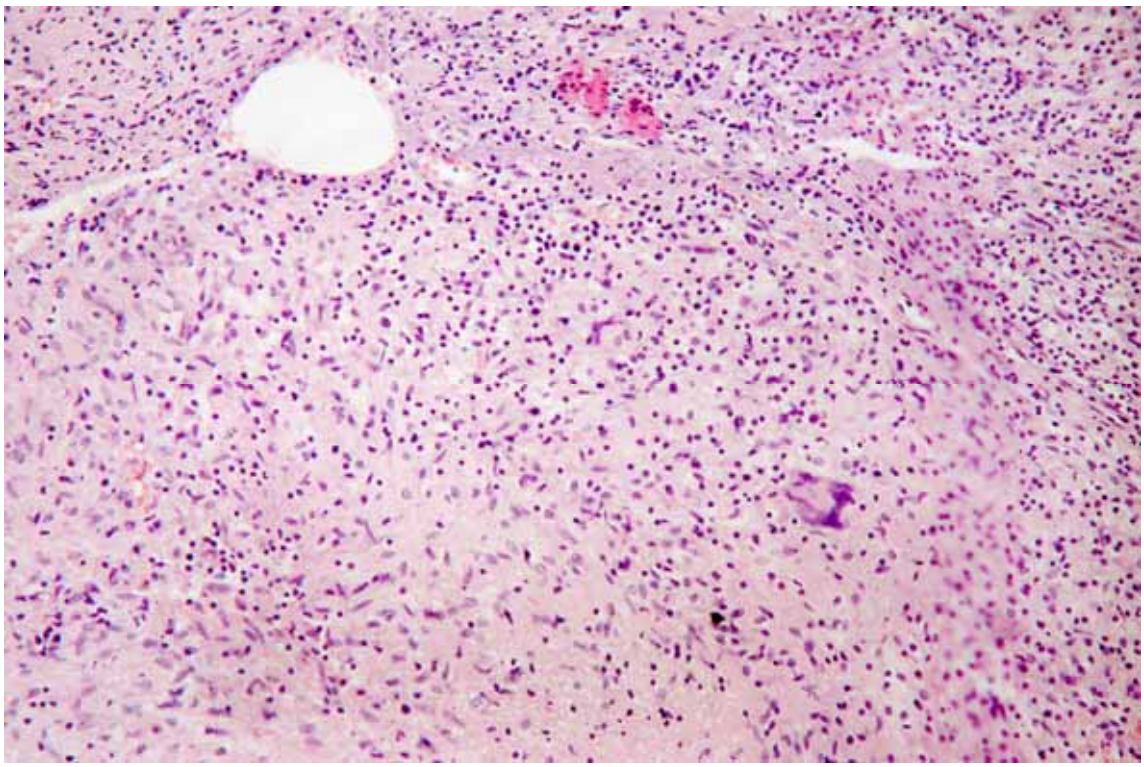

Fig. 1. A field of granulomatous inflammation in a lymph node, without a region of caseous necrosis, with Pirogov-Lanhgans giant cell (x100, hematoxylin and eosine stain).

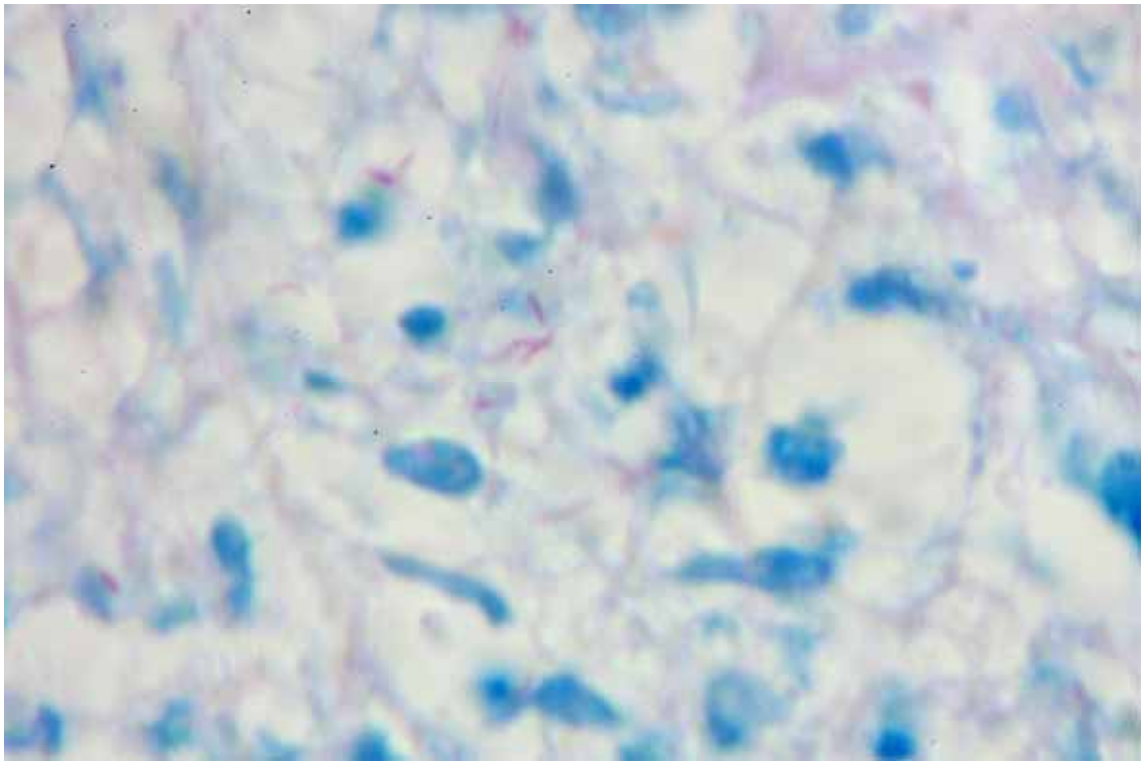

Fig. 2. MTB in a lymph node tissue, in area of granulomatous inflammation (x1000, Ziehl–Neelsen stain)

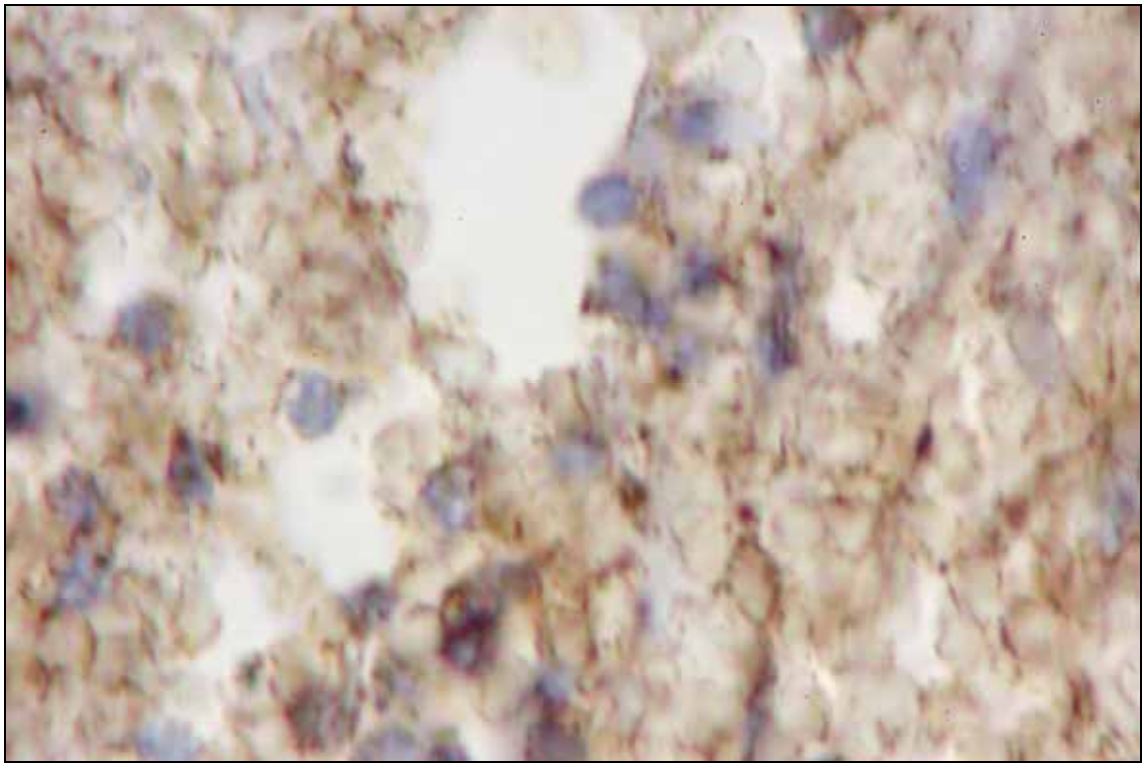

Fig. 3. MTB in a lymph node tissue, in area of granulomatous inflammation (x1000, immunohistochemical method, antibodies to MTB NCL-MT, clone 1.1/3/1).

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New Forms of Organizing Ophthalmologic Aid, Establishment of the Mobile Structure: Mobile Ophthalmologic Surgical Brigade and Mobile Operational – Diagnostic Complex of SBE RS (Y) «Yakutsk Republican Ophthalmologic Hospital».

Nazarov A.N., Zaharova E.K., Poskachina T.R., Prokopieva A.M., Litvintseva N.E., Solovyova T.P.

According to the latest estimations of the All-Russian Health Society blindness in most cases is caused by cataract - 39 %, uncorrected refraction infringements - 18 %, glaucoma - 10 %, yellow stain age degeneration - 7 %, diabetic retinopathy - 4 %. In modern technologic conditions 80 % of blindness cases are prevented or treated [2].

In the world approximately 10 million cataract operations are carried out in a year, and in developing countries the ratio of operations on cataract removal is less than 1000 for the whole population, whereas in the developed countries the given indicator makes 3000 - 4000. For removing the global cataract blindness the quantity of operations should increase up to 30 million by 2020. It means that there is big unsatisfied requirement for cataract surgery. There are four principal causes constraining the growth of cataract surgical treatment: realization of the problem, bad utilities, high cost and remote distance [9].

As to Russia, in order to approach the hi-tech medical aid (HMA) to the residence of patients, the Interbranch scientific and technical complex (ISTC) named after S.N.Fyodorov has been founded and the system of mobile structures «Eye Microsurgery» has successfully been implemented since 1978. There has been a long-term experience of applying the mobile operational ISTC "Eye Microsurgery" in 1978 as a bus for ISTC ES, and in 1989 as a ship [5]. In 1992 the mobile operational-diagnostic complex on the basis of two railway carriages was established by experts from the Orenburg branch of ISTC together with the South Ural railway department that has allowed to carry the newest technologies to patients of remote territories of Orenburgsky oblast [5].

Despite the huge potential of ISTC, even with mobile structures, the requirement of hi-tech medical aid (HMA) in regions of Russia remains enough high. Now HMA is carried out by 22 medical institutions in the country, 9 of them are located in Moscow. For the purpose of HMA availability, republican clinics have started to apply the experience of mobile structures into practice. Departures of experts in various regions of the country for consulting and diagnostic purpose with further direction to surgical treatment are widely spread.

Process of granting of mobile ophthalmologic services and its organizational forms are difficult enough, but are quite realizable. Besides advantages in the qualitative and qualified rendering of the ophthalmologic aid, social and economic aspects as granting of highly skilled ophthalmologic help in remote territories directly in the residence of patients is of great value as it allows to save considerable travel expenses, promoting the increase the level of high-qualified medical aid to the socially-not protected levels of population [6].

In the republic Sakha (Yakutia) the stationary department of SBE RS (Y) Yakutsk Republican Ophthalmologic Hospital with 85 beds is considered the leading specialized establishment where the surgical ophthalmologic treatment is carried out. The power technology of cataract surgery on the basis of ultrasonic phacoemulsification (FE) with implantation of elastic intraocular lenses (IOL) has been implemented in SBE RS YCOH since 2000. In 2010 within YCOH 2426 cataract operations were carried out, 97% of them being by FE method with the implantation of flexible IOL. Despite the growth of surgical activity, the demand for cataract operative treatment remains unsatisfied. The quantity of patients registered in the dispensary list concerning cataract in RC (Y) amounts for 3912 persons, and in 2010 there were 2072 patients addressed with cataract. There is a queue on the planned cataract surgical treatment within 1 year [4].

The Republic Sakha (Yakutia) is the subject of Russia, not having analogues on the planet on the natural and territorial conditions, is located in the northeast of the Euro-Asian continent and is the greatest region of the Russian Federation. On the globe there is no another critical place for human-being existence, except possibly Antarctica [3].

The huge territory can be considered as the distinctive feature of Yakutia, the total area is made up of 3,1 million sq. km.; over 40 % of the territory of the republic is behind the Polar circle; extremely low population density of 0,3 persons per 1 sq. km.; poorly developed transportation essentially limits the freedom of movement. Almost 18 % of the population have no all-the-year-round transport communications, only 14 % have the railway communication, about 5 % have very limited possibilities of departure from their settlements. Accordingly, inhabitants are not provided with constant medical aid, especially with specialized one (1).

Considering the peculiarities of the region, since 2001 YCOH has carried out the mobile work within the voluntary medical insurance (VMI) for rendering the organizational-methodical, advisory and treatment-and-prophylactic help to the population of the remote areas of the republic. Annually from 50 to 100 operations are performed in the republic, 85% of them on cataract removal. Operations were carried out by an extracapsular method with implantation of IOL rigid models and imposing of seam [4].

In order to increase the availability and quality of the hi-tech ophthalmologic aid and to improve the specialized medical aid to the population of republic Sakha (Yakutia) the decree of Ministry of Health (MH) RS (Y) № 01-8/4-117 «About the organization of mobile ophthalmologic surgical brigade rendering the medical aid within the territorial program of Obligatory Medical Insurance RS" was adopted on February 10th 2011 on the basis of SBE RS YCOH [7]. Regulations about the mobile ophthalmologic surgical brigade (EOSB) have been confirmed, its structure being as follows:

- an ophthalmologist-surgeon - 2, an ophthalmologist-diagnostician - 1, an anesthesiologist -1, an operational nurse - 2, an anesthesiologist nurse - 1, a medical technician - 1, a driver - 2. In case of need in the staff of EOSB medical workers CRH can be involved.

For achieving the purpose the brigade is equipped by the phacoemulsificator CataRhex (OERTLI, Switzerland), the operational microscope OM-8 (Takagi, Japan), the manual slot-hole lamp Shin-Nippon XL-1 (Japan), the portable autoclave of "Statim-5000", the ultrasonic system A-scan-OcuScan (Алкон), the portable ref-keratometer Retinomax K-plus (Japan), the ophthalmoscope Heine (Germany), sets of microsurgical toolkit for carrying out cataract and glaucoma operations and out-patient operations.

Heads of the republican medical institution, head physicians of the central regional hospitals should select patients from the attached territories for advisory surveys and surgical treatment, preoperative preparation and postoperative treatment of patients in out-patient conditions, provide with labor conditions for experts of EOSB SBE RS (Y) YROC.

Funding the medical services of EOSB within the Territorial Program OMI is made by the insurance medical organizations on tariffs and payment confirmed by the General (tariff) agreement on payment of medical services, rendered within the Territorial program of Obligatory Medical Insurance of Republic Sakha (Yakutia) [7].

Payment for the treatment of «a finished case» is made in accordance with medical aid standards confirmed by MH RS (Y) in the conditions of subroutine realization «Introduction of medical aid standards» in the program «Modernization of public health service RS (Y) 2011 - 2012».

In total on the profile "ophthalmology" 72 standards are introduced, 35 of them being on the basis of the federal ones. In the activity of EOSB the following nosology standards are confirmed: cataract, glaucoma, anomalies of development and position of eyelids, pterygium.

Payment is made up of following sources:

- From means of the Fund budget – concerning to the limit of assignments on the payment fund and norms of the budgetary service cost confirmed by the governmental decree of

the Republic Sakha (Yakutia) from October 29th, 2007 №440, including indexation of debit items and subitems;

- From means «Programs of modernization of public health service of Republic Sakha (Yakutia)» - on introduction of medical aid standards [8].

Doctors of EOSB determine the presence of indications to operative treatment, estimate the patent's preparedness to operation, hospitalize patients into surgical branch CRH with the documentation required: information consent for rendering medical service, consent for operative treatment and anesthetic allowance, case records, operational papers and etc., and also diagnostics and treatment of patients according to the standards adopted.

The reimbursement connected with patient's hospitalization in regional hospitals is performed by to the contract of refund rendering service between CRH and SBE RS (Y) YROC.

The SBE RS (Y) YROC submits the account and register on medical aid payment to the insurance company for the rendered help to the insured persons of EOSB hospitalized in CRB. The means obtained by SIH «YROC» for rendering the medical aid on payment method- «the finished case of treatment of medical-economic standards» (the mobile form) from means OMI are used on the purposes established according to the tariff structure: extra salary; material expenses.

The material expenses connected with the operations include the cost of medicaments and expenses materials; equipment amortization; other overhead expenses.

Payment for the finished case is made for each mobile medical aid on the basis of the register account of medical aid rendered and payment regulations as well. The sums adopted correspond to average wages.

The payment fund is distributed among workers considering the amount of the operations performed by proportionally established scores reflecting complexity of the work done. The scores reflect intensity of labor expenses per unit of time and qualifying complexity of the operation.

The means of material expenses fund are intended for pay of expenses, connected with the operations performed; acquisition of medicaments and expenses materials, toolkit and accomplishment of expenses connected with maintenance of the mobile form of medical aid and salary in case of well-grounded economy of specified expenses and realization of the plan - task.

The primary documentation of inpatients, hospitalized and treated by EOSB is considered and stored in the SBE RS (Y) YROC and handed out to the head physician for further analysis and estimation of quality of medical aid [7].

In 2011 mobile medical aid was carried out in the Arctic and Northern groups: Verkhniy Kolyma, Zhigansky; in Viljujsky group: Verkhneviljujsky, Viljujsky, Mirninsky, Suntarsky, Njurbinsky; the central areas: Aldan, Amginsky, Gorniy, Lensky, Megino-Kangalassky, Nerjungrinsky, Olekminsky, Tattinsky, Tomponsky, Ust-May, Khangalassky, Churapchinsky.

