The founder
The Yakut Science Centre
of Complex Medical Problems
The Siberian Branch
The Russian Academy of Medical Sciences
Co- founders:
Ministry of Health care Republic Sakha (Yakutia),
Medical institute Yakut State University after M.K. Ammosov,
Science & Practice Centre "Phthisiology" of HCM RS (Y), Republican AIDS Prevention Centre HCM RS (Y), " Centre of hygiene and epidemiology in RS (Y) ", State Insurance Medical Company " Sakhamedstrach"

The edition address:
677019, Yakutsk, Sergeljahsky highway, 4,
M&ChHCC NCM, unit S1-01,
tel.(4112) 32-15-26; 39-55-52
The telefax (4112) 32-19-81
E-mail: ysc_tech@sakha.ru
yscredactor@mail.ru
http: // www.ymj.ykt.ru

The articles are presented in the author's translation.

ISSN 1813 1905
2(38) `2012

YAKUT MEDICAL JOURNAL

SCIENTIFIC - PRACTICAL JOURNAL
OF THE YAKUT SCIENCE CENTRE OF
COMPLEX MEDICAL PROBLEMS
THE SIBERIAN BRANCH OF
THE RUSSIAN ACADEMY OF MEDICAL
SCIENCES

Quarterly

It is registered by Sakha-Yakut Territorial administration of the Ministry of the Russian Federation on press affairs, telecasting and means of mass communications from October, 30th, 2003

Registration number ПИ №19-0465

Subscription index: 78781
Free price

«The Yakut medical journal» is included in confirmed by the Higher certification commission of the Russian Federation «List of leading reviewed scientific magazines and editions in which the publication of the basic scientific results of dissertations on competition of scientific degrees of the doctor and the candidate on biological sciences and medicine, in edition from 25/02/2011 is recommended

The journal is included in the international directory system under periodic and proceeding editions "Ulrich's International Periodicals Directory"

«YMJ», № 2 (38) 2012

Contents

Original researches

Burtseva T.E., Samsonova M.I., Nikolaeva L.A., Dranaeva G.G.

Hospitalization morbidity of child population of Sakha (Yakutia) Republic

Samsonova M.I.

Endocrine regulation of growth and development processes of adolescents in Sakha (Yakutia) Republic

Vertkin A.L., Nosova A.V.

Influence of new form of combined hormonal oral contraceptive medication “Qlaira” on somatic and psychological status of women of reproductive age

Morozov S.N., Donskaya A.A., Ivanov K.I., Myarina L.M.

Analysis of the use of thrombolytic therapy in the prehospital phase in Yakutsk city

Sorokina E.A., Fokin A.A., Akhmedov V.A., Loenko V.B., Starzhevskaya L.E., Faile I.L.

Peculiarities of the hemostatic system in patients with erosive and ulcerative changes in gastroduodenal area and their relevance to cardiac pathology

Postnikova A.M., Chibyeva L.G., Daybanyrova L.V., Vasiliev N.N.

The level of intragastric acidity in patients with coronary heart disease with erosive and ulcerative lesions of the stomach and duodenum

Bulieva N.B.

Features of infectious complications in patients with hemoblastoses in the Far North in comparison with the Central region

Sadulayeva A.S., Ushnitsky I.D., Trifonov S.A.

Socio-hygienic aspects of the formation of dental status in elderly and senile patients in Yakutia

Tobohov A.V., Nikolaev V.N, Hovrova L.V.

Justification of the choice of colon resection in the surgical treatment of visceroptosis with chronic colonic stasis syndrome

Zakharov P.I., Gogolev N.M., Petrov V.S.

Clinical manifestations, introcardial hemodynamic and diagnosis of septal heart defects in children and adults

Vinokurov M.M., Gogolev N.M., Pavlov I.A., Petrov A.P.

Surgical treatment of elderly and senile patients with acute cholecystitis complicated by choledocholithiasis and obstructive jaundice

Egorova A.G.

The mortality of the population of Yakutia: Regional features of the dynamics and the main reasons for the last half century, long-term prognosis

Antipin V.V., Voivoda M.I., Romanova T.A.

Severity of coronary artery calcification among residents of Yakutia (according to CT-scan results)

Methods of diagnosis and treatment

Shepeleva L.P.

Basic forms and course of primary tuberculosis in children and adolescents

Mikhailova A.E., Zakharova R.N., Krivoshapkin V.G.

The physical component of life quality of men on the SF-36 questionnaire

Zakharova E.K., Nazarov A.N., Neroev V.V., Kiseleva O.A., Bessmertny A.M., Poskachina T.R.

Effectiveness evaluation of microinvasive drainage interventions in surgical treatment of primary glaucoma

Semenova E.I., Mironova G.E.

Indicators of peripheral blood of highly skilled acyclic sport athletes

Organization of public health, medical research and education

Petrova P.G., Borisov N.V., Aprosimov L.A.

Prospects for improving higher medical education as the foundation of healthcare practice in Sakha Republic

Evseeva S.A., Burtseva T.E., Dranaeva G.G., Chasnyk V.G., Ganichev S.N.

Evaluation of satisfaction of the rural population with medical children supervision in Sakha (Yakutia) Republic

Healthy lifestyle. Prophylaxis

Semenova N.B., Martynova T.F.

The possibility of using the R. Goodman's test to assess mental health of children and adolescents in Sakha Republic

Golokova VS, Zakharova, FA

Adaptive capacity of martial artists of Yakutia

Lapteva N.V., Yakovlev A.A.

Epidemiological evaluation of factors that could affect the development of combined forms of HIV infection with parenteral viral hepatitis among the population of the Sakha (Yakutia) Republic

Safianova T.V., Lukyanenko, N.V.

Management model of epidemic processes of hepatitis B, measles and rubella in Altai Krai

Hygiene, sanitation, epidemiology and medical ecology

Frank N.V., Ushkareva O.A., Shaynova N.A., Gusev A.P., Borhonova L.S.

The hygienic value of color intensity of drinking water for public health in Mirny city, Sakha (Yakutia) Republic after primary disinfection with chlorinated compounds

Makarov V.N.

Arsenium in the environment of Yakutia - potential health hazard

Topical subject

Bardymova E.V., Khantaeva N.S., Poluektova A.V.

The effectiveness of patient with tuberculosis follow-up in an unfavorable epidemic situation

Neustroeva V.N., Simonova G.I., Kylbanova Y.S., Tatarinova O.V., Shcherbakova L.V., Verevkin E.G.

Analysis of actual nutrition of senile in Yakutsk city

Markova S.V., Petrova P.G., Borisova N.V., Antipina U.D., Pshennikova E.V., Egorova G.A.

Children of South Yakutia: Health state and element status

Scientific reviews and lectures

Kukushkin V.L., Kukushkin E.A., Smirnitskaya M.V.

Complications of endodontic treatment

Gurieva P.I.

Charcot-Marie-Tooth's disease: current classification and clinical features

Zhukovets I.V., Zaritskaya E.N.

The synthesis of steroid hormones during pregnancy

Pharmacology. Pharmacy

Pavlova P.A., Semenova V.V., Fedorov I.A.

Prospects for Glycyrrhiza uralensis growth in Yakutia

Case history

Zhdanov G.N.

A rare case of myasthenia debut with late-onset accompanied with intrapulmonary thymoma

L.N.,Korosteleva. A.D. Makarov, Z.D. Gurieva, N.M. Sleptsova, A.S.Innokentieva

Breast ductal carcinoma IN CITU with the multifocal growth: clinical case

Exchange of experience

Skachkov D.P., Shtilerman, Grigorenko A.A.

Experience of application of intrastromal amniotic membrane implantation in the treatment of patients with endothelio-epitelial dystrophy of cornea

Nikolaeva T.I., Zharnikova T.N., Migalkina T.N., Ivanov P.M.

Experience of reconstructive plastic surgery for breast cancer

Potapov A.F., Alexeev R.Z., Evgrafov S.Y.

Efferent therapy in treatment of cold injury, complicated by multiple organ dysfunction syndrome

School of the young researcher

Statistics in biomedical research

From the Chronicle of events

Pages of History

Nikolaev V.P.

They made a great contribution to the development of medical science and medical education in Yakutia

Anniversaries

Professor Carl Georgievich Basharin - a man with an active stand in life

The mission of a doctor (on the 100th anniversary of M.I. Kolodeznikova)

Index of articles published in the "Yakut Medical Journal" in 2010 -2011

УДК 616-053.2(571.56)

T.E. Burtseva, M.I. Samsonova, L.A. Nikolaeva, G.G. Dranaeva

THE MORBIDITY RATES OF THE CHILDREN OF REPUBLIC OF SAKHA YAKUTIA

Yakut research center KMP SB RAM, Yakutsk

Pediatric center National medical center, Yakutsk,

Health ministry of the Republic of Sakha Government

Abstract.

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. For this period detected is raise number of children with oncology diseases, endocrinology problems, diseases of nerve system, genitourinary problems. 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.

Key words: children of the Yakutia, incidence of morbidity

Introduction.

The Republic of Sakha Yakutia is 3 103 2000 sq. km. and biggest territory of the Russia and a one of the big territorial country. The population in Yakutia over 1 million, children's population 252 545. The health care system in this condition is not good and high centralization to the Yakutsk.

Now the northern region has some social and economics problems. And the children's situation is not good [2, 1]. The middle incidence of the morbidity on this regions is high than on the all of Russia to 1,4 - 2 one [3].

For date of the official statistics morbidity rates to the children in Yakutia is very difference to the districts and determined by the accessible to the doctors and health care systems. The official date and the date of the medical examination is very different to [4]. And the real information about children health condition to my mined is present incidence of the hospitalization morbidity. We present date of the Pediatric center of the Republic hospital. It is a basis medical structure to the Yakutia.

Methods and materials.

We study cases of the children hospitalization to the Pediatric center to 2001 -2010.

Results.

Pediatric center begin work to 2000 and have 172 beds. Than on 2001 center have 302 beds, 2002- 312 pediatric beds.

All of the years 7383 children treated to this hospital (2001) to 9768 (2010). The rural patients is 27,1% on 2001, and 31,6% on 2010 and is results that in rural territory live 45% of the population. The urgent patient is over 32,5-46,8% (see to table 1).

More patient is address to the nearest districts: Megino-Kangalassky (3,3%), Namsky (3,4%), Tattinsky (3,2%), Changalassky(3,0%), Churapchinsky(2,9%), Ust-Aldansky(2,9%). Low patients is address to the distance districts: Verchoyansky (1,5%), Gigansky (1,2%), Momsky (1,8%), Ust-Yansky (1,5%).

The hospitalization structure presents to table 2. In the hospitalization structure on 2010 the feast pleases is respiratory system disease (528,8 to 100000 children population), second – trauma and poisoning (514,8), third – disease of the nerve system (484,0), forth – congenital disorders (372,8), fifes – gastroenterology disease (349,6), six – urology disease (323,6), than – endocrinology (232,4), oncology (216,0), disease of the skin (193,2), otolaryngology disease (171,2).

From 2001 is detected increase incidence of the hospitalization morbidity. This incidence increase to 1231,4 for 100000 children's population (2001 -2387,6; 2010 -3610,0). The respiratory disease increase to 37,9% (2001 -383,4; 2010 -528,8). Trauma and poisoning increase to 187,8 (over 57,4%), nerves system disease to 255,1 (111,4%), congenital disorders to 222,4 (147,8%), disease to gastroenterology systems to 63,0 (21,9%), urology disease to 97,0 (42,8%), endocrinology to 119,5 (105,8%), oncology to 140,8 (187,2%).

From 2001 is detected increase incidence of the oncology disease. On 2000 treatment 179 children's with oncology problems, but on 2010 -540.

Выводы.

The analysis is present real pathology profile in Yakutia and is detected increase the incidents of the hospitalization morbidity in Yakutia.

Список использованной литературы:

1. Kozlov V.K. The children health on the Far West of the Russia.-Novosibirsk: Nauka, 2003.-288p.
2. Lyaskovik A.Th. The research basis of the health care for the children living on the Far North with low of the density of the populations: avtoref. diss. … dokt.med.nauk.-SPb., 2004.-40p.
3. Savvina N.V. The strengthening mechanisms of the school-ages children health: avtoref. diss. … dokt.med.nauk.-M.., 2006.-48p.

4. Chasnyk V.G. The important pathology profile for the native children population for the Far North //Research and technology for the development the North of the Russia.-SPb., 2003.-P.326-327.

T.E. Burtseva, M.I. Samsonova, L.A. Nikolaeva, G.G. Dranaeva

THE MORBIDITY RATES OF THE CHILDREN OF REPUBLIC OF SAKHA YAKUTIA

Table 1

The basis incidence to work Pediatric Center on 2000-2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Beds	172	302	312	312	312	312	312	312	312	312	312
Hospitalization	4196	7383	8128	8564	8407	8650	8973	8920	9234	9014	9768
Wright out	4193	7306	8104	8545	8409	8661	8951	8745	9231	9030	9784
Rural patients, %	40,1	27,1	28,6	30,9	33,7	28,9	28,1	33,3	31,2	31,7	31,6
Urgent patient, в %	32,5	46,8	45,1	44,1	44,2	46,0	46,8	43,0	46,3	46,8	47,3

T.E. Burtseva, M.I. Samsonova, L.A. Nikolaeva, G.G. Dranaeva

THE MORBIDITY RATES OF THE CHILDREN OF REPUBLIC OF SAKHA YAKUTIA

Table 2

THE HOSPITALIZATION MORBIDITY RATES OF THE CHILDREN OF REPUBLIC OF SAKHA YAKUTIA ABOUT PEDIATRIC CENTER

(to 100 000 children's population)

МКБ X	2001	2010	Прирост показателя на	Прирост показателя к 2001г., %
Всего, в т.ч.	**2387,6**	**3610,0**	**1231,4**	**51,5**
J00-J99 Respiratory disease	383,4	528,8	145,4	37,9
S00-T98 Trauma and poisoning	327,0	514,8	187,8	57,4
G00-G99 Nerve system disease	228,9	484,0	255,1	111,4
Q00-Q99 Congenital disease	150,4	372,8	222,4	147,8

K00-K93 Gastroenterology disease	286,6	349,6	63,0	21,9
N00-N99 Urology disease	226,6	323,6	97,0	42,8
E00-E90 Endocrinology disease	112,9	232,4	119,5	105,8
C00-D48 Oncology disease	75,2	216,0	140,8	187,2
censer	-	81,2	-	-
L00-L99 Skin disease	161,6	193,2	31,6	19,5
H60-H95 Otolaryngology disease	118,9	171,2	52,3	43,9
I 00-I99 Hard disease	67,2	149,2	82,0	122,0

Сведения об авторах:

1 Burtseva Tatiana- MD, research directoe Yakut research center KMP SB RAM
2 Samsonova Margarita-PhD, Pediatric Center
3 Nikolaeva Ludmila-PhD, head of the Pediatric center
4 Dranaeva Galina-PhD, researcher Yakut research center KMP SB RAM

АДРЕС ДЛЯ ПЕРЕПИСКИ: BOURTSEVAT@RAMBLER.RU

УДК 616.43-097-053.5(571.56)

Samsonova M.I.

The teenagers of the Republic of Sakha Yakutia height and develops endocrinology regulation

Pediatric center (Yakutsk)

Yakut research center KMP SB RAM

Abstract. We are examination 970 teenagers. We provide hormonal analysis (gipophiz-suprarenal system, gipophiz-thyroid system). The date of the hormone is detected that the parameters is depend to agers, sex, ethnic of the children and ecological condition on the region.

Key words. Teenagers, Yakutia, weight, height, hormone.

Introduction. The population health is depending to harmonic height and develops of the teenagers and children's. This factor is a basis to the development country [2]. Especially height and develops is a components biological process in population [4,6]. The endocrinology system has a big role to the height and develops humans, adaptation process. The endocrine status is determent to some factors: ecological, climatic, to sex, ages, and nationalities [3,5]. The goals to this article are detected especial to hormonal status native and migrant teenagers in Yakutia.

The methods and materials.

We are examination 970 teenagers ages- 10-17 years, 689-live to the villages, 281- on Town Yakutsk. Girls -435, boys-535. Nationalities: Sakha – 352, russia-153, smaller in number people to North-465. We are measure to weight, height, index Kettle, somatotype. The anthropometric characteristics detected by the date to examination children's and teenagers in Yakutia to the 2003-2008 [1].

We are provide investigation the hormonal analysis: adrenocorticotropin (AKTG), thyreotropin, 3-iodtironin, thyroxin, cortizol, 17-hydroxiprogesteron, dehydro-epi-androsteron-sulfat.

This work provide by the support to the ethic committees of the Yakut research center KMP SB RAM.

Results.

The gnomonic anthropometric date to the 77,8% teenagers, over 23% have a disharmonic develops. Meso-somatothype have a 55,6% girls, 62%- boys.

The puberty to migrants girls characteristics decrease to AKTG, than the native girls. To native boys have a decrease AKTG (diagram 1). The native teenagers have a corticotrophin activity of the hypophisis.

The cortizol is higher to the migrants teenagers than native ($p<0,05$) (diagram 2).

To diagram 3 presents that the hypophiz-thyreoid system is high activity to the Sakha teenagers than the native and migrants teenagers.

Заключение. The anthropometric examination detected some especially: acceleration, disharmonic of the physical develops. The adaptation teenagers to the northern condition are connecting to the activity hypophiz-suprarenalis, hypophiz-thyreoid system and determined to agers, sex, ethnic and ecological condition to the regions.

* - $p\leq0,05$

***Diagramm.* 1 AKTG (ng/ml) to the native and migrates teenagers from Yakutia**

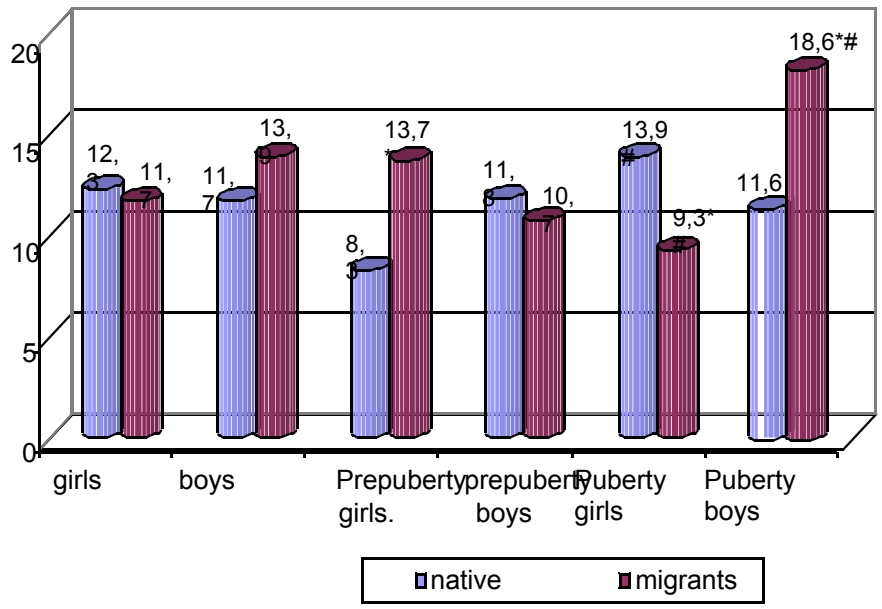


***Diagramm.* 2 Cortizol to the native and migrates teenagers from Yakutia**

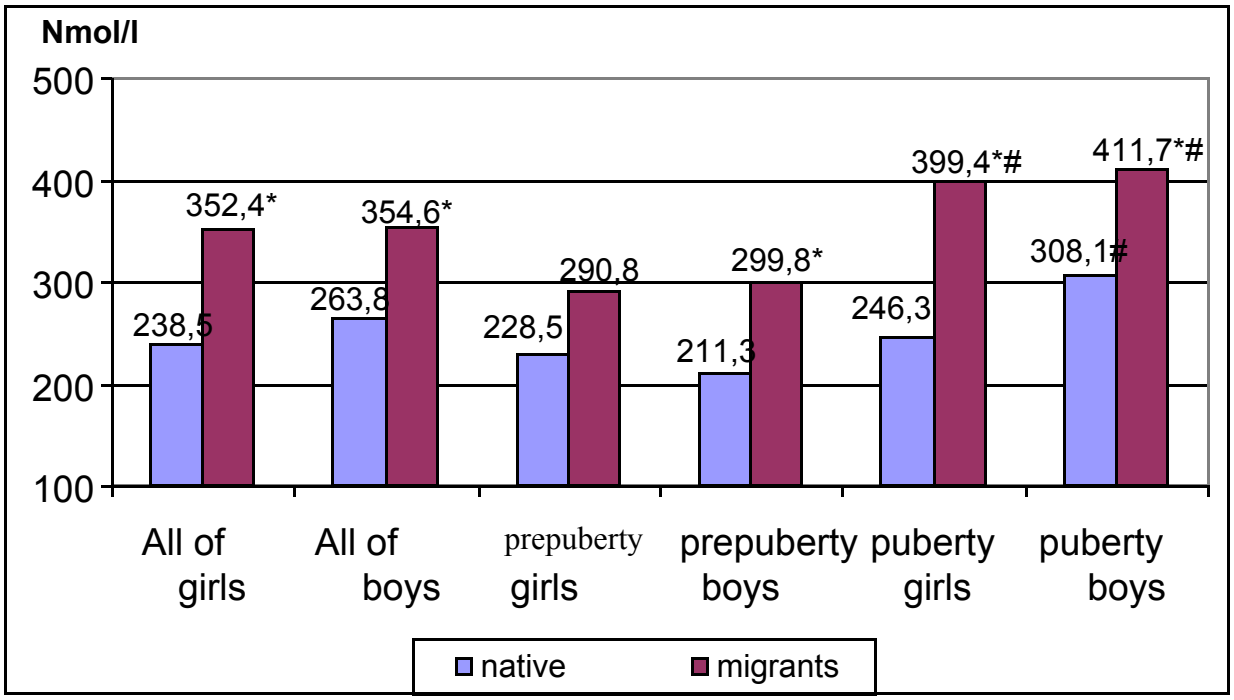
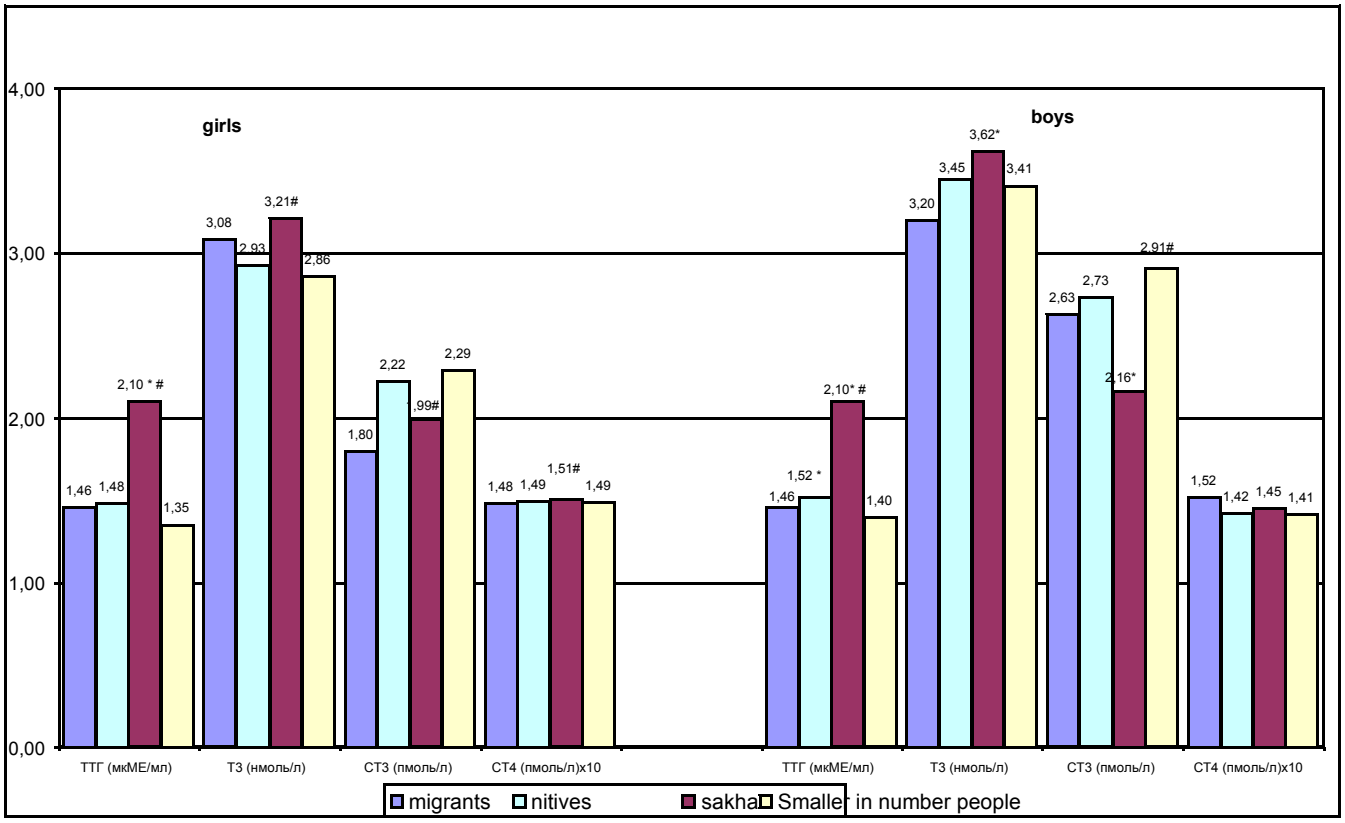


Diagramm.3 The hypophiz-thyreoid system to the native and migrates teenagers from Yakutia



Literature:

1. Anthropometric characteristics and blood presser to the children's Yakutia [MD, Chasnyk V.G. et all.]. Yakutsk, 2009. 48p.

2. Baranov A.A. The strategy «The Health and Develops teenagers Russia» /Baranov A.A., Kuchma B.P., Rappaport I.K. // Russian pediatric journal. 2011. N 4. P. 12-18

3. Kozlov V.K. The health condition children's and teenagers on the Far East. Novosibirsk: SB RAM, 2003. 288p.

4. The physical examination teenagers to 10-17 years ego on Xabarovsk/Rzankina M.F., Kuncevich S.A., Chernisheva N.V. Xabarovsk, 2008. 17p.

5. Uchakina R.V. The ecologo-physiological education hormonal status, physical and sexual develops children's to the Far North region.: avtoref. .. MD. M, 2006. 39p.

6. Yampolskaya Y.A. Tha regional and standardization to the examination anthropometric date to children's and teenagers //Pediatria. 2005. № 6. C. 73-76.

Samsonova Margarita Ivanovna-PhD, researcher Yakut research center KMP SB RAM

P.T. 39-56-07, Д.Т. 42-03-05, С.Т. 8964-419-78-76.

613.888

Influence the preparation of the new form of the combined hormonal oral contraception klayra the somatic and psychological status of women of reproductive age

Vertkin A.L., Nosova A.V.

Authors:
Vertkin A.L.- managing faculty of therapy pharmacotherapy with a rate of first aid Moscow
Nosova A.V.- assistent of faculty of therapy of pharmacotherapy with a rate of first aid of the Moscow

The resume of clause: In clause the problem influence of the new form of the combined hormonal oral contraceptive klayra on the psychological and somatic status of women of reproductive age reveals.

Contact: Vertkin A.L. kafedrakf@mail.ru

In Russia about two million abortions are made every day from which about one million – is iterant. The similar such practice has become traditional, and consequences being of great medical and social significances discased only among gynecologists. Meanwhile, artificial interruption of pregnancy have an influence on somatic and psychological status of woman [5], and these results in formation of neyroendocrine metabolic syndrome.

Besides two first years after abortion at 8 % of women have complications of inflammatory aerthology and in four years 20-25 % of women have violation of menstrual function begin failure of second phase of a cycle anovulation and relative hyperestrogenia [4]. These changes not only make worsen quality of a life of the women, but aggravate metabolic infringements, favouring early progress of atherosclerosis and occurrence of arterial hypertension [2].

The connection of abortion with psychological health is a problem discussed among wide circle of specialists[11]. Some authors demonstrate statistical correlation between abortion and stress, others mark out the term « postnatal syndrome » which includes itself the feeling of quilt, depression, emotional distance, aggression and thoughts of suicide [6].