For 9 months 2011 481 operations were performed, including 439 with PhE, 11 with NPSE, 12 with combined surgery (PhE with IOL + NPSE). All patients spent 1538 days as a whole, average stationary treatment has made 3 days (table №1).

In the EOSB activity the cataract surgery is based on the phacoemulsification technique with implantation of the flexible models IOL having obvious advantages: seamless connection of tissues, reduction of operation time and a period of organism recovery, acceleration of rehabilitation and achievement of its limiting values, patient's satisfactory state, profitability, high efficiency and quality.

In connection with the EOSB organization and inculcation of the new technology as the power cataract surgery with IOL implantation of advanced models, for 9 months 2011 the amount of cataract operations performed by EOSB SBE RS (Y) YROC has exceeded the indices of the mobile work YROC for 2010 in 52 %. The implementation of phacoemulsification technique in the EOSB activity has allowed to render the surgical help to patients with glaucoma and cataract in one-stage, carrying out the combined surgery, 12 phacoemulsification procedures with IOL implantation and not penetrating deep sclerectomy with suprachoroidal drainage.

The quantity of the treated patients within the limits of free medical aid in 2011 has increased up to 185 persons in comparison with indicators of 2010.

When analyzing the EOSB activity it was revealed that of all operated patients 97 % were discharged with recovery, 3 % with improvement (table №2). New forms of the organization of the ophthalmologic help and inculcation of new technologies allow not only to increase the amount of surgical help, and also to improve quality of treatment.

Thus, the introduction of such new forms of ophthalmologic aid in EOSB as the mobile structure (the mobile ophthalmologic surgical brigade and mobile operational - diagnostic complex of SBE RS («the Yakut Republican Ophthalmologic Clinic») within the limits of free medical aid; the hi-tech method of cataract surgery phacoemulsification with implantation of IOL advanced models in the EOSB work; «the finished case» treatments under the standards of medical aid confirmed by MH RS (in the conditions of subroutine realization «Introduction of medical aid standards» in the program «Modernizations of public health services RS (2011 - 2012» has allowed:

1. To increase the number of treated patients up to 53 %,

2. To reduce average admission till 50 %.,

3. To raise quality of medical service: according to the data the number of patients recovered has made 97 % ,

4. To increase salary of EOSB on 30,38 % for surgeons, on 43,49 % for operational staff nurses.

5. To cut down budget expenses of the Republic Sakha (Yakutia) in connection with unnecessity of compensation of travel expenses to patients and persons accompanying them, the economy has made 5 000,00 thousand rubles approximately.

The efficient management, introduction of new forms of the labor organization and development of new technologies will allow to satisfy requirement for cataract surgery, to liquidate the queue on planned operative treatment for patients with cataract in RS (Y).

Table 1

The amount of operations performed by mobile surgeons in 2010 and by EOSB in 2011

Nosology	**2010**	**2011**
PhE with IOL implantation	**232**	**439**
Not penetrating deep sclerectomy (NPSE)	**17**	**11**
Combined surgery: PhE with IOL+NPSE	**-**	**12**
Pterigium removal	**47**	**15**
Lower eyelid bend removal	**-**	**4**
Total	**296**	**481**

Table 2

Results of treatment of discharged patients by EOSB in 2011

Year	Number of discharged	recovery	improvement	No changes	Clinical deterioration
2011	481	470 (97%)	11 (3%)	-	-

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The resume:

Blindness in most cases is caused by cataract in 39 %. There are four principal causes constraining the growth of cataract surgical treatment: realization of the problem, bad utilities, high cost and remote distance [9]. The republic Sakha (Yakutia) is the greatest region of the Russian Federation. Distinctive feature of Yakutia, are: the huge territory, a total area makes 3,1 million in sq. km., extremely low population density of 0,3 persons per 1 sq. km., not developed transport message. Accordingly, the population is not provided on a constant basis with specialized kinds of medical aid. the introduction of such new forms of ophthalmologic aid in EOSB as the mobile structure (the mobile ophthalmologic surgical brigade and mobile operational - diagnostic complex of SBE RS («the Yakut Republican Ophthalmologic Clinic») within the limits of free medical aid; the hi-tech method of cataract surgery phacoemulsification with implantation of IOL advanced models in the EOSB work; «the finished case» treatments under the standards of medical aid confirmed by MH RS (in the conditions of subroutine realization «Introduction of medical aid standards» in the program «Modernizations of public health services RS (2011 – 2012)» will allow to satisfy requirements for cataract surgery, to liquidate the queue on planned operative treatment for patients with cataract in RS (Y).

Keywords: cataract, phacoemulsification, mobile structure.

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Grigorieva V.K.

Expert evaluation of the quality of medical care to patients in rheumatological Department.

An analysis of expert evaluation of the quality of care provided to patients in rheumatological Department in medical institutions of Yakutsk. As a result of evaluation groups of medical errors were established, which have the most important risk indicator of medical errors in the delivery of outpatient care.

Key words: quality of care, expert evaluation, medical errors, rheumatic disease.

Introduction

The problem of rheumatic diseases is regarded worldwide as one of the most important not only medical, but also to socio-economic position (Cooper, NJ, 2000; WV Epstein, 1990; W. Felts, 1989; E. Yelin, LF, 1995).

In the Republic of Sakha (Yakutia) in recent years showed a significant increase in the frequency of rheumatic diseases with autoimmune and immunocomplex of pathogenesis. During the period from 2005 to 2009 it increased from 95.2 to 115.7 per 1,000 adult population. Among all the causes of temporary incapacity cases of disease of the musculoskeletal system are the second place, after respiratory diseases - 11.7% (2008 - 11.8%).

The structure of the causes of primary disability in the 2009 the musculoskeletal system disease took 3rd place - 8.4%.

Currently, there is increase in the prevalence of rheumatic diseases in the population leads to an increase in population needs for health care and quality of the care of rheumatic patients, on the one hand, is a component of continual medical care in the general population, on the other hand, an indicator of the effectiveness of the treatment- care facility, or a specific diagnostic and treatment room.

Objective: To analyze the expert assessment of quality of care provided to patients in rheumatological Department.

Materials and methods:

control of the quality of care is carried out to determine defects, medical errors and other factors that have a negative effect, and that lead to reduced quality of health care efficiency. it also affects the Management of medical organization, which should reduce the number of medical errors in the work, improve quality and efficiency of health care and organize the control of management.

Expert evaluation of the quality of care provided to patients with rheumatological profile was carried out by random sampling. Analyzed only 220 cases of completed treatment, 70 of them in hospital and 150 in outpatient care.

Assessment of quality of care was carried out based on standards approved by the federal and regional level.

The volume, quality and timeliness of diagnostic and therapeutic measures, diagnosis, treatment time were evaluated by rheumatologists.

Results and Discussion

70 completed treatment of hospital care in the rheumatology department of YAGKB were analyzed by non-departmental review of quality of care.

Feasibility study on the hospital found that 98.6% of patients reasonable hospitalized. Among them 7.2% were hospitalized urgently, 92.8% planned hospitalized. All patients were successfully treated. The average length of stay depends on the diagnosis, the severity of the disease, presence of concomitant disease, and it is 19,3 (± 4,7) days. As a result of expert evaluation it was found that 5,8 ± 2,8% of laboratory studies were performed not in full. In 100% of the diagnoses have been exposed and are formulated correctly.

Thus, the quality of inpatient care consistent with established standards and rules of medical care.

150 completed treatment of outpatient care in the rheumatology department in clinics and hospitals in Yakutsk were analyzed by experts.
To provide outpatient care peer review analysis completed 150 cases of patients in rheumatological departments of clinics and hospitals in Yakutsk.
As a result of examination revealed 101 defects diagnostic and treatment process, which accounted for 67% of the total number of examinations performed.

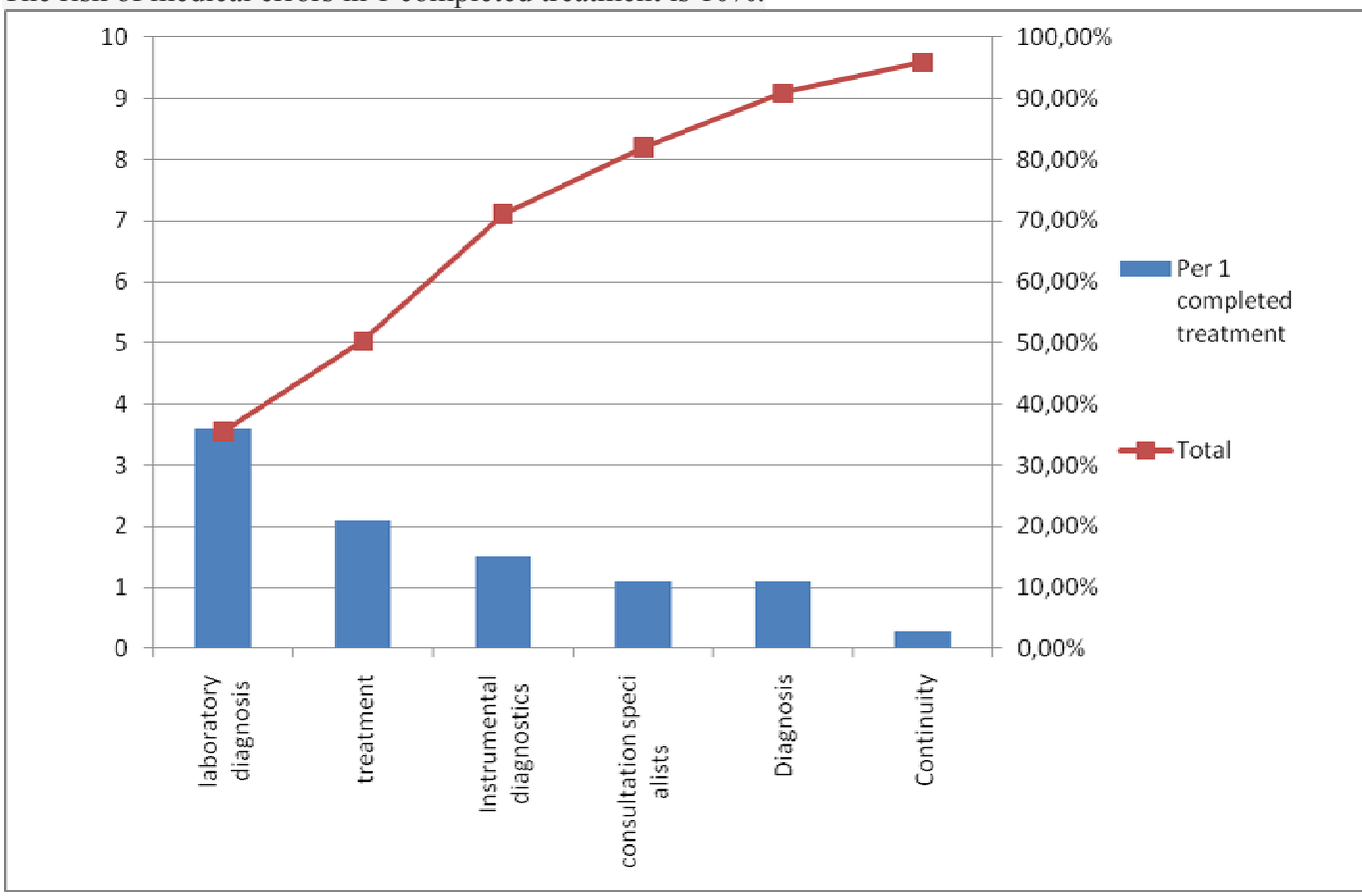
As a result of statistical analysis, groups of medical errors were established, which have the most conditional values of these parameters (Table 1).

Parameters of medical errors

Expert comments by blocks	**Per 1** completed treatment	**% errors**	
		In block	**Total**
The risk of medical errors	10		100%
1.**Collection of information**	**6,5**	**100%**	**65,3%**
- complaints	0,2	6,1%	4%
- history	02		
laboratory diagnosis:	3,6	54,5%	35,6%
- Research is not conducted	1,8		
-unnecessary research	0,2		
- Comments on time	1,6		
Instrumental diagnostics	1,5	22,7%	14,8%
consultation specialists	1,1	16,7%	10,9%
2. Diagnosis	**1,1**	100%	**10,9%**
- Comments on time setting	0,3	27,3%	
3. Treatment	**2,1**	100%	**20,7%**
- pharmacotherapy	1,9	90,5%	18,4%
4. Continuity	**0,3**	100%	**3%**

In order to establish a group of medical errors, the most important indicator of conditional risk of medical errors, were analyzed their estimates of their contribution to the risk score (Fig. 1).

As a result of analysis showed that the rate of risk of medical errors is mainly composed of the errors collection and treatment (by 65.3% and 20.7% respectively).
Estimated errors in the information gathering 54.5% is formed by the laboratory.
Estimated errors in the treatment of 90.5% due to errors of pharmacotherapy.
The risk of medical errors in 1 completed treatment is 10%.



Thus, the results of risk analysis eatsblished groups of medical in the provision of outpatient care to patients in rheumatological department, which require dynamic control:
1.Errors of laboratory diagnosis related to the lack of appointments studies that are necessary for diagnosis, selection and monitoring of effective treatment.
2. Errors of the pharmacotherapy related to the lack of unreasonable issuing a prescription for medicine which leads to ineffective treatment of rheumatic diseases and to risk of social consequences.

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FEATURES OF MEDICAL MAINTENANCE OF PUPILS CHILD – YOUTHFUL SPORTS SCHOOLS IN REPUBLIC SAKHA (YAKUTIA)

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RESUME

Research of system of medical maintenance of pupil's child – youthful sports schools (CYSS) of a city of Yakutsk according to the Republican center of physiotherapy exercises and sports medicine is conducted. Problems of organizational character in medical maintenance of young sportsmen are revealed: a severe shortage of medical shots and insufficient it is material – technical base, both in the republican center, and at child-youthful schools; absence of the medical block at sports schools; absence of continuity between the center of physiotherapy exercises both sports medicine and an out-patient-polyclinic link.

The offered system of perfection of medical maintenance of pupils child – youthful sports schools, including system of selection of children for employment by various sports at municipal level will allow to improve quality of rendering of medical aid and to lower level of disease of young sportsmen without additional financial expenses.

Keywords: young sportsmen, child – youthful sports school, a state of health.

In republic functions 57 child-youthful sports schools of system of the Ministry of Education Republic of Sakha (Yakutia) with coverage more than 30000 pupils. In child – youthful sports schools of republic it is cultivated more than 30 sports. With a view of selection of young sportsmen summer Games of pupils PC are annually spent to a national team Republic of Sakha (Yakutia) «the Olympic hopes of Yakutia» in which at all stages take part more than 45000 pupils. Games are check of a condition and a physical training and sports level of development in areas, cities and original review of a sports reserve of republic. For an exit on better level of preparation and successful performance at competitions to the purpose of preservation of a continuity of training process sports actions will annually be organized. The centralized study-training gathering are spent to the summer period in the area of Ministry of Education RS

(Yakutia) and municipal unions of areas. Young sportsmen spend stude-training gathering in various sports camps of republic on following sports: volleyball, boxing, free-style wrestling, drafts, chess, track and field athletics, a judo.

At pupils CYSS considerable on volume and intensity of physical activity involve overloads, infringements of a harmony of development, lead to formation of a various pathology, especially in the remote period of life and activity of an individual [1, 2].

Achievement of high sports results is impossible without the well enough debugged system of preparation of the sportsman. Achievement of high sports results probably only in the event that is well debugged system of preparation of the sportsman. It represents set of methodical bases, organizational forms and conditions training - the competitive process, optimum cooperating among themselves on the basis of certain principles and providing the best degree of readiness of the sportsman to high achievements in sport [3, 5].

Research objective was the analysis of system of medical maintenance of pupils child – youthful sports schools Yakutsk according to the Republican center of physiotherapy exercises and sports medicine.

Materials and methods

In municipal union there are 8 establishments of additional education of children «Child – youthful sports school» («CYSS») where it is cultivated following sports: game (volleyball, volleyball beach, table tennis, football, basketball), combat sports (free-style wrestling, boxing, a judo, thakvondo), difficult the coordination (sports gymnastics, rhythmic gymnastics, bullet shooting, shooting from onions), cyclic (track and field athletics, cross-countries), speed-power (sprint distances, powerlifting), national sports, and also drafts and chess. National - the regional component in educational activity of sports school is used in branches «stick Pulling», «Northern all-round», «the Yakut jumps», "Hapsagaj" and "Free-style wrestling" where besides classic methods traditional receptions of struggle of the Yakut people are applied.

We carry out the analysis of forms of account №1 – TO «Data on establishment of additional education of children» CYSS Yakutsk for 2010 and annual reports «the Republican center of physiotherapy exercises and sports medicine» for 2008 – 2010

Pupils of schools Yakutsk, expressed desire and the last test testings become pupils CYSS. Pupils on level of physical development and a state of health are enlisted in initial, study-training groups and groups of sports perfection. The sports school will organize work with pupils within a calendar year. study-training employment on sports are spent according to the annual curriculum calculated for 46 weeks of study-training employment. Planned teaching and educational work is conducted.

According to criteria of educational activity CYSS the curriculum has 4 stages: 1 stage – sports; 2 stage – initial preparation; 3 stage – study-training; 4 stage – sports perfection.

On the first stage (sports) the pupils of comprehensive schools having the written permission (inquiry) of the doctor-pediatrist are enlisted. The primary goal is stability of structure engaged, attendance them of training employment, positive dynamics of individual indicators of development of physical qualities and strengthening of health engaged.

On the second stage (initial preparation) pupils of the comprehensive schools are enlisted, wishing to go in for sports and having the written permission (inquiry) of the doctor-pediatrist. Here the sports-improving and educational work directed on versatile physical preparation and mastering by bases technicians of the selected sport, a choice of sports specialization and performance of control specifications for transfer on 3 stage of preparation is carried out. The primary goal is attraction of the greatest possible number of children and teenagers to the regular playing sports directed on development of the person, morally-ethical and strong-willed qualities.

The third study-training stage is formed on a competitive basis from physically healthy trained, had training necessary preparation not less than 2th years and executed reception specifications on the general physical preparation and the special physical preparation. At this stage the state of health, level of physical development of pupils, dynamics of level of readiness according to specific features of the engaged is traced; development of volumes of the training loadings provided by programs on sports; development of theoretical section of the program. The primary goal is improvement of a state of health, including physical readiness and sports results taking into account specific features and program requirements on sports; preventive maintenance of bad habits and offenses.

The stage of sports perfection assumes performance by the sportsman of volumes of the training and competitive loadings, the provided plan of preparation.

In CYSS the basic document of forward planning is working programs on the sports, confirmed Federal agency on physical training and sports of Russia and position about the child-youthful sports schools, the confirmed All-Union Central Council of Trade Unions, Ministry of education both To on physical culture and From Russia.

Each trainer-teacher in the beginning of academic year makes the developed plan-schedule of distribution of class periods for year which in details reflects sequence of studying of a program material, work maintenances during the various periods of preparation. For realization perspective, training effective control tests, competitions on the general and special physical preparation are used. On the basis of results of control tests the question on level of readiness of

the engaged is solved. One of the cores a direction of work of school is creation of conditions for formation of a healthy way of life of schoolboys.

The Republican Center of physiotherapy exercises and sports medicine «the Republican center of physiotherapy exercises and sports medicine» in which structure there are following divisions is engaged in medical maintenance of pupils CYSS «the administrative device; an organizational-methodical office; branch of sports medicine; physiotherapy exercises branch.

Activity of branch of sports medicine is regulated by following standard documents: order Ministry of health (MH) the Russian Federation №337 from 20.08. 2001 «About measures on the further development and perfection of sports medicine and physiotherapy exercises»; order MH the Russian Federation №621 from 12/30/2003 «About a complex estimation of a state of health of children»; order MH the Russian Federation №60 from 3/14/1995 «About the statement of the instruction on carrying out of routine inspections of children of preschool and school age on a basis Maine»; the order of MH Republic of Sakha (Yakutia) 5/31/2005 «About the organization of obligatory medical inspection of the persons who are engaged in physical culture and sports»; order MH the Russian Federation №613н from 2/10/2010« About the statement of an order of rendering of medical aid at carrying out of sports and sports actions ». In branch of only 10 established posts: 8 doctors and 2 nurses. Branch established posts: managing branch - 1, the therapist - 1, the pediatrist - 1, the ophthalmologist - 1, the neurologist - 1, the otolaryngologist - 1, the doctor of functional diagnostics. - 1, the traumatologist-orthopedist - 1, the senior nurse - 1, the nurse – 1, including 2 pieces of a unit are occupied with external part-time workers (the surgeon, the pediatrist). With a qualifying category of 62,5 % of doctors and 50 % of nurses. Certificates on a speciality« the Physiotherapy exercises and sports »have 80 % of doctors. The branch of sports medicine occupies 4 offices: registry, an office for anthopometrical researches, an office of the therapist and the pediatrist, an office of narrow experts, an office the doctor of functional diagnostics.

Medical control by experts «the Republican center of physiotherapy exercises and sports medicine» over young sportsmen is carried out according to the general organizational-methodical positions of sports medicine and provides definition of a state of health, features of physical development and a constitution, functionality of everyone, engaged in physical training and sports or starting employment. The volume of medical inspection depends on specific goals and conditions of its carrying out. Gathering of the medical and sports anamnesis, definition of a condition of nervous, cardiovascular and respiratory systems are obligatory, etc. On everyone examined the medical-control card which is stored in registry is made out. On the basis of the received data the complex estimation of a state of health according to order MH the Russian

Federation №621 from 12/30/2003 and distribution of young sportsmen on health groups according to order MH the Russian Federation №60 from 3/14/1995 is taken out

On the basis of profound medical inspection the sports doctor makes examination of sports work capacity of the persons, going in for sports being guided developed MH the Russian Federation by the list of contra-indications to those or other sports. Also the purpose of carrying out of expert surveys of the persons who are engaged in physical training and sports, early revealing of diseases, an estimation of physical development and a functional condition and preparation of corresponding recommendations is.

Statistical processing of the received results was spent with use of the computer program of processing of spreadsheet Microsoft Excel.

Results and discussion

Establishments of additional education of children Yakutsk have a total area of 9853 sq.m. where 3954 children are engaged, including more than half (57 %) from them goes in for sports regularly within several years. In total 282 sports groups are organized, including 26 groups (9,2 %) function on the basis of comprehensive schools where 455 pupils (11,5 %) are engaged. A polo - the age structure going in for sports is presented as follows: children till 6 years – 111 (2,8 %), including 77 girls, from 6 till 9 years – 1094 (27,7 %), including 297 girls, from 10 till 14 years – 1904 (48,2 %), including 500 girls, from 15 till 17 years – 821 (20,8 %), including 140 girls, are more senior 18 years – 24 (0,6 %), including 1 girl. As a whole, the share of girls going in for sports makes 25,7 % (1015 persons). Number of workers in the «CYSS» makes 176 persons, including the training-teaching structure is presented by 87 persons (49,4 %), study-support personnel – 7 (4,0 %), attendants – 62 (35,2 %). On the basis of two CYSS there is a boarding school - boarding house on 65 places.

All republics CYSS, including eight CYSS Yakutsk, school of the Olympic reserve, school of the higher sports skill, sports branch of the Yakut teacher training college-1, clubs of fans of run, health group, sports clubs, sections in sport centers, and also engaged in physical culture and sports in school and preschool centers are subject to medical supervision and control.

The share of references in «the Republican center of physiotherapy exercises and sports medicine» of children till 17 years makes more half (2008-89,0 %, 2010 – 83,4 %). In dynamics for 3 years the number of references by half (- 55,5 %), including children till 17 years (- 52,0 %) was cut: children till 14 years (- 55,3 %) and teenagers 15 – 17 years (- 43,3 %). It is possible to explain such decrease in references two factors: 1. In 2008 have passed the International sports games «Children of Asia» that has caused increase in quantity of references in connection with constant medical – pedagogical supervision of candidates of modular republic including

current medical inspections; 2. Reduction of quantity of references in 2010 is connected with shortage of financing. To execute Governmental order Republic of Sakha (Yakutia) №503 from 11/23/2009 «About the plan of optimization of expenses in the basic directions of social sphere on 2007 – 2011» and the order of Ministry of Health RS (Yakutia) №07 – 8/1 – 20 from 1/19/2010« About the statement of a limit of regular number in republican official bodies of public health services for 2010 »reduction of shots on 5,0 pieces of a unit, including 3,75 medical pieces of a unit (the table has been spent. 1)

Table 1

Quantity of all references of sportsmen depending on age (absolute number (AN)., %)

Years	Total of references.	till 17 years		Children and teenagers			
				Till 14 years		15 – 17 years	
		AN	%	AN	%	AN	%
2008	29840	26552	89,0	19312	64,7	7240	24,3
2009	25815	20058	77,7	14108	54,6	5950	23,0
2010	16575	13829	83,4	10691	64,5	3138	18,8

One of the basic functions of branch of sports medicine is диспансерное supervision of the persons who are engaged in physical culture and sports. Prophylactic medical examination provides regular medical control over sportsmen, for the purpose of reception of the full and all-round information about health, physical development, a functional condition and level of working capacity of an organism at the basic stages of a training cycle, and also behind adequacy of physical activities and organism restoration. By results clinical supervision the sports doctor solves a question on the admission of the sportsman to trainings and to competitions.

In dynamics for 3 years decrease in references of the young sportsmen who have passed prophylactic medical examination in CYSS on third (- 38,3 %) at the expense of reduction of departures in улусы because of shortage of financing (tab. 2) also is marked. The number of the pupils of republic CYSS captured by prophylactic medical examination remains at one level (2008 – 6979, 2010 – 7005) and makes approximately 20 % from total of pupils of republic CYSS.

Table 2

Quantity of references the persons who are engaged in physical culture and sports, passed prophylactic medical examination depending on group of physical activity (Absolute number (AN, %)

Years	Total of references.	Sportsmen of national teams		CYSS		Sports sections		The general physical preparation	
		AN	%	AN	%	AN	%	AN	%
2008	18406	4383	23,8	6979	37,9	2851	15,5	4193	22,8
2009	17385	3226	12,5	8649	33,6	2991	11,6	2519	9,7
2010	11368	2079	18,3	7005	61,6	1674	14,7	612	5,4

The analysis of the revealed general disease following the results of medical inspection of pupils CYSS Yakutsk in 2010 has shown that disease of young sportsmen has made 968,7 ‰ that below indicators of disease of young sportsmen according to the literature (1605 ‰) in 1,6 times [1], and in comparison with level of disease of pupils of comprehensive school Yakutsk (2423,0 ‰) more low in 2,5 times [4]. It can be caused that such experts didn't take part in medical inspection, as endocrinologist, the gynecologist, the urologist, the orthopedist - the traumatologist because of shortage of financing and shots. In structure of the revealed pathology on 1 place of illness of digestive organs – 296,8 ‰, basically at the expense of caries; on 2 place – illnesses of nervous system (291,6 ‰); on 3 place – illnesses of an eye (151,0 ‰); on 4 place – illnesses of an ear and respiratory organs (135,4 ‰), further – illnesses of cardiovascular system (93,7 ‰). The estimation of a state of health of children who are going in for sports, has shown that 15,2 % from number of all young sportsmen that will be coordinated with the literature data [1, 6] are almost healthy. 75,5 % of young sportsmen have those or other deviations in a state of health, demanding additional inspection. Haven't got the admission to playing sports of 9,3 % of pupils CYSS at which such diseases, as a bronchial asthma, miopiya average and high degree, illness of Shejermana-Mau, illness of Ostgut-Shljattera, adhesive illness, small anomaly of heart, a chronic pyelonephritis, a sleep-walking are revealed. It has resulted from defects in system of selection of young sportsmen at the initial stage.

Thus, the revealed general disease of young sportsmen following the results of medical inspection not completely reflects the valid picture of a condition of their health because of shortage of financing and deficiency of medical shots. In this connection, we offer perfection of medical maintenance of young sportsmen at municipal level without additional financial expenses:

1. In modern conditions in questions of medical maintenance of young sportsmen following establishments should be engaged: branch of sports medicine of the centers of physiotherapy exercises and sports medicine, territorial children's polyclinic, the rehabilitational-improving

centers (branches) that will allow to adjust continuity between head establishment and an out-patient-polyclinic link.

2. During trainings, gathering, competitions it is expedient to render health service of young sportsmen the qualified experts of the center of physiotherapy exercises and sports medicine. Strengthening of a brigade of experts of branch of sports medicine by doctors – experts of children's polyclinic (the endocrinologist, the gynecologist, the urologist, the stomatologist etc.) for carrying out of profound medical inspection of pupils CYSS.

3. To introduce complex inspection of all wishing to go in for sports children in the Center of health for children on formation of a healthy way of life with carrying out of questioning of parents for the admission of children to playing sports. Carrying out in the subsequent annual dynamic supervision in the center of health for monitoring of a state of health of young sportsmen. Complex laboratory-tool research will allow to receive complete multilateral representation about mentally – emotional and functional conditions of an organism of the young sportsman and possibilities of increase in level fitness and achievements of the maximum sports results by it; to find ways of the complete approach to quality of medical inspections of young sportsmen.

4. Carrying out of rehabilitation and improving actions in existing branches of regenerative treatment of territorial polyclinics and hospitals and the organization of improvement of young sportsmen in summer sports camp.

Conclusions

Problems of organizational character in medical maintenance of young sportsmen in republic are revealed: a severe shortage of medical shots and insufficient it is material – technical base, both in the republican center, and at child-youthful schools; absence of the medical block at sports schools; absence of continuity between the republican center and an out-patient-polyclinic link.

The offered system of perfection of medical maintenance of pupils child – youthful sports schools, including system of selection of children for employment by various sports at municipal level will allow to improve quality of rendering of medical aid and to lower level of disease of young sportsmen without additional financial expenses

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Features of a current of pregnancy and state of health of babies according to sociological poll of women of the Khabarovsk territory.

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Keywords: sociological interviewing the women's, current pregnant, picture of health newborns.

Summary: Social-economic position to families is an important factor, including upon mothers' pregnancy current and level of newborns' health.

Middle term of stating on account at Khabarovsk territory is about 19,31± 0,56 weeks. Middle level of evaluation on Apgar scale is 7,68±0,24 between newborns of the observed women. The positive communication between the period of stating on account and evaluation on the Apgar scale (r=0,76±0,11) has been proved as well as the positive connection between the physiological pregnancy and frequency of breastfeeding (r=0,87±0,11).

Introduction. Pregnancy current and health level of newborns are under the influence of social and economic condition of family [9]. Indicators of feto-infantile loses and their structural elements (perinatal and infantile rate) are the most significant indicators at formation of the results of treatment-and-prophylactic establishments and protection service of mother and the child activities [6,8].

For last five years level of complicated pregnancies, delivery and postnatal period has decreased on 21,9% in Khabarovsk territory. In 2010 it has affected on the rate of perinatal (9,12‰) and infantile (10,32‰) death. In structure of the reasons of infantile death rate perinatal reasons (53%), traumas and accidents (28%), congenital and developmental anomalies (14%), inflectional deseases (9%) prevail. Syndrome of sudden death and other anomalies occupy subsequent places. Indicator of postneonatal death rates 6,3 on 1000 born in live. Death of more than a half (55,7%) babies is connected with decompensation of boundary and menacing conditions [4].

At the same time experts think that it is impossible to overestimate data about achievements in positive dynamics of these indicators. Not all reproductive losses are considered because of the mechanism of falsification of early neonatal and Infantile death rate indicators with the help of criteria of definition of the perinatal period [1]. Besides, in the majority of territories of Far East federal district, as well as in Russia as a whole, the analysis of disease of newborns has shown feedback of dependence of disease and a lethality at the expense of revealing negative factor of correlation (r=-0,39). This indicator is as much as possible expressed among beared at full term babies (r=-0,46) [7].

There is a relative prevalence of women among lower-income strata in Russia. It makes additional risk of formation of a pathology at newborns in condition of economic crisis. Inequality in reception of qualitative medical aid among pregnant women from socially unsuccessful families leads to growth of a perinatal pathology. The social illness of mother is reflected on health of the newborn [10]. There is data about influence of a current of pregnancy and delivery on brestfeeding and level of primary disease of babies [2].

All above-stated has defined a research objective: consideration of relationships of cause and effect of a current of pregnancy and delivery with s social characteristic of a family, a level of health of newborns and babies in Khabarovsk territory.

Materials and methods. Analysis of data of sociological opinion poll of mothers living in Khabarovsk territory with babies (n=564), data about pregnancy course, deliveries and newborns health (n=300) from Maternity hospital №2 in Khabarovsk and babies (n=200) from Children's polyclinic № 1 in Komsomolsk-on-Amur was made. Sociological opinion poll was made on specially prepared polling card with the analysis of answers. Data about pregnancies, delivery, birth of a baby and his development till 12 months - from medical documents (the registration form №096-1/y-97; № 097-1/y-97; №003/y; № 113/y; №112/y).

Sociological research, its capacity, estimation of reliability was based on standard recommendations [5]. Estimation of newborns was based on Apgar scale. Character and duration of brestfeed, analysis of diseases was based on sampling from medical documents. During the analysis of materials we used

Results and discussions. The obtained data has shown that the majority of women is 20-24 (29,7%), 25-29 (36,4%), 30-34 (17,4%) years old, women under 20 years and older than 34 years – 16,5%. The relation to marriage is ambiguous – 62,7% are in legal marriage, 4,6% - are in church marriage. More than 7% are in legal and church marriage, about 7% are in civil marriage. 4,9% are not married and 12,5% were at a loss with the answer.

The majority of women said that optimal age for a birth of the child is 20-24 years (53,6%), 25-29 years – 23,9%. Before pregnancy 27,5% of women visited gynecologist 2-3 times a year, 22,7% - once a year and 16,2% visited gynecologist less than once a year, 12,9% - 4 and more times a year. Others were at loss with the answer.

The analysis of the results showed: 79,3% of women consider that health of mother most of all influences health of the child, 85,1% - think that it depends on observance of recommendations of the doctor on a food, hygiene, a mode of work, rest, 76,2% - on regular visits to doctor during the pregnancy, 67,7% - on heredity. At the same time only 57,5% of respondents consider that gynecological diseases influence baby s health, 47,6% - sexual diseases, 73,5% - complications of the present and previous pregnancies, 59,7% - abortions. 98,6% of respondents said that living and material conditions make solving impact on birth of a healthy baby. 77,8% think that smoking and drinking alcohol negatively influence health of the child.

In most cases pregnancy lasted 40 weeks (42,1%) and 39 weeks (27,5%). In 37,4% doctors waited for the spontaneous delivery, in 25,1% amniotomy was made, in 12,5% of cases doctors made medicinal stimulation of labor, the rest women told about other measures, including cesarean section operation.

The basic source of the income for the majority of women is salary (76,2%), grants (4,7%), pensions (3,7%), help of relatives (11,9%), 8,2% were at loss with the answer.

The answer about the monthly income of their family showed that: 34,6% had monthly income under 5000 roubls on one member of a family; 35,6% - 5100-10000 roubls ; 8,7% - 10100-15000 roubles; 6,8% - more than 15000 roubles. Other respondents were loss with the answer.

Analysis of the official statistics of the last 10 years showed disturbing tendencies. In 2010 230,6 cases of anemia on 1000 labors were registrated. Illnesses of blood circulation system – 53,0 ‰, hypostases, proteinuria, hypertension – 202,7‰, illnesses of urinogenital system – 62,9‰. The level of the maternal deaths in our region is about 61,9-22,7 on 100000 born in live [3]. This situation gives children with smaller potential of health than their mother have.

Every year about 17000 newborns get under control of the medical personnel of a primary link. Relative density of premature infants is 5,7%, and disease indicator on 1000 newborns – 325,7. Diseases of the perinatal period are at the first place among diseases of newborns (food lack, growth delay, hypoxemia and asphyxia of a fetus, perinatal defeats of nervous system) and congenital developmental anomalies. Every fifth newborn already since a

birth has a disease or deviation, that forms a risk level of backlog in development on the first year of life. Situation in a protection service of mother and the child is characterized by early statement on the account to the doctor of the pregnant women.