So according to the results of statistics it is possible to prognostigate that the number of women of reproductive age subjected after abortion to the danger of somatic and psychological problems are increased (WHO, 2009).

In connection with this diminution of number of abortions with the help of modern methods such as contraception is the most effective prophylactic way of influence upon the organism of a woman on the whole and that is more some psychological problems of fertility aged woman is

explained by fear and unwillingness of pregnancy in unsuitable for work and career advance time.

Considerable role in psychological comfort of the woman is played the chosen way of contraception [7]. Safe method of contraception according to criterion of WHO (2009) are complex oral hormonal contraception. Besides contraceptive effect they have wide remedial profilactic influence improving prognosis and quality of women life [1]. So, contained in complex oral hormonal contraception estrogens stimulating the synthesis oxide nitrogen, promote relaxation smooth-muscular cells vascular endothelium enlarging density of a bone fabric [9,10], stabilize menstrual cycle, normalize duration and intensity of menstrual cycle that like bleeding which brings to liquidation of iron deficiency anemia [8].

At the same time, despite obvious preference complex oral hormonal contraception their wide use in the structure of other methods of contraception in Russia no more that 5-6 % [1]. We know that no only among patients but doctors too in that number, including physicians exist ungrounded opinion about side action complex oral hormonal contraception, that restricts their use in practice.

At the same time against a background really can appear side effects including headaches, intermenstruel bleeding, depressing and troubled disorder and also hardning of lactiferous, leg vein thrombosis weight enlargement. These phenomenon are connected with hyperestrogenia frequency of which can be decreased by the means of low ring in complex oral hormonal contraception contraception of estrogen component combining it with progestins and selection of contraceptive sexual hormones [3].

The object of investigation

Determine the influence new form complex hormonal oral contraception klayra on psychological and somatic status of reproductive aged women.

Materials and methods of investigation

Investigation was made in 3 stages. In the first part of the work we stated back-ward glance at somatic status, use pharmaco-therapy and obstatic-gynecologic antecedent 1218 women of reproductive age (average 36±4,1 years) according to archives files of large-scale polyprofile hospital (n=741), of four polyclinics (n=361) and two women's dispensary (n=116).Board of direction of the Department of public health services SAO of the city of Moscow. Besides it on the basis of reports of autopsy has been analysed the structure and complications of a somatic

pathology of 164 women of reproductive age (average age 34±2,1 years), heaving died in four hospitals of Moscow, Bryansk, Kazan in the course of the last three years (2009-2011). Revealing of a morphological substratum of illnesses of these women average age of which was no more that 44 has promoted the formation of getting a idea about dangerous illnesses of the women of that age (see scheme 1).

The value of somatic status of 1218 women (average age of 36+4,1 years)		
Hospital (GCB №50) 741 women (average age 35±2,7 years)	Hospital (GCB № 159,GP №164,GP№ 155,GP№28 361 women (average age 37±3,2 years)	Women's dispensary (WD №4, WD №5) 116 women (average age 29±3,8 years)
Analysis and comparison of the structure of the basic illnesses and their complications which became the reason of applicalling to the medical aid		
Analysis and comparison of medicinal therapy, with the intention of basic somatic disease		
Analysis and comparison of frequency of revealing family antecedent availabiling of permanent sexual partner, use of methods of contraception, obstetrician gynecologic antecedent		
Study of cause of lethality, outcomes of 164 women (average age of 34+2,1 years), died in 4 hospitals of Moscow, Bryansk and Kazan in 2009-2011 year		

The scheme 1. Design of the first research part

The second part of research consisted in sociological questioning of 97 women of different age, among whom 22 (average age 36,6±4,1 years) were physician-general practitioners (group A), and rest 75 (average age 33,1±4,5 years) - patients (group B). Average age of call. The average age of women who were questioned make up 35,3±4,3.

Picture 1. Age structure of women who were questioned

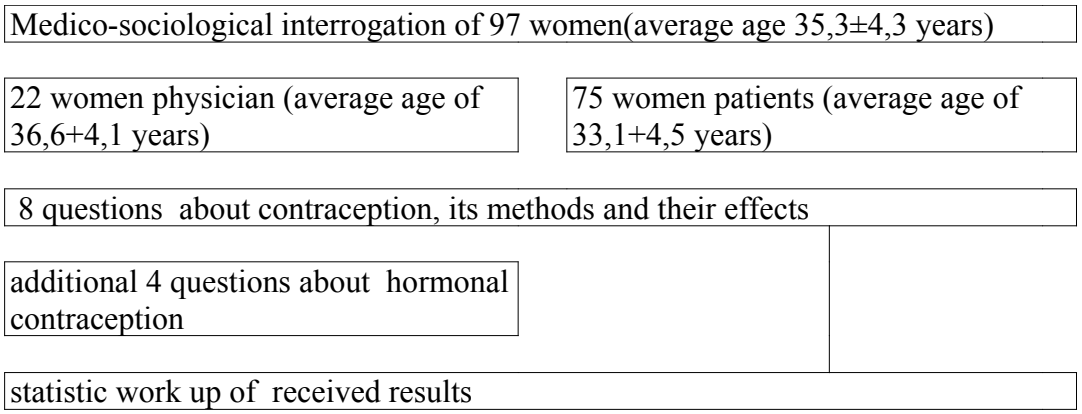
Ass we see from picture .1, most of women were of reproductive age.
Questionnaire was carried out with status and the level of their possession of information in the problem of efficiency and safety available methods of contraception.
8 questions were put to all women including:

1. Do you now about connection between the quality of contraception and your health state?
2. What method of contraception is the most effective in your opinion?
3. What method of natural contraception is the most effective?
4. What of method of barrier contraception is the most effective?
5. What of method of chemical contraception the most effective?
6. What of method of hormone- containing contraception the most effective?
7. About what apprehension connected with talking hormones do you know?
8. What methods of contraception do you see ?

Besides interrogate no man from the group must have answered to additional questions, touching upon hormonal contraception to wit:

1. Do you now with what components of complex hormonal oral contraception tied the risk of development of undesirable phenomenon?
2. What do you think, what facts promote hyperestrogenemia ?
3. Do you know about distinction of composition and regime of dosage of different oral contraception's?
4. Must a therapeutic together with a gynecologist take part in prescription of hormonal contraception?

Design of the second stage of analysis is presented in scheme 2.



The scheme 2. Design of the second part of research

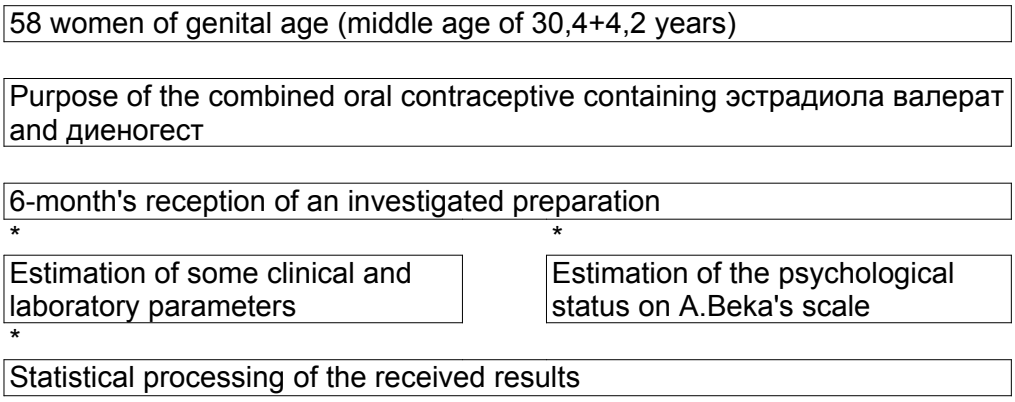
The third part of research was dedicate to the study of property of new KOK (preparation klayra, Bayer Shering Farma, Germany), containing in its composition valerat of estadiol and digionat, which are at most approached to estrogenus and progestins being uproduced organism of a woman.

Dynamic regime of dosage of preparation is chaacterised by lowing dosage of progestine for a period of 26 days of use of active pills. Estradiol of valerit after taking a medicine and during absorption in a mucous membrane of intestines it is quickly split up to valerian acids and estradiol, identical natural which absorption in mucous membrane of bowels splits and estrodiol indefical to natural concentration of which is supported on relatively stable level for the space of the whole cycle.

Dienogest is belonging to the to the progestagens of fouth generation as it does not contain in its structure etilic group, responsible for possible hepatotoxic effect, possesses high affinity to progesterone receptor calls forth its high selectivity.

58 women of genital age have been included in the given investigation phase (average age 30,4±4,2 years), by which gynecologist in strict with the scheme of the therapy registered by the company-manufacturer the investigated preparation has been appointed. Duration of therapy has made for 6 months, and the period of supervision - 12.

Efficiency of spent therapy's analyzed by quantity of cases of the developed pregnancy, and safety - on dynamics of the psychological status of the women estimated by means of a scale of depression Becca, a level arterial pressure (AP), to a condition carbohydrate (definition basal maintenances of glucose and insulin of whey of blood with calculation of an index of sensitivity of fabrics to insulin an exchange of lipid and elecrolite , to change of an index of weight of a body, parameters coagulogram (activated partial tromboplastin time, fibrinogen, MNO) and an exchange of iron. The design of the third part of work is presented on the scheme 3.



The scheme 3. Design of the third part of research

Statistical processing of results carried out in programs « Microsoft Exce1» and «Statistica» (Version 6.0). Used such statistical techniques, as: calculation of average value, calculation of a standard deviation, calculation of reliability and criterion Student, construction of diagrams and histograms. Distinctions between groups considered authentically significant at $p < 0,05$.

The received results and their discussion

In the first part of research it has been revealed, that from 741 women of genital age 476 (64,2 %) - have been hospitalized in gynecologic branch, 218 (29,4 %) - in surgical, and the others 47 (6,3 %) - in therapeutic clinic. From 476 patients hospitalized in gynecologic branch by an occasion for hospitalization at 309 (64,9 %) there was a threat noncarrying of pregnancy, at 52 (10,9 %) - ovarian apoplexy, at 48 (10,2 %)-disfunctional uterine bleeding, at 38 (7,9 %) - extrauterine pregnancy and at 29 (6,1 %>) – torsion legs ovarian . (fig. 2)

Figure 2. The reasons of hospitalization in gynecologic branch of women of reproductive age

Artificial interruption of pregnancy under medical indications has been made to 178 women (37,4 %) which middle age has made 29,0±6,1 years, that below middle age of other women hospitalized in a hospital.

Thus, greater prevalence of diseases of the female reproductive system demanding stationary, frequently operative, treatment, high frequency of development of a pathology of the pregnancy dictating necessity of its interruption, and also younger age of this category of patients testifies to presence of lacks of questions of informing of women on planning pregnancy and a choice of a method of contraception.

Special attention in work gave a question of presence at surveyed women of the constant partner, which clinical physicians have specified only at 783 (64,3 %) from 1218 patients, including in a hospital at 62,6 % (n=464) and on

Outpatient reception hours in a polyclinic - at 56,8 %) (n=205). At the same time doctors of female consultations have reflected data of the family anamnesis in 98,3 % cases (n=114).

Thus, specification of presence of the constant sexual partner and the question of contraception naturally following it remains obscure in 35,7 % of cases.

The most informative medical documents containing rather developed data on applied ways of preventive maintenance of pregnancy, out-patient cards of the patients consisting on the dispensary account in female consultations were.

So, from 116 women whose archival documents were in female consultations, in 103 cases doctors paid attention of 88,8 % to a regularity of a sexual life of the patient, feature of an applied method of contraception or absence of those.

Return situation is observed in a hospital where the given parameter has made 32,4%o (n=240), and on outpatient reception hours - only in 12,7 % of cases (n=46).

Thus, gathering of the anamnesis reflecting genital function of women, being at reproductive age and methods of preventive maintenance of pregnancy applied by them, is made extremely seldom (n=389), that makes 31,9%o from all women with the kept genital function. Thus the

given questions are set in most cases (n=366) by advisers-gynecologists (94,1 %) while therapists pay attention to problems of female reproductive health and questions of contraception of the young patients in single instances - 5,9 %) (n=23).

From 1218 women of various age groups included in research of the obstetric -gynecologic anamnesis has been collected by clinical physicians only in 579 cases (47,5 %). So, from 579 patients in the anamnesis at 236 (40,8 %>) took place artificial interruption of undesirable pregnancy, and at 82 of them (14,2%) - abortions were repeated (*Table 1*.).

Table 1. Influence of abortions on the somatic status of women (n=579)

Quantity of abortions in the anamnesis	**Quantity of somatic diseases**
0 (n=343)	1,2±0,1
1 (n=154)	1,2±0,1
2 (n=36)	1,4±0,2
3 (n=29)	2,6±0,2*
More than 3 (n=17)	3,1±0,3*

* *corresponds meanings p <0,05*

As follows from tab. 1, together with the number of cases of artificial interruption of pregnancy the number of somatic diseases increases. So, at patients with three and more abortions in the anamnesis the somatic status is never heavier on 61,3 % in comparison with women resorted to abortion.

At the others 639 women (52,5 %) the information in section of the obstetric-gynecologic anamnesis in medical documents was absent.

At 893 (73,3 %) from 1218 women managed to be analysed a spectrum of medical products, which patients have been compelled to accept on a regular basis in connection with any somatic pathology. So, from 893 women fertile

age long medicinal therapy 349 patients (39,2 %) from whom 143 (40,9 %) - accepted anti-inflammatory preparations, 96 (received 27,5 %) - vitamins, 75 (21,5 %) – hypertensive preparations, 68 (19,5 %) - the medicines influencing bronchial passableness, 34 (9,7 %) - the medical products applied at diseases of bodies of digestion, 27 (7,7 %) - antimicrobic preparations, 14 (4,1 %)-system glucocorticosteroids and 11 (3,2 %) - other medicines (including sedative, корригирующие a metabolism, etc.). The information on long therapy of the others 325 (26,7 %) patients in medical cards was absent (fig. 3).

Figure 3. Medicamentous therapy of women of reproductive age

Thus, in case of occurrence of any possible pathology connected with infringement of reproductive function and demanding purpose of this or that hormonal preparation (including combined), its selection approximately at a quarter of women is complicated in a view of absence of the information on in parallel spent therapy and about potentially possible medicinal interaction.

From 164 died women of reproductive age the reason of death of 102 patients (62,2 %) was malignant new growths, at 39 (23,7 %) - sharp alcohol- associate of a condition and alcoholic visceropaty, and at 23 (14,1 %) - infectious diseases and their complications. In structure of malignant new growths at 69 (67,4 %) were a cancer of female reproductive bodies, including at 37 (36,3 %) - cancer of a mammary gland. 17 (52,8 %) have been diagnosed ovary cancer, 11 (35,9 %) - a cancer of a body of a uterus, and 4 (11,3 %) - the diagnosis of neck a uterus cancer, at 22 (21,8 %) - cancer of a pancreas and in 11 (10,6 %) cases - cancer of other localizations (lungs, kidneys, a stomach, etc.) (рис.4) is established.

Figure 4. Structure of malignant new growths - the reasons of death of women of reproductive age

Thus, at women of reproductive age high prevalence of somatic diseases takes place, most adverse of which are malignant new growths of bodies of female reproductive system. In this connection pertinently to remind of value of estrogen in preventive maintenance of cancer of female reproductive bodies and a role the complex hormonal oral contraception as the aid donor of sexual hormones.

According to the lead questioning of 97 women existence of communication between frequency of artificial interruption of pregnancy and the somatic status is assumed only with 24,5 % of women (n=25), namely 16 of group " And " (72,7 %) and 6 - from group " In " (8,1 %) (p <0,05).

Figure 5. An estimation of efficiency of contraception by respondents

Apparently from fig. 5, in opinion of 68,2 % of women of group " And " (n=15) and 44,1 % - groups " In " (n=33) the most effective method of contraception is the reception of hormonal contraceptive means. However natural a method of preventive maintenance of pregnancy of 9,1 % of women of group " And " (n=2) and consider as more successful 14,7 % - group " In " (n=11), and barrier - 22,7 %) (n=5) and 37,3 %) (n=28), accordingly. A chemical method of contraception consider as the best 4,1%o women-patients (n=3.) 40,9 % of women-doctors (n=9) and 41,3%o women-patients (n=31) as the most effective method of natural contraception consider the interrupted sexual certificate (p> 0,05). The temperature method is the most effective for 27,3% (n=6) and 16,1 %) (n=12) (p> 0,05), calendar - for 18,2 % (n=4) and 32,1 % (n=24) (p> 0,05), and cervical- for 13,6 % (n=3) and 10,7 % (n=8) women (p> 0,05), accordingly.

59,1 % of women-doctors (n=13) and 77,3 % women-patients (n=58) consider as the most effective method of barrier contraception use of man's condoms (p>0,05).

The application cervical hubcap is the most successful method in opinion of 13,7 % (n=3) and 13,3 %> (n=10) women (> 0,05), vaginal diaphragms - 9,1 % (n=2) and 8,1 % (n=6) (0,05), and female condoms - from the point of view of 18,2 % (n=4) and 1,3 % (n=1) women (0,05), accordingly.

68,2% women-doctors (n=15) and 44,1 % of women-patients (n=33) consider as the most effective method of chemical contraception use vaginal candles (p <0,05). Application vaginal tampons is the most effective for 9,1 % (n=2) and 34,7 % (n=26) (p <0,05), and vaginal cream-for 22,7 % (n=5) and 21,3 % (n=16) women (> 0,05), accordingly. 22,7% women-doctors (n=5) and 30,7 %> women-patients (n=23)

consider as the most effective method of hormonal contraception reception the complex hormonal oral contraception (p <0,05). The reception not combined gestagens (mini-drank) is the most successful way of contraception in opinion of 18,2 % (n=4) and 16,1 %> (n=12) women (0,05), and use postcoital hormonal contraception - 4,1 % (n=3) women-patients (p <0,05). Besides the use of hormonal injections as much as possible effectively at a sight of 4,5 % and 4,1% (n=3) the interrogated women (> 0,05), hormonal hypodermic implant - 4,5% (n=1) and 2,7 % (n=2) (0,05), hormonal rings - 27,3 % (n=6) and 22,7%o (n=17) (0,05), hormonal plasters - 4,5 % (n=1) and 5,3 % (n=4) (> 0,05), hormonal intrauneri spirals - 18,2 % (n=4) and 14,7 % (n=11) women (p <0,05), accordingly.

Thus, the awareness of women in questions of efficiency and safety of contraception is ambiguous, that, possibly, causes difficulties in a choice them of a contraceptive method. However if in questions of efficiency of natural, barrier and chemical contraception women have a certain clearness in a choice of the most effective hormonal method of contraception obvious difficulties are observed. Moreover, women-patients are assured of efficiency the complex hormonal oral contraception of the woman-doctors on 8 % less often. Ambiguity of the attitude to hormonal contraceptive means can be explained from positions of safety (fig. 6).

Figure 6. Knowledge of respondents of an opportunity undesirable effects of reception of hormonal contraceptives

Apparently from fig. 6,7 % of women-doctors (n=19) and 70,7 % (n=53) women-patients are afraid of superfluous weight of a body (> 0,05). Superfluous growth of hair 22,7 % (n=5) and 33,3 % (n=25) women are afraid (0,05), occurrence of new growths - 63,7 % (n=14) and 24,1 % (n=18) (p <0,001), depressive and disturbing frustration - 36,7 % (n=8) and 48,1 % (n=36) (> 0,05), thromboses-72,7 % (n=16) and 54,7 % (n=41) (0,05), and infringements of a menstrual cycle-18,2 % (n=4) and 64,1 % (n=48) women (p <0,05), accordingly.

Thus, the basic arguments against hormonal contraception at the majority of women are the risk of adiposity, superfluous growth of hair, depressive and disturbing frustration and trombosis complications. Moreover, women-doctors on 39,6 % more often than women-patients connect reception of hormonal contraceptive means with the development of new growths, including malignant. And on the contrary, women-patients on 45,9 % are afraid of infringements menstrual cycle on a background of reception of hormonal contraceptives is more often.

Doubts in safety of hormonal methods of contraception which overwhelming majority of women (68,2 % of women of group " And " (n=15) and 44,1 %) women of group " In " (n=33)) admit to the most effective, at the same time lead to low frequency of reception of hormones (fig. 7).

Figure 7. The methods of contraception are used by investigated women

Apparently from fig. 7, prefer hormonal contraception of 38,1 % women (n=37). Thus the majority 42,3% (n=41) - chooses a barrier method of protection from undesirable pregnancy, and 7,2 % on a regular basis resort to natural and chemical methods of contraception (n=7) and 12,4 % (n=12) women, accordingly.
Interrogation of 22 women-doctors the complex hormonal oral contraception has shown their lack of information in mechanisms of action and possible by-effects. So, the KOK of 40,9 % of doctors (n=9) connects the undesirable phenomena with estrogen and 27,3%o (n=6) with a gestagen component, 13,6 % (n=3) - with high dozes of both hormones, a part the complex hormonal oral contraception , and 18,2% (n=4) - cannot answer on this question.
In opinion of 5 doctors (22,7%) hyperestrogenemya 3 doctors (13,6%) - adiposity, 4 doctors (18,2 %) promote hormone- modeless to a tumour, stress situations, and the others 10 clinical physicians (45,5 %) were at a loss to answer. Nicotinic and alcoholic dependences, and also associated with them any of clinical physicians to risk factors of development hyperestrogenemia has not carried a pathology. Any of the interrogated doctors-therapists have not answered a question on a chemical compound and a mode of batching of various hormonal contraceptive means, at the same time of expediency of purpose and a choice the complex hormonal oral contraception the joined decision of the gynecologist and the therapist had been convinced 19 interrogated women (86,4 %).

Thus, women of reproductive age, including being doctors of the general practice, have shown low awareness in the general questions of contraception, and also in aspect of efficiency and safety of a hormonal method of protection from undesirable
A background of 6-month's therapy the KOK of oppression of the psychological status of the women who have entered into research, it has not noted been. Moreover, during supervision the mean score of symptoms of depression has decreased with 12±1,1 up to 9±0,7 (for 41,7 %) ($p < 0,05$), and alarms - with 7±0,8 up to 5±0,4 (on 44,6 %) ($p < 0,05$).
Apparently from tab. 2, on a background of therapy by the combined hormonal oral contraceptive containing estradioli valerat and dienogest a level systolic and diastolic the arterial pressure (> 0,05), carbohydrate (> 0,05), lipid (> 0,05) and hydrous an exchange (> 0,05), an index of weight of a body (0,05), parameters coagulagramm (> 0,05) and an exchange of iron (> 0,05) have not undergone changes. Besides on a background of its application at one of patients pregnancy has not come.

Table 2. Dynamics of clinic-laboratory parameters on a background of therapy KOK

Parameter	**Before therapy**	**After therapy**
IWB, kg/м2	28,7±4,3	27,8±3,9
Index QUICKY, point	0,365±0,012	0,371±0,011
systolic arterial pressure, мм.hg.	128±7	127±6
diastolic arterial pressure, мм.hg.	78±3	79±4
PTT, sec.	32±1,8	34±1,4
fibrinogen, g/l	2,5±0,2	2,4±0,2
INR	0,9±0,05	0,8±0,05
hemoglobin, g/l	121,4±2,7	123,3±1,9
serum iron, micromoll/l	24,4±0,8	24,9±0,9

general cholesterol, mmoll/l	3,8±0,3	3,7±0,2
glucose of blood, mmoll/l	4,1±0,2	4,0±0,4
kalium of blood, mmoll/l	3,9±0,9	4,1±0,6
sodium of blood, mmoll/l	137,6±2,2	139,2±2,4

* *corresponds meanings p <0,05*

Conclusion:

The findings reflect the high efficiency and safety of the known KOK, allow you to use it as a hormonal contraceptive drug in a wide range of women of reproductive age, not affecting the oppression of mental status, and has no influence on hemodynamic parameters and parameters of carbohydrate, lipid, water-salt exchange.

Literature:

- Adamyan, L.V.Genetic aspects of gynecologic diseases // L.V. Adamyan,V.A.Spitsin,V.N.Andreeva-M:,Medicina,2008.-240p.
- Kulakov, V.I.Treatment of female and male's barreness // V.I.Kulakov, B.V.Leonov, L.N. Kuzmichev-M:,Medicina,2005- 592p.
- Podzolkova, N.M.Differential diagnostics in gynecology // N.M.Podzolkova, O.L.Glazkova-M:,Medicina,2003.-129p.
- Saveleva, G.M.Obstetrics. // G.M. Saveleva, V.I. Kulakov, A.N. Strishakov-M:,Medicina,2000-262p.
- Hlomov, K.D. The influence psychoemotional and individual- characteristical on current of pregnancy at women with threat of interruption.// K.D. Hlomov, S.N. Enicolopov / Prenatal psychology and perental psychology.- 2007.- №3.- P. 38-49.
- Adler, N.E. Psychological factors in abortion // N.E.Adler, H.P.David, B.Major/ American Psychologist.-2007.- № 47.-P. 1194-1204.
- Coleman, P.K. Abortion and mental health: quantitative synthesis and analysis of research published 1995–2009. // P.K. Coleman/ The British Journal of Psychiatry.2007.- 199 (3).P. 180-186.
- Graser, T. Climodien (estradiol valerate 2 mg plus dienogest 2 mg) is safe and effective in the treatment of postmenopausal complaints. // T. Graser/ Climacteric. 2001.-№ 4.-P. 332-342.
- Katsuki, Y. Effects of dienogest (a synthetic steroid) on coagulation, fibrinolysis, and platelet aggregation in female monkeys. // Y. Katsuki, H. Nobukata, T. Ishikawa/ Toxicol Letters. 1998.-(98).P.105-113.

•Muck, A.O. Effects of estradiol and dienogest on potential markers of vascular function in postmenopausal women // A.O.Muck/ Jenapharm Company Documentation 1998.-21p.
•Pope, L. M. Postabortion psychological adjustment: Are minors at increased risk? // L. M. Pope, N. E.Adler, J. M. Tschann /Journal of Adolescent Health.2008.-№ 29.P. 2-11.

616.1-083.98(571.56)

The analysis of trombolisis therapies application at a pre-hospital stage in Yakutsk

Morozov S.N№., Donskaya A.A.I, Ivanov K.I.i, Myarina L.M.4

Moscow State University of Medicine and Dentistry№
North-Eastern Federal University named after M.K. AmmosovI
Cardiology republic clinic Ministry of Health Republic Sakha (Yakutia)i
Yakutsk city hospital 4

The articles present the analysis of results of patients treatment from acute coronary syndrome at a pre-hospital stage has been made: the group of patients received TLT and not received was compared. Positive dynamics in group with TLT on electrocardiography attributes was found at 63 %, to clinical attributes at 84 % of the patients; in distinction from patients who did not received TLT: positive electrocardiography dynamics in 38%, clinical dynamics in 59%. Technique TLT is effective and safe and can be spent by any emergency brigade.

Key words: acute coronary syndrome, trombolysis therapy

Despite of huge efforts of scientific and practising doctors lethal outcomes from cardiovascular diseases in the Russian Federation remains high. [5] In many respects it is caused by difficulties at introduction intravascular methods of treatment of a acute coronary syndrome. Even in the capital of Russian Federation Moscow these methods are used at 5-10 % of patients. [7] In Republic of Sakha (Yakutia)-territorial dissociation of settlements and remote transport schemes do not allow to deliver the patient to an operational table in recommended time period -90 minutes from the beginning of occurrence by a symptom of acute coronary syndrome. Therefore

trombolysis therapy (TLT) for today is leading strategy. On the data presented by 2007 year, TLT it is spent in a megapolis to 13 %, in average cities in 19 %, in a countryside in 9 %. [8,9] and in a Yakutsk in 9,9 % from quantity of possible procedures TLT [1]. So little percent of TLT is caused by that procedure is carried out only by specialized emergency brigades, despite of recommendations to spend TLT to medical assistant's and linear emergency medical brigades [6]. Besides at a pre-hospital stage the ambulance doctor for diagnostics of acute coronary syndrome uses the poor analysis, clinical and the electrocardiogram results and doesn't always apply biochemical markers a myocardium. In this connection, the TLT can be not effective . However by good organization of process and desire of organizers of public health services, doctors, medical assistants of first aid it is possible to introduce this technique, including regional hospitals and ambulance stations and to increase quantity of the lead procedures.