The analysis of relationships of cause and effect between the time of statement of the pregnant woman on the account to the doctor and health level of the newborn was made on 300 stories of labor in 2009-2010. Statement on the account under 12 weeks of pregnancy reduces risk of complications of a current of pregnancy, labor and risk of diseases. The middle period of stating on account was 19,31±0,56 weeks. The estimation average level on Apgar at newborns was 7,68±0,24. Positive communication (r=0,76±0,11) between statement term on the account and a condition of a newborn was proved (p□0,05).

Data of sociological poll in regions showed that 97,4% of women planned brestfeeding, 99,8% think that it makes a good influence on the health of a baby. On the decision of a question on brestfeeding influence: mother and other relatives – 53,1%, books and mass media – 24,3%, recommendations of doctor – 22,6%. At the same time early applying of the newborn to a breast took place in 48,1% and only in 24,7% joint stay of mother and the newborn took place.

Marital status of a woman influences character of feeding. Planned brestfeeding among women in marriage was 1,41±0,32 months longer than among others (9,26±0,42 and 7,12±0,25). Principal cause of refusal of brestfeeding was absence of milk (25,1%), other reasons were study, illness and etc. The analysis of the data has proved presence of direct communication between frequency of normal current of pregnancy and brestfeeding (r=0,87±0,11).

Indicator of disease of babies is 3121,5 on 1000. Growth of nervous system diseases, respiratory organs diseases, congenital developmental anomalies is noted. According to poll in families with unsatisfactory conditions of life (26,3%) frequency of respiratory organs diseases among children is higher than among those who live in good conditions on 53,8%. Besides, children being on brestfeeding get ill less often (r= 0,82±0,012;p□0,05).

The regional medicine removed health protection of women on the second plan. Few regional programs paid attention to features rendering of medical aid to women of different age. Researches on health protection of the woman had fragmentary character and also were financed by a residual principle. In the conditions of realisation of the law "About medical insurance of citizens in Russia" children and pregnant women continue to concern the idle population. As a result regional administrations reluctantly and irregularly carried out of the obligations on payments in fund of obligatory medical insurance for the idle population.

At the same time perfection of rendering of medical aid to women and newborns in our region within the limits of realization of the program of modernization is planned to carry out at

the expense of introduction of modern perinatal technologies. They include rendering assistance under standards of antenatal supervision, perinatal diagnostics and intranatal protection of a fetus. For perfection of rendering assistance by newborn introduction of standards on support brestfeeding, preventive maintenance of a hypothermia, an early extract from the maternity hospital are planned. Besides, carrying out creation of three-level system of health protection of mother and the child, introduction of the register of pregnant women of high group of risk, remote monitoring of pregnant women, development of a telemedicine, planned antenatal hospitalisation are planned.

Conclusion. Family economic and social situation is the important factor influencing a current of pregnancy. Average term of statement of the pregnant woman on the account in Khabarovsk territory is 19,31±0,56 weeks. The average level of an estimation of a condition of the newborn on a Apgar scale is 7,68±0,24 . The estimation average level on Apgar at newborns was 7,68±0,24. Positive communications (r=0,76±0,11) between statement term on the account and a condition of a newborn and between frequency of normal current of pregnancy and brestfeeding (r=0,87±0,11) were proved. Besides, children being on brestfeeding get ill less often (r=0,82±0,012). Within the strategy of the regional program of modernization of public health services carrying out of organizational actions in the form of formation of three-level system of a protection service of health of mother and the child and introduction of modern technologies in obstetrical establishments are planned.

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Microbiological monitoring of yersinioses in Yakutia

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Summary

Here, we report results of long-term complex epidemiological and microbiological monitoring of yersinioses in Yakutia. The circulating pathogenic yersinia strains were screened for presence of the major virulence genes. A persistence of human- and rodent- non-pathogenic *Y. enterocolitica* biotype 1A and *Y. kristensenii* in the internal organs of the most prevalent rodent species was detected.

Key words: *monitoring, pseudotuberculosis, enteric yersiniosis, small mammals, yersinia virulence genes*

Introduction

Yersinia pseudotuberculosis and *Yersinia enterocolitica* are widely prevalent in many countries of the world and cause sporadic and group morbidity. At the same time, pseudotuberculosis is more characteristic mainly in the areas with moderate and cold climate while enteric yersiniosis is omnipresent [4,6,10,11,13]. A total of 6500 cases of pseudotuberculosis are notified every year (the mean incidence rate is 4.5 per 100,000 population (‰) while most of them are registered in Siberia (67.2 %) [15]. According to the official statistics in 2010, the prevalence of enteric yersiniosis in some oblast of North-West, Siberian and Far East Federal Districts is more than double higher than mean national values.

A variability of clinical manifestations of yersiniosis due to multiplicity of the virulence factors of the pathogens [1,5], makes it difficult their diagnostics and differentiation from other infectious and somatic diseases. The standardized diagnostic methods of detection of yersinia and antibodies against them play a leading role in confirmation of the yersinia etiology of the disease and identification of the sources and factors of the pathogen's transmission.

It is known that psychrophilic properties of yersinia allow for their long-term persistence in water and soil thus leading to the permanent circulation of the pathogen in natural ecosystems in the soil-plant-animal chain [7,9]. Previous observations in the areas of focal reservoirs of

yersinia in Yakutia demonstrated that small animals, mainly wild mouse-like rodents, grey rats, were shown to be more sensitive to yersiniosis [2,3,8,10].

The focused monitoring of yersinia in Sakha Republic (Yakutia) that comprises a half of the Far Eastern Federal District is carried out since 2006 in the context of implementation of megaprojects in the northeastern Russia (railroad and oil pipeline construction).

Aim of this study was to determine the prevalence of different species of yersinia in Yakutia and to study their epidemiological and microbiological characteristics.

Materials and methods

The following methods were used: bacteriological, serological (reaction of indirect hemagglutination), molecular genetic (polymerase chain reaction [PCR]). PCR was used to detect chromosomal virulence genes coding for proteins of yersinia adhesion/invasion into intestinal epithelium (*ail*, *inv*), *Y. pseudotuberculosis* superantigen toxin (*ypma/c*), *Y. enterocolitica* thermostable toxin (*ystB*) and yersinia virulence plasmid (*yscQ*) [12,14].

Results and discussion

Yersinioses are registered throughout Yakutia although their distribution is non-uniforumous across the territory while large cities (Nerungri, Yakutsk) and rural areas are marked with highest prevalence of the disease. Rural and urban population have similar incidence rates.

Diseases caused by *Y. enterocolitica* and *Y. pseudotuberculosis* in Yakutia are notified as group outbreaks and sporadic cases. The periods of epidemic incidence (1974-1998) (Table 1) and sporadic incidence (since 1999 until present) (Table 2) have been described. A total of 13 outbreaks of pseudotuberculosis and enteric yersiniosis were registered in 1974 to 1998 in child and day-care institutions and workers settlements during spring-summer and autumn-winter periods. All outbreaks were food-born and were due to consuming salads of fresh vegetables. Yersinia etiology of the disease was suggested based on clinical and epidemiological data, positive culture and detection of specific antibodies (Table 1).

It has been demonstrated that liver disorders (hepatomegaly, hepatitis) and fever are the most frequent clinical manifestations of pseudotuberculosis in Yakutia. The etiological role of *Y. enterocolitica* was also shown in cases of acute surgical pathology of the abdominal cavity organs in infectious patients from Srednekolymsky district (Argakhtakh and Svatay villages, Srednekolymsk city). During the short time-span in 1996 (27.12.96 - 13.01.97) 3 out of 143 patients diagnosed with acute appendicitis were culture positive for *Y. enterocolitica* serotype O9

(biotype 2) isolated from appendix. The incidence of acute appendicitis in Srednekolymsky district in that period was high with mean values 14-15 ‰ while children from 3 to 16 years old constituted 60 %. *Y. kristensenii* were also isolated from the excrements of two patients with acute enteric infection. The food-born transmission of yersinia was demonstrated (dairy products) although the water-born mode of transmission cannot be excluded since water from surface ponds was used for drinking and economic purposes in some locations, however no yersinia were isolated from water specimens. Isolation of such strains from patients along with non-isolation of other pathogenic agents suggests a potential role of yersinia as etiological agents of enteric yersiniosis in humans. These results should be taken into consideration and a further diagnostic study should be performed for enteric yersiniosis of patients diagnosed with "acute enteric infection of unknown etiology".

Multiyear dynamics of the yersinia isolation is wave-like. Bacteria of the *Yersinia* genus were isolated from organs of small mammals, swabs of vegetables and fruits, swabs of packing materials and surfaces of equipment of large vegetable stores, soil, water from surface water ponds. This isolation is a peculiar kind of indicator of favorable conditions for yersinia circulation. A circulation of *Y. pseudotuberculosis* serotype O:1 and *Y. enterocolitica* serotypes O:3 (biotype 4); O:9 (biotype 2); O:5; O:6,30; O:6,31; O:7,8; O:19,8; O:22 (biotype 1A) has been demonstrated. At the same time, a use of the more sensitive PCR method permitted us to detect infected samples >5 times more frequently than bacteriological method (Tables 3, 4).

The serological screening of the rural population revealed that antibodies to *Y. pseudotuberculosis* and *Y. enterocolitica* are detected in agricultural workers in 2,7 % and 7,4 % studied individuals, respectively (Table 5). A retrospective serological investigation of the blood sera from farm animals (cattle, pigs, dogs) identified antibodies to *Y. pseudotuberculosis* and *Y. enterocolitica* in 2.7 % and 6.5 % samples, respectively (Table 6).

As a result of complex epidemiological and microbiological monitoring of yersinia in Yakutia the natural and antropurgic foci of yersinioses have been detected. The following rodent species as yersinia reservoirs captured in their natural habitats were identified: gray rat (36 %), red vole (20 %), house mouse (15 %), shrew (7 %), root-vole (5 %), red-gray vole (4 %). In the recent years, a trend of increasing rodent population has been noticed in human settlements due to the favorable conditions of wintering and the period of the reproduction. The level of rodent prevalence in antropurgic foci is 60 per 100 traps/day, in natural biotopes – up to 25. While infecting the environment and being subjected to hunting, the rodents in antropurgic foci infect the domestic and farm animals with *Yersinia* species via water- and food (forage)-born modes.

The correct delineation of the area of distribution of yersinia and infected animals is important for implementation of the anti-epidemic measures in the foci of yersinioses.

It may be that a severe climate of the Far North with drastic changes in temperature (from -67 ^{0}C in winter to 35 ^{0}C and more in summer), long cold period acting as a stress factor, create favorable conditions for preservation and accumulation of the pathogenic agents of pseudotuberculosis and enteric yersiniosis due to their psychrophilic properties. The global warming trend of the climate changes implying increasing temperature and humidity (from 20 to 70%), lead in particular to the permafrost warming that in its turn influences the changing ecology of microorganisms and possible emergence of new subspecies with modified biological and genetic properties [8].

This is a first focused study in Yakutia that analysed presence of the major virulence genes of yersinia circulating herein. The following species and genes were found: *Y. pseudotuberculosis* serotype O:1, carrying yersinia virulence plasmid pYV and gene coding for superantigen YPM a/c; pathogenic *Y. enterocolitica* serotypes O:3 (biotype 4) and O:9 (biotype 2), carrying plasmid pYV and adhesin/invasin coding gene *ail*, isolated also from rodents. A circulation of non-pathogenic *Y. enterocolitica* serotypes O:6,30; O:5, O:7,8 biotype 1A carrying thermostable enterotoxin YSTB encoding gene *ystB* has also been observed. At the same time, a fragment of the *ystB* gene was detected in 3 samples of intestinal homogenates and in 1 sample of spleen homogenate obtained from red voles captured in the areas of construction of oil pipeline stations NPS-5 Talakan-Vitim, NPS-14, oil pipeline Eastern Siberia – Pacific Ocean and on the location of Verhne-Munskiy diamond mines. Three cultures of *Y. enterocolitica* biotype 1A and cultures of *Y. kristensenii* were also isolated from organ homogenates. These results demonstrate a persistence of the *Yersinia* species considered to be non-pathogenic for humans and rodents, in the internal organs of rodents. Further investigations are needed to study virulence properties of this group of yersinia and their possible role as etiologic agents.

As a part of implementation of large national megaprojects in North-East Russia, a railway road is under construction that will connect central part and northeastern Russia (Sakha Republic (Yakutia). The Eastern Siberia – Pacific Ocean oil pipeline exports Russian crude oil to the Asia-Pacific countries (Japan, China and Korea) since 2010. Apparently, such an active influence of the technogenic factors in this region would favor increasing the spectrum of the circulating microorganisms pathogenic for humans and animals, forming various habitats and ecological niches, suitable for potentially pathogenic microorganisms. On the other hand, increasing human migration and cargo flows, load of goods, number of terminals, storage facilities etc, in Yakutia would require focused preventive measures in relation to different

infections, including yersinioses. The above perspectives of the economical exploration and development of the Yakutia territory would need strengthening measures of monitoring of yersinia as well.

Conclusions

1. Our results demonstrate a high reservoir role of rodents living in Yakutia. Gray rat and house mouse were found to be the major rodent species infected with yersinia in the antropurgic foci, red vole and root-vole – in the natural biotope.
2. Use of molecular genetic method demonstrated that 10 % of the studied rodents were infected with pathogenic yersinia.
3. *Y. pseudotuberculosis* serotype O:1 and pathogenic *Y. enterocolitica* serotypes O:3 (biotype 4) and O:9 (biotype 2), carrying virulence genes circulate in Yakutia.
4. An important epidemiological feature of yersinioses in Yakutia is isolation of non-pathogenic *Yersinia* from humans and rodents.

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Table 1

Characteristics of outbreak incidence of pseudotuberculosis and enteric yersiniosis in 1974-1998

Year	Location	Population subgroup	Incidence rate, ‰	Transmission factor	Aetiological agent/Method of confirmation
1974 1975 1987	Mirninsky district, Township Nadezhnyy, City Mirnyy	Children in children's pre-school institutions	>10.0	Salad of fresh cabbage	*Y. pseudotuberculosis*/ Bacteriology, RIHA
1977 1978 1983	City Nerungri	Adults, schoolchildren	>10.0	Russian Vinaigrette	*Y. pseudotuberculosis*/ Bacteriology, RIHA
1979	Oymyakon district, Mine “Yubileinyy”, location “Partizan”,	Adults, children	4.0 - 10.0	Salad of fresh vegetables	*Y. pseudotuberculosis*/ Bacteriology, RIHA
1981	City Yakutsk, children's tubercular hospital	Children	8.0-9.0	Salad, vegetable dishes	*Y. enterocolitica*/ Bacteriology, RIHA
1985, 1987	Lenskiy district, Township Razvedchik, City Lensk	Workers of plant “Lenskiy”, children	4.0 - 10.0	Salad of fresh cucumbers	*Y. pseudotuberculosis*/ RIHA
1993, 1997	Srednekolymsky district, Villages Argakhtakh and Svatay, City Srednekolymsk	Adults, children	3,8-6,7	Dairy products	*Y. enterocolitica*/ Bacteriology, RIHA
1998	City Viluysk, psychoneurological nursing house	Patients	>10.0	Foodstuffs	*Y. enterocolitica*/ RIHA

Table 2

Dynamics of incidence of enteric yersiniosis in Sakha (Yakutia) Republic in 2001-2010*

Year	Absolute values	Incidence rate, ‰000
2001	1	0.10
2002	0	0
2003	1	0.10
2004	0	0
2005	1	0.10
2006	0	0
2007	0	0
2008	3	0.31
2009	8	0.84
2010	7	0.74

* data of the official statistics Rospotrebnadzor in Republic Sakha (Yakutia)

Table 3

Detection of yersinia in small animals in 2001-2010

Year	Bacteriology		PCR	
	Number of tested samples	Isolated cultures number/%	Number of tested samples	Detected virulence genes number/%
2001	121	12/9.9	-	-
2002	151	0	-	-
2003	106	0	-	-
2004	261	0	-	-
2005	325	5/1.5	-	-
2006	221	0	12	4/8.3
2007	256	1/0.4	357	0
2008	320	4/1.3	26	7/26.9
2009	279	11/3.9	334	64/19.1
2010	359	1/0.3	366	35/9.5
TOTAL	2399	34/1.4	1095	110/10

Table 4

Detection of yersinia in environmental samples (swabs, vegetables, surface ponds water, soil) in 2001-2010

Year	Bacteriology		PCR	
	Number of tested samples	Isolated cultures number/%	Number of tested samples	Detected virulence genes number/%
2001	4847	26/0.5	-	-
2002	4289	7/0.2	-	-
2003	3636	4/0.1	-	-
2004	3692	5/0.1	-	-
2005	2431	5/0.2	-	-
2006	2831	1/0.03	-	-
2007	3750	7/0.2	-	-
2008	3070	5/0.2	48	5/10.4
2009	3610	17/0.5	35	2/5.7
2010	4012	22/0.5	116	4/3.4
TOTAL	36168	99/0.3	199	11/5.5

Table 5

Results of serological investigation of agricultural workers

Year	Number of tested individuals	Detected antibodies to the pathogenic agents of			Number of positive findings, %
		Pseudotuberculosis	Enteric yersiniosis		
			O:3	O:9	
2001	49	5	2	-	14
2002	163	4	2	-	3.6
2003	102	-	7	-	6.8
2004	159	3	1	1	3.1
2005	21	1	-	-	4.7
2006	86	4	11	-	17
2007	157	4	20	5	18
2008	24	3	10	-	54
2009	145	-	4	4	5.5
2010	223	6	16	-	9.8
TOTAL	1129	30	73	10	10.0

Table 6

Serological investigation of blood sera from farm animals (Sosnovka village, Viluyskiy district) in 1999

Animal	Number of samples	Number of samples positive for antibodies to pathogenic agents of			Number of positive findings, %
		Pseudotuberculosis	Enteric yersiniosis		
			O3	O9	
Cattle	77	-	5	-	6.4
Pigs	14	3	-	-	21.0
Dogs	17	-	2	-	11.7
TOTAL	108	3	7	-	9.2

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MEDICO-SOCIAL AND EPIDEMIOLOGICAL ASPECTS OF TUBERCULOSIS, COMBINED WITH HIV INFECTION IN THE IRKUTSK REGION

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Summary: The epidemiological situation of tuberculosis, combined with HIV - infection in the Irkutsk region is unfavorable because of the regions with the largest incidence of both infections. Indicator of the incidence of newly diagnosed STI, increased from 1.3 per 100 thousand population in 2000. to 20.4 per 100 thousand population in 2009, the total incidence rate increased from 1.8 per 100 thousand population in 2000. to 47.7 per 100 thousand population in 2009. and the mortality rate for the period 2005 - 2009. increased from 1.06 per 100 thousand population to 15.5 per 100 thousand population. The study of medical and social characteristics of revealed that TB patients combined with HIV infection are in most cases, the were not social and adopted persons (75.5%). According to the appealability (74.8%) combined pathology is revealed in health care establishments. TB develops on HIV-infection background (91.6%) and is characterized by an increase in the proportion of heavy and acutely progressive forms (37.3%).

Key words: tuberculosis, HIV - infection, the Tuberculosis epidemiological situation combined with HIV - infection.

The aim of the study. Study of features of the tuberculosis epidemiological situation combined with HIV infection and the medical and social characteristics of the firstly revealed patients with combined pathology in the Irkutsk region.
Materials and methods. Analyzed the data of reporting forms № 8, 33, 61, 2000 and 2010. And all credential form № 263 / a "personal record card to the patient with tuberculosis, combined with HIV infection" and № 089 "Report of patients with newly diagnosed in the life of tuberculosis, with recurrence of tuberculosis "in 2010.

Results and discussion. Retrospective analysis of epidemiological situation of HIV infection in the Irkutsk Region for the period 1998-2006 showed that up to 1999 the morbidity of HIV infection was of a sporadic nature. The situation worsened in 1999, which observed a high rise in the incidence of HIV infection among the population [2,3]. Since 2000, it has been observed a decrease of HIV incidence with a simultaneous increase rapidly (on average 14.3%) prevalence of HIV infection among the population (Fig. 1).

The dynamics of the incidence of HIV infection in the Irkutsk region can be divided into two periods: the first - 2000 - 2003 index decreased by 40.8%, the second one – 2004 – 2009 the rate tended to increase, and enlarged in 2009 by 79.8% compared to 2003., exceeding the same indicator for Russia is 2.7 times. The prevalence of HIV infection, in contrast to the incidence rate tended to increase, and for a given period it increased 2.6 times. In 2010 the incidence and prevalence of HIV infection decreased compared to 2009. 18.9% and 6.2%.

According to the data, high incidence and prevalence of the population of the Irkutsk region of TB and HIV infection cause the increase in the frequency of occurrence of tuberculosis in HIV-infected patients. A prerequisite for the growth of TB patients with HIV infection is a high HIV incidence of tuberculosis among the population. In addition, 30% of people who have had tuberculosis, the residual changes in HIV infection are formed, which have become a source of its reactivation.

Proportion of tuberculosis cases among the group of patients with HIV in 2010 in the Russian Federation was 3.7%, in the Siberian Federal District - 5.4%, in the Irkutsk region - 4.2%. Among the dead patients with HIV infection the part of registered cases of tuberculosis in was 70.8%, in the Irkutsk region - 76.7%.

In the Irkutsk region intense epidemiological situation in tuberculosis, combined with HIV infection still remains, the incidence rates of which is higher than similar indicators in the Siberian Federal District and the Russian Federation as a whole (Fig. 2).

Each year, it is observed an increase in the incidence of newly diagnosed active tuberculosis combined with HIV infection. During the reporting period the indicators were characterized by stable tendency to a growth and the morbidity rate increased in 16.8 times, the prevalence to 30.7 times and mortality over the past 5 years, 15.5 per cent. As the transition of HIV from the pre-clinical stages to the stage of AIDS, the tuberculosis epidemiological situation in the Irkutsk region will dramatically worsen with the primary-grown of the mortality rate from tuberculosis.

Among the new cases (446) of tuberculosis, combined with HIV infection, in the Irkutsk region in 2010 men were dominated - 65.0%, women - 35.0%. The structure of newly diagnosed TB patients, combined with HIV infection, by age and sex has a high value at the age of 20-29 years (49.4%), predominantly among men (32.3%) , the followed indicator decreased, reaching a minimum values in the age group 55-59 (4.3%).

The study of the social situation of TB patients, combined with HIV infection, found that most of them are unemployed - 75.5%, 13.5% - persons GUFSIN system, 3.5% - homeless persons, 7.5% - the workers.

In most cases (57.9%) TB patients with HIV infection are detected in general health care when the patient turns to the therapeutist (33.1%) with signs of pulmonary disease, or when he is in a therapeutic hospital (24.8%) Moreover, the major method of revealing of the disease is radiation - 87.0%, 12.5% bacteriological. Posthumously tuberculosis diagnosed in 0.5% of cases. Circumstances of the revealing of tuberculosis combined with HIV infection, in 74.8% of cases is the visit to a doctor with complaints, active detection was 25.2%.

Among newly diagnosed patients with combined pathology people with tuberculosis of respiratory organs are dominated. The incidence of respiratory tuberculosis among HIV-infected patients was 97.0%, the incidence of non-pulmonary was 3.0%. Among the clinical forms of tuberculosis in HIV-infected patients predominate: infiltrative - 45.1%, disseminated - 18.8%, fibrocavernous - 10.5%, focal - 7.8%, pleural effusion of tuberculous etiology - 6 8%, miliary - 5.0%, caseous pneumonia - 3.0%, tuberculoma - 1.0%, cavitary tuberculosis - 1.0%, generalized TB - 1.0. Among all cases the persons discharging bacteria accounted 47.0%. Resistance to chemotherapy was noted in 5.9% of cases, 26.2% of cases the result is not obtained in 23.3% of cases there is no resistance to chemotherapy, and in most cases, 44.6% of the study on the resistance was not conducted. A significant proportion (37.3%) forms, such as fibro-cavernous tuberculosis, disseminated tuberculosis, caseous pneumonia, miliary tuberculosis, evidence of clinically unfavorable structure of newly revealed pulmonary tuberculosis in HIV-infected patients.

At the time of detection of combined pathology the majority (88.5%) of patients had advanced stages of HIV - infection (Fig. 3). Analysis of tuberculosis patients with HIV infection showed that 91.6% of cases developed TB in HIV-infection, in 8.4% of HIV infections has been developing on background of the previous tuberculosis.

In 1999, with co-diagnosed HIV infection and tuberculosis, died just one patient in 2003 - 29 people, and in 2006 a third of deaths from HIV infection the cause of death was tuberculosis. It should be noted strong growth in mortality over the past 4 years. So, in 2007. 97 patients with combined pathology died, in 2008 – 268, in 2009 - 388 in 2010 - 411 people. An analysis of deaths by age and sex showed that in most cases - 27.3% - are men aged 30-39 years. Among

women, death rate predominate at the age of 20-29 years is 20.0%. The peak of deaths from tuberculosis among HIV-infected patients accounted for the age groups 20-29 and 30-39.

In the structure of mortality in patients with tuberculosis, combined with HIV infection, in 2010 66.7% were not social and adopted persons, 20.1% - working people, 13.2% - were persons of GUFSIN system.

The forms of tuberculosis in rank order of dead people are distributed as follows: disseminated tuberculosis - 60.0% of cases, infiltrative tuberculosis - 26.7%, miliary tuberculosis - 13.3%. All dead patients had stage IVB HIV infection.

To determine the reliability of the differences between the rates of TB patients and TB patients, combined with HIV infection, we used the criterion of reliability (t). Significant differences were found in comparison of the clinical forms of tuberculosis in patients without HIV infection and HIV status (Table 1).

It is observed the differences between patients with regard to development of severe clinical forms of tuberculosis (fibrocavernous, disseminated, miliary, caseous pneumonia), which confirms the unfavorable clinical structure of newly diagnosed tuberculosis in HIV-infected patients.

In comparison of the social status of patients with tuberculosis (660,0 ± 8,5) and tuberculosis, combined with HIV infection, (760,0 ± 20,2), we obtained significant difference $t = 4,6$, $p < 0.001$

In most cases the combined pathology among newly diagnosed patients are observed in people of 25-34 years old(419,3 ± 23,4), among tuberculosis patients without HIV infection in the same age group (300,7 ± 8,3). Validity criterion of indicators of differences was 4,79, $p < 0,05$.

Tuberculosis patients, combined with HIV infection, are mainly detected by a visit to a doctor (50,0 ± 20,5). In comparison of this index with the index of tuberculosis patients without HIV infection (570,0 ± 8,9), we obtained significant differences $t = 8,08$, $p < 0,05$.

Conclusion. The study of the epidemiological situation of tuberculosis, combined with HIV - and the medical and social characteristics of newly diagnosed patients with combined pathology revealed the following:

- Situation of tuberculosis, combined with HIV infection - estimated as a tough situation , tends to deteriorate with a poor prognosis for its further time development;
- High growth rates of mortality of patients with tuberculosis combined with HIV - infection;
- Patients with this disorder are not socially and adopted people (drug users, alcoholics, unemployed, those systems UIN) - 75.5%;
- Combined pathology is revealed mostly by a visit to a doctor - 74.8% of the agencies of general health;
- In most cases the tuberculosis was previously diagnosed on the background of HIV infection - 91.6%, and 88.5% of cases in the later stages of it;
- Among the clinical forms of tuberculosis there is a high proportion of disseminated, miliary, fibrous-cavernous tuberculosis
- Measures against the combined pathology should be directed at early detection and prevention of tuberculosis in HIV-infected patients.

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Table 1.

Reliability of differences of clinical forms of tuberculosis patients with and without HIV infection

	Tuberculosis patients			**Tuberculosis patients with combined HIV infection**			**Validation criteria (t)**
Clinical forms of tuberculosis	абс.	Per 1000 pop.	m	абс.	Per 1000 pop.	m	
infiltrative	1945	639,0	± 8,7	201	450,6	± 23,5	7,5, (p < 0,0005)
Focal	286	94,0	± 5,3	34	76,2	± 12,5	1,3 (p < 0,05)
Fibro cavernous	194	64,0	± 4,4	47	105,4	± 14,5	2,7 (p < 0,05)
Disseminated	270	89,0	± 5,1	84	188,3	± 18,5	5,2 (p < 0,005)
Pleurisy of tubes. etiology	94	31,0	± 3,1	30	67,2	± 11,8	3,0 (p < 0,005)
Miliary	43	14,0	± 2,1	22	49,3	± 10,2	3,4 (p < 0,005)
Cheesy pneumonia	27	8,8	± 1,7	13	29,1	± 7,9	2,5 (p < 0,05)
Tuberculoma	83	27,2	± 2,9	5	11,3	± 5,0	2,8 (p < 0,05)
Cavernous	3	0,9	± 0,5	5	11,3	± 5,0	2,1 (p < 0,05)
Primary tubes. complex	6	1,9	± 0,8	–	–	–	–
TVGLU	92	30,2	± 3,1	–	–	–	–
Generalized	–	–	–	5	11,3	± 5,0	–

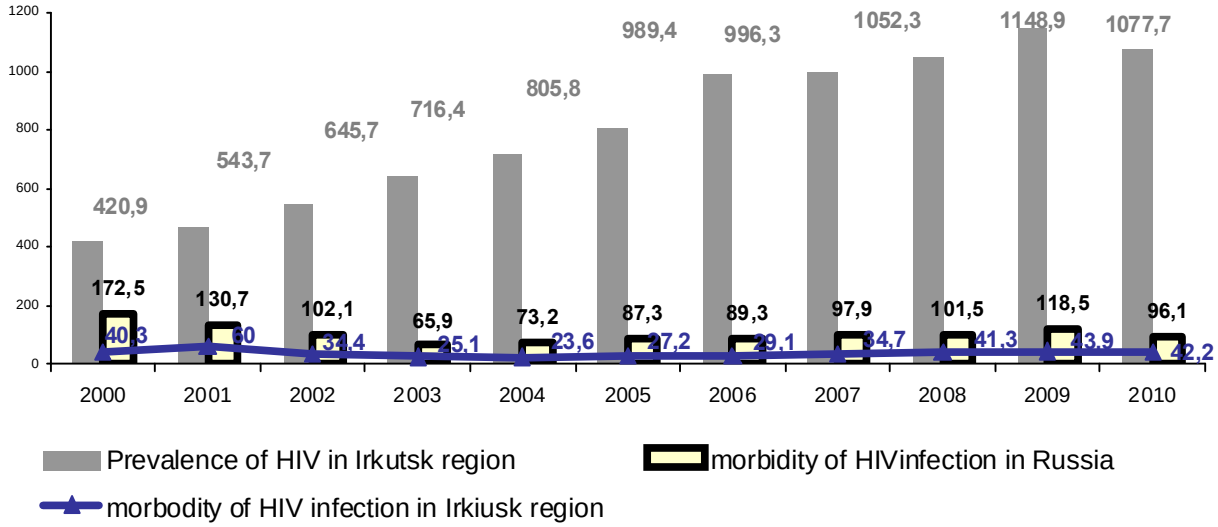

Fig. 1. Dynamics of the incidence and prevalence of HIV infection in the Irkutsk region and the Russian Federation for 2000-2010. (per 100 thousand of pop.).

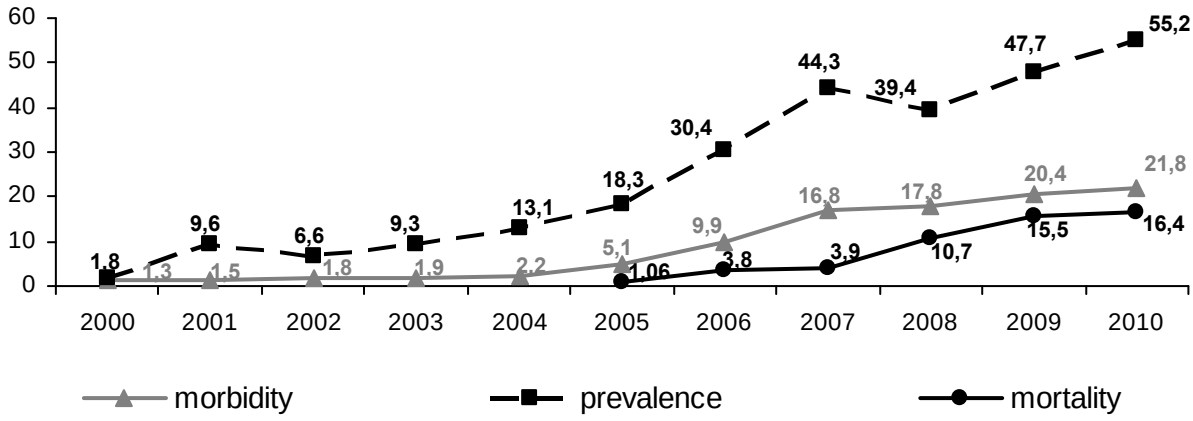

Fig. 2. The dynamics of incidence, prevalence and mortality of TB patients, combined with HIV - in the Irkutsk Region for the period 2000-2010. (per 100 thousand of population.).

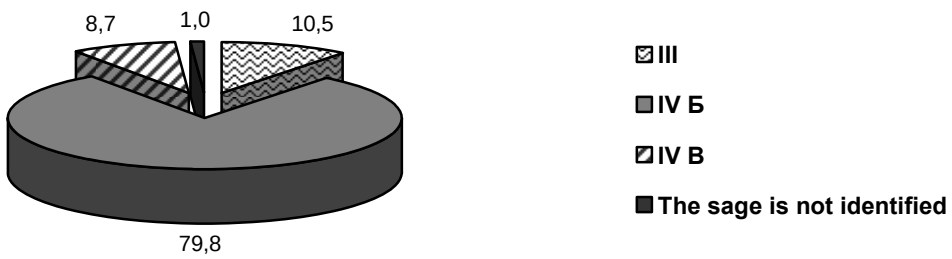

Fig. 3. The structure of newly diagnosed patients with combined pathology of the dependence on the phase of HIV - infection in 2010. (total %).

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Children morbidity in Sakha (Yakutia) Republic as a indicator of ecological situation of region

This article present information about children was treated in Pediatric center of National medical center of the Republic of Sakha Yakutia with
2001 to 2010 and analysis of the levels of morbidity. This results of analysis is present that for this periods is raised morbidity rate of the some
diseases group, in republic provide organization work for medical examination children. Detected that for this period is raised ecology-association
diseases.

Key words: children and teenagers of the Yakutia, incidence of morbidity, ecology.

UDC 614.8:656.1(671.56)

Road accident mortality in the Sakha Republic (Yakutia) in 2001-2010

A.A. Ivanova, A.F. Potapov, L.F. Timofeev

Summary. The research analyzes road accidents (RA) in the Sakha Republic (Yakutia) for the period 2001-2010. This includes major causes of accidents on the republic's roads, their frequency split for different regions, as well as road accident mortality. It has been revealed that the road accident mortality on M-56 federal motorway is 2-2.5 times higher than in population aggregates.

Key words. Road accident, injury rate, mortality.

Road accidents injury rate has critical demographic, economic and social consequences, and in most countries is considered a major social problem, which, however, may be successfully solved through purposeful measures.

Despite a lower level of automatization in Russia, the road accident mortality is significantly higher than in other countries: by 1.6 times higher compared with the USA; France - by 2.9 times; Sweden - by 3.8 times; Great Britain - 4.6 times [2]. According to the State Inspection for Traffic Safety (GIBDD), Russia experiences annually approximately 200 thousand road accidents, resulting in 27 thousand deaths and 250 thousand injuries. Over the past three years, the annual RA damage has made 2.4-2.6% of the country's Gross Domestic Product, with the economic damage rate increasing by 5-7% a year [2, 4]. The figures show importance of the issue, especially in areas with well-developed road infrastructure and growing number of vehicles.

Purpose of the research is to study the level of road accidents and RA mortality in the Sakha Republic (Yakutia).

Material and methods of the research.

The research analyzes the trend of RA occurrence and mortality of this cause in the Sakha Republic (Yakutia) over the past ten years. In order to do that, we have studied accident books, annual reports by GIBDD Department in the Sakha Republic (Yakutia) for the period 2001-2010. Also, we have analyzed reports by the Emergency Unit (ER) on providing pre-hospital medical aid at road accidents in the city of Yakutsk in 2009-2010 and 10 months of the year 2011.