The purpose of research: To carry out the comparative analysis of results of treatment of patients from acute coronary syndrome at a pre-hospital stage.

Materials and methods: 327 patients are included in research from acute coronary syndrome addressed for medical aid on first aid Station of Yakutsk in 2009-2010. Depending on tactics of treatment patients are divided into 2 groups: the first group included 127 patients at whom along with standard medicamentous therapy it was spent TLT. Indications to carrying out of TLT were: rise of a segment ST an electrocardiogram on 0,1 мВ and more not less in 2 adjacent assignments, or for the first time the diagnosed blockade of the left leg of His bunch, which were accompanied by a corresponding clinical picture of acute coronary syndrome [3]. The second were 91 patients of acute coronary syndrome for whom they did not spend TLT and intravascular by the various reasons medical interventions (refusal of the patient, presence of contra-indications, absence angiography services). In compared groups the significant distinctions was not found (p = 0,09-0,777;> 0,05) (table 1).

Table 1. Initial data of the surveyed patients

parameter	1 group (n=127)	2 group (n=91)	p
age, years	56,6=7±8,2	57,1±10,3	
male	101(79,5%)	72(79,1%)	p>0,05
arterial hypertension	112(88,1%)	79(86,8%)	p>0,05
smoking	46(36,2%)	31(34,0%)	p>0,05
diabetes	11(8,7%)	8(8,8%)	p>0,05
hypercholesterolemia	50(39,4%)	37(40,7%)	p>0,05

angina pectoris	71(55,9%)	50(54,9%)	p>0,05
Symptom-needle* up to 6 hours	88(69,3%)	64(70,3%)	p>0,05
Symptom-needle* up to 12 hours	111(87,4%)	80(87,9%)	p>0,05

*-time from the beginning of an attack till the moment of medicamentous treatment by a emergency brigade of first aid.

Investigated groups were comparable. All patients according to the report received the treatment including therapy by nitrates, β-adrenoblockers, antithrombotics, analgetics. It was spent monitoring of an electrocardiogram, arterial presser, frequency of intimate reductions for patients. With the purpose of the further treatment patients have been delivered to Yakutsk State clinical Hospital . The statistical analysis was spent by means of the software package Statistica 6,0: the Fisher's criterion was aplied, distinctions was considered as significant at p <0,05.

Results:

Patients of advanced age were studied. Middle age in 1 group: 56,6=7±8,2, in the 2 group - 57,1±10,3. By analysis of electrocardiogram of localization of defeat of a myocardium in investigated group prevailed defeat anterior - septal area : In 1 group – anterior- septal -55(43,3%), posterior-inferior 46(36,2%), anterior – 9(7,1%), lateral -9(7,1%), circular-apex - 6(4,7%), posterior -2(1,6%); In 2 group - anterior - septal -45(49,5%), posterior - inferior 32(35,2%), anterior – 7(7,7%), lateral -2(2,2%), circular - apex - 4(4.4%), posterior -1(1,1%).

The data indicate that the level of ST-segment elevation in the studied groups was the most up to 5mm. AT 1 group 1-3мм −20(15,7%); 3-5мм -85(66,9%) ;5-7мм -18(14,2%); 7 and above -4 (3,2%). In 2 group : 1-3мм −12(13,2%); 3-5мм -62(68,1%) ;5-7мм -16(17,6%); 7 and above -1 (1,1%). Restoration of blood circulation was estimated on approach to or normalization of a segment ST on 90 and 180 minutes from the beginning of treatment. In 1 group: on 90 minute – decrease ST on 50 % and more at 23 (18,1%), normalization ST is at 10 (7,9%%) patients; decrease ST less than 50 % at 38(29,9%) without dynamics ST at 66(52%) patients; on 180 minute : - decrease ST on 50 % and more at 58 (45,7%) is from normalization ST at 40 (31,5%); decrease ST less than 50 % 22(17,3%); without dynamics ST at 47(37%). In 2 group : on 90 minute – decrease ST on 50 % and more at 8 (8,8%) normalization ST at 3 (3,3%) (p<0,05); decrease ST less than 50 % at -18(19,8%); without dynamics ST at - 65(71,4%)

(p<0,01); on 180 minute decrease ST on 50 % and more at 13 (14,3%)(p<0,01) is from normalization ST at 7 (7,7%)(p<0,01); y decrease ST less than 50 % at 21 (23%); without dynamics ST at 57(62,6%)(p<0,01).

The given significant distinctions show that is more restoration of blood circulation is effectively reached at use of TLT already on 90 minute and increases by 180 minute.

In the first group of patients complications as acute coronary syndrome, and TLT were observed: at 11(8,7%) patients has developed cardiac shock , at 14(11%) fibrillation ventricular , at 5(3,9%) supraventricular tachicardia, at 12(9,4%) ventricular tachicardia , at 5(3,9%) cardiogenic shock , at 6(4,7%) atrio-ventricular block, at 5(3.9%) blockade of the bundle of His, at 1(0,8%) the moderate bleeding, at 2 (1,6%) the big bleeding by criteria GUSTO . In the second group following complications of acute coronary syndrome were observed: at 19 (20,9%) patients has developed cardiac shock , fibrillation ventricular at 17 (18,7%)

Clinical dynamics was shown by decrease in intensity of a painful syndrome, from the beginning of treatment for 90 minute. Decrease in intensity of a painful syndrome in a thorax at patients with acute coronary syndrome occurred as follows: : in 1 group the beginning of treatment 16,5% fill discomfort , middle pain 25,2% and strong pain 58,3% . During 90 minuets 35 (27,6%) patients with pain cropped completely at 6 (4,7%) was severe pain at 14 (11%) and average intensity of pain at 72 (56,7 %) retained a sense of discomfort. In patients of 2 groups : the pain a strong character in 45% , they felt discomfort 22% , the average intensity of pain at 33%, 90 minutes from start of treatment is completely cropped only 12 (13,2%) , severe pain was at 21 (23%) , the pain of medium intensity 16(17,6 %) and feeling of discomfort 42(46,2 %).

At a pre-hospital stage positive dynamics on electrocardiogram attributes was observed at 63 % patients of 1 group and 38 % by patients of 2 groups (p <0,01), positive clinical dynamics at 84,3 % patients of 1 group and 59,4% 2 groups (p <0,01). Thus, with the big share of confidence it is possible to approve, that current of acute coronary syndrome at the patients who have received TLT pre-hospital more favorable.

During supervision over patients at a stationary stage for 30 day we observed the following picture of disease presented in table 2.

Table 2. Results of supervision over patients of acute coronary syndrome for 30 day

parameter	1 group (n=156)	2 group (n=171)	p
interrupted heart attack of a myocardium	5(3,9%)	2(2,2%)	-
Development Q-miocardial infarction	107(84,3%)	86(94,5%)	p<0,01
Relapse not fatal miocardial infarction	2(1,6%)	14(15,4%)	p<0,01
Incompetence circulation Killip I-II	77(60,6%)	53(58,2%)	-
Incompetence circulation Killip III-IV	26(20,5%)	22(24,2%)	-
lethality from all reasons	8(9,6%)	17(18,7%)	p<0,01
lethality from cardiac reasons	7(7,1%)	13(14,3%)	p<0,01

Development of Incompetence circulation Killip I-II (φ=0,349; p>0,05) and Incompetence circulation Killip Ш-1V(φ=0.648; p>0,05), interrupted heart attack of a myocardium (φ=0.728; p>0,05) is statistically not significant, that is development of insufficiency of blood circulation TJIT did not influence.

Not complicated clinical current of acute coronary syndrome (without lethal cases, without relapses of a heart attack of infarct myocardium, progressing of Incompetence circulation), we have noted: in 1 group at 65 (51,2%) patients , in 2 group at 18 (19,8%) patients (p<0,01)

During supervision from 218 patients for 30 day have died 25 (11,5%), from them at20 (9,2%) the reason of death was a pathology of heart, and at5(2,3%) the other reasons. The reasons of lethality are presented in table 3.

Table 3. The reasons of death at patients in investigated groups for 30 day

parameter	1 group (n=127)	2 group (n=91)	p
cardiogenic shock Killip III-IV	5(3,9%)	9(9,9%)	p<0,05
exterior broken heart	2(1,6%)	3(3,3%)	-
ventricular fibrillation		1(1,1%)	-
onkologi		2(2,2%)	-
pulmonary thromboembolism		1(1,1%)	-
bleeding	1(0,8%)	1(1,1%)	-
total	8(6,3 %)	17(18,7%)	p<0,01

Apparently from the presented data, higher lethality was observed at patients of 2 group (18,7%) in comparison with patients of 1 group (6,3%), the same tendency has been noted at the analysis of cardiac lethality reasons (1 group-7,1 %; 2 group-14,3 %) also we have received authentic distinctions in groups at cardiogenic shock, these terrible complications oceure at the patients who have received TLT at a pre-hospital stage less often.

We carried out the comparative analysis of complications at patients of 1 group with results of clinical researches GISSI-1, ISIS-2, ASSET [2,4,10,11]. At patients after carrying out TLT following kinds of complications were observed (table 4.).

Table 4. Complications after lead TLT in comparison

complications	GISSI-1 (n=5860;SK)	ISIS-2 (n=8592;SK)	ASSET (n=2512;TAP)	1 group (n=127)
big bleeding	0,3	0,5	1,4	1,6
moderate bleeding	3,7	3,5	6,3	0,8
allergic reaction	2,3	4,4	0	0
anaphylaxis	0,1	0	0	0
hypotension	3	10	HP	6,3
stroke	1,1	0,7	1,1	0
intracranial hemorrhage	HP*	0,1	0,3	0

The note. *HP - it was not registered.

The insignificant variability of data is caused by observance of standards and use of modern preparations for TLT. In general data are comparable and testify to low risks of complications, risks of operated complications do not exceed 10 %.

In the second group of patients already at a pre-hospital stage frequent complication of treatment was arrhythmia, accompanied a heavy ischemia of a myocardium or the expressed Incompetence circulation 13,2%, despite of spent treatment there were attacks of a angina pectoris at 15,4 % not fatal relapse was observed by IM and 9.9 % have died from accrueing left ventricular insufficiency or cardiogenic shock. Thus, complications from TLT are minimal, in comparison with complications of acute coronary syndrome.

For revealing factors influencing on lethality at acute coronary syndrome we carried out the analysis of clinical, tool data: a floor, age, presence of an arterial hypertension, a diabetes, localization of defeat, relapse by IM, the used methods of treatment. By results of the analysis significant distinctions between lethality and refusal from TLT (φ=3,685 %; $p < 0,01$); localization of defeat of a myocardium of a superior wall (φ=2,764 %; $p < 0,01$); that presence of an anemia (φ=2,403 %; $p < 0,01$). Authentic distinctions on number of lethal cases and cardial complications between the patients received various trombolitics (alteplasa, tenecteplasa) it is not received.

The conclusion:

For today TLT is an effective and often applied method recanalisation at acute coronary syndrome of pre-hospital stage. The complications connected with carrying out TLT do not exceed average and do not influence the forecast. Lead TLT promoted the proved reduction of complications at acute coronary syndrome and to lethality decrease . Yielded results allow to recommend persistently TLT to wide application at acute coronary syndrome at a pre-hospital stage not only specialized brigades, but also linear and medical assistant's brigades.

Conclusions:

1. At carrying out pre-hospital trombolisis at patients with acute coronary syndrome with lifting segment ST the rekanalization on the electrocardiogram criteria is more effective on the 90th minute, than at persons receiving standard medicamentous therapy.

2. At patients with acute coronary syndrome with lifting segment ST, not received TLT at the pre-hospital stage such complications as cardiogenic shock and fibrillation of ventricles that conducts to increase in the lethality in this group more often develop.

3. Carried-out TLT in the combination to standard medicamentous therapy accelerates receiving positive clinical dynamics at patients acute coronary syndrome with lifting segment ST.

4. Carried out at the TLT pre-hospital stage reduces the hospital lethality from all reasons and from cardiological the reasons in 2 times.

The literature:

5 Annual reports of the «First aid station Yakutsk» 2010y.-86p.

6 ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. Randomized trial of intravenous streptokinase, oral aspirin, both or neither among 17, 187 cases of suspected acute myocardial infarction: ISIS-2.//Lancet.-1988.(2).P.349-360.

7 .National clinical recommendation. RNOC. –M.: Publishing house Sitselia-Poligraf,-512p.

8 Gruppo Italiano per lo Studio della Streptochinasi nell'infarto Miocardica (GISSI): Long-term effects of intravenous thrombolysis in acute myocardial infarction: final report of the GISSI study.//Lancet.-1987.(2).P.871.

9 Oganov, R.G. Cardio vascular disease in Russian Federation in second half XX centuries: tendencies, the possible reasons, prospects./ R.G. Oganov, T.Y. Maslennicova // Kardiologiia.- 2000.№6.P.4-8.

10 Order Minzdravsocrazvitiya RF № 599-n 19 August 2009 year. «About the statement of the order of rendering of scheduled and urgent medical aid to the population of the Russian Federation at illnesses of system of blood circulation of a cardiological structure».

11 Ruda, M.Y. The organization of the help of patients from at acute coronary syndrome a pre-hospital stage. The report on congress «Progress of cardiology and decrease cardiovascular death rates »./ M.Y. Ruda- Moscow, 3 June 2008 y.

12 Shetkina, I.N. Trombolysis therapy of a sharp heart attack of a myocardium at a pre-hospital stage of rendering assistance. / I.N. Shetkina- Saratov: Publishing house Saratov med. acad, 2008.-24p.

13 Shetkina, I.N. Economic efficiency trombolysis therapies of a heart attack of a myocardium with rise of a segment ST at a pre-hospital stage of rendering assistance. /I.N.Shetkina// Cardiology.-2009. Materials of VI All-Russia scientifically-educational forum. P. 330-331.

14 Wilcox, R.G.Trial of tissue plasminogen activator for mortality reduction in acute myocardial infarction: Anglo-Scandinavian Study of Early Thrombolysis (ASSET)./ R.G.Wilcox,[etal.]//Lancet.-1988.(2).P.525.

15 Wilcox, R.G. For the Anglo-Scandinavian Study of Early Thrombolysis. Effects of alteplase in acute myocardial infarction: 6-month results from the ASSET study: the Anglo-Scandinavian Study of Early Thrombolysis./ R.G Wilcox, G.von der Lippe, C.G. Olsson //Lancet.- 1990. (335).P.1175.

УДК 616.33/34-002.44-005.1-008-092:616.12

SINGULARITIES OF HEMOSTASIS SYSTEM IN PATIENTS WITH EROSIVE AND ULCEROSIS CHANGES OF GASRODUODENAL ZONE AND THEIR INTERACTION WITH CARDIAC PATHOLOGY

E.A. Sorokina[1], A.A. Fokin[2], V.A. Akhmedov[1], V.B. Loenko[1],
L.E. Starzhevskaya№, I.L. Fayil№
№ - The Omsk Regional Clinical Hospital, Omsk
I - The Cheliabinsk National Medical Academy, Cheliabinsk**

Introduction

The erosive and ulcerative gastroduodenal changes in not only gastroenterological problem, but also a heart and vascular diseases problem too, because the existence of ulcerative gastroduodenal changes restrict the pathogenetical treatment of heart and vascular diseases, especially for use the drugs that have influence on haemostasis because of high risk of gastrointestinal bleeding formation like aspirin, clopidogrel at patients with ischemic heart disease, anticoagulants at patients with atrial fibrillation, artificial heart valves and at patients with open and X-ray heart surgery [6]. Thus, the estimation of haemostasis and fibrinolisis system at this category of patients is very important that become the aim of our investigation on patients with ulcerative and erosive gastroduodenal changes with concomitant heart diseases that demand open heart surgery (cardiopulmonary bypass, surgical treatment of heart valves defects, and aorta aneurism) on preoperative period.

The aim of this study was to evaluate the haemostasis and fibrinolisis system at the patients with ulcerative and erosive gastroduodenal changes with concomitant heart diseases that demand open heart surgery on preoperative period.

Methods

The study involved 157 patients including 118 males and 39 females. Patient age ranged between 15 and 72 years (mean age 54,03±10,18 years) (M±σ)) admitted to the Heart Surgery Department of the Omsk Regional Clinical Hospital, than underwent open heart surgery because of ischemic heart disease (n=115) or heart valves defects with different etiology including insufficient of aorta valve at patients with aorta aneurisms (n=42). All patients were divided on two clinical groups – first group (n=115) with endoscopy verified ulcerative and erosive gastroduodenal mucosa changes (91 males and 24 females, mean age 54,25±10,10 years (M±σ));

second group (n=42) – without endoscopy verified ulcerative and erosive gastroduodenal mucosa changes (24 males и 15 females, mean age 53,43±10,37 years (M±σ)).

At two groups were investigated some haemostasis and fibrinolisis system parameters like partial platelets time (normal value 26-37 sec), platelet index (normal value 85-110%), platelet correlation (normal value 0,95-1,25), fibrinogen (normal value 1,8-3,5 g/L); soluble fibrinmonomer complex (normal value 0,0- 5,5 mg/100 ml); - XIIa – depended fibrinolisis (normal value 4-10 min).

All investigated haemostasis and fibrinolisis system parameters were estimated at both group of patients with ischemic heart disease and heart valves defects and also we estimated the influence of the atrial fibrillation on haemostasis and fibrinolisis system parameters.

Thus, according to various estimates [4], the prevalence of high stress level on trombinemia we were estimated the correlation interactions between soluble fibrinmonomer complex and high anxiety level that was estimated using K.K. Yakhin and D.M. Mendelevitch questionnaire. In accordance with this questionnaire the parameter more than +1.28 indicate on good health level, and less than +1.28 on high anxiety level [3].

Results and Discussion

In first and second groups of patients all mean haemostasis and fibrinolisis system parameters are presented in Table 1.

Thus, we can consider than at patients with ulcerative and erosive gastroduodenal mucosa changes the more often changes of haemostasis system parameters are occurred in compare with patients without endoscopy verified ulcerative and erosive gastroduodenal mucosa changes and more intensive changes was estimated for mean level of soluble fibrinmonomer complex in first group. All another parameters were not significant between two groups. In both groups of patients in some cases was estimated the hypocoagulation presence with internal coagulation mechanism (11% in both group) and external coagulation mechanism (18% in both group). Anyway the hypocoagulation parameters were not so significant for limit the open heart surgery (platelet correlation 1,5 and more, partial platelets time 48 sec and more) and we can consider that they were connected with uses of oral anticoagulants before hospitalization and more excessive consumption of coagulative factors in condition that associated with thrombinemia.

The depress of XIIa – depended fibrinolisis registated at 27% of patients with ulcerative and erosive gastroduodenal mucosa changes in compare with 16% of patients without endoscopy verified ulcerative and erosive gastroduodenal mucosa changes.

Probably these changes have the common pathogenetic mechanisms with increase of soluble fibrinmonomer complex and connected with inflammatory changes in atherosclerotic plague in patients with ischemic heart disease, damages of heart valves in valve defects, damages

of gastric mucosa and all these changes have at the same time protective effects against the bleeding from ulcerative and erosive gastroduodenal mucosa defects.

The features relating to the increase of the thrombinemia at patients with ulcerative and erosive gastroduodenal mucosa changes probably can be an organism reaction on the damage to prevent bleeding from mucosa destructive zone. This fact have a valuable clinical meaning at pathogenetical features of heart and vascular pathology:

- for patients with ischemic heart disease thrombinemia can be a risk factor of atherosclerosis progression, including after open heart surgery - cardiopulmonary bypass [2];

- for patients with damages of heart valves in valve defects the risk of embolic complications increases and also increases the artificial heart valves dysfunction and decrease the regression of the left ventricle hypertrophy at patients after aortal valve prothesis because of aortal valve stenosis [1,5];

- for patients with atrial fibrillation with different etiology the risk of stroke is increases because of brain vessels embolia [2].

Thus, we can consider the increase level of soluble fibrinmonomer complex as a valuable diagnostic test for dynamic investigation in clinical practice at patients with high risk factors during treatment of ulcerative and erosive gastroduodenal mucosa changes with antisecretic drugs and eradicational therapy at patients with Helicobacter pylori positive analysis. Also the increase level of soluble fibrinmonomer complex can be used as a valuable diagnostic test at patients during decrease of thrombinemia after anticoagulation therapy. This strategy can decrease the probability of gastrointestinal bleeding and decrease the risk of a fatal consequences of thrombinemia for heart and vascular system.

The next stage of our investigation was to estimate of the atrial fibrillation role in the haemostasis parameters changes, because according to several researchers the absence of the effective left atrial function at the patients with atrial fibrillation can lead to a blood stream decrease in auricle of the left atrial and this mechanism can increase the blood coagulation properties [2]. In first and second groups of patients the frequency of atrial fibrillation was 22 (19,1%) and 13 (30,9%) cases (Chi-Square test 1,85, p=0,17), that was indicated the absence of significant differences between groups, moreover the atrial fibrillation frequency was more low in first group than in second. Thus, we can consider that at patients with ulcerative and erosive gastroduodenal mucosa changes the thrombinemia can not be depend from atrial fibrillation frequency. However this fact can not exclude that atrial fibrillation can be an independent risk factor of thrombinemia formation. That is why we were investigated the mean haemostasis and fibrinolisis system parameters at patients included in our work (Table 2).

Thus, we can consider that thrombinemia parameters at patients with atrial fibrillation were higher than in patients without atrial fibrillation, however this was not significant. Probably the decrease of thrombinemia parameters at patients with atrial fibrillation was connected with uses of oral anticoagulants before hospitalization to prevent embolic complications as we can see on the presence of hypocoagulation with external coagulation mechanism, that according to several researchers can be a laboratory marker of the anticoagulants action [4].

The next stage of our investigation was to estimate the comparative analysis the haemostasis and fibrinolisis system parameters at patients with ischemic heart disease and heart valves defects for two groups of patients (Table 3).

Thus, we can consider the significant differences in more higher meanings of soluble fibrinmonomer complex at the patients with ischemic heart disease compared with the patients with heart valves defects especially more higher parameters of soluble fibrinmonomer complex at patients with ulcerative and erosive gastroduodenal mucosa changes. This fact can be connected with pathogenesis of atheroscrerosis that can initiate the coagulation system activity and also this fact can be connected with more often use of the anticoagulants therapy at patients with heart valves defects.

According to several researchers about important role of stress in thrombinemia formation [4], we were estimated the diagnostic meaning of anxiety level that was estimated using K.K. Yakhin and D.M. Mendelevitch questionnaire. In our group of patients the mean anxiety level that was +1,70 $\pm$ 3,48 ($M\pm\sigma$), and on calculating the Spearman correlation coefficient the correlation with thrombinemia was not significant r_s=0,17. As we can see the role of stress reaction in a realization of thrombinemia is not significant in both group of patients.

Conclusion

In conclusion, according to our results the haemostasis and fibrinolisis system parameters changes at patients that demands open heart surgery on preoperative period connected with thrombinemia formation that is higher at patients with ulcerative and erosive gastroduodenal mucosa changes and at patients with ischemic heart disease. Trombinemia is a common pathogenetic mechanism for ulcerative and erosive gastroduodenal mucosa changes formation and for formation of the ischemic heart disease, heart valves defects. In patients with ulcerative and erosive gastroduodenal mucosa changes trombinemia plays a protective role, but for heart and vascular diseases it plays a pathological action. The atrial fibrillation increases the blood soluble fibrinmonomer complex concentration. The hypocoagulation with external coagulation mechanism decreases the blood soluble fibrinmonomer complex concentration. The blood soluble fibrinmonomer complex concentration must be investigated in dynamics to control the effectiveness of the therapy. The role of stress reaction in a realization of thrombinemia is not

significant in patients with and without ulcerative and erosive gastroduodenal changes with concomitant heart diseases that demand open heart surgery.

Table 1

The parameters of haemostasis and fibrinolisis system at patients with (first group) and without (second group) ulcerative and erosive gastroduodenal mucosa changes

№	Parameters	Mean values, M±σ		Deviation of parameters	The frequency of pathological changes n (%)		
		ulcerative and erosive gastroduodenal mucosa changes			ulcerative and erosive gastroduodenal mucosa changes		In the whole group
		Positive	Negative		Positive	Negative	
1	partial platelets time	32,52 ±6,77	31,46 ±3,78	hypocoagulation with external coagulation mechanism	15 (13%)	2 (5%)	17 (11%)
				Decrease of partial platelets time	7 (6%)	1 (2%)	8 (5%)
2	platelet index	89,90 ±13,69	93,73 ±8,15	hypocoagulation with external coagulation mechanism (decrease of platelet index)	23 (20%)	6 (14%)	29 (18%)
3	platelet correlation	1,14 ±0,27	1,11 ±0,19	hypocoagulation with external coagulation mechanism (increase of platelet correlation)	23 (20%)	6 (14%)	29 (18%)
4	fibrinogen	3,33 ±1,12	3,07 ±0,83	Hyperfibrinogenemia	39 (34%)	9 (21%)	48 (31%)
5	soluble fibrinmonomer complex	7,45 ±6,52**	4,01 ±3,85**	thrombinemia	63 (55%)^^	13 (31%)^^	76 (48,4%)
6	XIIa – depended fibrinolisis	8,66 ±7,03	10,47 ±9,04	Depression of XIIa XIIa – depended fibrinolisis	31 (27%)	7 (16%)	38 (24%)
7	#			The presence of deviation of any parameter	91 (79%)^^	25 (60%)^^	116 (74%)

** $P = 0.02$ (t= 3,217) *vs* second group - *P*-value based on two-sided paired *t*-test.

^^ - P-value is from comparison (Chi-Square test) between two group of participants p<0,01,

- only categorical means estimated.

Table 2

The haemostasis system parameters in patients with and without atrial fibrillation

№	Parameters	Mean values, M±σ	
		Atrial fibrillation	
		Presence (n=35) M±σ	Absence (n=122) M±σ
1	partial platelets time	34,61±8,25	31,46±5,0
2	platelet index	82,21±18,56***	93,80±8,0***
3	platelet correlation	1,30±0,44***	1,09±0,16***
4	fibrinogen	3,28±1,22	3,25±0,99
5	soluble fibrinmonomer complex	7,22±7,23	6,21±5,67
6	XIIa – depended fibrinolisis	10,71±10,33	8,82±6,83

***- p<0,001 (t> 4,0).*P*-value based on two-sided paired *t*-test.

Table 3

The parameters of haemostasis and fibrinolisis system at patients with ischemic heart disease, heart valve defects at patients with (first group) and without (second group) ulcerative and erosive gastroduodenal mucosa changes

№	Parameters	ischemic heart disease (M±σ)			heart valve defects (M±σ)		
		ulcerative and erosive gastroduodenal mucosa changes		In the whole group (n=115)	ulcerative and erosive gastroduodenal mucosa changes		In the whole group (n=42)
		Presence (n=87)	Absence (n=28)		Presence (n=28)	Absence (n=14)	
1	partial platelets time	32,44 ±6,23	31,11 ±4,14	32,07 ±5,74	32,76 ±8,30	32,23 ±2,86	32,58 ±6,88
2	platelet index	92,51 ±10,91	94,46 ±7,04	93,05 ±9,99^^^	82,85 ±17,70	92,15 ±10,29	85,88 ±16,15^^^
3	platelet correlation	1,11 ±0,21	1,12 ±0,29	1,12 ±0,23^	1,28 ±0,44*	1,02 ±0,09*	1,23 ±0,41^
4	fibrinogen	3,36 ±1,08	3,23 ±0,89	3,32 1,03	3,23 ±1,23	2,76 ±0,58	3,08 ±1,07
5	soluble fibrinmonomer complex	8,31 ±6,62**	4,68 ±4,18**	7,30 ±6,24^^	5,04 ±5,67	2,58 ±2,62	4,22 ±4,97^^
6	XIIa – depended fibrinolisis	8,24 ±4,99	10,72 ±10,37	9,0 ±7,07	9,48 ±10,0	10,08 ±7,01	9,70 ±8,92

* - *P*-value based on two-sided paired *t*-test *p<0,05 (t>2,0), ** - p<0,01 (t>2,7) patients with ulcerative and erosive gastroduodenal mucosa changes *vs* patients without ulcerative and erosive gastroduodenal mucosa changes

^ - *P*-value based on two-sided paired *t*-test ^p<0,05 (t>2,0), ^^ - p<0,01 (t>2,8), ^^^ p=0,001 (t>3,0) patients with ischemic heart disease *vs* patients with heart valve defects in the whole group of patients

LITERATURE

Goncharova N.S., Moiseeva O.M., Alyoshina G.M., Shlyachto E.V. The meaning of trombopenia in patients with stenosis ostii aortae // Arterialnaya hypertenzia. – 2009. – Vol. 17, №5. – P. 575-579.