Results of the research.

Over the studied period the republic registered 9,252 road accidents, with casualties totaling to 12,432 people. The annual pattern, however, has been fluctuating considerably. With 818 accidents registered in 2002, their number reached the peak of 1,137 cases in 2007, making the difference of 313, or 28% (Fig. 1).

It is worth nothing that in the recent years (2007-2010) there is a trend for decreased number of road accidents, compared to the previous years; still, the figures are quite great. A number of casualties directly depends on a number of road accidents, and it is the largest in 2007, amounting to 1,501 people.

The number of the dead is 12.5% (1,550 people, including 96 children under 16). The remaining 87.5% (10,882 people, including 1,460 children) suffered from injuries of different degrees.

Among municipalities of the republic, by the number of road accidents the city of Yakutsk ranks first, followed by the town of Neryungri. Then come Mirninsky, Aldansky, Lensky, Megino-Kangalassky and Khangalassky regions (Table 1).

Several factors affect the road situation. The analysis of road accidents shows that over 90% of fatalities were caused by drivers failing to follow rules of the road (1,420 people); in the rest of the cases deaths were fault of pedestrians themselves (130 people). One should note that before 2009 the official statistics included deaths within 7 days after an accident; then in 2009 the period of monitoring road accident casualties was extended to 30 days (cf., in the USA this period is one year after an injury).

As for the modern state of the road infrastructure, the republic is facing progressive increase in the number of vehicles and subsequent decrease in road capacity in cities. During the studied period unsatisfactory roads caused 2,173 accidents (including 370 fatalities). Yakutsk accounts for the largest share in this statistics with 952 cases (43.8%) and 107 deaths.

Unfortunately, another contributing factor is low standards of driving and spread of alcoholism among the republic's population. For example, in the period 2007-2010 alone, drunk driving caused 487 deaths.

Over 70% of accidents occur in population aggregates, with the city of Yakutsk accounting for over a half (61.0%) of them. The republic's capital also accounts for about a quarter of road accident deaths (28.2%). Out of 1,458 registered accidents involving children, 557 (38.2%) happened in Yakutsk, killing 22 (23%) out of 96 children.

Half of the accidents beyond population aggregates are registered on M-56 federal motorway (B. Never - Yakutsk, Yakutsk - Kolyma) running through the republic's territory (2008 - 53.6% of road accidents, 2009 – 47.8% , 2010 – 50.3%). Territorial units rating by road

accidents occurred in 2010 on the federal motorway goes as follows: Aldansky (22 cases) Megino-Kangalassky (20), Churapchinsky (17), Neryungrinsky and Tattinsky (7 each), Tomponsky (6), Oymyakonsky and Khangalassky (5 each). mortality in these cases exceeded the one for population aggregates by 2-2.5 times. The most dangerous sections of M-56 federal motorway in 2010 are shown in Table 2 (GIBDD data).

Road accident rates in the republic are also characterized by periods of increase and decrease. For example, in 2003 the road accident factor per 100 thousand people increased from 85.9 to 101.8, which is by 15.6%; then it decreased to 85.8-89.9 by the end of 2006 and then skyrocketed to 199.8 (by 33.1%). In the period 2008-2010 this factor made 109.8, 107.5, and 95.1, respectively (Fig. 2).

When comparing the road accident mortality rate in the republic with the one in the Russian Federation, we see that the road situation in the Sakha republic (Yakutia) is relatively favorable (Table 3).

During the period of the highest mortality rate in the republic - 2001-2005 - the road accident mortality made 17.1 - 18.9 per 100 thousand people; however, in 2008, with the total mortality rate at 1,007.7 it decreased to 13.6. On the contrary, with a considerable fall in the total mortality rate to 973.2 in 2006, the RA mortality was as high as 18.7

Road accident deaths account for 6.4-8.7% of all external cause deaths and 82.2-92.0% of all transport-related injuries (Table 4).

Obviously, the presented data show that the republic faces a serious situation with road accident injuries. Along with a set of various measures to prevent road accidents, an important way to reduce the number of road accidents is provision of timely and qualified medical service on spot.

Consequences of road accidents for casualties largely depend on timeliness and quality of medical service provided. According to Sklifosofsky Emergency Medicine Research Institute, road accidents account for 57% of severe multisystem injuries. 60% of people with severe road injuries die on spot, 8% - during transportation to medical institutions. Doctors believe that the lack of qualified medical service within the first hour after a a road injury increases mortality by 30%; within first 3 hours - by 60%; and within first 6 hours - by 90% [5].

"Concept of lowering population's mortality in the Sakha Republic (Yakutia) of preventable causes and oncology diseases until the year 2025" states that about one third of the injured in various accidents and disasters die of late provision of medical service (failure to provide first medical aid, including self- and mutual aid, unreasonable prolongation of the isolation stage) [3].

According to Emergency Unit, in the city of Yakutsk in 2009, 1,043 people were injured in road accidents (6 of them died before arrival of ambulance brigade); in 2010 - 1,036 (8); during nine months of 2011 - 900 (9). 65% of the injured in the republic's capital were helped by specialized Emergency Unit brigades. In 97% off calls for accidents the brigades would leave within 4-5 minutes and arrive on spot within 15 minutes. After being provided first aid, 80% of the injured were take to hospital^ 2009 - 847 (81.2%); 2010 - 834 (80.5%); during nine months of 2011 - 745 (82.8%). 27.0-28.5% were admitted to hospital due to their bad condition.

Conclusion:

1. In the period 2001-2010 the Sakha Republic (Yakutia) witnessed 9,252 road accidents injuring 12,432 people and killing 1,550 people (12.5%) (including 96 children under 16).

2. 28.2% of road accident fatalities among adults and 23% among children happen in Yakutsk, the republic's capital.

3. mortality on M-56 federal motorway running through the republic's territory exceeds mortality in population aggregates by 2-2.5 times.

4. To lower the road accident mortality the republic should adopt a regional program with a number of measures designed for lower road injuries, improved quality of medical aid at all stages, and more effective interaction between the Health Ministry and the Ministry for Emergency Situations and the State Inspection for Traffic Safety (GIBDD).

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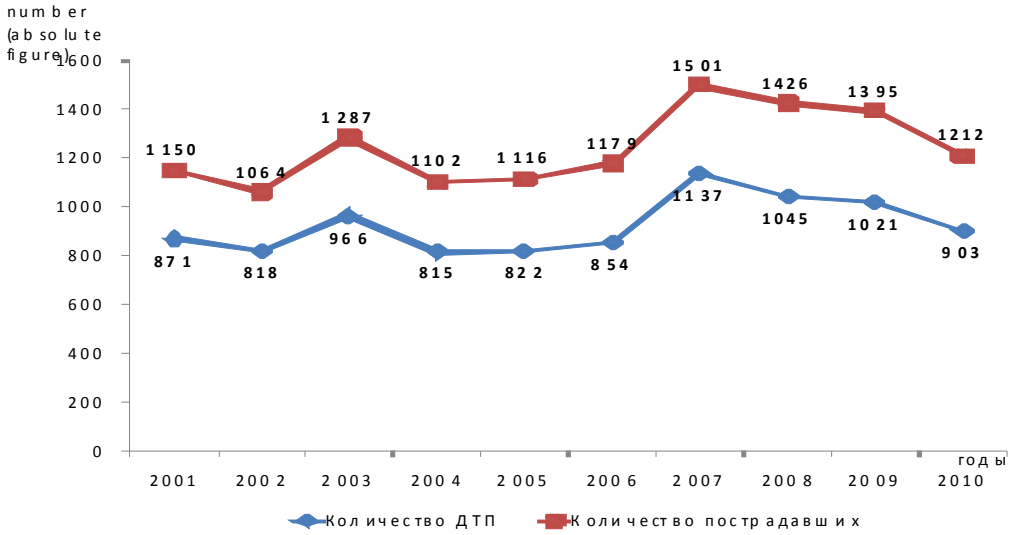
Figure 1. Number of road accidents in the Sakha Republic (Yakutia) in 2001-2010



number
(absolute figure)

number of road accidents number of casualties years

Table 1

Number of road accidents in certain regions of the Sakha Republic (Yakutia) (2001-2010)

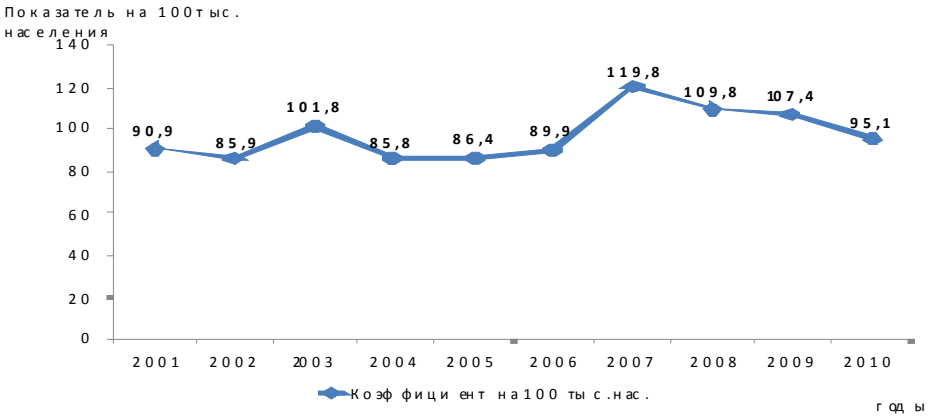
Regions (cities)	Number of road accidents by years (absolute figure)									
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Yakutsk	317	281	342	274	272	265	464	452	502	395
Neryungri	117	123	152	139	112	111	135	89	70	60
Aldansky	77	83	98	67	73	86	82	71	77	63
Lensky	50	52	52	47	44	45	41	41	38	37
Megino-Kangalassky	27	24	41	30	32	39	57	46	46	58
Mirninsky	56	69	67	76	74	74	79	74	50	47
Khangalassky	35	36	40	34	32	28	37	27	21	24

Table 2

Most dangerous sections of M-56 federal motorway (2010)

Direction of M-56 federal motorway	Region	Section of M-56 federal motorway (km)
Yakutsk - Kolyma	Megino-Kangalassky	23-25
	Churapchinsky	133, 173-174, 179-182, 185-186
Never - Yakutsk	Neryungrinsky	488

Figure 2. Road accident rate pattern per 100 ths people in the Sakha Republic (Yakutia) 2001-2010



Factor per 100 ths people

Rate per 100 ths people

years

Table 3

Trends of total mortality rate and road accident mortality for the period 2001-2010

Years	Total mortality rate in the RF*	Total mortality rate in the SR(Y)*	Road accident mortality rate in the RF**	Road accident mortality rate in the SR(Y)**
2001	15,6	10,2	21,1	18,2
2002	16,2	10,2	22,9	18,9
2003	16,4	10,2	24,6	17,4
2004	16,0	10,2	23,9	17,1
2005	16,1	10,2	23,6	18,8
2006	15,2	9,7	22,9	18,7
2007	14,7	9,7	23,4	13,5
2008	14,6	10,1	21,1	13,6
2009	14,2	9,8	18,4	14,3
2010	14,2	9,8	18,6	12,5

** - per 1000 people*
*** - per 100,000 people*

Table 4

Share of road accident deaths in the structure of external cause mortality (2000-2010)

Years	Deaths of external causes (absolute number)	Deaths of road accidents (absolute number)	Road accidents deaths		
			Absolute figure	Share in * (%)	Share in ** (%)
2000	2341	175	161	6,9	92,0
2004	2230	197	162	7,3	82,2

2005	2186	209	179	8,2	85,6
2006	2055	212	178	8,7	84,0
2007	1941	140	128	6,6	91,4
2008	1975	147	129	6,5	87,8
2009	1870	148	136	7,3	91,9
2010	1872	138	119	6,4	86,2

** - external causes* *** - road accidents*

N.V. Savvina, Y.E. Petyurkanova, V.B. Egorova

SOCIO-MEDICAL STUDIES OF CHILDREN HEALTH BORN OUTSIDE OF MARRIAGE

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The growth of non-marital births is one of the most urgent problems of modern medicine now. Nearly one in three children are born outside of marriage (in the year 2000 - 28.0% [1, 2]) as it is noted in the "State Report on the health status of the Russian Federation for 2004 year".

Dynamics of illegitimate births in the Republic of Sakha (Yakutia), compared with Russian Federation and the Far East Federal District data, is characterized by a pronounced increase (Fig.1).

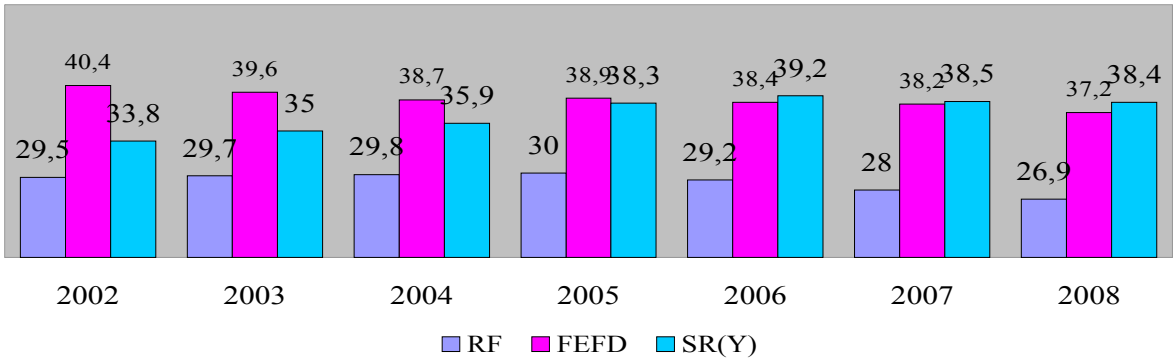

Fig.1 Dynamics of illegitimate births in Russia (RF), Far East Federal District (FEFD), Sakha Republic (Yakutia) for the period of 2002-2008.

And though there were 17.9% of children of the total births born out of wedlock in 1990 in the Republic of Sakha (Yakutia), but in the year 2010 it was 39.2% already.

According to modern research, emotional stress in women related to pregnancy in the common law marriage, has a significant impact on the incidence and severity of toxicosis of pregnancy. Unfavorable state of the pregnant woman causes a higher level of complications such as abruptio placenta, threatened premature labor (N.V. Polunina, 1999; O. Agafonova, 2002). In addition, there is a significant increase in preterm births, sick and injured infants (E.B. Yakovleva, 1992) [3,4,5].

However, despite the great scientific and practical significance of the problem of illegitimate births, there is a significant deficit of studies on this group of medical and social risk, which should be a priority for medical observation.

Objective

To analyze the dynamics of illegitimate births in the Republic of Sakha (Yakutia) from 1999 to 2009 and assess the health status of children born to mothers who are not in a registered marriage.

Materials and methods

The study was conducted in two stages. *In the first stage* to assess the frequency of illegitimate births, the data were analyzed by the Territorial Department of Federal Service of State Statistics (FSSS MOT) in the Republic of Sakha (Yakutia) for 1999-2009.

In the second stage studied the health status, pregnancy, births to unmarried mothers (n = 101) and mothers who are married (n = 102), as well as the health status of children born to them.

According to the study design, the main (incomplete families) and control (complete families) groups have been formed based on the twin-dual selection on the basis of the leading social defect. The history of delivery (Form 096/U) and the history of the newborn (Form 097/U) were analyzed, of those who were born in 2008-2011, at the first obstetric department of Yakutsk City Hospital.

The materials obtained were processed using the software package «STATISTICA v.6.1 © STATSOFT, USA». Methods of descriptive statistics were used (calculation of mean values, standard error and Student's t-t test). Statistically significant difference was considered for $p < 0,05$.

Results and discussion

An analysis of statistical data on illegitimate births in the Republic of Sakha (Yakutia), obtained at the FSSS of Sakha (Yakutia) for 1999-2009 showed a tendency to increase of the proportion of children born out of wedlock. At the same time the highest rates were observed in 2006 - 39.2% and in 2009 - 38.6% growth rate - 19.9% (Fig.2).

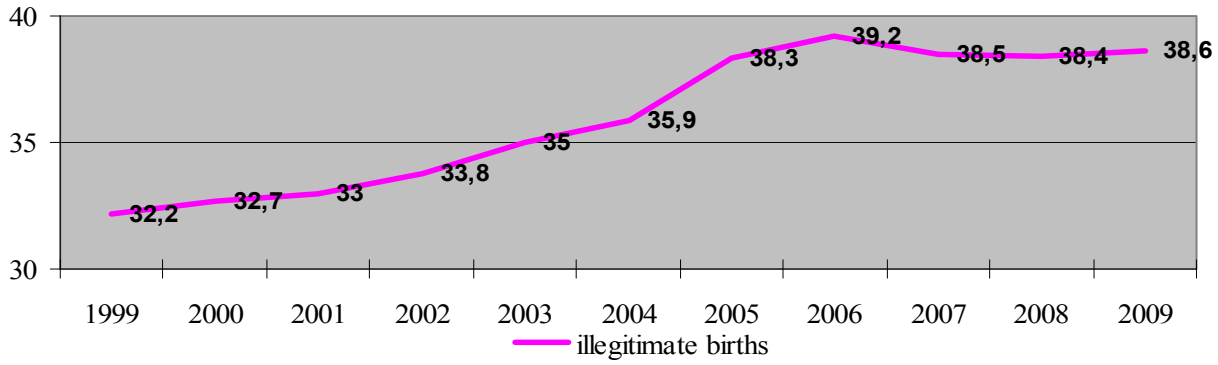

Fig.2 Dynamics of illegitimate births in the Republic of Sakha (Yakutia)

The highest rates of the illegitimate births were recorded in the city of Yakutsk and in the industrial areas of the Republic of Sakha (Yakutia). It can be explained by a higher population density and an increase in external migration. The lowest rates were recorded in the Arctic zone, inhabited mostly by indigenous people (tribal communities), who are engaged in reindeer herding, fur and fish trades.

Motherhood at the age of 18 years is a serious medical and social problem caused by these women's low social support as well as lack of psychological maturity. Pregnancy at a young age takes place in a functional immaturity of the organism and the inadequacy of adaptive mechanisms. These facts create a high risk of complications for mothers as well as for fetus.

An even more pressing problem is the illegitimate birth rate of women aged 18 years. Throughout the study period, the proportion of children born out of wedlock increased in the Republic by 1.3 times on average for women less than 18 years old. The index rose by 21.4% for rural areas and by 15.4% in the city areas. The figure was 76% in the city and 90.4% in rural areas of the total number of births in this age group in 2009.

At the age structure of women who gave birth out of wedlock prevailed young mothers aged 15-19 years. It is significantly higher than in other age groups (Table 1).

Table 1

The share of non-marital births by mother's age
(in % of total births in each age group)

Years	from 15 to 19		from 20 to 24		from 25 to 29		from 30 to 34		from 35 to 39		40 and older	
	C	V	C	V	C	V	C	V	C	V	C	V
1999	52	52,2	32,6	30,8	30,7	23,9	30	21,6	31,7	25,3	30,7	21,2
2000	49,6	46,9	35	32,7	32,6	24,8	29	22,1	33.9	26,7	39,6	18,1
2001	48,9	49	33,9	32,6	32	25	28,9	22,8	34,5	27	42,8	25,8
2002	50,2	47,4	35,9	34,7	31,4	26,9	29,3	25,9	34	25	34,8	21
2003	49,5	50,7	35,4	35,7	32,8	29,3	31,3	25,9	33,4	28,2	37,5	20,3
2004	53,9	35,9	35,7	37,7	32,4	29,9	33,5	26,9	34,8	25	29,7	22,6
2005	56,5	62	39,3	40	32,9	32,7	32,8	27,8	36,5	25	41,8	23,1
2006	56,5	63,8	38,3	44,4	32,8	36,5	34,4	29,3	35,5	21,9	39,2	27,8
2007	57,5	66,3	40,1	44,3	30,6	34	31,6	31,4	34,8	23,3	44,9	28,6
2008	57,8	66,2	38,2	44,4	33,3	33,4	31,9	32	35,9	21,2	46,2	19,9
2009	63,5	68,2	39,4	46	31,8	33,6	30,9	31,5	34,2	26,1	37	31,6
rate of increase	22,1	30,7	20,9	49,4	3,6	40,6	3	45,8	7,9	3,2	20,5	49,1

Note: **C** - a city, **V** – a village.

Analysis of data showed an increase in illegitimate births in all age groups. In the city over the study period, the highest growth rate of illegitimate births was 22.1% for the age group of 15-19 years. The smallest increase was 3% among women from 30 to 34 years.

In rural areas, the highest growth rate was 49%. It was recorded for the age group of 20-24 and over 40 years. The lowest growth rate was 3.2% for ages from 35 to 39.

Catamnesis of births of 203 women was examined as a part of the second stage of the present study. Main group comprised 101 women who are not in a registered marriage. The control group included 102 women who are married. The history of development of their infants has been analyzed.

The age structure of mothers ranged from 15 to 44 years. The greatest number of mothers in the main as well as in the control groups were women aged 20 to 24, 38 (37.6%) and 35 (34.3%) years respectively. In the main group there were 16.8% of young mothers aged 15 to 19 years and in the control group the rate was 2%. In the age group of 30 to 40 years and older, was dominated by women who are in a registered marriage.

Extragenital pathology was detected in 83 mothers (82.2%) in the main group and in 88 women (86.3%) of the control group. The leading place in the structure of extragenital pathology belongs to diseases of the genitourinary system in both groups: 55.4% - in the main group,

39.2% - in the control group. There is a high percentage of thyroid disease, mostly in the form of endemic goiter disease of the respiratory and digestive organs.

It is found that 73 mothers (72.3%) from the main group had complicated pregnancy. The figure was 52 (50,9%) (p <0,05) for the control group.

In the structure of the pathology of pregnancy leading role belongs to chronic intrauterine hypoxia, feto-placental insufficiency and gestosis of the 1st and 2nd degrees. Morbidity was noted in 22 births (21.8%) pregnant women from the main group. Much more childbirth (delivery) stimulations have been made: for 19 (18.8%) in the main group and for 14 (13.7%) in the control group.

Deliveries for most women in both groups pass through the birth canal. Operative delivery was performed for 5 patients (4.9%) from the main group and for 6 (5.9%) in the control group.

According to the literature [1,2], illegitimate prematurely children births were often by more than 2 times. According to our study, 30 children (29.7%) were born prematurely in the main group and 9 children (8.8%) in the control group. Significantly differentiated (p <0,05).

According to Apgar scale score, body weight of newborns at the 1st and 5th minute for children born outside of marriage was significantly lower (p <0.05) than for children from the control group (Table 2).

Table 2

Indicators of weight, height and Apgar scale of the studied newborns

group	weight	growth	Apgar at 1 min	Apgar at 5 min
main group *n= 101*	3263,3±514,5	51,6 ± 2,3 см	7,04 ± 0,8	7,42 ± 0,9
control group *n=102*	3407,8±462,3	52,2 ± 2,4 см	8,13 ± 0,6	8,55 ± 0,6
p	<0,05	>0,05	<0,01	<0,01

We observed prolonged jaundice for 12 infants (11.9%) in the main group and for 6 infants (5.9%) in the control group.

Clinical signs of CNS in the form of hypoxic-ischemic encephalopathy were noted for 10 infants (9.9%) in the main group and for 6 children (5.9%) of the control group.

We observed congenital malformations, mainly in the form of CHD among children: for 8 infants (7.9%) in the main group and for 3 (2.9%) in the control group.

Distribution of health groups: 1) we did not identify children for the 1st group of health; 2) for the 2nd health group there were 93 children (92.1%) in the main group and 99 children (97.1%) in the control group; 3) for the 3rd health group there were 7 children (6.9%) in the main

group and 3 children (2.9%) in the control group. There was 1 child (0.9%) in the main group with the 4th group of health.

Conclusion

Thus, the illegitimate birth rate has increased by 6.4% for the last decade (index of births out of wedlock was 32.2% in 1999 and 38.6% in 2009). The increase of the fertility out of wedlock in a group of young mothers (under 20 years old) is an important social problem.

According to the study, pregnancy was complicated for 73 mothers (72.3%) ($p < 0,05$) in the group of single mothers. The same was for 52 (50.9%) mothers in the control group. For the threats of termination, fetal hypoxia, feto-placental insufficiency as well as preeclampsia of the first and second degrees was the leading factor in the structure of pregnancy complications.

Proportion of preterm births among single mothers was 30 (29.7%) but it was 9 (8,8%) among married women ($p < 0,05$). Body weight of newborns, Apgar score at the 1st and 5th minute for children born outside of marriage was significantly lower ($p < 0.05$) than in the control group of children.

Among the diseases of children born outside of marriage, there were birth defects, intrauterine growth retardation, morphofunctional immaturity, prolonged jaundice and perinatal CNS involvement. These diseases are twice higher than that for children born in wedlock.

An illegitimate birth is one of the major problems of socio-demographic policy. An appropriate response from the government is required for this problem.

Summary

Negative changes in marriage and family relations are becoming more pronounced in the present conditions. This can be seen growing out of wedlock births. The number of illegitimate children is increasing rapidly among juvenile female, aged 14-17 years.

Illegitimate birth is a problem that has several negative effects: emotional stress in women related to pregnancy in the common law marriage, has a significant impact on pregnancy, and causes a higher rate of complications. It is also accompanied by a high number of preterm births and sick babies.

However, despite the great scientific and practical significance of the problem, there is an obvious shortage of papers for this group of high medical and social risk until now.

Keywords: births out of wedlock, children, health

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Fetal alcohol syndrome

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The article represents an overview of the literature on fetal alcohol syndrome. Also here is presented diagnostics criteria, recognition of facial features, perspective of treatment.

Key words: children, fetal alcohol syndrome, facial features.

In last 10 years in the Republic of Sakha (Yakutia) growth of identification of the mental development retardation in children and behavioral infringements with social disadaptation by 30 % [2]. Fetal alcohol syndrome is the most recognizable and preventable cause of mental retardation in the world, which has a frequency 17 per 1000 live-born (in comparison with 1,3 per 1000 for a syndrome of Down) [6]. The epidemiological data indicates that prevalence of alcoholism in the Republic of Sakha (Yakutia) remains high and consist of 1,9 % of the total population (1884,7:100000). The rate of prevalence of alcoholism in the republic is higher than in Russia (1593,3:100000) by 18,3 % and lower than rate in Far East Federal district (2115: 100000) at 10,9 %.

Among women this rate is 747,0 patients per 100 thousands female population [5].

A the present time the following terms are used concerning the issue of the prenatal alcohol exposure: FAS (Fetal Alcohol Syndrome), FASD (Fetal Alcohol Spectrum Disorders), ARND (Alcohol Related Neurodevelopmental Disorders), ARBD (Alcohol Related Birth Defects).

FAS is the combination of neural and abnerval anomalies that revealed itself in pre- or postnatal lesions of the nervous system, growth deficiency, a specific facial anomalies and evidence of prenatal alteration in brain function such as congenital microcephaly, neurologic problems without postnatal antecedents or complex patterns of functional disability and occurs in infants born of women who consumed alcohol during pregnancy.

Fetal Alcohol Spectrum Disoders (FASD) is the term that describes the range of consequences that can occur in individual whose mother consumed alcohol during pregnancy. These consequences may include physical, mental, behavioral and/or learning disabilities with potenial lifelong implications. The term FASD is not intended for use as a clinical diagnosis. [12]

The first scientific mention of FAS is associated with the publication in French medical literature in 1967 by a French physician, Philip Lemoine and coauthors [17]. They examined 127 children born of alcoholic women with different anomalies and set up common features that could occur in the offspring of mothers who drank heavily during pregnancy.

Subsequently Ken Jones, David Smith [15] and associates published two articles in Lancet in 1973 concerning more detailed description of the common set of features in 11 children whose mothers were known to

be alcoholic. This combination of features was determined as the Fetal Alcohol Syndrome.

The epidemiology of FAS is quite variable. Data about prevalence FAS depends on variety of circumstances and, in particular, on medico-social features of alcohol consumption in certain group of examination, doctors and social workers awareness about diagnostic criteria of the disease [21].

FAS prevalence rates is 0,2 to 2,0 cases per 1000 live born [4]. In the US, where the issue is investigated in details the incidence of FAS is between 1 – 3 cases per 1000 live-born. The incidence of FASD is up to 190 cases per 1000 live born in families of Canadian Indian [10]. The highest rate of prevalence of FAS was recorded in South Africa: 65 cases per 1000 live born. [27]

Surveys indicate that 10% of pregnant women in the United States consume alcohol and 1,9% drink heavily. Meanwhile 20% of pregnant women in Russia consume alcohol and 2,7% drink heavily [4].

The manifestation of FAS depends on a dose, duration, frequency and time of consuming alcohol, also on genetic predisposition.

Pathogenesis

Alcohol alters the proliferation, migration, differentiation and survival of neuronal cells. Alcohol can also disrupt the development of glial cells, leading to alterations in cell signaling and myelination. Alcohol may impact on the cell membrane. For example, alcohol disturbs membrane fluidity, which can affect cell adhesion, migration and cell communication. Prenatal alcohol is also able to affect on glutamate receptors and GABA receptors [4, 28].

Clinics and diagnostics

Nowadays the 4-Digit Diagnostic Code, CDC (Center for Disease Control and Prevention, Department of Health and Human Services, 2004) is used for diagnosis of FAS [11, 12]

According to CDC system criteria FAS diagnosis based on following procedures [CDC]:

1. Documentation of all three facial abnormalities (smooth philtrum, thin upper lip border and small palpebral fissures);
2. Documentation of growth and weight deficiencies;
3. Documentation of CNS abnormality;
4. Documentation of maternal alcohol consumption.

1. A specific craniofacial profile associated with FAS was first described by Jones and Smith in 1973 [15] and later refined by Astley, Clarren and others [11].

The facial dysmorphia criteria that is essential for FAS:

- Smooth philtrum
- Thin upper lip border
- Small palpebral fissures.

It is essential to establish standard facial anthropometric data for all ages and subpopulations. Facial phenotype is a key factor of FAS diagnostics, its specificity cannot be assumed, and moreover it should be confirmed through properly designed empirical studies [7].

Stoler and Holmes (2004) showed that the specificity of the facial score and overall accuracy was relatively high – 91,7% [23]. Among other facial features of FAS the epicantal folds, midface hypoplasia, anteverted nares, long hypoplastic philtrum should be mentioned. However some of these features, such as epicanthal folds and flat wide nasal bridge, are normal for certain ethnic groups, so it can result in overdiagnosis in these ethnic groups [23]. Cross-sectional and longitudinal studies indicate that many features can change with age or development [12].

2. Growth and weight retardation are main factors of FAS. Growth retardation begins in intrauterine life period and becomes most evident in the nearest months and years of postnatal development [4].

3. Documentation of CNS abnormality is based on structural, neurological, functional deficiencies or abnormality (CDC).

The whole IQ scores of patients with fetal alcohol syndrome varies from 20 to 120 [24]. Children with large quantity of anomalies have a significantly lower IQ than those children who has lower anomalies[20].

4. Documentation of maternal alcohol consumption during pregnancy.

A. Confirmation of prenatal alcohol exposure requires documentation of the alcohol consumption of own mother during the pregnancy based on clinical observation; self-report; reports from a reliable source, medical records confirming positive blood alcohol levels or alcohol treatment.

B. Unidentified prenatal alcohol exposure indicates that there is neither a confirmed presence nor a confirmed absence of exposure. (CDC)

All the guidelines require prenatal alcohol exposure to be confirmed but in case of exposure not identification it is assumed a diagnostics of FAS. Often the own mothers do not present at the time of the child's diagnostics. The 4-Digit Code defines that diagnosing of FAS when alcohol exposure is not identified is medically valid. [7, 8].

Among congenital development malformation concomitant to FAS following ones occur more often: the congenital heart diseases – an atrial septal deficiency, a ventricular septal deficiency, a Fallots tetrad; anomaly of eyes – ptosis, strabismus, ophtalmomycria; anomaly of urogenital system – hydronephrosis, doubling of ureters, cryptorchism и.т.д. [4, 10].

Concerning the FAS many authors often highlights the anomalies of skeleton – knitting of corpuses cervical vertebra, funnel chest, short ossa metatarsalia and short ossa metacarpalia [4, 10].

Since the FAS facial criteria is defined by short palpebral fissures, smooth philtrum and thin upper lip, it is able to be overlapped with other syndromes. Syndromes with similar combination of features are Aarskog syndrome, Williams syndrome, Noonan syndrome, De Lange syndrome, Dubowitz syndrome, toluene embriopathy, fetal anticonvulsant syndrome including fetal hydantoin and fetal valproate syndromes, maternal phenilketonuria (PKU) fetal effects. [10].

The neuroimaging method is widely used for FAS diagnostics. Magnetic resonance imaging (MRI) is applied on fetal alcohol syndrome (FAS) to detect central nervous system (CNS) anomalies. One specific feature of FAS diagnosis was revealed by MRI it is brain size decrease. Mattson considered that Pre and/or early alcohol exposure can cause decrease of cerebellum size [19]. The anomaly that is revealed by MRI is agenesis of the corpus callosum. [25]. Earlier the FAS was supposed to be the main cause of this anomaly [14].

The EEG records of the FAS children indicated reduced power, particularly of the alpha frequencies and the absence of significant slow activity. FAS children were more affected at the left hemisphere [16].

Prevention and treatment of FAS.

At the present time there is no specific treatment of FAS. Nevertheless development of drugs that experimentally positively affects on ethanol exposure consequences gives us the hope of its future clinical application them [9, 13, 18, 22, 26, 29].

Table 2. The experimental therapy of intrauterine alcohol exposure

Preparation	Effect
Choline	Improvement of memory and behavior, decrease of ethanol's teratogenicity;
Lithium	GSK-3 (ferment that determine ethanol's toxicity) influence prevents apoptosis
the vasoactive intestinal peptide (VIP)-related peptides, NAPVSIPQ (NAP) and SALLRSIPA (SAL),	Have effect on GAMK receptore and contribute to prevention of FAS facial anomalies
Agmatine	Effect on imidazoline and n-methyl-d-aspartate receptors (NMDAR), improve behavior
Dietary selenium plus folic acid	Effect on glutathion-reductase, catalase and protein peroxidation
Anthocyanins	Antioxidant

The important stage of preventing alcohol-exposed pregnancies is identification of women with significant risk of alcohol consumption during the pregnancy.

An early diagnosis is essential to decrease the risk of the development of subsequent "secondary disabilities" (unemployment, mental health problems, inappropriate sexual behavior) among affected people [10, 24].

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Dranaeva G.G.
Elements of pediatric service modernization in Sakha (Yakutia)
Republic: Application of automated system of prophylactic child

On this article present a date of the health cares system modernization in Republic of Sakha Yakutia. Present the optimal scheme of the
dynamic examination children living on the rural territory using automatic technology and organization medical expedition.
Key words: AKDE, children population, pathology profile, Republic of Sakha Yakutia.

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The cost of treatment complications of drug allergy in children with acute intestinal infections

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Summary. As a result of pharmacoeconomic analysis found that the greatest costs associated with the treatment of severe manifestations of allergic reactions to drugs. In the treatment of allergic reactions of moderate forms of economically viable single intramuscular injection of «Suprastin», then in children under one year application of the «Fenkarol», in children over the year – «Parlazin».

Key words: children, adverse drug reactions, drugs, pharmacoeconomic analysis.

Introduction. Questions of safety of medicines (drugs) are constantly in the focus of attention of many experts, since the growth of consumption of medicines in the world has a number of adverse health, social and economic consequences. Despite advances in the field of pharmacovigilance, there are certain difficulties associated with the state of the problem of drug safety, particularly in pediatric patients [1,8]. The pharmacological safety of the children require special attention, since the appointment of drugs first occurs in childhood, often in connection with acute infectious diseases in the structure of which one of the top belongs to an acute intestinal infection. Children are one group of people who most often have medical complications [7]. The structure of side effects (SE) drug leads in the incidence of allergic and play other immunological reactions [2,4,5,6].

In addition to physical and moral sufferings, which bring medical complications, SE pharmacotherapy leads to significant financial costs. Some countries spend on eliminating complications associated with the use of drugs, from 5,5 - 17 to 15-20% of their health care costs [3].

The purpose of this study was to evaluate the cost of treating complications of pharmacotherapy in the form of allergic reactions in children with acute intestinal infections.