Zateyschikov D.A., Zotova I.V., Dankovceva E.N. Tromboses and antitrombotic therapy in arythmias. – M.: Praktika, 2011. – 296 p.

Mendelevich V.D. Clinical and medical psychology. –M.: Medpress, 1999. – 514 p.

Momot A.P. Hemostasis pathology. Principles and algorithms of the clinical and laboratory diagnostics. –Spb.: FormaT, 2006. – 208 p.

Kiavar M., Sadeghpour A., Bakhshandeh H. et al. Are prosthetic heart valve fibrin strands negligible? The associations and significance // J. Am. Soc. Echocardiogr. - 2009. – Vol. 22. - №8. – P.890-894.

Papatheodoridis G.V., Papadelli D., Cholongitas E. et al. Effect of Helicobacter pylori infection on the risk of the upper gastrointestinal bleeding in users of nonsteroidal anti – inflammatory drugs // Am. J. Med. – 2004. – Vol. 116. - №9. – P. 601-605.

SINGULARITIES OF HEMOSTASIS SYSTEM IN PATIENTS WITH EROSIVE AND ULCEROSIS CHANGES OF GASRODUODENAL ZONE AND THEIR INTEACTION WITH CARDIAC PATHOLOGY

E.A. Sorokina№, A.A. FokinI, V.A. Ahmedov№, V.B. Loenko№,
L.E. Starzhevskaya№, I.L. Fayil№
№ - The Omsk Regional Hospital, Omsk
I - The Cheliabinsk National Medical Academy, Cheliabinsk**

Summary. The condition of hemostasis and fibrinolis systems was studied in patients with erosive and ulcerosis changes of gastroduodenal zone (n=115) and persons of control group (n=42) in period of preparing to the heart surgery for evaluation of pathogenic consequences in combination of these pathologic conditions and for generation of curing tactics in this category of patients. It is revealed, that thrombinemia is the most common mechanism for erosive and ulcerosis changes of gastroduodenal zone and for cardiovascular diseases (ischemic heart disease, cardiac vices, auricle fibrillation) and it play's the protection role in the first case and the pathogenic role in the second case. The presence of mucous layer destruction in upper part of the gastroduodenal tract, ischemic heart disease and atrial fibrillation are further risk factors for magnifying of filamentous fibrin strands plasma level. The magnitude of thrombinemia increases in presence of hypocoagulation, containing one, which specifying of peroral ahticoagulants using. The sequential treatment is validated in this category of patients, including erosions and ulcers of gastroduodenal zone epithelisation and decrease of thrombinemia. It is marked that the stress is non reliable significant factor for FSs increase in patients with cardiac pathology in period of preparation for the heart surgery with cardiopulmonary bypass.

Key words. Thrombinemia, erosive and ulcerosis changes of gastroduodenal zone, heart surgery, hemostasis.

Author's information

Sorokina Elena Albertovna – k.m.n. The physician of the X-ray-surgery diagnostic and treatment unit of the Omsk Regional clinical hospital

Fokin Aleksey Anatolievich – MD, professor, the chief of Surgery department of Cheliabinsk National Medical Academy

Akhmedov Vadim Adilevich – MD, professor of the Faculty Therapy Department of Omsk State Medical Academy, Omsk, Russia

Loenko Vitaliy Borisovich - k.m.n, the chief of X-ray-surgery diagnostic and treatment unit of the Omsk Regional clinical hospital

Starzhevskaya Larisa Evgenievna – k.m.n. The physician of the heart-surgery unit of the Omsk Regional clinical hospital

Fayil Irina Leonidovna - k.m.n. The physician of the hemostasis laboritary unit of the Omsk Regional clinical hospital

УДК 616.155

Bulieva Natal'ya Borisovna,
PhD (Medicine), associate professor of the department of hospital therapy,
Khanty-Mansi State Medical Academy, Khanty-Mansiysk, Russia;
tel.: 8-953-105-24-58,
e-mail: a-editor@yandex.ru

Specifics of infectious complications among patients with hemoblastosis in the Far North in comparison with the central region

Abstract. The epidemiologic evidence of infections complications in patients with hematologic malignancies of Khanty-Mansiysk' and Ulyanovsk' regions is analyzed in the article. It was set the prevalence of localized forms of the infections over generalized. The pneumonia was determined as more often complication at the hematologic patients of Khanty-Mansiysk' region, especially it was set in the cases of non-Hodgkin lymphoma and chronic lympholeukemia. The frequency of gynecological infections at the patients with hemoblastosises was reliably higher in Ulyanovsk' region, but stomatitis had been verified in Khanty-Mansiysk. The prevalence of urological infections was higher in patients with multiple myeloma and gastrointestinal infections were more often complications in the case of non-Hodgkin lymphomas.

Key words: hemoblastosises, infections complications, Khanty-Mansiysk' region, Ulyanovsk' region.

Opportunistic infections among patients with hemoblastosis continue to be relevant problems of modern hematology as such patients much more often expose to pyoinflammatory complications than patients who are not affected by tumorous diseases; 80-85% of such patients have infectious processes and it is a menacing and negative complication [6,7,10]. At that in many cases the infections are of a nosocomial ("hospital") kind, they proceed extremely hard and badly yield to therapy owing to high resistance of the causative agents [4,8].

Oncologic patients' infections are running rather intricately due to progression of bacterial-bacterial and fungal-bacterial infections [1,9]. The analysis of causes of death among oncologic patients showed that infectious complications were the cause of death of more than 1/3 of oncologic patients [2,3,5].

Therefore oncologic patients constitute the high-risk group as for progression of opportunistic infections; that is why the study of territorial features of infectious complications among patients with hemoblastosis is the urgent problem of clinical medicine.

Objectives of the research. The research tasks included the analysis of localized and generalized forms of infectious complications, estimation of occurrence frequency of complications of various localization (respiratory and urinary system, gastro-intestinal tract, vaginitis and vulvovaginitis) along with chronic lymphocytic leukemia, multiple myeloma, Hodgkin's and non-Hodgkin's lymphomas among patients living in Khanty-Mansi Autonomous District in comparison with the Ulyanovsk region.

Data and methods. 1770 case-records (Khanty-Mansi Autonomous District – 1010, the Ulyanovsk region – 760) from 2004 to 2010 were used for the data of the research. The valuation of difference of infectious complications frequency rates of different allocation was carried out under criterion h^2 and considered statistically-valid when $p<0,05$.

Results and discussions. From 1770 case-records analyzed non-Hodgkin's lymphomas (NHL) constituted 35,1% (622 per.), chronic lymphocytic leukemia (CLL) – 29,3% (519 per.), multiple myeloma (MM) – 17,2% (304 per.), Hodgkin's granuloma (HG) – 18,4% (325 per.).

In estimating the total numbers of infectious complications among all the hospital records under analysis 1715 cases were registered. Among them: Khanty-Mansi Autonomous District -888(51,8%); Ulyanovsk region – 827 (48,2%), with authenticity under criterion h^2 - $p<0,05$.

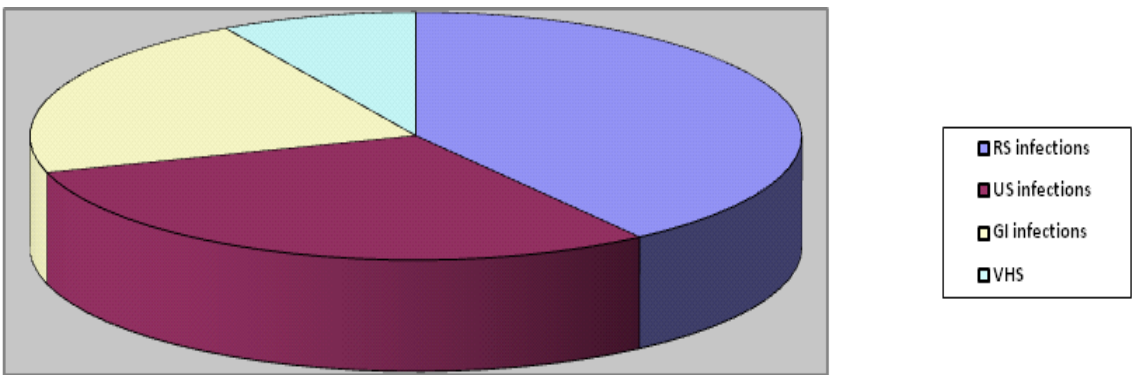
Of all the infectious complications the localized forms have constituted the major part – 97,3%. See picture 1. Thereafter, the generalized forms have constituted 2,7%.

8,0%

21,0%

29,2%

39,1%



Picture 1. The structure of infectious complications depending on the process localization.

Notes: RS – respiratory system, US – urogenital system, GI – gastro-intestinal tract, VHS – virus hepatitis.

Further the analysis of peculiarities of infectious complications among patients with hemoblastosis in Khanty-Mansi Autonomous District and Ulyanovsk region was carried out. The data received is presented in Table 1.

Table 1

The structure of infectious complications among patients with hemoblastosis in Khanty-Mansi Autonomous District and Ulyanovsk region in 2004-2010

	Khanty-Mansi Autonomous District n=888	**Ulyanovsk region n=827**	**p**
Respiratory system infections			
Bronchitis/tracheitis	153 (17,2%)	119 (14,5%)	p=0,1
Pneumonia	87 (9,8%)	35 (4,2%)	p<0,05
Pharyngitis	75 (8,4%)	112 (13,5%)	p<0,05
Sinusitis	41 (4,6%)	48 (5,8%)	p>0,05
RS infections in all	356 (40,1%)	314 (38,0%)	p>0,05
Urogenital system infections			
Pyelonephritis	49 (5,5%)	44 (5,3%)	p>0,05
Cystitis/urethritis	84 (9,5%)	62 (7,5%)	p>0,05
Vaginitis/vulvovaginitis	91 (10,2%)	171 (20,7%)	p<0,05
US infections in all	224 (25,2%)	277 (33,5%)	p<0,05
Infections of gastro-intestinal tract			
Stomatitis	148 (16,7%)	92 (11,2%)	p<0,05
Enteritis	47 (5,3%)	39 (4,7%)	p>0,05
Ulcerous-necrotic colitis	19 (2,1%)	15 (1,8%)	p>0,05
GI infections in all	214 (24,1%)	146 (17,7%)	p<0,05
Virus hepatitis B	65 (7,3%)	72 (8,7%)	p>0,05
Generalized forms			
Sepsis (According to criteria ACCP/SCCM, 1992.)	29 (3,3%)	17 (2,1%)	p>0,05

p – distinction veracity according to F-ratio test (unilateral).

According to the data submitted the distinctions by prevalence of infectious complications of respiratory system among patients with hemoblastosis living in the northern districts in comparison with the central districts, all-in-all, did not authentically differ and compiled 356 (40,1%) against 314 (37,9%), p>0,05. At that time we should notice some distinctions in clinical entities of infectious complications: prevalence of pneumonias in Khanty-Mansi Autonomous District in opposition to the Ulyanovsk region (9,8% and 4,2%, p<0,05), and opposite changes in pharyngitis prevalence (8,4% and 13,5%, p<0,05). See Table 1. As for urinary and genital systems there was authentically indentified rather a large number of complications in the central

region (35,6%), in comparison with the northern one (28,5%, p<0,05), primarily owing to gynecological infections (p<0,05, Table 1).

The analytical data of infectious complications occurrence among patients with different forms of hemoblastosis are presented in Tables 2 and 3.

So in Khanty-Mansi Autonomous District the frequency of occurrence of infectious complications of respiratory system was the highest upon NHL and CLL (13,4%, accordingly 119 cases). See Table 2. There are more cases of bronchitis/tracheitis and pneumonia in these groups. Spread of pharyngitis and sinusitis among patients with different forms of hemoblastosis did not differ much. Occurrence of urologic and gynecologic infections was the highest upon MM - 76 cases, 8,6%; then - CLL - 56 cases, 6,3%; further - NHL (52 cases, 5,8%) and HG (40 cases, 4,5%). See Table 2. Of all GI infections the most accounted for NHL - 92 patients, 10,4%. Generalized infections in the northern region constituted 3,3% cases from their total number (29 patients), the frequency due to NHL was the highest - 14 patients, 1,6%.

Table 2

Localization of infectious complications among patients with hemoblastosis in Khanty-Mansi Autonomous District over the period of 2006-2010

Infectious complications n=888	**Clinical entities of hemoblastosis**			
	NHL	**HG**	**CLL**	**MM**
Respiratory system infections				
Bronchitis/tracheitis n=153	51 (5,7%)	24 (2,7%)	60 (6,7%)	18 (2,0%)
Pneumonia n=87	36 (4,1%)	18 (2,0%)	20 (2,3%)	13 (1,5%)
Pharyngitis n=75	21 (2,4%)	14 (1,6%)	25 (2,8%)	15 (1,7%)
Sinusitis n=41	11 (1,2%)	9 (1,0%)	14 (1,6%)	7 (0,8%)
RS infections in all n=356 (40,1%)	119 (13,4%)	65 (7,3%)	119 (13,4%)	53 (6,0%)
Urogenital system infections				
Pyelonephritis n=49	8 (0,9%)	13 (1,5%)	7 (0,8%)	21 (2,4%)
Cystitis/urethritis n=84	26 (2,9%)	12 (1,3%)	18 (2,0%)	28 (3,2%)
Vaginitis/vulvovaginitis n=91	18 (2,0%)	15 (1,7%)	31 (3,5%)	27 (3,0%)
US infections in all n=224 (25,2%)	52 (5,8%)	40 (4,5%)	56 (6,3%)	76 (8,6%)
Infections of gastro-intestinal tract				
Stomatitis n=148	68 (7,7%)	32 (3,6%)	30 (3,4%)	18 (2,0%)
Enteritis n=47	17 (1,9%)	13 (1,4%)	12 (1,3%)	5 (0,6%)
Ulcerous-necrotic colitis n=19	7 (0,8%)	6 (0,7%)	4 (0,5%)	2 (0,2%)
GI infections in all n=214	92 (10,4%)	51 (5,7%)	46 (5,2%)	25 (2,8%)
Virus hepatitis B n=65	21 (2,3%)	15 (1,7%)	23 (2,6%)	6 (0,7%)
Generalized forms				
Sepsis (According to criteria ACCP/SCCM, 1992.) n=29	14 (1,6%)	6 (0,7%)	7 (0,8%)	2 (0,2%)

% - percent ratio of generalized and localized infectious complications among patients with hemoblastosis of total number of infections.

The retrospective analysis of case records of patients with hemoblastosis in the Ulyanovsk region(Table 3) showed that prevalence of respiratory system infections was the highest among patients with NHL (106 cases, 12,8%) and CLL (84 cases, 10,2%), less – with HG (75 cases, 9,1%), minimum with MM (49 cases, 5,9%). In accord with nosological structure bronchitis/tracheitis and pharyngitis constituted the major part among infectious complications of respiratory system: NHL – 4,7% and 4,6%, HG - 3,3% and 3,5%, CLL – 4,1% and 3,3%, MM – 2,3% и 2,2% of total number of cases. There was the minimum number of cases of pneumonia in the region. Infectious complications of urogenital system were most often registered in case of CLL (86 cases, 10,4%) and MM (78 cases, 9,4%). Among all the infections of this localization in the Ulyanovsk region dominated gynecological complications (vaginitis and vulvovaginitis) in case of NHL - 4,8%, HG - 3,5%, CLL - 7,9%, MM - 4,4% of total number of cases. Your attention is specifically drawn to the largest number of gynecological complications among patients with CLL.

Table 3

Localization of infectious complications among patients with hemoblastosis in the Ulyanovsk region over the period of 2006-2010

Infectious complications n=827	**Clinical entities of hemoblastosis**			
	NHL	**HG**	**CLL**	**MM**
Respiratory system infections				
Bronchitis/tracheitis n=119	39 (4,7%)	27 (3,3%)	34 (4,1%)	19 (2,3%)
Pneumonia n=35	12 (1,5%)	9 (1,1%)	8 (1,0%)	6 (0,7%)
Pharyngitis n=112	38 (4,6%)	29 (3,5%)	27 (3,3%)	18 (2,2%)
Sinusitis n=48	17 (2,1%)	10 (1,2%)	15 (1,8%)	6 (0,7)
RS infections in all n=314	106 (12,8%)	75 (9,1%)	84 (10,2%)	49 (5,9%)
Urogenital system infections				
Pyelonephritis n=44	11 (1,3%)	8 (1,0%)	7 (0,8%)	18 (2,2%)
Cystitis/urethritis n=62	16 (1,9%)	9 (1,1%)	14 (1,7%)	23 (2,8%)
Vaginitis/vulvovaginitis	40 (4,8%)	29 (3,5%)	65 (7,9%)	37 (4,4%)

n=171				
US infections in all n=277	67 (8,0%)	46 (5,6%)	86 (10,4%)	78 (9,4)%
Infections of gastro-intestinal tract				
Stomatitis n=92	34 (4,1%)	19 (2,3%)	28 (3,4%)	11 (1,3%)
Enteritis n=39	14 (1,7%)	12 (1,5%)	10 (1,2%)	3 (0,4%)
Ulcerous-necrotic colitis n=15	6 (0,7%)	5 (0,6%)	2 (0,2%)	2 (0,2%)
GI infections in all n=146	54 (6,5%)	36 (4,4%)	40 (4,8%)	16 (1,9%)
Virus hepatitis B n=72	24 (2,9%)	17 (2,1%)	22 (2,6%)	9 (1,1%)
Generalized forms				
Sepsis (According to criteria ACCP/SCCM, 1992.) n=17	8 (1,0%)	5 (0,6%)	3 (0,4%)	1 (0,1%)

% - percent ratio of generalized and localized infectious complications among patients with hemoblastosis of total number of infections.

The number of infections of gastro-intestinal tract among patients with hemoblastosis was lower than in the northern region and constituted: for NHL - 6,5%, HG - 4,4%, CLL - 4,8%, MM – 1,9% of all the cases of infectious complications. Stomatitis dominated when nosological stricter was analyzed. According to the retrospective analysis covering a five-year period among 17 patients with hemoblastosis in the Ulyanovsk region sepsis advanced: 1,0% constituted patients with NHL, 0,6% - with HG, 0,4% - with CLL and 0,1% - with MM.

Conclusions. 1. According to the research the localized forms of infectious complications among patients with lymphoproliferative disorders and multiple myeloma dominated over generalized forms, at that of all the localized forms respiratory system infections were predominant ones, $p<0,05$. 2. Patients with hemoblastosis living in Khanty-Mansi Autonomous District more often suffered from pneumonia in comparison with patients from the Ulyanovsk region, with domination in groups with non-Hodgkin's lymphomas and chronic lymphocytic leukemia ($p<0,05$). 3. Gynecologic infections among patients with hemoblastosis (vaginitis and vulvovaginitis) were dominant in the Ulyanovsk region, and stomatitis - in Khanty-Mansi Autonomous District. 4. The prevalence of urologic and gynecologic infections was the highest in case of multiple myeloma and most of infections of gastro-intestinal tract occurred in case of non-Hodgkin's lymphomas.

References

- Бакиров, Б.А. Особенности эпидемиологии хронических лейкозов в Республике Башкортостан (1999-2008 гг.) / Б.А. Бакиров, А.В. Варшавский // Актуальные вопросы гематологии и трансфузиологии: материалы международной конференции. – Ереван-Степанакерт, 2010. – С. 50-51.
- Hallek M., Pflug N. Chronic lymphocytic leukemia // Ann. Oncol. – 2010. – Vol. 21 (Suppl. 7). – P. 154-164.
- Horn D.L., Neofytos D., Anaissie E.J. et al. Epidemiology and outcomes of candidemia in 2019 patients: data from the prospective antifungal therapy alliance registry // Clin. Infect. Dis. – 2009. – Vol. 48 (Suppl.12). – P. 1695-1703.
- ., Lewis RHYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed?term=%22Lewis%20RE%22%5BAuthor%5D".HYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed?term=%22Lewis%20RE%22%5BAuthor%5D"E., Kontoyiannis DHYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed?term=%22Kontoyiannis%20DP%22%5BAuthor%5D".HYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed?term=%22Kontoyiannis%20DP%22%5BAuthor%5D"P. Fungal infections in leukemia patients: how do we prevent and treat them? // ClinHYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed/20047485".HYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed/20047485" InfectHYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed/20047485".HYPERLINK "http://www.ncbi.nlm.nih.gov/pubmed/20047485" Dis. – 2010. – Vol. 50 (Suppl. 3). – P. 405-415.
- Marr K.A., Carter R.A., Crippa F. et al. Epidemiology and outcome of mould infections in hematopoietic stem cell transplant recipients // Clin. Infect. Dis. – 2002. – Vol. 34 (Suppl. 7). – P. 909-917.
- Morrison VHYPERLINK "http://asheducationbook.hematologylibrary.org/search?author1=Vicki+A.+Morrison&sortspec=date&submit=Submit".HYPERLINK "http://asheducationbook.hematologylibrary.org/search?author1=Vicki+A.+Morrison&sortspec=date&submit=Submit"A. Management of Infectious Complications in Patients with Chronic Lymphocytic Leukemia // Hematology. – 2007. - N1. – P. 332-338.
- Neofytos D., Horn D., Anaissie E. et al. Epidemiology and outcome of invasive fungal infection in adult hematopoietic stem cell transplant recipients: analysis of

Multicenter Prospective Antifungal Therapy (PATH) Alliance registry // Clin. Infect. Dis. – 2009. – Vol. 48 (Suppl. 3). – P. 265-273.

- O'Brien SHYPERLINK "http://asheducationbook.hematologylibrary.org/search?author1=Susan+N.+O%E2%80%99Brien&sortspec=date&submit=Submit".HYPERLINK "http://asheducationbook.hematologylibrary.org/search?author1=Susan+N.+O%E2%80%99Brien&sortspec=date&submit=Submit"N. , Blijlevens N.M., Mahfouz THYPERLINK "http://asheducationbook.hematologylibrary.org/search?author1=Tahsine+H.+Mahfouz&sortspec=date&submit=Submit".HYPERLINK "http://asheducationbook.hematologylibrary.org/search?author1=Tahsine+H.+Mahfouz&sortspec=date&submit=Submit"H. et al.Infections in Patients with Hematological Cancer: Recent Developments // Hematology. - 2003. - N1. – P. 438-472.
- Pagano L., Caira M., Candoni A. et al. The epidemiology of fungal infections in patients with hematologic malignancies: the SEIFEM-2004 study // Haematologica. – 2006. – Vol. 91 (Suppl. 8). – P. 1068-1075.
- Yermakov G. Frequency of infections complications in structure of oncohematological diseases of children of Amur region / G. Yermakov, N. Sheina, G. Chubcnko // The XII Symposium of the Russia-Japan Medical Exchange. – 2005. – P .274.

SOCIAL-HYGIENIC ASPECTS OF THE DENTAL STATUS FORMATION OF SENILE AND ELDERLY PATIENTS FORMATION IN YAKUTIA

A.S.Sadulaeva, I.D. Ushnitsky, S.A. Trifonov
FSAEI HPE «North Eastern Federal University named after M.K. Ammosov», Yakutsk
UDK УДК 616.31:617.3 (571.56)

A comprehensive analysis revealed a high level of needs in orthopedic dental care of elderly and senile patients of the region. The influence of social and hygienic factors on the need for medical assistance was ascertained.

Keywords: abutments, removable and non-removable dentures, terms of operation of prostheses, the upper and lower jaws.

Introduction. According to the WHO, a valuable increase of people of elderly and senile ages is waited in the near future. According to the UNO prognosis (2008), to the 2025 year a number of people more than 60 years old will prevail 1 billion, and to the 2030 year the number of women older than 50 will total 1,2 billion. In Russia in the background of comparatively short longevity of life, the number of people older than 60 is also increasing and according to prognosis to the 2055 year part will total about 40 per cent [1, 4]. Herewith, natural physiological processes are aging and presence of somatic disease which are combined with high diffusion level and intensity of dental pathologies and also with lowering of self control of own health's condition, of lowering or loss of prophylactic and hygienic motivation [5], what motivates the peculiarities of medical tactics when rendering help [10]. According to this, holding of epidemiological and social-hygienic researches of people of the given age group is very actual for a planning and perfecting of dental help [2, 3, 7, 8, 9]. We should also note that accounting of regional life conditions has a great value for a rising of quality of the given specialized help [6].

We must emphasize, that similar researches, directed on the study of frequency and structure of pathologic processes of organs and tissues of oral cavity, on the optimization of dental help for senile and elderly patients under conditions of the Sakha Republic (Yakutia) have never been held.

The aim of research: to define the factors that influence on the dental status of senile and elderly patients on the basis of complex social-hygienic and clinical researches.

Materials and methods: We held a complex dental inspection of senile and elderly patients of the age from 60 to 93 years, living in Viluyskiy, Northern, Central and Southern regions of Yakutia. In all 165 people were inspected. The inspections were held on the basis of the Republic hospital's geriatric center №3 of the Public health Ministry of the Sakha Republic (Yakutia). For inspection was
used a special card, elaborated in the Department of orthopedic stomatology SEI HPE «Krasnoyarskiy state medical university named after professor V.F. Yasenetsky» (2003). The social-hygienic inspection was being held with the usage of the special card-questionnaire that included attitude to own health, the questions of nourishment and the level of health education. The questionnaires with accounting of regional peculiarities were completed in the Department of therapeutic, surgical, orthopedic stomatology and children's stomatology of the Medical Institute of NEFU (2009). A definition of hygienic index of people using dentures was made by Bernadsky's method. Statistic processing of the material was fulfilled with the usage of the standard software package of applied statistic analysis (Statistika for Windows v. 6.0).

Results of research. The analysis of received data shows, that all investigated people have somatic diseases. In the structure of accompanying diseases the most often are pathologies of cardio vascular system and they were in the limits of numeric meanings 21,51 ± 1,91%, then digestive tract – 20,06 ± 2,03% and musculoskeletal system – 17,15 ± 0,48%, also nervous system - 13.08 + 2.93%, respiratory - 12.21 + 3.11%. In this minor levels of performance were identified among the diseases of the genitourinary and endocrine systems, mental disorders, where data totaled 15,99 ± 2,47%. Besides, 29,36 ± 2,24% of investigated people revealed a combination of a few pathologic processes of organs and systems. We should note, that 2,14% revealed the I degree of disability, and 2,77% revealed the II degree, an index of the III degree was on the level 17,08%. An analysis of disability reasons revealed, that the main factors are somatic diseases – 47,30 ± 1,05%, herewith 7,88 ± 3,41% associated their condition with industrial injuries, and the index of other reasons totaled 3,66 ± 2,15%.

We must note that the presence of somatic diseases at the given category of people defines a medical treatment under versatile hospital conditions. So, before the investigation period 39,41 ± 1,60% were on the hospital treatment three or more times 60,59 ± 0,87%. Herewith, the testimonies to hospitalization of 36,96 ± 1,74% were exacerbation of chronic diseases, 34,55 ± 1,88% were on the hospital treatment to get rehabilitated, and 22,42 ± 2,96% noted, that associated with acute illnesses.

Considering a correlation between health and nourishment, we conducted an analysis of the ration and periodicity of aliment consumption. So, under the inclement natural-climatic conditions of Yakutia 55,76 ± 0,93% of older age group people often use meat and fish products in diet. Meanwhile, in the diet of 22,42 ± 2,96% prevail bakery products, and in the 21,82 ± 3,07% are fruits and vegetables. Herewith 49,09 ± 1,16% eat soft aliment, and 9,70 ± 3,31% eat the hard one and the combined type is marked only in 41,21 ± 1,52%. Besides, the respondents noted that 64,24 ± 0,69% have a meal more than three times in a day, and 35,76 ± 1,81% have a meal less than three times. The received data fulfils, that the major part of respondents has a lowered nourishment quality, that in combination with other factors have a negative influence at the functional condition of organs and tissues of oral cavity.

It is known, that pernicious habits are one of the factors promoting formation and developing of pathologic processes in organism. According to this, we made an appraisal of them among the questionnaires. So, 23,64 ± 2,84% have been the active smokers during many years, and 76,36 ± 0,41% weren't smokers at the moment of research. In the analysis of alcohol drinking frequency, the follow answers were given by respondents: in the holidays answered positively 29,70 ± 0,64%, once in a month - 14,55 ± 1,88%, once in a week - 3,64 ± 2,17%, everyday usage of alcohol drinks noted 2,41 ± 1,08%. The positive moment of questionnaire is that 49,70 ± 1,14% of senile and elderly patients in Sakha Republic (Yakutia) don't drink alcohol at all.

It is known, that dental diseases have multifactor origin, where an individual health education level takes an important part. This fact furthered for making a mark of knowledge's level on this direction. So, during an year only 18,75 ± 0,79% of investigated senile and elderly patients visit polyclinic of general profile. Herewith, the 13,94 ± 0,27% of respondents noted, that they visit medical specialists twice in year, three times in year visit – 6,67 ± 1,21% of people. We should note, that the most of area and social infrastructure of the Sakha Republic (Yakutia) have its own peculiarities, in particular, in many rural populated areas of the arctic and sub arctic areas there are no multi profile polyclinics and, according to this, 44,85 ± 1,33% of respondents noted, that they don't visit them during the year. But in spite of it, just 15,79 ± 1,47% of investigated handle with their health more carefully. The received data testifies about the considerable part of older age group people, living under the republic's conditions, are not able to appeal to the doctors in time because of the remoteness of the populated areas and of the complex transport system.

An analysis of the given causes for the visit of dental clinics revealed some peculiarities, where 76,97 ± 0,39% noted, that the purposes of visiting were the extraction of teeth and prosthetics. Meanwhile, just 23,03 ± 2,06% appealed to the dentists in connection with

consultations, sanitations of oral cavity and dispensers observation. It is known, that discharging the treating doctor's prescriptions and recommendations have certain influence on the functional condition of organs and on the organism systems. According to this, conducted research fulfilled, that 57,58 ± 0,87% always discharge the doctor's prescriptions strictly and accurately, and 26,06 ± 1,10% associate disobedience of prescriptions with the lack of time. Besides, it is established, that 10,91 ± 3,11% disobeyed the doctor's prescriptions because of the impossibility of medical preparations acquisition because of the financial difficulties. But in spite of it, the 5,45 ± 3,11% of respondents noted the practicability of discharging the doctor's prescriptions.

The conducted analysis of orthopedic status fulfilled some peculiarities (table 1). So, in the structure of abutments in oral cavity prevailed partial removable dentures, where the index totaled 32,52 ± 2,04%. Herewith, complete removable dentures functioned at the 30,67 ± 2,18% of investigated. The defects of teeth alignment at the 11,66 ± 2,17% of investigated people of older age group were rehabilitated by the artificial crowns. Besides, the 19,63 ± 0,89% of senile and elderly patients had bridge prosthesis. Herewith the index of presence of more than one bridge prosthesis totaled 5,52 ± 2,62%.

Table 1

Characteristics of existing prosthesis in oral cavity of investigated senile and elderly patients

Prosthesis construction	***General indicator***	***On the upper and lower jaws***	***On the upper jaw***	***On the lower jaw***
Partial removable dentures	32,52 ± 2,04%	9,20 ± 1,15%	11,66 ± 1,03%	11,66 ± 1,03%
Complete removable dentures	30,67 ± 2,18%	15,95 ± 2,64%	10,43 ± 2,08%	4,29 ± 2,70%
Crowns	11,66 ± 2,17%	1,84 ± 1,02%	2,45 ± 0,96%	7,37 ± 0,45%
Bridge prosthesis	19,63 ± 0,89%	6,13 ± 1,83%	10,43 ± 1,54%	3,07 ± 2,05
More than one bridge prosthesis	5,52 ± 2,62	1,84 ± 0,97%	2,45 ± 0,86%	1,23 ± 1,04%

In the conducting of research the indexes of different prostheses operation terms of senile and elderly patients were considered. So, the term of making of non-removable dentures only at the 15,28 ± 0,73% of investigated was up to 7 years, while the index of more than 7 years was on the level of 20,83 ± 0,60%. Herewith the indicators of removable dentures had an analogical tendency and the data of exploitation term totaled just 16,67 ± 0,69%, and that of the more than three years was 47,22 ± 1,20%. Received data testify about an unfavorable situation, characterizing the need of older age group in replacement of existing constructions in oral cavity.

In general, the clinical results of research defined a high level of need in prosthetics and this index totaled 70,31 ± 1,24%. Herewith, the need of senile and elderly patients in one kind of prosthetics totaled 74,13 ± 0,51%, and in combined – 20, 28 ± 1,70%. The 5,59 ± 3,40% needed a complete prosthetics of the upper and lower jaws. In spite of this, 29,69 ± 1,82% didn't need prosthetics, as existing constructions in oral cavity were in satisfactory condition.

The aforesaid dictated us the subjective assessment of existing removable and non-removable dentures in oral cavity of senile and elderly patients. So, the 72,88 ± 0,94% of respondents were satisfied by the functional condition of existing non-removable dentures in oral cavity, and the 27,12 ± 3,31% noted, that the quality doesn't satisfy them. With reference to the functioning of removable dentures in oral cavity the ambiguous answers were got among the people of the given age category. 68,13 ± 1,32% of respondents denominated their satisfaction by quality of the existing removable dentures in oral cavity, while the 31,87 ± 1,68% evaluate

their condition as unsatisfactory. It is known, that the hygienic condition of prosthesis may have a negative influence on their function. According to this, during the research an assessment of hygienic condition of abutments was held. The 74,58 ± 0,87% kept the existing non-removable dentures in satisfactory hygienic condition, and the 25,42 ± 3,50% kept in unsatisfactory one. A good hygienic condition of removable dentures was at the 65,91 ± 0,95% of respondents, while an unsatisfactory condition was at the 34,09 ± 1,39%.

We also held an analysis of paid dental services usage and a subjective assessment of their ministration. The received data showed, that 43,64 ± 1,39% apply for the help, and 8,48 ± 3,73% do it for the consultation, diagnosis and rehabilitation. Herewith, 47,88 ± 1,21% of investigated didn't use the paid dental services. 51,52 ± 1,07% were absolutely satisfied by the quality of rendered dental services, 37,58 ± 1,70% were partially satisfied, and 10,91 ± 5,94% of respondents were not satisfied by the equality of its rendering.

Conclusion. The received data of complex research characterize a high level of senile and elderly patients need in orthopedic dental help. Also a low level hygienic culture of older age group people is established. The received data dictate the need in perfecting of dental help organization and activation of prophylactic measures with the accounting of the population specific regional life conditions. Accounting the aforesaid, we think we need to elaborate and adopt a complex comprehensive evidence-based program of organizational and methodical approach to the planning of dental help for senile and elderly patients into the practical public health of the region.

Literature

1. Baida A. P. Regional optimization model for primary health care to senile and elderly patients with hypertension: synopsis. dissert. … Doctor of med. sciences / A. P. Baida. – M., 2010. – 20 p.

2. Glushnjuk E. P. Improving the efficiency of endodontic treatment of teeth in elderly and senile patients: synopsis. dissert. … Candidate of med. sciences / G. E. Glushnjuk. – M., 2010. – 22 p.

3. Clinical and economic approaches to the planning of orthopedic discounted dental care to elderly and senile patients: a manual for doctors and dentists, dental service organizers, managers of financial institutions, health authorities and social security / D. O. Dzidoev, U. V. Chijov, O. M. Novikov and others. – Krasnoyarsk: PIK «Ofsets», 2011. – 192 p.
4. Kuznetsov R. E. Little invasive technologies in the surgical treatment of gynecological patients of elderly and senile ages: synopsis. dissert. … Candidate of med. sciences / R. E. Kuznetsov. – M., 2010. – 23 p.

UDC 611.1:617-089(571.56)

SURGICAL TREATMENT AND PROPHYLAXES OFTHECEREBRAL BLOOD CIRCULATION'S DISTURBANCES FOR PATIENTS WITH PATHOLOGY OF CAROTIDS

A.V. Tobokhov, L.A. Popova, V.N. Nicolaev
Medical institute of the North-Eastern Federal University
The Yakut hospital surgery and radiology department

Summary

We have analysed the results of examination and treatment of 168 patients with atherosclerosis affection in the domain of bifurcation of the carotids and inner one. On this basis of instrumental examination methods for all patients were made open and endovascular carotid's reconstructions. The good results of the surgical interferences on the carotids and low percentage of the perioperative complications show advantage of the surgical correction as an instrument of prophylaxes and treatment of the cerebral circulation's ischemic maladies.

Introduction

The cardiovascular diseases take the third place among death reasons in the developed countries and 85 per cent of them have an ischemic character. Besides atherosclerosis affection in the domain of bifurcation of the carotids and inner one is the most frequent reason of the ischemic maladies of the cerebral blood circulation (IC). In 60 per cent cases they are explained by embolism of the intracranial vessels fragments of the ulcerous plaques or thrombogenic material formed in the domain of stenosis. In other cases chronicischemia of the brain has seldom appeared in the result of insufficiency its blood supply, caused by the critical stenosis or occlusion of the IC [1].

The aim of the surgical interferences on the modern stage of problem research of the carotids constriction is the prevention of the cerebral blood flow's ischemic maladies. Nowadays there are two principal approaches for restoration of the blood flow to carotids- surgical endarterectomy and endovascular stenting of the IC that allow to treat patients effectively with denoted pathology, but at the same time they don't decide all problems. In spite of the numerous researches there are still many unsettled questions such as definition of indications for the operation, so peculiarities of the surgical instruments, ways of the perioperative risk's reduction and improvement of the separated results of the surgical treatment on atherosclerosis affection of carotids [6].

The materials and research methods

168 patients at the age from 40 to 75 (at an average 63,1) were operated on carotid in the Republic hospital №1, national medicine centre. Only 206 operations were accomplished, 175 from them on carotids. The sex ratio equaled 140:28 (table 1.).

Table 1

Age and sex description of patients.

Sex/age	To 40 years	41-50 years	51-60 years	From 61years	Total
Female		3	13	12	28
Male	1	22	60	57	140
Total	1	25	73	69	168

We used CICC's clinical classification of the RAMS's academician A.V. Pokrovsky (table 2) in our work, according to:

I rate- asymptomatic affections.

II rate- transiently ischemic attacks or ephemeral disturbances of the cerebral blood flow.

III rate- chronic dyscirculatory encephalopathy.

IV rate- undergoing ischemic strokes.

Table 2

Description of patients by stadium chronic insufficiency of the cerebral blood circulation (CICC) and age

CICC/age	To 40	41-50	51-60	Above 61	Total
I rate		2	9	6	17
II rate	1	13	34	31	79
III rate			5	14	19
IV rate		10	25	18	53
Total	1	25	73	69	168

115 patients were operated before stroke stadium that equaled 68,4%. 53 (31,6%) patients were operated after undergoing stroke.

Doppler ultrasonography is the most convenient diagnostic's method of the carotids stenosis. It allows estimating exactly on acceleration of the blood flow rate of the vessel's constriction and in many cases plaque morphology [6].

We made duplex screening research of the carotids for all patients (100%).

Table 3

Assignment of the operated patients for carotid's stenosis rate.

Rate/age	To 40 years	41-50 years	51-60 years	60 years	Total
Moderate/evident30-69%.		16	35	27	78
Evid./critical 69-99%.	1	9	29	38	77
Occlusion-embolism			9	4	13
Total	1	25	73	69	168

Preoperative and intraoperative monitoring of the blood flow in brain vessels by the transcranial Doppler sonography method (TCDG) allows choosing surgeon more optimum method of the brain's intraoperative protection.

The transcranial Doppler sonography before operation was made for 147 patients (87,5 %).

Table 4

Description of the operated patient's cerebral blood flow before operation.

TCDG	N-number of patients	% correlation
Strength from 2 sides	53	36%
Strength from 1 side	36	24,4%
Unfoundedness from 2 sides	23	15,6%
No window from 2 sides	21	14,2%
No window from 1 side	14	9,5%
Total	147	100%

The TCDG before operation was made for 147 patients (87,5%) from 168 operated patients. The strength of the collateral blood flow from both sides was noted for 53 patients. The given category of patients is considered more favourable in respect of brain's intraoperative protection choice method.

The TCDG has enormous role for definition of conduct's tactics, individual way for each patients and choice of the method intraoperative protection of brain (controlled hypertension, pharmacological methods, mounting of temporary intravascular bypass- TIB) [4].

The carotid angiography which is preferable method of the diagnostic visualization was made for 139 patients (82,7%). The others were operated on the facts of ultrasonography that is possible and it practices in many clinics.

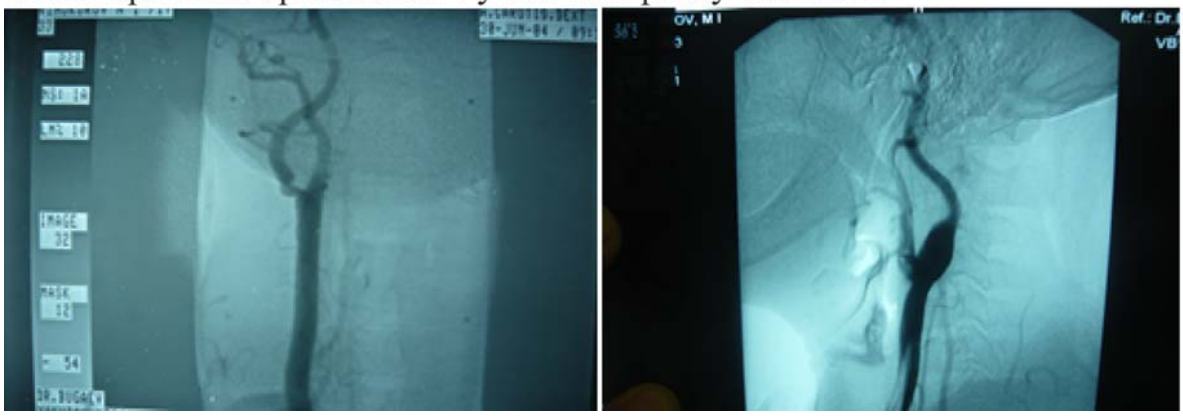
Table 5

The angiography facts on lesion localization of vessel's brain.

% of stenosis	<70%	>70%	occlusion	Total
To the right	30	35	8	73
To the left	29	33	4	66
Total	59	68	12	139

Pict.1. Angiogram of patient before operation operation in 4 years with plasty of mouth.

Pict.2. Angiogram after



The magnetic resonance tomography is in angio regime.

Table 6

Description on stage CICC

CICC	N-number of patient.
I	6
II	33
III	8
IV	33
Total	80

80 patients underwent the magnetic resonance tomography (MRT) in angio regime that equaled 47,6% from the general number.

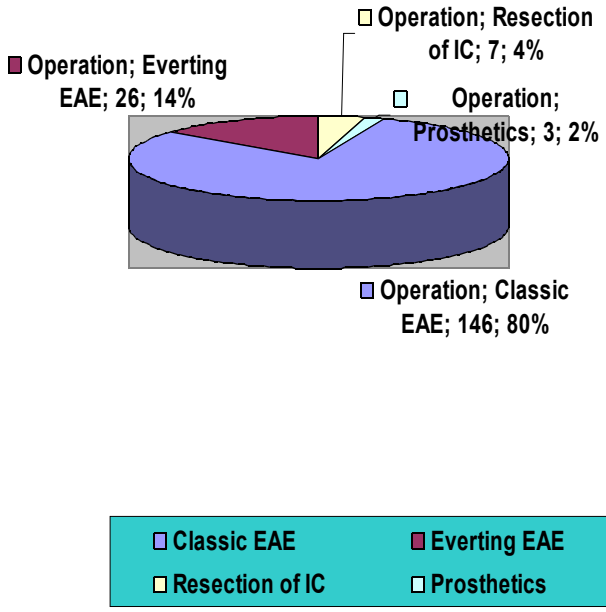
Table 7

The results of angio research- MRT.

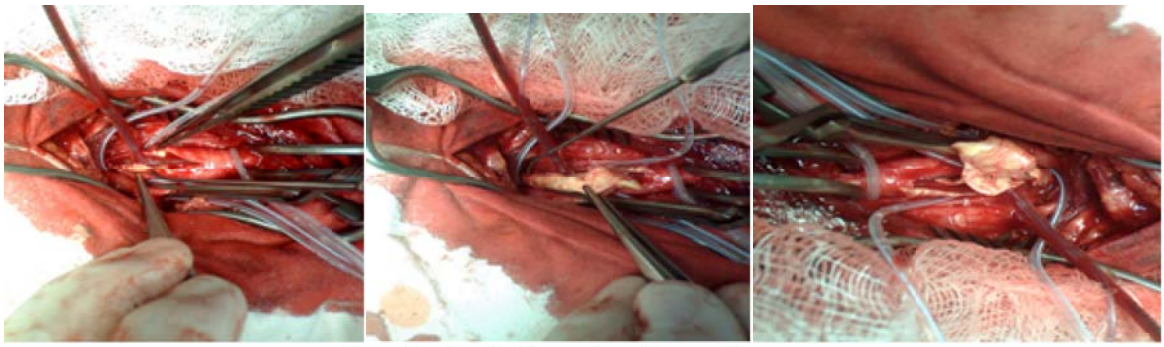
	I	II	III	IV	Total
Without pathology	4	10	1	1	16
Dyscirculatory encephalopathy			5		5
Postischemic changes		2		9	11
Lacunar cysts	1	6		6	13
Cysts		1		6	7
Intracranial lesion	1	11	1	5	18
Aneurysm				3	3
Adenoma of ephippium				1	1
Hematoma			1		1
Pituitary adenoma				1	1
Arnold-Chiari		1			1
Retrotserebny cyst		2		1	3
Total	6	33	8	33	80

The results of research and their discussion.

The classic endarterectomy (EAE) from the general number of interferences on the IC was made in 146 cases (83,4%) (pict. 4), 7 patients (4%) were made duplex carotid endarterectomy. The mounting of the temporary intravascular bypass was used in 54 cases (30,8%). The plasty of carotid's mouth for patients with short diameter of the IC was used in 36 cases (20,5%), from them vein was used in 22 cases (12,5%) and artificial patch in 14 cases (8%). Everting method was made in 26 cases (14,8%), from them 7 resections of the IC. The everting method has some advantages in front of "classic" EAE: initial anatomy of carotids keeps and the normal sizes of the IC restore without plastic material.



Pict.3 The operation's varieties on the IC.

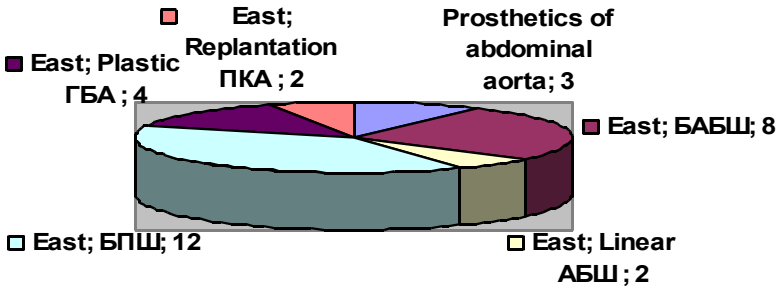


Pict.4, 5, 6.The classic endarterectomy.

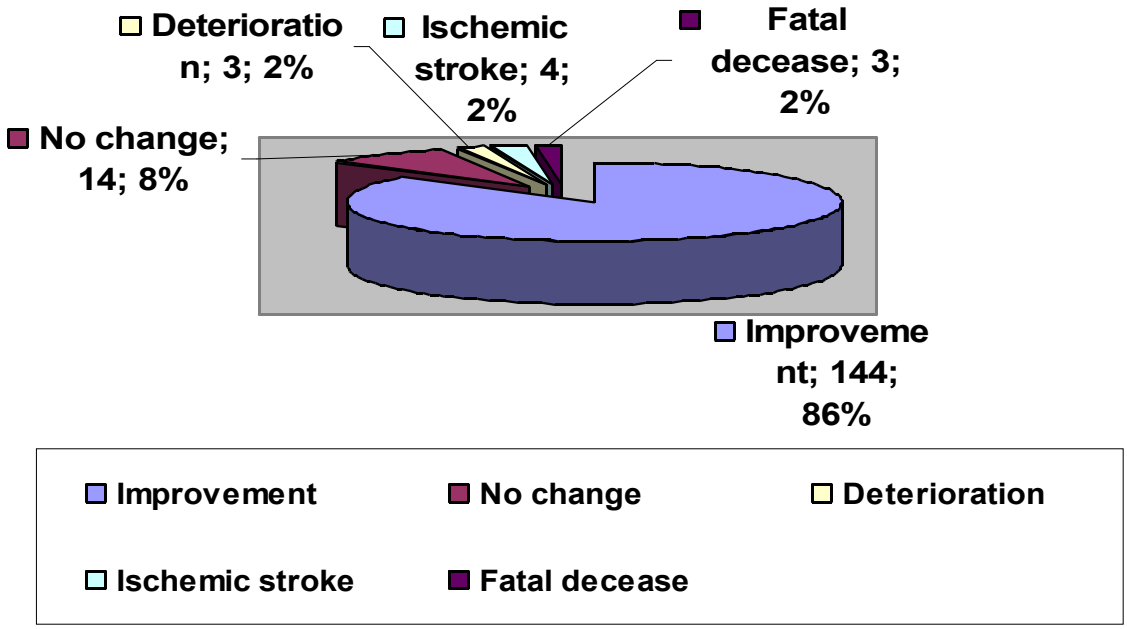
Pict.7, 8, 9. Finished operation with plasty of IC's mouth and extractedatherosclerosis plaque.

The atherosclerosis is generalized process. The combinedlesions of some arterial system's regions are often for patients, that increases risk of the perioperative and postoperative complications. The ischemic heart disease (IHD) was observed for 121 patients (72,5%), myocardial infarction in the past underwent 22 patients (13%). The chronic obliterating illnesses of the underextremities

vessels were observed for 56 patients (33,3%), for 5 (2,9%) was pathology of aorta's abdominal section.



Pict.10 Single-stage operations.



Pict.11 The results of surgical interferences.

3 patients (1,7%) died in postoperative period. The reason of the fatal decease was ischemic stroke in all cases.

After operation 14 patients (8,3%) remained without essential positive clinical changes in the neurologic status that is observed for 11 patients (6,5%)with duplex lesions.

Deterioration was for 3 patients: ephemeral disturbance of the cerebral blood flow with motion's disturbance in the left extremities was in one case, that was over at the end of a day, 2 patients had light neurologic ephemeral disturbances. 4 patients underwent the ischemic stroke in early postoperative period.

Conclusion

Thus, good results of the surgical interferences on the carotids and low percentage of the perioperative complications show advantage of the surgical correction as an instrument of prophylaxes and treatment of the cerebral circulation's ischemic maladies.

The literature:

1. Alexanders A.V.Angiografichesky measurement of a stenosis of an internal carotid / A.V.Alexander//Angiologija and vascular surgery. - M, 1996. - 4. - With. 8-21.
2. Antonov G. I. Performance variants эверсионной каротидной эндарерэктомии / G.I.Antonov, G.E.Mitroshchin//warmly - vascular diseases. - M, 2005. - T.6. - C.108.
3. Ahmetov of Century of Century the Optimum technics of a lateral plasticity of an internal carotid a patch at каротидной эндартерэктомии / scientific research institute of first aid of N.V.Sklifosofskogo. V.V.Ahmetov, A.A.Shamshidin, V.L.Lemenev//Cardiovascular diseases. - 2005. T-6: 5: - with. 109.
4. Beloglazov V. V, Dudarev V. E, Smjalovsky V.E.Otsenka of reserve possibilities of brain blood circulation with the help транскраниальной допплерографии as a preventive maintenance method интраоперационных strokes / V.V.Beloglazov, V.E.Dudarev, V.E.Smjalovsky. - 1995; 2:
5. Jasseran J. M, Ferdani M, Retstsi I. Karotidnaja эндартерэктомия with the help of technics эверсии: radiological results in 1 year.//J. M. Jasseran, M.Ferdani, I.Retstsi//Angiologija and vascular surgery.-1995; 2: 6.
6. Fokin A.A. Feature atherosclerotic стенотических defeats of carotids - value for surgical treatment / A.A.Fokin, E.V.Deyev, D.I.Alekhin//Angiologija and vascular surgery. - M, 2007. №2. - C.212-215.

About authors: Tobohov Alexander Vasilevitch, head of hospital surgery and radiodiagnostics department, doctor of medical science of MI NEFU. E-mail: avtobohov@mail.ru
Nikolaev Vladimir Nikolaevitch, candidate of medical science, associate professor of hospital surgery and radiodiagnostics department of MI NEFU. E-mail: w.nik@mail.ru
Popova Lyudmila Afanasevna, candidate of medical science, the doctor-surgeon of branch of vascular surgery of RH №1 – NCM.

CLINICAL PICTURE, INTRACARDIAC HEMODYNAMICS AND DIAGNOSTICS OF SEPTAL HEART DISEASES IN CHILDREN AND ADULTS

P.I. Zakharov [1,2], N.M. Gogolev[1], V.S. Petrov[2].
[1]Department of surgical diseases and dentistry, IPGED, NEFU, Yakutsk
[2]SFE Republican hospital #1-National Center of Medicine, Yakutsk

The high prevalence of congenital heart diseases in adults in the conditions of the Far North is a regional feature. In connection with the above-said, a comparative analysis of 258 adult patients and 344 pediatric patients was carried out in terms of clinical progression, intracardial hemodynamics and diagnostics of septal defects. Progression features of the given pathology in the North were found out.
Keywords: septal defects, intracardiac hemodynamics, pulmonary hypertension, bacterial endocarditis.

Purpose: To study clinical progression features, intracardiac hemodynamics and diagnostics of congenital septal heart diseases in children and adults in conditions of the Far North.

Materials and methods

Within the period of 2000-2010, total of 602 patients with septal defects had been treated in Cardiac Surgery Department of Clinical Center of Republican Hospital #1 – National Center of Medicine (CC of RH#1-NCM), including 344 (57,1%) children up to 17 y.o. Among these patients 409 (67,9%) were operated due to atrial septal defect (ASD) and 193 (32,1%) due to ventricular septal defect (VSD).

Out of 409 patients surgically operated due to ASD, 210 (51,3%) were children under 17 y.o. and 199 (48,7%) were adults over 17 y.o. Age of the patients who underwent the surgery was 4 days to 58 y.o. (see Table 1).

Table 1

Age distribution of patients surgically operated due to ASD

Children					Adults				
0-1 y.o.	2-3 y.o.	4-6 y.o.	7-10 y.o.	11-17 y.o.	18-20 y.o.	21-30 y.o.	31-40 y.o.	41-50 y.o.	>50 y.o.
39	42	58	45	26	26	61	58	37	17

The majority of patients with ASD among children were patients between 2 to 10 y.o. (145 – 69,0%), among adults – patients between 21 to 40 y.o. (119 – 59,8%). As for sex, there were more surgically operated females – total of 304 (74,3%), including 141 (67,1% among children) girls and 163 (81,9% among adults) women. Complaints of fast fatigue and shortness of breath during physical activities, pulse beat and precordialgia were registered in 112 (53,3%) children and 179 (89,9%) adults. Frequent respiratory diseases, pneumonia were noted in 18 (8,6%) children and 25 (12,6%) adult patients; pulmonary hypertension of the II hemodynamic group in children was diagnosed in 15 (7,1%) cases; pulmonary hypertension of the II and IIIa hemodynamic group in adults was diagnosed in 24 (12,0%) cases.