Materials and methods. A retrospective analysis of 34 case histories of children in 2007, located at the hospital in the Municipal Children's Infectious Diseases Hospital «to them. A.K. Piotrovich» Khabarovsk, who experience allergic reactions (ARs) in the ongoing pharmacotherapy. Diagnosis of adverse reactions (NDP) was based on data from drug history, clinical manifestations and identification of causal relationships from the moment of drug use. In all cases the degree of certainty of causation «drug - the NDP», proposed by WHO can be estimated as «probable».

Used methods of pharmacoeconomic analysis «Analysis of cost minimization» and «Cost-effectiveness». Selling prices for drugs purchased by the hospital, are a distribution company JSC Protek refer to 2007.

The cost of drugs: 1 bottle of drops «Parlazin» (10 mg. in 1 ml - 10 ml) - 112 rub. 21 cop; 1 bottle of drops «Zirtek» (10 mg. in 1 ml - 10 ml) - 254 rub. 84 cop; 1 bottle of drops «Fenistil» (0,1% p-p 20 ml vial, 1 mg in 1 ml) - 106 rub. 74 cop; «Fenkarol» (тab. 0,025 grams. № 20) - 55 rub. 99 cop; «Supratin» (тab. 0,025 grams. № 20) - 55 rub. 51 cop; «Activated Carbon» (тab. 0,25 grams. № 10) - 1 rub. 07 cop; «Polysorb MP» (pack of 50 grams.) - 104 rub. 35 cop.

Results and discussion. The diagnosis of acute intestinal infection was verified on the basis of bacteriological methods in most cases identified by the representatives of opportunistic flora (P. mirabilis, P. vulgaris, E. aerogenes, E.gergovia, E.cloacae) and in rare cases, S. enteritidis and S. flexneri 2a.

The average age of the children was three years and amounted to 1,7 ± 0,19 years. When the distribution by sex reported prevalence of male 20 (58,8%) than girls, 14 (41,2%).

Assessment of the severity of clinical manifestations of AR in children held on the following criteria: the mild form - a child there were sporadic eruptions on the trunk and extremities in the form of small pink spotty rash, nor were there indications for allergy drugs. In the moderate form - the rash was profuse, maculopapular, by a sick person appointed by the H_1-histamine blockers. Severe form of AP was established in the diagnosis of a patient or a rash of toxic and allergic reactions, medication adjustment at the same time carried out in intensive care.

It was found that the development of AR occurred in the first three days of the beginning of the use of drugs, namely, after 2,5 ± 0,15 days. Meanwhile, only 78,8% of patients with prescriptions can be considered rational. In other cases, the use of drugs, is recognized as not valid (21,2%), as it were patients who administered antibiotics for milder forms of intestinal infections or have used drugs that have age restrictions («Chloramphenicol»).

Among the drugs that most often lead to the development of the NDP, were antibiotics. The structure of the latter occupied a leading place cephalosporins and aminopenicillins, in rare cases - aminoglycosides, as well as «Chloramphenicol».

In the analysis of complications of drug therapy, found that in 2 (5,9%) of children registered with a mild form of AR, in 27 (79,4%) - middle-form, in 5 (14,7%) patients there was a severe form of AP, in the form of toxic-allergic reaction and rash on the introduction of «Cefotaxime» and «Cefazoline». The average duration of preservation of the NDP was 3,16 ± 0,33 days.

The choice of drugs for the relief of AR was based on clinical symptoms and the presence of drugs in the hospital. In milder forms of AR was sufficient to abolish the drug, which was connected with the development of drug allergy. If necessary, medical correction of AR revealed that the highest frequency used H_1-histamine blockers first generation («Suprastin», «Fenkarol»,

«Fenistil») - 58,5% of cases, other children have used drugs of second generation («Zirtek», «Parlazin»). In 26,6% of patients for the relief of urticaria, toxic-allergic reaction, briefly, during the 1-2-days used parenterally «Prednisone». The children in the development of severe forms of NDP held infusion therapy, which included a glucose-salt solutions.

Appointment of AR treatment scheme included the following: moderate form for recorded – «Suprastin» inside or «Fenkarol» or «Parlazin» or «Fenistil» or «Zirtek». In some cases, we used a combination of these drugs with adsorbents «Activated Carbon» or «Polysorb MP».

Given that the administration of these drugs «Parlazin», «Zirtek», «Fenistil» performance was the same, in order to calculate the cost of treatment, the method of pharmacoeconomic analysis «Analysis of cost minimization». The calculations proved to be the lowest cost of treating drug «Parlazin» (табl. 1).

In cases where a child as a single agent used drugs «Fenkarol» and «Suprastin» found that the effectiveness of «Fenkarol» amounted to 75% efficiency «Suprastin» - 71%. For these drugs, the method of pharmacoeconomic analysis of the «Cost – effectiveness». Established that the cost-effectiveness ratio was lowest in«Fenkarol», so it is preferable to use (табl. 2).

A combined therapy of H_1-histamine blockers + adsorbent («Activated Carbon» or «Polysorb MP») is not noted an increase in the effectiveness of therapy compared with monotherapy. Meanwhile, the use of combination therapy increased the cost of treatment.

After conducting pharmacoeconomic analysis «Analysis of cost minimization», revealed that the lowest cost of treatment was associated with combination therapy «Suprastin» + «Activated Carbon» (табl. 3).

Of interest to calculate the cost of the treatment of severe allergic reactions. In this case, long-term use was within 4,5 ± 1,38 days. In this case, we used the following regimen: in the first two days of the manifestations of AR applied fluid therapy in the volume of 400 ml of 10% glucose and 0,9% sodium chloride solution was injected intramuscularly and «Prednisolone» - 2 times a day; simultaneously for three days intramuscularly administered solution «Suprastin» 2 times per day, with the subsequent transition to the 4 day for ingestion and also for all the days the patient received «Activated Carbon».

The value of drugs, including the cost of syringes and systems for drip, are shown in табle 4.

Given the fact that during the 4 days of treatment using different drugs, the total cost of treating an allergic reaction severe was 148 rub. 92 cop. and costs more than ten times higher compared with the treatment of allergic reactions of moderate severity (табl. 5).

Recommendations for practitioners. In the treatment of acute AR should be guided by the severity of clinical manifestations. Need a «turn-based» assessment of a child with allergic nature of the NDP.

Thus, in mild forms - possible withdrawal of the drug, which caused complications and dynamic observation of patients. In the moderate form, in the presence of an itchy rash, especially on the face, neck - after the drug was shown a single intramuscular dose «Suprastin». In the future in terms of economy and efficiency, as shown by the calculations, depending on the child's age, in children 1 year of life - the use of «Fenkarol» in children older than one year – «Parlazin». If necessary, the sorption from the gut the allergen is advisable to use a combination of these drugs with «Activated Carbon». In severe forms of AP shows a fluid therapy, using a glucose-saline solution for two days, combination of drugs, «Prednisolone» + «Suprastin» + «Activated Carbon», but after the relief of acute manifestations, needs to be replaced «Suprastina», depending on age to «Fenkarol» or «Parlazin».

Conclusion: The analysis shows that the unjustified use of antibiotics in children contributes to risk for the NDP. In the moderate form of cost-effective use of AR «Suprastina», «Fenkarola», «Parlazina» The largest costs are associated with the treatment of severe AR, which includes an infusion therapy, glucocorticoids, H_1-histamine blockers and adsorbents.

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Table 1

Costs of H_1-histamine blockers for the treatment of allergic reactions-moderate

Drug	Dosages regimen	Cost package	Price of 1 are suitable treatments	Cost of treatment
«Parlazin» 10 mg in 1 ml, 10 ml	5 drops 2 times a day	112 rub. 21 cop.	5 rub. 61 cop.	16 rub. 83 cop.
«Zirtek» 10 mg in 1 ml, 10 ml	5 drops 2 times a day	254 rub. 84 cop.	12 rub. 74 cop.	38 rub. 23 cop.
«Fenistil» 1 mg in 1 ml, 20 ml	10 drops 3 times a day	106 rub. 74 cop.	8 rub. 01 cop.	24 rub. 03 cop.

Table 2

Calculation of the «Cost – effectiveness»

Drug	Dosages regimen	Of treatment cost	Effectiveness	Ratio «Cost-effectiveness»
«Fenkarol» 25 mg № 20	for 5 mg (1/5 tablets) 3 times a day	5 rub. 03 cop.	75 %	6,71
«Suprastin» 25mg. № 20	for 5 mg (1/5 tablets) 3 times a day	4 rub. 99 cop.	71 %	7,03

Table 3

Cost of combination therapy in the treatment of allergic reactions-moderate

Drug	Dosages regimen	Room 1 are suitable treatment	Cost of treatment
«Zirtek» + «Activated Carbon»	5 drops 2 times a day + 1 tab. 3 times a day	13 rub. 06 cop.	39 rub. 19 cop.
«Fenistil» + «Activated Carbon»	10 drops 3 times a day + 1 tab. 3 times a day	8 rub. 33 cop.	24 rub. 99 cop.
«Parlazin» + «Activated Carbon»	5 drops 2 times a day + 1 tab. 3 times a day	5 rub. 93 cop.	17 rub. 79 cop.
«Fenkarol»» + «Polysorb MP»	5 mg (1/5 tablets) 3 times a day + 1gr. on day	3 rub. 76 cop.	11 rub. 28 cop.

«Fenkarol» + «Activated Carbon»	5 mg (1/5 tablets) 3 times a day+ 1 tab. 3 times a day	1 rub. 99 cop.	5 rub. 97 cop.
«Suprastin» + «Activated Carbon»	5 mg (1/5 tablets) 3 times a day+ 1 tab. 3 times a day	1 rub. 98 cop.	5 rub. 94 cop.

Table 4

Cost of drugs and medical supplies

Drugs and medical products value	Cost of packing	Mode of
Glucose solution 10% - 200 ml	18 rub. 47 cop.	200 ml of 1 per day, intravenous drip solution
Sodium chloride 0,9% - 200 ml	19 rub. 88 cop.	200 ml of 1 per day, intravenous drip solution
«Prednisolone» 25 mg. - 1 ml, № 50	362 rub. 70 cop.	25 mg 2 times a day, intramuscularly
«Suprastin» 2% - 1 ml, №5	86 rub. 12 cop.	0,2 ml 2 times per day, intramuscularly
«Suprastin» 25 mg. №20	55 rub. 51 cop.	5 mg (1/5 tablets) 3 times a day
«Activated Carbon» 0,25 gr. №10	1 rub. 07 cop.	1 table. 4 times a day
System for infusion	4 rub. 70 cop.	1 time per day
Syringe, 2 ml	98 cop.	2-4 times per day

Table 5

The cost of treating an allergic reaction severe form

Drugs and medical products value	cost 1-day treatment	cost 2-day treatment	cost 3-day treatment	cost 4-day treatment
Glucose solution 10% - 200 ml	18 rub. 47 cop.	18 rub. 47 cop.	-	-
Sodium chloride 0,9% - 200 ml	19 rub. 88 cop.	19 rub. 88 cop.	-	-
«Prednisolone» 25 mg. - 1 ml, № 50	14 rub. 50 cop.	14 rub. 50 cop.	-	-
«Suprastin» 2% - 1 ml, №5	6 rub. 89 cop.	6 rub. 89 cop.	6 rub. 89 cop.	-
«Suprastin» 25 mg. №20	-	-	-	1 rub. 67 cop.
«Activated Carbon» 0,25 gr. №10	42 cop.	42 cop.	42 cop.	42 cop.
System for infusion	4 rub. 70 cop.	4 rub. 70 cop.	-	-
Syringe, 2 ml	3 rub. 92 cop.	3 rub. 92 cop.	1 rub. 96 cop.	-
Total:	**68 rub. 78 cop.**	**68 rub. 78 cop.**	**9 rub. 27 cop.**	**2 rub. 09 cop.**

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Results of Complicated Cataract Phacoemulsification with Implantation of Multifocal Intraocular Lenses ACRYSOF IQ RESTOR (ALCON)

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Actuality.

The quantity of operations concerning replacement of crystalline lens with refracting purpose has increased significantly from the moment of IOL occurrence in the market for presbyopy correction. In the beginning this procedure was considered as removal of transparent crystalline lens, meanwhile crystalline lenses are not transparent any more at senior patients aged 50 and over. Even at high visual acuity the age kernel sclerosis can be observed influencing on sight quality and colour perception. These changes have been called as the syndrome of disfunctional crystalline lens. This syndrome can be identified by its thickening and hardening in combination with disability to accommodation in patients aged 40 years as the kind of presbyopsy [2]. For performing presbyopsy in artiphacia updated models of «premium class» intraocular lenses are used such as multifocal and accommodating ones. Multifocal lenses Tecnis MF (AMO, Santa Ana, the USA), AcrySof IQ Restor+3,0 (Alcon, Ford-Yort, the USA) irrespective of optics design, being of refraction or diffraction, allow to reach high sight afar and thus to read without spectacles. There are such disadvantages of the given kind of lenses as low sight on intermediate distance as well as higher frequency of circles of light diffusion in the conditions of poor illumination. Nevertheless, many ophthalmologists-surgeons consider that the given models of lenses are considered to be optimal at present stage [3], besides the IOL data are economically profitable. Accommodating lenses Crystalens HD (Baush and Lomb Surgical, the San-Dimas, the USA) are characterized not only by magnificent sight afar and in intermediate distance, high contrast sensitivity, but by lower indices of sight in short distance and lower ability to read as well. Early studies of accommodating lenses also have shown that their functional result is less predicted, and when the accommodation has been reached in sufficient volume, eventually it regressed in most cases [3,4].

For the purpose to decrease the demand in spectacle corrections after cataract surgical treatment, the multifocal lens Acrysof IQ Restor (Alcon) has been used. In the central part of lens optics the principle of apodisation is applied that allows to distribute the quantity of light energy between near and far focuses depending on the pupil width (and illumination). Gradual reduction of the height of steps from center to periphery guarantees the pure sight due to optimum distribution of light energy on retina concerning the illumination. The central part of optics in diameter of 3,6 mm forms the image in two focuses that provides possibility to read and see afar. In twilight the light energy is redistributed on distant focus while the pupil expansion (and reduction of illumination) that allows the patient to be guided well in space [1]. As the majority of ophthalmologists – surgeons admit who implant IOL multifocal, the latest invention Acrysof IQ Restor +3,0 has become considerably popular in comparison with Acrysof IQ Restor +4,0, as this lens has allowed to make purer sight on intermediate distance [5,6].

The purpose: to analyze functional results of implantation of multifocal intraocular lenses AcrySof Restor+3,0 made by "Alkon" in the patient with complicated cataract.

Material and methods. In the department of the Yakutsk Republican Ophthalmologic Clinic (YROC) the intraocular lenses Acrysof IQ Restor +3,0 have been implanted to 24 patients (38 eyes) with complicated cataract . Depending on the etiology of complicated cataract patients were distributed as follows: 42 % (16 eyes) with myopia of high and average degree, 31,6% (12) with hypermetropia of high degree, 18,4 % (7) with glaucoma I-II , 5,3 % (2) with age maculodystrophy of dry form, 2,7 % (1) with squint.

Patients' visual acuity (VA) before the operation has amounted 0,5 from light sensation (l/s) with correct projection. IOL calculation has been presented under the formulae SRK-T, Holladay, Haigis. Measurement of frontback axis of the eye was carried out by OcuScan RxP. During the operation and in the early postoperative periods there were no complications.

Results.

High functional results have been noted in the patients discharged . The visual acuity afar without correction has made 0,7 - 1,0 in 85 % of cases (32 eyes), as VA closely, 75% patients read the text № 6 without correction. The functional results in a year are presented in Table 1.

According to the Table the visual acuity afar without correction has been noted to be 0,7 - 1,0 in 68 % (26 eyes) in remote terms after the operation, the indices of close distance without correction by Sivtsev's Table № 6 in 75 %.

Unfortunately, in one case (the patient aged 75) due to accompanying age macular retina dystrophy (dry form), VA in the postoperative period has made 0,3. Before the operation, considering age and impossibility of eyeground ophthalmoscopy because of full cataract (before the operation VA = l/s), the patient has been warned about probable low visual functions after the cataract extraction.

Even in monocular implantation the lens intolerance wasn't noted. All patients with the implantation of lens Acrysof IQ Restor +3,0 had high VA in the average distance, without decrease in quality of sight afar and close. In one case we did not observe the light phenomena, so-called galo and glare effects.

Conclusions. Our experience of implantation lenses Acrysof IQ Restor +3,0 of diffraction - refraction types testifies that given IOL models allow to achieve high sight as afar as close, and in the average distance too.

Table 1

Visual acuity afar in 1 year after phacoemulsification with IOL implantation Acrysof IQ Restor +3,0 (n=38).

Kinds of cataract / Visual acuteness	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0
Myopia I and II				3	3	3	4	3
Hypermetropia I				4	2	3	3	
Glaucoma			1	3	2	1		
Maculodystrophy	1				1			
Squint						1		
TOTAL	1	-	1	10	8	8	7	3

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The resume.

The quantity of operations concerning replacement of crystalline lens with refractional purpose has significantly increased from the moment of IOL occurrence in the market for presbyopy correction. For performing presbyopsy in artiphacia updated models of «premium class» intraocular lenses are used such as multifocal and accommodating ones. Multifocal lenses Tecnis MF (AMO, Santa Ana, the USA), AcrySof IQ Restor+3,0 (Alcon, Ford-Yort, the USA) irrespective of optics design, refractional or diffractional, allow to reach high sight afar and thus to read without spectacles.

In the department of the Yakutsk Republican Ophthalmologic Clinic (YROC) the intraocular lenses Acrysof IQ Restor +3,0 have been implanted to 24 patients (38 eyes) with complicated cataract .

High functional results have been noted in all patients discharged. The visual acuity afar without correction has amounted for 0,7 - 1,0 in 85 % of cases (32 eyes), as VA closely was in 75% patients reading the text № 6 without correction.

Our experience of implantation of diffractional and refractional lenses Acrysof IQ Restor +3,0 testifies that given IOL model allow to achieve pure sight as afar as closely, and in the average distance as well.

Keywords:

Phacoemulsification, multifocal, diffractional, complicated cataract.

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