Adult patients with ASD had comorbid conditions more often – in total of 121 (60,8%) cases: chronic illnesses of lungs and bronchial tubes – 78 (39,2%), chronic pyelonephritis – 39 (19,6%), chronic hepatitis – 35 (17,6%), chronic gynecopathies – 24 (14,7% - among women), cholelithiasis – 18 (9,0%), arterial hypertension – 17 (8,5%), diabetes – 9 (4,5%). Children had suffered comorbid conditions less often – in total of 49 (23,3%) cases: chronic genyantritis and

sinusitis – 28 (13,3%), chronic tonsillitis – 23 (10,9%), chronic bronchopulmonary diseases – 15 (7,1%), neuropathies – 7 (3,3%), chronic pyelonephritis – 5 (2,4%). Clinic picture of chronic bacterial endocarditis was observed in 23 (11,5%) adult patients and 12 (5,7%) children.

During auscultation, all patients with ASD had systolic murmur of moderate intensity in 2-3 intercostal space to the left of the breastbone; heart sounds were clear. Sinus rhythm was registered on the electrocardiogram (ECG) of all pediatric patients; incomplete blockage of right crus of atrioventricular bundle was registered in 152 (72,4%) children; atrioventricular blockage of I degree was registered in 18 (8,6%) pediatric patients. Deviation of heart's electrical axis to the right with signs of hypertrophy of the right ventricle was registered in 186 (88,6%) children; vertical position of heart's electrical axis was registered in 24 (11,4%) children. Sinus rhythm was registered in 184 (92,5%) adults; atrial fibrillation of normal systolic character was diagnosed in 3 (1,5%) patients; episodes of auricular flutter were noted in 7 (3,5%) cases; atrial fibrillation strokes – in 6 (3,0%) patients; sinus arrhythmia with frequent premature atrial contraction – in 8 (4,0%) cases; sinus tachycardia strokes – in 5 (2,5%) adult patients. Among adults, incomplete blockage of right crus of atrioventricular bundle was registered in 156 (78,4%) cases; atrioventricular blockage of I degree was registered in 25 (12,6%) examined patients. Hypertrophy of the right ventricle (RV) was observed in all adult patients; combination with signs of hypertrophy of the left ventricle (LV) was registered in 7 (3,5%) cases. There were 187 (94,0%) adult patients with the deviation of heart's electrical axis to the right; the rest 12 (6,0%) patients had vertical position of heart's electrical axis.

Majority of patients with ASD had intensification of vascular pattern of lungs on X-Rays. Signs of hypervolemia of pulmonary circulation with prominence of the pulmonary artery (PA) and with distension of trunk of PA were found in 15 (7,1%) pediatric patients and 26 (13,1%) adult patients; moderate hypervolemia was noted in 84 (40,0%) children and 86 (43,2%) adults. On the average, Moore's index was 32,9 (P – 3,8)% in 172 (81,9%) children and 36,4 (P – 3,6)% in 183 (92,0%) adults. The rest 38 (18,1%) children and 16 (8,0%) adults had normal value of Moore's index. On the average, cardiothoracic ratio was 0,55 (P – 0,05) in 176 (83,8%) children and 0,56 (P – 0,06) in 185 (93,0%) adults; the rest 34 (16,2%) children and 14 (7,0%) adults had normal value of this index.

Our research has shown that the increase of heart volume in patients with ASD generally occurs at the expense of hypertrophy of the right chambers of heart, and these data coincide with the published data. The 1st degree of RV hypertrophy before surgery was found in 70 (33,3%) pediatric patients, and 65 (32,7%) in adults; the 2nd degree of RV hypertrophy was diagnosed in 82 (39,0%) children and 76 (38,2%) adult patients; the 3rd degree of RV hypertrophy was registered in 28 (13,4%) children and 46 (23,1%) adult patients. The rest 30 (14,3%) children and 12 (6,0%) adults had normal size of RV.

Size and position of ASD, intracardiac hemodynamics were identified by echocardiography (ECHO) and catheterization of heart cavities, angiocardiography. ECHO was carried out in all patients, the catheterization of heart cavities was performed on 57 (27,1%) children and 72 (36,2%) adults with ASD diagnoses. According to results of this research, secondary defects were found in 207 (98,6%) children and 197 (99,0%) adults; all patients had shunt through ASD from the left atrium (LA) into the right atrium (RA). According to angiocardiography before surgical treatment, pulmonary hypertension (PH) of II hemodynamic group was diagnosed in 16 (7,6%) pediatric and 27 (13,6%) adult patients. In all patients tests for oxygen saturation in RA cavity were higher than tests taken in venae cavae; the relation of systolic pressure in PA to system arterial pressure (SAP) fluctuated from 32,0 to 72,0% (45,8±8,4% on the average); systolic pressure in PA fluctuated from 30,0 to 78 mmHg (52,1±9,8 mmHg on the average); the relation of total pulmonary resistance to total peripheral resistance fluctuated from 8 to 32% (21,2±6,7% on the average); shunt from the left to the right in relation to minute volume of pulmonary circulation (PC) fluctuated from 38,0 to 85,0% (62,1±12,8% on the average).

Out of 193 patients surgically treated concerning VSD, there were 134 (69,4%) children and 59 (30,6%) adults. Among children 71 (53,0%) were girls and 63 (47,0%) were boys; among adult patients there were 17 (28,8%) women and 42 (71,2%) men. Age of the patients ranged from 7 days to 55 years (see Table 2).

Table 2

Age distribution of patients surgically operated due to VSD

Children					Adults				
0-1 y.o.	2-3 y.o.	4-6 y.o.	7-10 y.o.	11-17 y.o.	18-20 y.o.	21-30 y.o.	31-40 y.o.	41-50 y.o.	>50 y.o.
22	29	35	29	19	11	23	16	7	2

In children's group 32 (23,9%) patients did not have any complaints; the rest 102 (76,1%) complained about shortness of breath and fast fatigue during physical activity. It should be noted that children of younger age cannot identify pulse beat and precordialgia, nevertheless, it was possible to diagnose (besides shortness of breath and fast fatigue) precordialgia in 35 (26,1%) and complaints about unpleasant feelings in chest in 42 (31,3%) pediatric patients. All patients of adult group with VSD made complaints about fast fatigue and shortness of breath during physical activity; also 19 (32,2%) of them complained about periodic precordialgia. 12 (20,3%) adult patients complained about heart malfunctions. Frequent respiratory diseases were noted in 39 (29,1%) children; frequent respiratory diseases and pneumonia were found in 23 (38,9%) adult patients. Pulmonary hypertension of II hemodynamic group was registered in 21 (15,7%) children with VSD; pulmonary hypertension of IIIa hemodynamic group – in 15 (11,2%) patients. Among adults, pulmonary hypertension of II hemodynamic group was found in 12 (20,3%) patients with VSD; pulmonary hypertension of IIIa hemodynamic group – in 9 (15,3%) patients. Among patients with VSD, clinical picture of bacterial endocarditis was observed in 9 (6,7%) pediatric patients and 8 (13,5%) adult patients.

Adult patients with VSD had comorbid conditions more often – in total of 34 (57,6%) cases: chronic illnesses of lungs and bronchial tubes – 22 (37,3%), chronic pyelonephritis – 8 (13,6%), chronic hepatitis – 7 (11,9%), chronic gynecopathies – 3 (17,6% - among women), cholelithiasis – 6 (10,2%), arterial hypertension – 5 (8,5%), diabetes – 3 (5,1%). Pediatric patients suffered comorbid conditions less often – in total of 29 (21,6%) cases: chronic genyantritis and sinusitis – 18 (13,4%), chronic tonsillitis – 15 (11,2%), chronic bronchopulmonary diseases – 7 (5,2%), neuropathies – 5 (3,7%), chronic pyelonephritis – 4 (3,0%). In addition, it should be noted that among adults with VSD 2 (3,4%) had patent foramen ovale; 3 (5,1%) patients were diagnosed with ASD. Comorbid patent ductus arteriosus (PDA) was found in 5 (8,4%) adult patients. Among children with VSD, patent foramen ovale was diagnosed as comorbid CHD in 17 (12,7%) cases; PDA was diagnosed in 8 (6,0%) cases.

During auscultation, all patients with VSD had strong systolic murmur of various intensity to the left of the breastbone; splitting of the 2nd tone was found more often in adult patients (23 (39,0%)) than in children (35 (26,1%)).

According to ECG, sinus rhythm was registered in all pediatric patients with VSD; heart rate was from 82 to 132 beats per minute (99±12,0 on the average); incomplete blockage of right crus of atrioventricular bundle was registered in 21 (15,7%), atrioventricular blockage of I degree was registered in 15 (11,2%) children. Sinus rhythm was registered in 57 (96,6%) adult patients' ECG; heart rate was from 58 to 88 beats per minute (72,0±7,0 on the average). According to ECG, hypertrophy of LV and LA was diagnosed in 48 (35,8%) children and 12 (20,3%) adult patients; signs of hypertrophy of RV and RA were diagnosed in 58 (43,3%) children and 37 (62,7%) adults.

There was no deviation of heart's electrical axis found in 15 (11,2%) pediatric patients; 39 (29,1%) children had heart's electrical axis dislocated to the left; vertical position of heart's electrical axis was registered in 26 (19,4%) children; and 54 (40,3%) pediatric patients had heart's electrical axis dislocated to the right. Among adult patients with the same diagnosis, 4 (6,8%) were diagnosed with normal position of heart's electrical axis; 9 (15,3%) had horizontal

position of heart's electrical axis; and 28 (47,5%) had deviation of heart's electrical axis to the right.

All patients with VSD had intensification of vascular pattern of lungs on X-Rays. Nipple of pulmonary artery (PA) and distension of trunk and branches of PA were found in 37 (27,6%) pediatric patients and 21 (35,6%) adult patients. Enlargement of heart size due to hypertrophy of the left chambers of heart was noted in 47 (35,1%) children and 25 (42,4%) adults; enlargement of heart size due to hypertrophy of the right chambers of heart was found in 52 (38,8%) children and 31 (52,5%) adults.

According to ECHO, among pediatric patients, perimembranous VSD was diagnosed in 102 (76,1%), subarterial VSD – in 7 (5,2%), and intramuscular VSD – in 25 (18,7%) cases. Among adult patients, perimembranous VSD was found in 48 (81,3%), subarterial VSD – in 5 (8,5%), and intramuscular VSD – in 6 (10,2%) cases.

Catheterization of heart cavities and angiocardiography was performed on 42 (31,3%) children and 21 (35,6%) adults with VSD. Furthermore, all patients of both groups had increased saturation of blood by oxygen in RV in comparison with blood tests in RA. Pulmonary hypertension (PH) of II hemodynamic group was diagnosed in 19 (14,2%) children and 12 (20,3%) adults; PH of IIIa hemodynamic group – in 15 (11,2%) children and 11 (18,6%) adults. Classification of pulmonary hypertension by V.I. Burakovsky with coauthors (1975) was used for identification of degree of PH. In children with PH of II hemodynamic group systolic pressure in PA fluctuated from 38,0 to 78 mmHg (58,2±12,4 mmHg on the average); in adults with the same type of PH the pressure in PA fluctuated from 45,0 to 80,0 mmHg (60,2±12,3 mmHg on the average). The relation of total pulmonary resistance to total peripheral resistance in these patients of pediatric and adult groups averaged 18,9±3,7% and 19,9±3,8% respectively. In children of this group, the relation of systolic pressure in PA to system arterial pressure fluctuated from 33,9 to 62,0% (48,2±9,9% on the average); in adults this indicator fluctuated from 37,5 to 61,0% (49,1±9,6% on the average). In pediatric patients with VSD and PH of IIIa hemodynamic group, systolic pressure in the trunk of PA fluctuated from 62,0 to 94,0 mmHg (78±10,8 mmHg on the average); in adults with VSD and PH of the same hemodynamic group, this indicator fluctuated from 64,0 to 97 mmHg (80,7±9,3 mmHg on the average). The relation of systolic pressure in PA to system arterial pressure fluctuated from 66,0 to 100,0% (83,1±12,1% on the average) in children; this indicator fluctuated from 64,0 to 100,0% (82,4±12,3% on the average) in adults.

Discussion

Thus, the results of our research and observation allow us to note a number of features of clinical progression and intracardiac hemodynamics in pediatric and adult patients with septal defects:

1. Patients attaining adult age without surgery concerning correction of septal defects have comorbid conditions of adult age more often: chronic illnesses of lungs and bronchial tubes – 78 (39,2%) and 22 (37,3%), chronic pyelonephritis – 39 (19,6%) and 8 (13,6%), chronic hepatitis – 35 (17,6%) and 7 (11,9%), chronic gynecopathies – 24 (14,7%) and 3 (17,6% among women), cholelithiasis – 18 (9,0%) and 6 (10,2%), arterial hypertension – 17 (8,5%) and 5 (8,5%), diabetes – 9 (4,5%) and 3 (5,1%) patients with ASD and VSD respectively. Children less often have comorbid conditions (29 - 21,6% cases): chronic genyantritis and sinusitis – 18 (13,4%), chronic tonsillitis – 15 (11,2%), chronic bronchopulmonary diseases – 7 (5,2%), neuropathies – 5 (3,7%), chronic pyelonephritis – 4 (3,0%). Our observations correspond with the data received by L. Kidd et al. (1993), U. Neumayer et al., (1998) and B.D. Amirkulov (2004).

Furthermore, it is necessary to pay attention to the fact that, according to the majority of researchers [1,2,3,4,5,6,10,11,12], there are no data on occurrence of bacterial endocarditis. As a result of our research, the clinical picture of chronic bacterial endocarditis was observed in 23 (11,5%) adult patients and 12 (5,7%) pediatric patients with ASD. Children with VSD had the clinical picture of bacterial endocarditis in 9 (6,7%) cases; adults - in 8 (13,5%) cases. Our data

of frequency of infectious endocarditis development in patients with VSD exceed the results of research of the majority of authors [11,12].

2. According to the methods of functional research, it has been found that signs of hypertrophy of RA and RV were more evident in adult patients with ASD than in pediatric patients (100% and 3,5% in adult patients, 88,6% and 0,0% in children respectively). Our results coincide with the data of many authors [1,2,3,5,6,7,8].

Among patients with VSD signs of hypertrophy of the right and left heart chambers were more often observed in adults. According to ECG, hypertrophy of LV and LA was found in 48 (35,8%) children and 12 (20,3%) adults; signs of hypertrophy of RV and RA were diagnosed in 58 (43,3%) children and 37 (62,7%) adults.

3. Adult patients with ASD more often have heart rhythm disorders: sinus rhythm was registered in 184 (92,5%), atrial fibrillation of normal systolic character was diagnosed in 3 (1,5%), episodes of auricular flutter were noted in 7 (3,5%), atrial fibrillation strokes – in 6 (3,0%), sinus arrhythmia with frequent premature atrial contraction – in 8 (4,0%), sinus tachycardia strokes – in 5 (2,5%) patients of adult group. All pediatric patients had sinus rhythm. Results of our research confirm the published data [5,6,7,8,9].

4. Our data have shown more frequent increase in pulmonary blood stream in patients with ASD (7,1% of children and 13,1% of adults), more frequent increase in Moore's index (81,9% of children and 92,0% of adults), and increase in volume of the right chambers of heart (increase of the III degree in 13,4% of children and 23,1% of adults) in patients of adult group. These data are confirmed by the data of the majority of authors [5,6,7,8,9].

5. The observation data of intracardiac hemodynamics in patients with septal defects have revealed the development of pulmonary hypertension which is more frequently found in adult patients: pulmonary hypertension of II hemodynamic group in children was found in 15 (7,1%) cases, while pulmonary hypertension of II and IIIa hemodynamic group in adults was found in 24 (12,0%) cases among patients with ASD. Among patients with VSD, we diagnosed PH of II hemodynamic group in 19 (14,2%) children and 12 (20,3%) adults; PH of IIIa hemodynamic group – in 15 (11,2%) children and 11 (18,6%) adults.

Conclusion

The clinical progression and clinical picture of septal defects have the following specific characteristics:

a) frequent comorbid condition;

b) cardiac rhythm disturbance;

c) more frequent cases of pulmonary hypertension of II and IIIa hemodynamic groups;

d) most frequent cases of earlier or current bacterial endocarditis.

A frequent comorbid condition and bacterial endocarditis are characteristic to septal defect progression in conditions of the Far North and are caused by remoteness of settlements which are sparsely populated and dispersed on a vast territory with lack of medical care and transportation infrastructure in extreme geo-climatic conditions of the North.

Bibliography

1. *Podzolkov V.P., Gadzhiev A.A., Amirkulov B. D., et al.* Radical correction of Fallot's tetralogy in adults.//Thoracal and cardiovascular surgery – 2003. - No. 4. – P. 10-15.

2. Cardiovascular surgery. Edited by V.I. Burakovsky, L.A. Bokeria, M. Medicine – 1989. – P. 100-114.

3. *Adams D.H., Chen R.H., Kadner A. et al.* Impact of small prosthetic valve size on operative mortality in elderly patients after aortic valve replacement for aortic stenosis: does gender matter? // J. Thorac. Cardiovasc. Surg - 1999. - Vol. - 118. - P. 815-822.

4. *Albanese S.B., Carotti A., Didomato R.M. et al.* Bidirectional cavopulmonary anastomosis in patients under two years of age. // J. Thorac. Cardiovasc. Surg. - 1992. - Vol. 104. - P. 904-909.

5. *AI-Halees Z., Pieters F., Qadoura F. et al.* The Ross procedure is the procedure of choice for congenital aortic valve disease. // J. Thorac. Cardiovasc. Surg. – 2002. - Vol. 123. - P. 437-442.

6. *Allen H.D., Driscoll D.J., Fricker F.J. et al.* Guidelines for pediatric therapeutic cardiac catheterization: a statement for health professionals from the Committee on Congenital Cardiac Defects of the Council on Cardiovascular Disease in the Young, the American Heart Association. Circulation – 1991. - Vol. 84. - P. 2248-2258.

7. *Ceccin F., Johnsrude C.L., Perry J.C. et al.* Effect of age surgical technique on symptomatic arrythmias after the Fontan procedure. Am. // J. Cardiol. - 1995. - Vol. 76. - P. 170-176.

8. *Chan K.L., Ghani M., Woodend K et al.* Case-Controlled study to assess risk factors for aortic stenosis in congenitally bicuspid aortic valve. // J. Am. Coll. Cardiol. – 2001. - Vol. 38(3) – P. 835-842.

9. *Cang A.C., Hanley F.L., Wernovsky C. et al.* Early bidirectional cavopulmonary shunt in young infants. Postoperative course and early results. Circulation – 1993. - Vol. 88. – P. 149-158.

10. *Connelly M.S. ,Webb G.D. ,Somerville J. et al.* Canadian Consensus Conference on adult Congenital heart disease 1996. Can. // J. Cardiol. – 1998. – Vol. 14. – P. 395-452.

11. *Dabritz S., Seipelt R., Muhler E. et al.* Fontan – type procedures after childhood: rick and outcome. The second World Congress of pediatric Cardiology and Cardiac Surgery – 1997. - P. 84.

12. *Dajani A.S., Taubert K.A., Wilson W. et al.* Prevention of bacterial endocarditis: recommendations by the American Heart Association. // J. AMA – 1997. – Vol. 277. – P. 1794-801.

M.M.VINOKUROV, N.M.GOGOLEV, I.A.PAVLOV, A.P.PETROV

SURGICAL TREATMENT OF PATIENTS OF ELDERLY AND SENILE AGE WITH ACUTE CHOLECYSTITIS COMPLICATED BY CHOLEDOCHOLITHIASIS AND OBSTRUCTIVE JAUNDICE

UDC 616.366 – 002: 616.36 – 008.5

Perspective analysis of the treatment results of patients of elderly and senile age with the acute cholecystitis complicated by choledocholithiasis and obstructive jaundice has been done. The studying methods were laboratory research, US of hepatobiliary zone and organs of abdominal cavity, ERCP. Terms of preoperative preparation and operative treatment were depended on the form of acute cholecystitis and the category of physical condition severity of the patients. Therapeutic approach was minimally invasive methods of surgical treatment. The decrease of postoperative complications (14,4 %) and level of the postoperative lethality (7,8 %) has been observed due to advanced therapeutic approach.

Keywords: acute cholecystitis, choledocholithiasis, mechanical jaundice, cholecystectomy.

VINOKUROV Mikhail Mikhailovitch – Doctor of Medical Science, professor, head of faculty surgery department of Medical Institute, NEFU, e-mail: mmv_mi@rambler.ru;

GOGOLEV Nikolay Mikhailovitch – Candidate of Medical Science, senior lecturer, head of surgical diseases and stomatology department, e-mail: gogrcemp@rambler.ru

PAVLOV Ilya Andreevitch – Candidate of Medical Science, head physician of central hospital of Megino-Kangalassky region

PETROV Alexander Petrovitch – surgeon of I surgical department of Republic hospital №2 – Emergency Center of medical aid, e-mail: APPetrof73@rambler.ru

Introduction. Recently, despite of the successful treatment results of the complicated forms of acute cholecystitis among patients of elderly and senile age, the problem has still a high percent of complications and postoperative lethality [3, 4, 13]. The majority of patients is somatically burdened by various concomitant diseases and, as a rule, they represent a group of patients with high operational risk in emergency surgery [6, 11]. Thereby, the development of optimal tactics of surgical treatment for this category of patients has an important practical value [2, 9, 12].

Improvement of the operative results in patients of elderly and senile age should be started with a complex approach to surgical tactics of treatment [5, 8]. The last one should define the urgency, sequence, volume of medical-diagnostic actions, and also the performance of endoscopic and minimally invasive methods of operations taking into account patients' physiological condition severity [1, 7, 10].

Research purpose was the results improvement of surgical treatment of patients of elderly and senile age with acute cholecystitis complicated by choledocholithiasis and obstructive jaundice.

Materials and methods. This work is based on the results analysis of surgical treatment of 76 patients of elderly and senile age (100 %) (according to WHO criteria) with acute cholecystitis complicated by choledocholithiasis and obstructive jaundice. Patients had been treated in the surgical branch of Republic hospital №2 – Emergency Center of medical aid of Yakutsk since 2004 to 2010 (tab. 1).

The majority was 47 females (61,1 %), 29 males (38,9 %). Most of the patients of elderly and senile age had revealed concomitant diseases: cardio-vascular and pulmonary systems pathology.

The duration of obstructive jaundice varied from 2 till 15 days. In patients with III and IV category of severity, the duration of obstuctive jaundice was from 7 – 14 days and more than 14 days.

Clinical data and US results have revealed the morphological forms of acute cholecystitis: catarrhal form – 30 (39,4 %); destructive – 46 (60,6 %) (tab. 2).

ERCP has been done in 35 patients of elderly and senile age (46 %), 13 patients (37,1 %) from them have showed plural choledocholithiasis.

Medical-diagnostic tactics was based on the advanced assessment card of the condition severity for patients with acute cholecystitis complicated by obstructive jaundice. It has allowed to make optimal volume of minimally invasive surgical interventions on the gall bladder and extrahepatic bile ducts (ERCP, EPS with lithoextraction, microcholecystostomy under ultrasonic control, LC, cholecystectomy from mini access) depending on the form of acute cholecystitis and the category of condition severity (tab. 3).

ERCP has been done in 35 patients of elderly and senile age (46 %), 13 patients (37,1 %) have been revealed plural choledocholithiasis.

Results and discussion. Operative interventions were of stage character at catarrhal form of acute cholecystitis, complicated by choledocholithiasis and obstuctive jaundice in 30 patients of elderly and senile age. There were 3 cases of wide laparotomy because of inflammatory infiltration of tissues and technical difficulties during operation. Postoperative complications took place in 4 patients. The fatal outcome has happened in 1 patient with IV category of state severity in the postoperative period because of the liver-renal insufficiency.

The least quantity of patients of elderly and senile age – 4 (8,6 %) were among I category of condition severity and destructive form of acute cholecystitis, complicated by choledocholithiasis and obstructive jaundice. The prevailing majority were 42 (91,4 %) patients with II, III, IV category of severity. 22 patients with I and II category after 6 – 12 hour preoperative preparations carried out one-stage correction of cholecystitischoledocholithiasis from mini access. There was minimum quantity of postoperative complications among this group of patients. No lethal outcomes have been observed. 17 patients with III category of state severity have been done microcholecystostomy under US control for removal of the bile hypertension. Cholecystectomy has been done from miniaccess in a 24-48 hours after endoscopic corrections of choledocholithiasis. Wide laparotomy conversion has happened in 2 cases. 1 patient died of acute cardiovascular insufficiency.

7 patients were of IV category of physiological condition severity. Due to severe condition, this group of patients have been done microcholecystostomy with the subsequent endoscopic correction of choledocholithiasis. After such method of treatment lethal outcomes have been observed in 4 cases.

According to the analysis of postoperative complications and lethality, it is necessary to note that they have been predicted. From 76 patients of elderly and senile age with acute cholecystitis complicated by choledocholithiasis and mechanical jaundice, postoperative

complications have been observed in 11 patients (14,4 %): suppuration of the postoperative wound - 1 patient; hematoma of gall bladder bed - 1 patient; hypostatic pneumonia - 2 patients; sharp cardiovascular insufficiency - 3 patients; liver-renal insufficiency - 3; sharp pancreatitis, edematic form - 1 patient. 6 patients (7,8 %) died from expressed endotoxicosis of inflammatory intoxication and cholemy, led to cardiovascular and liver-renal insufficiency.

Conclusion. Thus, patients of elderly and senile age are a special group, demanding special diagnostic and medical approach. The performance of stage tactics of treatment with the minimally invasive surgical interventions is more appropriate. Microcholecystostomy under US control is necessary in the destructive form of acute cholecystitis in patients with IV category of severity at the first stage performance. Microcholecystostomy creates conditions both for removal of the bile hypertension in the gall bladder and also cholestasis through cystic duct.

Literature

·Altyev B. K. Endoscopic treatment of obstructive jaundice in patients of elderly and senile age / B.K.Altyev, F.B.Alidzganov, A.M.Hozgibaev, others // 14th Moscow international congress on endoscopic surgery. RSCS by B.V. Petrovsky Russian Academy of Medical Sciences Problem commission «Endoscopic surgery» RAMS. M. - 2010. - P. 8 - 9.

· Buharin A.N. Results of endovideosurgical technologies use in treatment of obstructive jaundice in patients of elderly and senile age / A.N.Buharin, A.D.Timoshin, A.L.Shestakov, others // 14th Moscow international congress on endoscopic surgery. RSCS by B.V. Petrovsky Russian Academy of Medical Sciences Problem commission «Endoscopic surgery» RAMS. M. - 2010. - P. 51 - 52.

· Bystorov S.A. Minimally invasive operations in treatment of cholelithiasis in patients with high operational risk / S.A.Bystorov, B.N.Zhukov, V.O.Bizyarin // Surgery. Magazine of N.I.Pirogova. 2010. - №7. – P. 55.

·Varanov. G.A. Minimally invasive methods of cholecystectomy in patients of senior age-groups with acute cholecystitis / G.A.Varanov, E.A.Reshetnikov, B.V.Kharlamov // Surgery. - 2008. № 6. - P. 27 - 30.

·Vinokurov M.M. Acute cholecystitis: methods of results improvement of surgical treatment / M.M.Vinokurov // Novosibirsk: Science. - 2002. - 67 p.

·Zhukov B. N. Minilaparotomy access to surgical treatment of cholelithiasis in elderly people / B.N.Zhukov, S.A.Bystrov, V.O.Bizyarin // Samara medical magazine. - 2008. № 11. - P. 28.

·Kharimov Sh.I. Percutaneous transhepatic cholecystostomy in treatment of acute cholecystitis in patients with high operational risk / S.P.Borovsky, M.Sh.Khakimov, others // Surgical hepatology annals. - 2009. - V.15. - № 1. - P. 53 - 56 .

·Pavlov I.A. Optimisation of medical tactics of acute cholecystitis in patients of elderly and senile age: abstract of thesis: 14.00.27 / I.A.Pavlov - Yakutsk. - 2002. - 23 p.

·Tashkinov N.V. Methods of optimisation of treatment of acute cholecystitis complicated by choledocholithiasis in patients of elderly and senile age / N.V.Tashkinov, E.V.Nikolaev, N.I.Boyarintsev, others // Far East medical magazine. - 2009. - № 1. - P. 44 - 46.

·Chang W.H. Endoscopic retrograde cholangiopancreatography in elderly patients / W.H. Chang, W.Y. Lei // Int J Gerontol. 2007; 1:83–88.

·Koivusalo A.M. Laparoscopic cholecystectomy with carbon dioxide pneumoperitoneum is safe even for high-risk patients. / A.M. Koivusalo, P. Pere, M.Valjus et al. // Surg Endosc. 2008; 22 (1: 61-67).

·Kwon A.H. Laparoscopic cholecystectomy in patients aged 80 years and over. / A.H. Kwon, Y. Matsui // World J Surg. 2006; 30.

·Vinokurov M.M., Pavlov I.A., Gogolev N.M., Petrov A.P. The choice of surgical treatment in the case of acute cholecystitis in elderly and geriatric patient. / “JRME NIIGATA ’ 04” - The Eleventh Symposium of the Japan-Russian Medical Exchange. - Niigata, Japan.-2004.8.10 (Tue) / 8.11 (Wed). – Abstract (II. P.318).

Table 1

Distribution of patients by age and severity categories

Age, Years	Total number of patients n(M±m%)	Including: category of state severity n(M±m%)			
		I	II	III	IV
60-69	55 (72,4±5,1)	12 (92,3±7,3)	29 (85,3±6,0) *	10 (50,0±11,2)	4 (44,4±16,5)
70-79	15 (19,8±4,5)	-	1 (2,9±2,8)	9 (45,0±11,1)	5 (55,6±16,5)
80 and elder	6 (7,8±2,7)	1 (7,7±2,7)	4 (11,8±5,5) *	1 (5,0±4,8) *	-
Total	76 (100,0)	13 (100,0)	34 (100,0)	20 (100,0)	9 (100,0)

*-Differences are statistically significant in comparison with I category of severity (p <0,05)

Table 2

Distribution of patients by the morphological form of gall bladder inflammation and severity categories

Form of Gall bladder Inflammations	Total number of Patients n (M±m %)	Including: category of physiological condition severity n (M±m %)			
		I	II	III	IV
Catarrhal	30 (39,4±5,6)	9 (69,2±12,8)	16 (47,0±8,5)	3 (15,0±7,9)	2 (22,2±13,8)
Phlegmonous - gangrenous	46 (60,6±5,6)	4 (30,8±12,8)	18 (53,0±8,5)	17 (85±7,9)	7 (77,8±13,8)
Total	76 (100,0)	13 (100,0)	34 (100,0)	20 (100,0)	9 (100,0)

Table 3

Improved medical tactics

The form of acute cholecystitis	Diagnostics	Severity category	Medical tactics
Catarrhal	Physical examination US, ERCP	I II	2-stages medical tactics 1. EPS + LE 2. LC or CMA in the delayed order
		III	Preoperative preparation in intensive care department during 12-24 hours. 1. EPS + LE; 2. While condition category decrease of LE or CMA in the delayed order
		IV	Preoperative preparation in intensive care department during 24-48 hours. EPS + LE
Phlegmonous - gangrenous	Physical examination US, ERC	I II	Preoperative preparation during 6-12 hours One-stage correction cholecystecholedocholithiasis CMA + CLT + choledochitis drainage
		III	Intensive therapy in intensive care department during 12-24 hours ·Microcholecystostomy; ·EPS + LE; CMA + CLT + choledochitis drainage in category severity decrease
		IV	Intensive therapy in intensive care department during 24-48 hours ·Microcholecystostomy; EPS + LE

Notes: LC – laparatomy cholecystectomia, CMA – cholecystectomia from mini access, CLT – choledocholititomy, ERC – endoscopic retrograde cholangiopancreatography, EPS – endoscopic papillosphincterotomy, LE – lithoextraction, US – ultrasonic examination

The Yakutian Mortality Rate: region-specific dynamics, main causes and outlook.

Egorova Aytalina Grigorievna – PhD, Senior Researcher at the Laboratory of Medical and Social Research, Yakut Scientific Center of complex medical problems, Russian Academy of Medical Sciences.

The present paper is concerned with the mortality rate in Yakutia between 1960-2010. The mortality rate is affected by changes in the size and age structure of the population, migration patterns, and socio-economic living conditions. During the period in question there was a change in the rank structure of mortality. The forecast of the mortality rate in Yakutia depends on the pace of economic development and more general well-being of Russian citizens.

Keywords: mortality rate, dynamics, trend, cause of death, population, forecast.

The population mortality rate is a major objective criteria for assessing the status of health and medical care within a region. Also, identifying the causes of mortality makes it possible to assess the current condition and prospects of the demographic situation in the area.

With respect to the dynamics of mortality in Yakutia we can distinguish several periods.

The first is a period of falling mortality rates between 1960 to1980. Prior to 1970 the mortality rate of the republic exceeded the USSR average, attributed to low standards of living in the northern half of the region and poor levels of health care. Since the early 1970s the situation reversed – mortality in the Republic was far below the USSR average, explained by a change in the age structure of the Yakutian population. During this period, due to the rapid industrial development of the Northern territory there was a constant increase in the number of economically active young people coming from outside the Republic. Over the years, new towns were built: Neryungri, Mirniy, Lensk, Udachniyand largecillages-Deputatskiy, Aikhal, Ust-Nera, Solnechniyand others. Thus, between 1960 to 1980 the population of Yakutia grew by almost 1.5 times and continued to grow until 1991, when the total population reached its highest level in the history of the republic (1,119,000). During this period, the average mortality rate decreased by 0.2% per year and reached 8.6% in 1980 (compared to 11.0% in the USSR).

The second period in the 1980s was characterized by first stability, and then a more significant decrease in mortality. The significant reduction in mortality rates begun in 1985, and corresponds to the beginning of the anti-alcohol campaign implemented by MS Gorbachev. By 1987, the Republic had a low mortality rate of 5.9%.

Since the early 1990s (the third period) mortality rates began to increase, primarily associated with demographic changes. These changes were the result of socio-economic and political reforms in the country leading to workforce migration out of the Republic, reducing the overall population. The maximum rates of out-migration were observed in 1991-1994, and by 1995 the overall mortality rate reached 9.8%, 66% higher than in 1987.

Furthermore, since 1996 the mortality rate has continued to increase reaching 8.9% in 1998 (the same level as in 1960). During these years, the economy recorded positive developments.

The mortality rate in the Republic between 2001-2008 was stable at 10.2% and only after 2009 did it start to reduce.

Analysis of the major causes of death show the following changes. Before the migration processes, the leading causes of mortality were accidents, injuries and poisonings, followed by tumors and the then, diseases of the circulatory system. However, since the mid 1960s the main cause of death was cardiovascular diseases (also in Russia overall). Death from external causes shifted to second place, and then tumors occupied a stable third position.

The period between 1960-1990 saw a reduction in mortality due to tumors by 12%, respiratory diseases by 42%, and infectious and parasitic diseases by 8%. On the other hand, mortality from circulatory diseases increased two-fold (from 112.1 to 228.9 per 100,000

inhabitants). In the Russian Federation, mortality from cardiovascular diseases increased 3.2-fold (from 176.9 to 617.4 per 100,000 inhabitants). During the same period, deaths from accidents, poisonings and injuries among yakutians increased by 9.5%, constantly exceeding the overall rate for Russia as a whole. In the early 1960s the mortality rate from accidents, injury and poisoning in the Republic amounted to 150.3 per 100,000 inhabitants (69.3 for the Russian Federation). It reached its highest level in the early 1980s and in 1995 (251.7 and 257.7 deaths per 100,000 inhabitants respectively).

Between 1990-2010 the growth rate of mortality surpassed that of the Russian Federation. The mortality rate in the Republic increased 1.5-fold between 1990-2005 (1.4-fold in the Russian Federation), reaching a high of 10.2 cases per 1000 population, mainly due to cardiovascular disease and accidents, injuries and poisonings. However, following the government's national project "Health" in 2006 we see a decrease in mortality rates.

During the period 2005-2010 the total mortality rate in the Republic decreased by 3.8% (11.9% in Russia), mainly due to a 15% reduction in mortality from external causes (31% in Russia), infectious and parasitic diseases by 26% (13.6% in Russia). However, there is a doubling of mortality from diseases of the digestive system.

As for mortality from diseases of the circulatory system, the increase in the mortality rate in the Republic between 1990-2010 was 3.5 times higher than in Russia as a whole.

Between 1960-1990 the mortality rate decreased by 25.7%. This period was characterized by a large influx of people of working-age, due to the industrial development of the Northern territories of Yakutia. The total population increased by 2.3 times. However, it changed the ranking of the causes of death. In place of such "traditional" causes of death such as respiratory diseases, diseases of the digestive system, tumors, and infectious and parasitic diseases came new diseases, mainly those of the circulatory system. During this period, deaths from circulatory diseases in Yakutia increased two-fold.

The available statistical sources show the age structure of the population being dominated by people of working age and children. Until 1995, children accounted for almost one-third of the total population, and by contrast, people above working age accounted for only about 9%, with the rest of the population being of working age. While the majority of the population in the Republic are young, and the highest rates of mortality are within older age groups, the overall mortality rate was low compared to the average. However, the true picture is not so good. If the population structure of Russia is taken as standard, then the standardized mortality is higher than the actual, and that for the whole of the Russian Federation.

During the last 20 years (1990-2010) the mortality rate increased by 46.5%. This is explained by an outflow of young people, with a consequent decline in the population by 15%. During this period, the age structure of the population changed in favour of people of working age or older, whose numbers increased by 1.5 times, while the absolute number of children decreased by 1.6 times. Overall, the working-age population fell by 10%. Thus, in the republic, as well as in Russia, there was a trend of population ageing. A linear trend in mortality rates indicates that total mortality from diseases of the circulatory system have not had a tendency to decrease.

According to forecasts by the Federal State Statistics Service, based on an assessment of the resident population of subjects in Russia by sex and age on January 1 2009, and subject to the Concept of Demographic Policy of the Russian Federation for the period up to 2025, the overall mortality rate of the population will depend on the pace of economic development and increasing well-being of Russian citizens.

Analysis of the dynamics of mortality in the Sakha Republic (Yakutia) is the basis for an evaluation of possible future scenarios. A low (pessimistic) scenario considers the deterioration of the socio-economic climate, and results in mortality rates in the Sakha republic (Yakutia) increasing by 1.4 times to reach 13.0 cases per 1000 population by 2030. The middle scenario assumes a slower development of the country so that the mortality rate will remain at a consistently high level. A high (optimistic) scenario, assumes an improving socio-economic

situation in Russia, and that the measures designed to reduce mortality identified in the Concept of Demographic Policy of the Russian Federation until 2025, and the priority national project "Health" are successful. This results in a reduction in the mortality rate to 7.5% by 2030.

Conclusions:

5. Mortality is the most well recorded, and the most informative indicator of the state and dynamics of public health. It is no less useful than other public health indicators, and proves to be very sensitive both to the political reforms in the country and to the state of social and economic conditions.
6. Changes in mortality reflect the number and age structure of the population, which in turn reflects changing migration patterns. Due to the increase in the working age population there was a decrease in mortality within the republic, and subsequently a decrease in the working age population increased mortality rates.
7. During this period there was a change in the rank structure of mortality. In place of such "traditional" causes of death as respiratory diseases, digestive system, tumors, infectious and parasitic diseases have come new, mainly diseases of the circulatory system. Mortality from circulatory diseases in the republic increased by 4 times.
8. The long-term forecast of population mortality rate depends on the pace of economic development and well-being of Russian citizens.

LITERATURE:

16 Demographic Yearbook of the Republic of Sakha (Yakutia), 2008. Statistical Yearbook. - Yakutsk. 2008. - 193 p.
2. Medical and demographic characteristics of the Russian Federation, the 2005 statistics. - M., 2006.
Three. Medical and demographic characteristics of the Russian Federation, the 2007 statistics. - M., 2008.
4. Medical and demographic characteristics of the Russian Federation, the 2009 statistics. - M., 2010.
Five. Medical and demographic characteristics of the Russian Federation, the 2010 statistics. - M., 2011.
6. Ethnic genomics Yakut (Sakha people): genetic features and population history / LA Tarski, A. Gogolev, G. El'chinova et al, Institute of Molecular Genetics, Academy of Sciences. - Moscow: Nauka, 2009. - 271 p.
7. Demographic Yearbook of Russia. 2005: Statistical Yearbook / Rosstat. - M., 2005. - 595 p.
Eight. Statistical Yearbook of the Republic of Sakha (Yakutia): Statistical Yearbook. - Yakutsk. In 2001. - 10.
9. Vital statistics of the Russian Federation for 2010: Statistical Bulletin. - M., 2011.
10. Health care in the Russian Federation: Statistical Bulletin / State Statistics Committee of Russia. - M., 1994. -88 S.
11. Health care in the Russian Federation: Statistical Bulletin / State Statistics Committee of Russia. - M., 1995. -90 S.
12. Health care in the USSR: Stat. collection / Central Statistical Office of the Council of Ministers of the USSR. - M., 1966. - 442 p.
13. Medical Service of the Russian Federation in 1994: Statistical Yearbook / State Statistics Committee of Russia. - M., 1995. - 258 p.

Table 1.

Proportion ofage groups inthe total population, percent

Years	1979	1989	1995	2000	2005	2010
Youngerworking age (male and female0 -15)						
RF	23,3	24,5	22,7	19,4	16,3	16,1
RS(Y)	31,8	32,6	30,2	27,5	24,2	23,3
In theworking-age (men16 -59,women16 -54)						
RF	60,4	57	57,0	60,2	63,3	62,3
RS(Y)	62	61	60,6	62,6	65,2	64,1
Above working age (men60 andover, women 55 andover)						
RF	16,3	18,5	20,3	20,4	20,4	21,6
RS(Y)	6,2	6,4	9,2	9,9	10,6	12,6

Table 2.

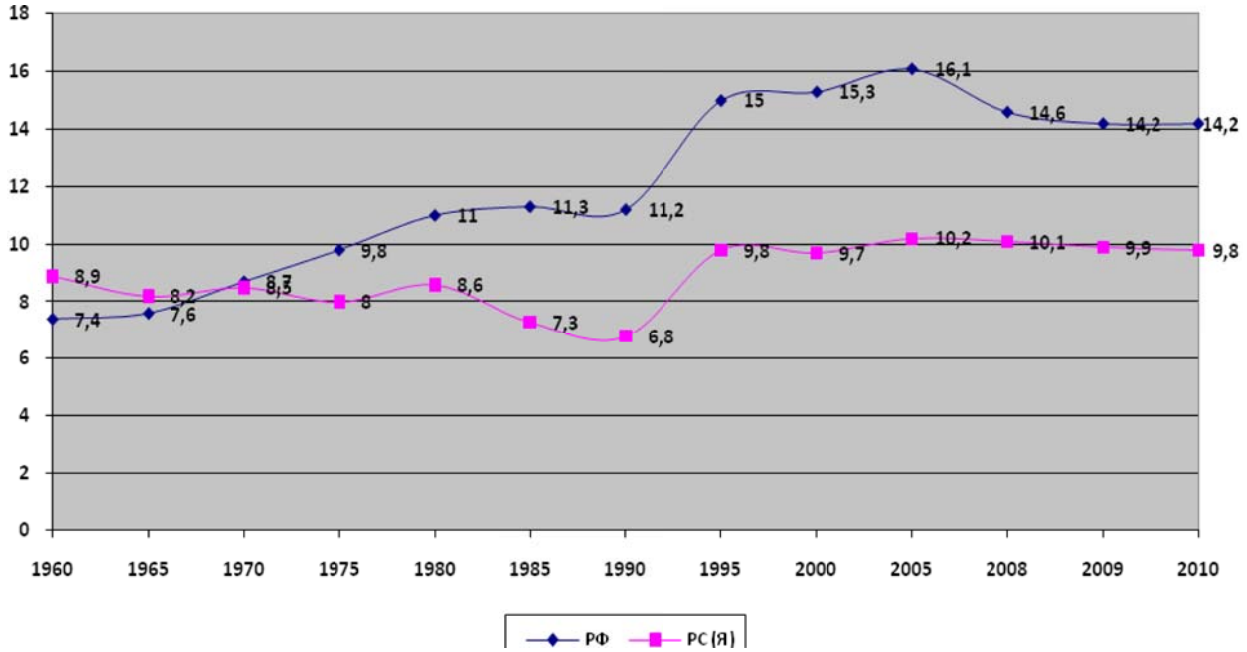
Standardised mortality rates from all causes of death in the Russian Federationand theRepublic of Sakha (Yakutia) (number of deathsper 1,000 population)

Years	2004	2005	2006	2007	2008	2009	2010
RF	15,0	14,9	13,9	13,1	12,9	12,3	12,3
RS(Y)	15,7	15,5	14,3	14,4	14,4	13,7	13,6

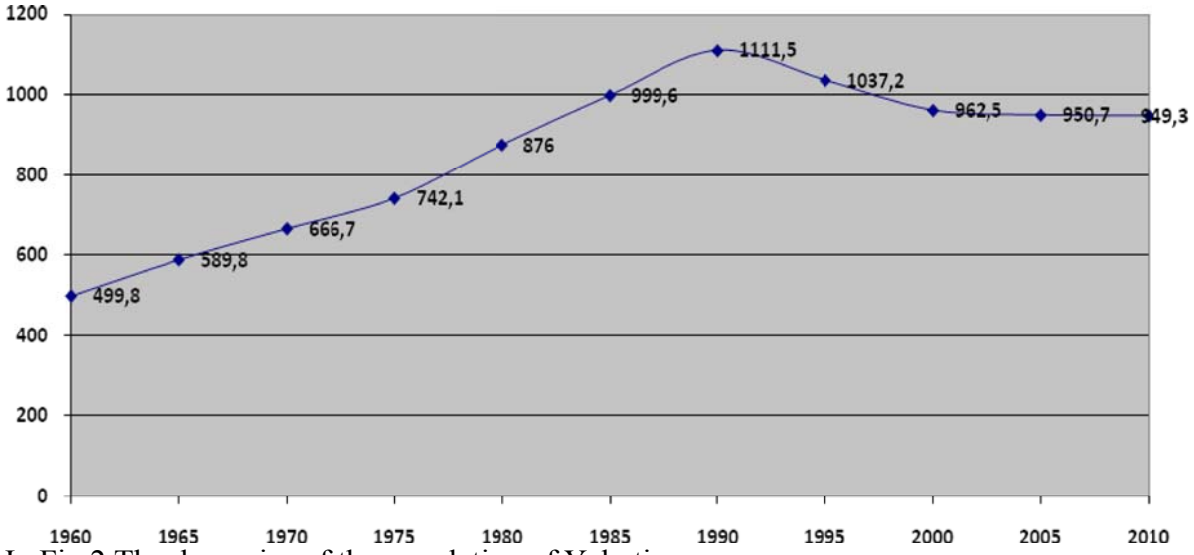
Table 3.

Death ratesby maincauses of deathin the dynamicsfrom 1960 to2010 andthe Russian Federation andthe RS (Y) (number of deathsper 100 thousandpopulation)

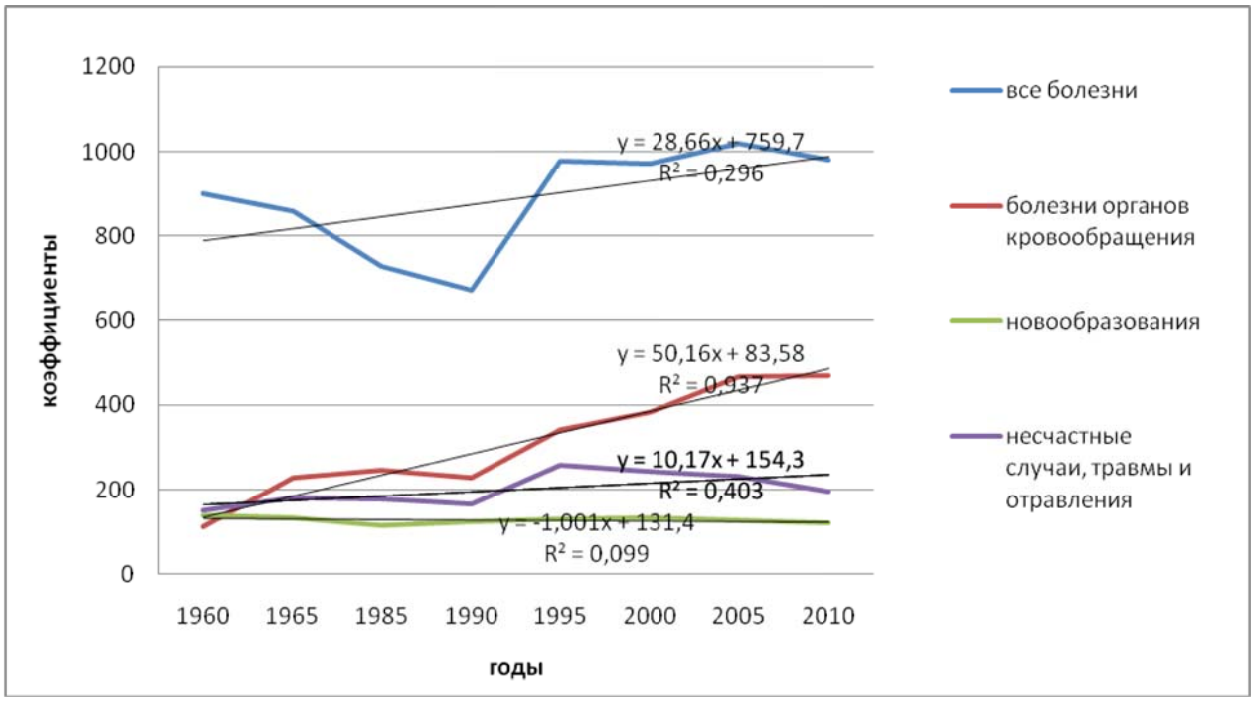
	1959 1960	1964 1965	1985	1990	1995	2000	2005	2010
	The coefficient of total mortality							
RF	762,3	694,2	1130	1120	1497,7	1529	1609,9	1419,2
RS (Y)	901,5	859,2	726,7	669,8	979,7	971,4	1020,3	981,2
Including deaths from circulatory diseases								
RF	187,9	194	633,9	617,4	790,7	846,1	908	805,9
RS (Y)	112,1	229	244,9	228,9	341,8	381,7	466,8	469,5
from tumors								
RF	118,9	124,4	172,9	191,8	203	204,7	201,2	205,1
RS (Y)	138,4	131,2	114	122	130,5	132,6	126,3	120,7
accidents, injuries and poisonings								
RF	69,3	77,3	137,6	133,7	236,8	219	220,7	151,7
RS (Y)	150,3	180,2	178,4	164,6	257,7	243,9	230	195,4
respiratory diseases								
RF	99	68,8	79,5	59,3	73,9	70,3	66,2	52,3
RS (Y)	108,3	86,2	65,7	40,8	51,3	43,3	36,4	34,9
from diseases of the digestive system								
RF	34,7	24,7	30,3	28,7	46,1	44,4	65,5	64,4
RS (Y)	45,2	30,9	33,4	26,1	55,5	45,8	46,3	55,7
from infectious and parasitic diseases								
RF	66,2	37,6	17,2	12,1	20,7	24,9	27,2	23,5
RS (Y)	15,2	87,9	27,6	14	20,4	15,2	15,4	11,4



In Fig.1 Changes in totalmortalityin the Russian Federation and and the Republic of Sakha (Yakutia), %.



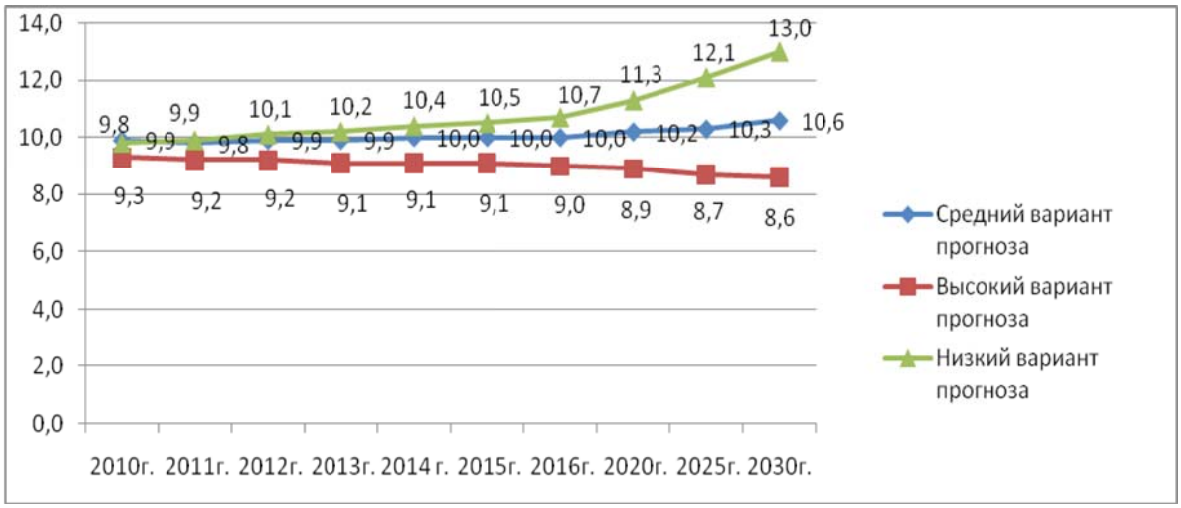
In Fig.2 The dynamics of the population of Yakutia.



y- the equationofthe trend linechart

R2 - value ofthe reliability ofapproximation

In Fig. 3 Trends in basic indicators of mortality in the Sakha Republic (Yakutia) in the dynamics of c 1960-2010 years.



IN FIG.4. FORECAST TOTAL MORTALITY OF THE POPULATION OF THE RS (Y)

MAIN FORMS AND CLINICAL PROGRESSION OF PRIMARY TUBERCULOSIS IN CHILDREN AND ADOLESCENTS

Shepelyova L.P.

SBI "Research-Practice Center 'Phthisiatry'" of the Sakha Republic (Yakutia)

Introduction. The rise of tuberculosis incidence among pediatric population of Yakutia was first registered in the beginning of the 90s. In 1990 pediatric incidence was 11.7 per 100 000, in 1997 it has reached its maximum and was as high as 59.9 per 100 000. Since then and until 2006 inclusive, pediatric incidence over republic never fell lower than 41.0 to 44.0 per 100 000. But for the last years, apparent decline of the incidence rate had been observed (31.0 in 2007, 29.9 in 2008, 22.8 in 2009, 21.8 in 2010). One of the reasons for noticeable decrease in pediatric tuberculosis incidence was the implementation of modern digital examination techniques, namely computed tomography (CT), to the field of pediatric phthisiatry in Yakutia. CT-based diagnosis has started to be widely used in the republic since 2007, and has been a major step towards improvement of primary tuberculosis infection diagnosis.

Aim: To analyze CT-based semiotics of primary tuberculosis, we studied X-ray data of children and adolescents who had tuberculosis of intrathoracic lymph nodes (n=270) or various phases of primary tuberculosis complex (n=88), treated in the "Phthisiatry" Research-Practice Center. Children and adolescents were divided to 4 age groups (Table 1).

Table 1

Children and adolescents with tuberculosis of intrathoracic lymph nodes at various disease stages

No.	Age group	Infiltration phase	Early consolidation and calcification phase	Calcification phase	Total:
1	0-3 years	25 (37.3%)	11(16.4%)	31 (46.3%)	67 (24.8%)
2	4-6 years	25 (28.7%)	10 (11.5%)	52 (59.8%)	87 (32.2%)
3	7-13 years	20 (20.6%)	4 (4.1%)	73 (75.3%)	97 (36.0%)
4	14-17 years	4 (21.0%)	-	15 (79.0%)	19 (7.0%)
	Total:	74 (27.4%)*	25 (9.3%)	171 (63.3%)**	270 (100%)

Note: $p<0.01$ when comparing between * and **;
$p<0.05$ when comparing between calcification phases in groups 1 and 4.

The following groups of children and adolescents were referred to CT examination: patients with early phase of primary tuberculosis infection (with tuberculin test conversion) who developed hyperergic reaction, patients with infection in the past who showed a gradual increase of susceptibility to tuberculin, patients exposed to a person with tuberculosis disease, and patients whose alterations on both plain chest X-ray pictures and linear CT-scans required differential diagnosis of tuberculosis.

Results and discussion. Analysis of the patterns of radiological alterations showed, that, among 270 children and adolescents, presence of tuberculosis process in lymph nodes was detected: at infiltration phase in 27.4%, at early reverse development phase in 9.3%, and at calcification phase in 54.9%. Timeliness of tuberculosis detection clearly correlated with age: the younger was the age, the more was the percentage of cases detected at infiltration phase, while the elder age correlated with more percentage of cases detected at calcification phase. These findings demonstrate the untimely detection of local tuberculosis in children and adolescents, which is a source for development of chronic and secondary disease.

Tuberculosis of intrathoracic lymph nodes affects 1 to 6 or more lymph node groups (Table 2). When many groups are involved, the extent of involvement is chiefly age-dependent. Involvement of 3 and more lymph node groups on average, along with their marked enlargement is more often seen in newborns and infants (0 to 3 year old). Predominant involvement of less then 3 lymph node groups, i.e. minor form of bronchadenitis, is observed more often in preschool and school children. Extensive primary process with involvement of 6 and more lymph node groups is observed more often in adolescents (in 75% of cases).

Table 2

Number of lymph nodes groups involved in tuberculosis of intrathoracic lymph nodes, by age groups

No.	Age groups	Lymph node groups involved (absolute number / %)						Total:
		1 group	2 groups	3 groups	4 groups	5 groups	6 groups >	
1	0-3 year	4 (11.1%)	6 (16.7%)	14 (38.9%)	6 (16.7%)	4 (11.1%)	2 (5.5%)	36 (100%)*
2	4-6 year	8 (22.9%)	8 (22.9%)	8 (22.9%)	5 (14.2%)	4 (11.4%)	2 (5.7%)	35 (100%)*
3	7-13 year	9 (37.5%)	5 (20.8%)	4 (16.7%)	5 (20.8%)	-	1 (4.2%)	24 (100%)**
4	14-17 year	-	-	1 (25%)	-	-	3 (75%)	4 (100%)**
	Total:	23 (23.2%)	18 (18.2%)	26 (26.3%)	17 (17.3%)	7 (7%)	8 (8%)	99 (100%)

Note: p>0.05 in age groups 1 and 2 with involvement of 3 and more lymph node groups,
p<0.05 when comparing between age groups: 1 and 3, 3 and 4.

The following lymph node groups are involved in tuberculosis most often: bronchopulmonary, subcarinal and retrocaval (Table 3). Enlargement of hilar lymph nodes leads to dilatation of the lung hilum. The margins become uneven and wavy. Enhancement and deformation of the hilar pattern caused by thickening of interlobular intersticium in the surrounding lung, and abnormality of anatomical organization of the hilum are detected on CT. Tuberculosis of intrathoracic lymph nodes rarely affects hilar nodes alone without involvement of mediastinal lymph nodes.

Table 3

Lymph node groups involved in tuberculosis of intrathoracic lymph nodes, by age groups

Lymph node groups	Age				Total:
	0-3 year	4-6 year	7-13 year	14-17 year	
Right bronchopulmonary	38 (23.0%)	50 (26.5%)	42 (20.1%)	13 (18.3%)	143 (22.6%)*
Left bronchopulmonary	49 (29.7%)	50 (26.5%)	55 (26.3%)	14 (19.7%)	168 (26.5%)*
Subcarinal	27 (16.4%)	31 (16.4%)	40 (19.2%)	17 (24.0%)	115 (18.1%)*
Retrocaval	17 (10.3%)	19 (10.0%)	24 (11.5%)	10 (14.1%)	70 (11.0%)
Паравазальная	10 (6.1%)	16 (8.5%)	13 (6.2%)	3 (4.2%)	42 (6.6%)
Paratracheal	11 (6.7%)	11 (5.8%)	10 (4.8%)	6 (8.5%)	38 (6.0%)
Para-aortic	8 (4.8%)	8 (4.2%)	8 (3.8%)	5 (7.0%)	29 (4.6%)
Tracheobronchial	2 (1.2%)	1 (0.5%)	9 (4.3%)	0	12 (1.9%)
Aortic window lymph nodes	1 (0.6%)	2 (1.0%)	5 (2.4%)	1 (1.4%)	9 (1.4 %)**
Paraesophageal	2 (1.2%)	1 (0.5%)	3 (1.4%)	2 (2.8%)	8 (1.3%)**
Total:	165 (100 %)	189 (100 %)	209 (100 %)	71 (100 %)	634 (100 %)

Note: p<0.01 when comparing between * and **

CT-based angiography enables to reliably differentiate between the enlarged lymph nodes and the large mediastinal and hilar vessels. Contrasting agent is accumulated within the capsule of an affected lymph node, marking the limits of caseous-necrotic matter contained within the capsule. It should be noted, that this is not a feature in tuberculosis alone. The same response to contrast enhancement is seen in other diseases as well, e.g. in metastatic involvement of lymph nodes, sarcoidosis, or lymphomas.

Primary pulmonary complex is a triad formed by a specific lesion at the site of penetration of mycobacteria, lymphangitis and involvement of regional lymph nodes. Classical primary complex with marked pulmonary process and an extensive perifocal response develops when the following unfavorable factors meet: heavy bacterial excretion, virulence of tuberculosis infection, and impaired immune and biological capabilities of the host.

When a primary complex is caused by aerogenic infection, the lungs are the common site where disease develops – by A.I. Strukov's data, the percentage of such cases is 95% [2]. And most often the disease affects peripheral subpleural parts of predominantly well-aerated segments and quite frequently, these are right segments II and III. Initially, several alveoli are involved in the process, this is followed by development of alveolitis, and later, when the bronchioles become involved, bronchiolitis develops. Thus, the primary affect initially appears as pneumonia. The size of pneumonic focus depends on the number of alveoli involved: if a small number of alveoli are affected, pneumonic focus can be the size of a millet seed, in other cases acinar, lobular, or even lobar focus may develop.

Radiological diagnostics of primary complex is based on recognition of basic features of the disease. We studied the local manifestations of primary tuberculosis complex in 88 children and adolescents. Primary complex occurs in different age groups.

Because of the presence of alterations in the lungs and the large extent of the process, the percent of cases detected in infiltration phase is higher in age group 1, than in other age groups (Table 4).

Table 4

Children and adolescents with primary tuberculosis complex detected at different disease phases

Age groups	Infiltration phase:	Early consolidation and calcification phase:	Calcification phase:	Total:
0-3 year	11 (61.1%)*	5 (27.8%)	2 (11.1%)*	18 (20.5%)
4-6 year	11 (40.8%)	4 (14.8%)	12 (44.4%)	27 (30.7%)
7-13 year	19 (47.5%)	5 (12.5%)	16 (40.0%)	40 (45.4%)
14-17 year	1 (33.3%)	-	2 (66.7%)	3 (3.4%)
Total:	42 (47.7%)	14 (15.9%)	32 (36.4 %)	88 (100%)

Note: * $p<0.01$

Today, with the help of high resolution CT-imaging, most cases of primary affect are detected as acinar (sized 0.2 to 0.9 sm.) or lobular pneumonic focus (sized 1.0 to 1.5 sm.), which always has a subpleural localization. As our data show, in 61.9% of cases the primary affect is a lesion of less than 1 sm. in size, while in 21.4% of cases the size of primary affect is 1 to 1.5 sm., and in 16.7% of cases an entire segment or two are affected by primary tuberculous pneumonia. Small acinar and lobular lesions are round-shaped, with low or medium density and relatively well-defined margins. With the growth of the extent of infiltration, the shape of dense areas tends to assume the anatomic shape of the affected part of the lung, its subsegment or segment. Bronchial lumina may be visible in the zone of specific pneumonia.

Primary affect can be localized in various sites, but is found predominantly in well-aerated regions of lung tissue. In 65.9% of cases primary affect develops in the right lung, usually in segments S6 (25.8%), S1 (19.0%), S2 (10.3%), S3 (10.3%), and S4 (10.3%). In 34.1% of cases the left lung is affected, with segment S6 affected in 40.0% and segments S1-S2 affected in 20% of them.

A simultaneous involvement of a number of intrathoracic lymph nodes is one of the most important distinguishing features of primary tuberculosis complex (Table 5). In contrast to tuberculosis of intrathoracic lymph nodes, right-sided hilar bronchopulmonary lymph nodes enlarge more often (22.6%), while involvement of left-sided hilar bronchopulmonary nodes occurs in 19.0%, subcarinal lymph nodes become involved in 18.1%, and retrocaval lymph nodes – in 14.5% of cases.

Table 5

Lymph node groups involved in primary tuberculosis complex, by age groups

Lymph node groups	Age				Total:
	0-3 year	4-6 year	7-13 year	14-17 year	
Right bronchopulmonary	14 (26.4%)	16 (24.6%)	20 (20.0%)	-	50 (22.6%)*
Left bronchopulmonary	9 (16.9%)	12 (18.4%)	18 (18.0%)	3 (100%)	42 (19.0%)*
Subcarinal	10 (18.9%)	11 (16.9%)	19 (19.0%)	-	40 (18.1%)*
Retrocaval	8 (15.0%)	12 (18.5%)	12 (12.0%)	-	32 (14.5%)
Paravasal	3 (5.7%)	4 (6.2%)	13 (13.%)	-	20 (9.0%)
Paratracheal	3 (5.7%)	4 (6.2%)	6 (6.0%)	-	13 (5.9%)
Para-aortic	2 (3.8%)	-	8 (8.0%)	-	10 (4.5%)
Tracheobronchial	2 (3.8%)	3 (4.6%)	2 (2.0%)	-	7 (3.2%)
Aortic window lymph nodes	-	3 (4.6%)	1 (1.0%)	-	4 (1.8%)**
Paraesophageal	2 (3.8%)	-	1 (1.0%)	-	3 (1.4%)**
Total:	53 (100%)	65 (100%)	100 (100%)	3 (100%)	221 (100%)

Note: $p<0.05$ when comparing between * and **.

Distinction between complicated and non-complicated forms of pediatric primary tuberculosis was offered as far back as in 1930-40s by M.P. Pokhitonova and A.I. Kudryavtseva [1]. In non-complicated disease, the specific process is limited to bronchoadenitis and primary complex. The infiltration phase lasting for 4 to 6 months, is followed by the phase of resolution (5-6 months long) and consolidation, and finally by calcification phase. During consolidation phase, both the primary lesion and the lymph node become smaller and better defined, and their borders become more sharply marginated. Early calcification in this phase can be seen as multiple “lumps” and “crumbs” along the periphery of the lesion or lymph node. The phase of scarring and calcification begins in 8 to 10 months, on average.

CT is one of the basic methods for diagnosis of complicated primary tuberculosis (Table 6).

Table 6

Complications of primary tuberculosis in children and adolescents

Complications of primary tuberculosis:	Age groups (n)				Total (n=155)
	0-3 year (n=52)	4-6 year (n=50)	7-13 year (n=48)	14-17 year (n=5)	
Total number of children with complications:	*13 (25%)*	*13 (26%)*	*16 (33%)*	*3 (40%)*	*45 (29.0%)*
Bronchopulmonary involvement	5	4	2	1	12 (18.2%)
Bronchonodular fistula	-	1	-	-	1 (1.5%)
Bronchogenic seeding	1	2	3	1	7 (10.6%)
Lymphogenic seeding	8	9	12	1	30 (45.4%)
Hematogenic seeding	2	-	-	1	3 (4.6%)
Pleurisy	-	1	3	-	4 (6.0%)
Destruction	1	-	1	1	3 (4.6%)
Chronic tuberculosis	-	1	2	-	3 (4.6%)
Infiltrative exacerbation	-	1	-	-	1 (1.5%)
Generalized tuberculosis, including:	2	-	-	-	2 (3.0%)
Meningitis	-	-	-	-	-
Involvement of bones	1	-	-	-	1
Involvement of vertebrae	1	-	-	-	1
Enlargement of intra-abdominal lymph nodes	-	-	-	-	1
Involvement of adrenal gland	1	-	-	-	-
Number of complications:	*19 (28.8%)*	*19 (28.8%)*	*23 (34.8%)*	*5 (7.6%)*	*66 (100%)*

Based on incidence structure of newly identified primary tuberculosis, 29.0% children and adolescents had complicated disease forms. We observed 45 patients with complicated tuberculosis forms. Half of patients had two and more complications along with the specific process. Lymphogenic seeding (45.4%) and bronchopulmonary involvement (18.2%) were the leading types of complications.

In complicated development of primary tuberculosis, the clinical and radiological manifestations of intrathoracic processes show some age-specific features. This is true primarily for early age. In children aged 0 to 3, the more severe forms of complications – such as generalization of tuberculosis infection to other organs or bronchopulmonary involvement – are found more often than in other age groups. Primary pneumonic alterations in children from this age group often occupy a large part of the lung or an entire lobe. Patients from this age group are detected mainly on visit to a hospital. The most frequent diagnosis is pneumonia, and inefficiency of nonspecific antibacterial therapy requires differential diagnosis of tuberculosis. A caseous process in mediastinal lymph nodes which manifests in the form of tumor-like

bronchadenitis is especially pronounced in early age, when tuberculosis is characterized by a predominant presence of large parcels of caseation-alterated lymph nodes.

Direct signs of bronchial involvement are bronchial obstruction, altered diameter and deformed walls of the bronchi. Indirect symptoms are various degrees of impaired bronchial lumen patency ranging from hypoventilation to atelectasis, which appear on CT as well-defined areas of diminished and thickened lung tissue.

If a bronchonodular fistula develops, it is a precondition for the invasion of caseous-necrotic matter from the molten lymph nodes to bronchial lumina, causing a bronchogenous dissemination.

Tendency to generalization and to hematogenous dissemination of the process is one of the most noticeable features of primary tuberculosis in infants. A characteristic feature in acute microfocal and miliary disseminations is the presence of multiple monomorphous foci distributed over the lungs from apices to diaphragm. These focal alterations are accompanied by a mild response of interstitial structures, which manifests as a diffuse thickening of interlobular intersticium. A characteristic feature in subacute hematogenous disseminations is that numerous homogeneous or polymorphous foci develop in the lungs. And the upper lobes are predominant sites, where alterations take place.

Lymphogenous tuberculosis dissemination is seen more often in preschool and school children and is marked by highly irregular pattern of involvements. The alterations have predominantly subpleural localization and appear as productive foci of medium density with relatively well-defined margins, 0.3 to 0.5 sm. large. These foci are found more often in anterior and posterior segments of the upper lung lobes, in apical segments of lower lobes, in lingular segments and in middle lobes.

A slower progression of primary tuberculosis is more common in children of elder age (second half of preschool age and school age). A pulmonary process with acute onset, later followed by a prolonged disease course, is the reason to consider chronic process. Lymphotropic nature of *M.tuberculosis* is manifested as a tendency of the disease towards lympho-glandular progression with involvement of new groups of lymph nodes.

Involvement of pleura in primary tuberculosis rarely occurs (6%) in preschool and school children. Pleurisy in primary tuberculosis is certainly a complication, which is attributable to a special sensitivity of serous membranes to inflammatory responses that develop during the first phase of infection. Besides, because the lymphatics of hilum and pleura are directly interconnected, an inflammatory process can easily spread on pleura.

Destruction of pulmonary tissue is the rarest complication in a primary tuberculosis complex. Such alterations may take place in an affected lymph node as well. In this case a “glandular cavity” is diagnosed on CT.

Progressive disease is observed more often in adolescence, compared to early preschool and preschool age, along with clinically favorable forms of tuberculosis that also develop in this age. In the presence of underlying primary tuberculosis that started to develop in the past but stopped in early phase, adolescents develop pulmonary alterations that are indicative of secondary forms of tuberculosis. Almost all intrathoracic lymph node groups (6 and more groups) can be involved in the process. Along with this involvement of lymph nodes, miliary, acinar and exudative lobular foci are found, as a byproduct of either hematogenous and lymphogenous generalization, or bronchogenous spread of infection, associated with marked exudative response, necrosis, molten foci and development of cavities, all of which are signs of a progressive disease.

Conclusion. To summarize the analysis, it must be stated once more, that in adolescents and infants, a complicated clinical progression of the primary tuberculosis complex occurred more often, manifesting as a disease with bronchopulmonary involvement, accompanied by a generalization of the process onto other organs and systems. In preschool and junior school age, an unfavorable clinical progression of tuberculosis is a rare exclusion and occurs predominantly in the form of a lymphogenous seeding.

Reseacrh of a physical component of quality of life of menQuality of life for men

Mikhailova, A. E., Zakharova, R.N., Krivoshapkin V.G

The paper represents the results of QOL studies of men. The analysis showed that the level of the physical component of QoL in men of the industrial zone was higher than that of men of agricultural and arctic zones.

Keywords: SF-36 quality of life.

One of the priorities of our state is to improve the quality of life. In turn, physical health - one of the most important human values. Health status is reflected in all spheres of life: professional, creative and personal. Because thanks to an active lifestyle, people can more fully realize their plans and achieve personal happiness. Thus, physical health is a major component of the assessment of QOL man. To assess the physical component of QOL can be used a standardized questionnaire SF-36. Four of the eight scales of the questionnaire describe the physical components of health: physical functioning, role physical functioning, pain intensity and general health [2, 3].

For the purpose of this paper is to assess the physical component of quality of life among men in different health and social care areas of the Republic of Sakha (Yakutia).

Material and methods

We examined 503 men aged 15 to 65 years and older. The study was conducted using generally accepted in international practice, SF-36 questionnaire (Short Form Medical Outcomes Study) in accordance with the requirements of the International Project IQOLA, designed for a population-based studies of QOL [2, 4].

SF-36 questionnaire suitable for self-respondent and applied at the age of 14 years and older [2,3,5].

Inclusion criteria: Informed consent.

Statistical data processing was carried out. Testing of samples for the presence or absence of the normal distribution was carried out by constructing frequency histograms and the Kolmogorov test - Smirnoff. Since the distribution of the sample differed from normal, to test the hypothesis that significant differences between mean value of the sample used nonparametric methods Mann - Whitney (Mann-Whitney U-test) and Kraskela - Wallis (Kruskal - Wallis ANOVA). Analysis of the relationship between the study groups sampling conducted by the Spearman correlation coefficient.

Results and Discussion

General characteristics of men enrolled in the study are presented Table 1.

Performance analysis of physical activity shows distinct differences depending on the medical and economic zone.

Thus, the level of physical activity men of the industrial zone was above average, regardless of age, among men of the Arctic zone in women aged 25-34 was above average, unfortunately, in other age groups, the value of physical functioning was below average. Regardless of the age level of physical activity of men agricultural zone was below average. Based on the results of the study should be mentioned that the rate of physical functioning of the industrial zone of men regardless of age is almost 2 times higher than that of men of the Arctic and agricultural zones ($p < 0.001$). The data obtained in men Agriculture, arctic zones, and partially industrial area do not correspond to the result of population-based study conducted in the framework of a multicenter project "Mirage", where physical activity of respondents aged 18 to 45 years was higher than the mean values and gradually decreased with age. In this study, the results of the above-mentioned tendency was on the scale and role-physical functioning [1]. According to our data on the health impact of professional activity or daily activities, showed that the role-physical functioning (RFF), the industrial zone of men in all age groups was significantly higher in men of other zones ($p < 0,001$).

Indices of role physical functioning of male arctic and agricultural areas were below average, regardless of age.

These data suggest that especially those living in the arctic and agricultural area pointed out the problems related to health, which adversely affect the performance of work and daily activities.

The following estimates the presence of pain in men. It should be noted that the lower the rate on this scale, the greater the pain interferes with normal life to do.

In men, the industrial zone pain had no significant effect on QOL. Among men, the Arctic zone from 15 to 24 and from 35 to 44 is not expressed pain, although in other age groups, level of pain played a significant role in assessing the health and life of men.

Judging from the intensity of pain, the most pronounced among men was agricultural zone.

Self-assessment of health is one of the most important criteria for evaluating the quality of life, since it reflects the opinion of the respondent about his state of health at present and the prospects for treatment. Results of assessment of their health are presented in Figure 4.

Attention is drawn to low scales of general health status of men and 24 years of age, regardless of area of residence. Overall health of the industrial zone of men and 54 years rated above average, and gradually decreased with age. Men farm and the Arctic zone, regardless of age had lower resistance to disease.

Analysis of the physical component of QOL showed that the men of the industrial zone had the best scores on all scales of physical health, compared with men of Agricultural and Arctic zones (p <0,001).

Thus, the results of the physical component of quality of life, as measured by the man himself, can serve as additional elements that make up the concept of "health" and can be applied to the adoption of programs aimed at improving the QOL of men of the Arctic and agricultural zones.

References

1. Population-based indicators of quality of life on the SF-36 (results of a multicenter study of quality of life "Mirage"). Amirdzhanova VN Goryachev, D., Korshunov NI, Rebrov AP et al / / Nauchn.-practical. rheumatology. - 2008 - № 1 .- P. 36-48.

2. Quality of Life Research in Pediatrics / ed. Acad. RAMS JL Shevchenko. - M.: Publishing RAE, 2008. - 103.

3. Guidelines for the study of quality of life in medicine / ed. Acad. RAMS JL Shevchenko. - 2nd ed. - Moscow: OLMA, 2007. - 314 with.

4. Novik, AA Modern standards of Quality of Life Research in Pediatric / AA Novick, T.I Ionova, TP Nikitina // Journal of Multinational Quality of Life Research Center. - 2009. - № 13-14. - S. 6-12.

5. Wagner, A. K. Cross-Cultural Comparisons of the Content of SF-36 translations across ten countries: results from the IQOLA Project / A. K. Wagner, B. Gandek, N.K. Aaronson N. et al. / / J. Clin. Epidem. 1998, 51 (11): 925-932.

Quality of life for men

Mikhailova, A. E., Zakharova, R.N., Krivoshapkin V.G

Mikhailova A. E. – **phd**, 677710, Yakutsk, Sergelyakhskoe Highway 4, Building C-2, tel. 89841008152, e-mail: nsvnsr.66 @ mail.ru

Zakharova R.N. - **phd**, 677710, Yakutsk, Sergelyakhskoe Highway 4, Building C-2, tel. 89142223002

Krivoshapkin V. G. – director, Institute of the Health, NEFU. 677710, Yakutsk, Sergelyakhskoe Highway 4, Building C-2, office. tel. 36-15-36

ESTIMATION OF EFFICIENCY OF MICROINVASIVE DRAINAGE INTERVENTION IN PRIMARY GLAUCOMA SURGERY

E.K.Zaharova[1], A.N. Nazarov[1], V.V. Neroev[2], O.A. Kiseleva[2], A.M.Bessmertniy[2], Poskachina T.R[3].

Yakutsk Republican Ophthalmologic Clinic[1], Yakutsk

Federal State Medical Institution « Helmholtz Research Institute of Eye Illnesses» Ministry of Health and Social Development of Russia[2], Moscow

Northeast Federal University, Medical Institute[3].

Yakutsk.

Despite considerable achievements of ophthalmology for the last decades the glaucoma problem continues to remain at a high level as is causes the blindness from 5,2 million to 10,05 million people in the world. According to foreign authors the number of patients suffering from glaucoma in the world will have increased up to 80 million by 2020, and natives of Asia will make 47 %, furthermore the form called as angle-closure glaucoma (ACG) will make 87 % of them. According to the WHO data, open-angle glaucoma (OAG) as the cause of bilaterial blindness will have been noted at 5,9 million people by 2020, while angle –closure glaucoma being at 5,3 million, i.e. the ratio of blindness caused by ACG as well as OAG will be equal in the world [10, 12].

In the Russian Federation 1,025 million patients with glaucoma have been registered, the level of blindness owing to glaucoma has risen in 3 times for the last 10 years: from 8 to 22 per one thousand population [3, 4].

In the Republic Sakha (Yakutia) for the 10-year-old period (2001-2010) the steady prevalence of primary glaucoma (PG) increased up to 35 and in 2010 it was noted at 133,5 per 10 000. The prevalence of glaucoma among the natives (Sakha) reaches up to 171 per 10 000, surpassing considerably the data all over the republic. For the indigenous population a narrow ‘beak – shaped’ profile of iridal - corneal angle is prevailing (57 %) as well as short eyes (with frontback axis of 23 mm and less) and small anterior chamber (less than 2.3 mm). In age category of senior patients older than 60 years, the increase of cataract crystalline lens causes the formation of ACG with relative pupil block [1, 2].

Trabeculectomy is considered to be gold standard of fistulas antiglaucoma operations, but it is interfaced to high risk of complications, their prevalence reaching 25 % [5, 9]. Not penetrating deep sclerectomy is shown basically only in case of open - angle glaucoma and it is ineffective in narrow-angle form [5, 9].

Today drainages are of great importance in glaucoma treatment. There is a considerable number of drainage devices, including: Molteno, Baerveldt, Ahmed and Ex-PRESS implants which form the artificial channel for draining superfluous moisture from the forward chamber into the subconjunctival space. The basic problem associated with such standard drainages as the valve Molteno and the valve Ahmed consists in superfluous scarring of postoperative wound, so the frequency of unsuccessful outcomes is estimated at 10 % a year. For the last years the draining operations with drainage of liquid into the subarachnoid space are performed more fluently. The device intended for them is Gold Shunt (the USA, «the Gold shunt») which unlike the majority of other drainages improves natural ways of outflow and does not create a filtration pillow [5, 11, 13].

A new way of microinvasive treatment of glaucoma has been elaborated by us, which can be used at out-patients with ACG and complicated OAG (The Way of Surgical Treatment of Primary Glaucoma. The priority inquiry № 2011116957 from 28.04.11).

The aim of this research is to estimate remote results in performing the modified deep sclerectomy (MDSE) with eye microshunting at patients with ACG and OAG.

Material and methods. 52 patients (63 eyes) are referred for the study aged from 40 till 72 years, including 41,5 % women and 58,5 % men.

According to the glaucoma form the investigated patients were grouped as follows: 52,4 % with OAG; 47,6 % with ACG. The distribution of the operated eyes on stages and form of PG is presented in Table 1.

Among the operated eyes with OAG the prevalence was observed among eyes of stage II (33,3 %); visual acuity (VA) from 0,5 to 1,0 in 22,2 %, moderately high IOP (46 %). Among ACG the majority was referred to the eyes of stage II (27 %); VA from 0,5 to 1,0 in 23,8 %; moderately high IOP (42,8 %).

The accompanying eye pathology is revealed in 93 % (41 eyes), including 56,8 % with cataract, 20,4 % with earlier laser iridectomy.

Results of the treatment were estimated on the 7th day and in 12 months after the operation. All patients underwent MDSE with microshunting on the upper segment. Visual acuity and IOP (Pt) before MDSE at patients with PG are presented on Table 2.

All operations were performed at in-patients. The technical intervention is as follows. Firstly deep scleral rag was formed for not-penetrating deep sclerectomy. To carry out

cyclodialysis the sclera was cut through at the top of scleral rag. The anterior chamber paracentesis was performed in trabecular area. In cases of ACG the iridectomy was performed. The drainage "Repegel" manufactured by "Reper-NN" (Nizhni Novgorod) was used as an implant. The drainage is made of the elastic transparent material "Digel", i.e. spatially sewed polyoxypropilen block copolymer represented as a rectangular plasty 6,0 mm of length, 4,0 mm of width, 0,1 mm of thickness. The material possesses with hydrophil as well as hydrophobic properties, water content is 10-15 %. Due to the hydrophil property the intraocular liquid is easily delivered from the anterior chamber into the venous system, while the hydrophobic property prevents the formation of sclero - scleral unions [6, 7, 8]. The drainage was shaped like a sand-glass and implanted through the paracentesis into the anterior chamber by one end, and into the cyclodialysis slit by one (fig. 1, 2). As the final stage the superficial scleral rag was sewed to the edges by two knots, and the continuous seam was applied on the conjunctiva.

Results. No intraoperative complications were noted. The rate of early postoperative complications was rather low (5 cases - 8 %). Hyphema as a suspension of uniform elements was observed in 3 eyes (4,8 %) the day after at patients with ACG III who had had the laser-assisted operation before. In two days the siliochorioidal exfoliation (SCE) has developed in 2 (3,2 %) eyes ACG II and III with laser iridectomy carried out before and had a typical clinical picture: hypotonia (IOP < 10 mm hg), a small anterior chamber, reflex weakening on the eye bottom. The ophthalmoscopy detected that SCE looked like one or two grey bubbles of average height. All patients had the diagnosis confirmed by echography. In all cases the back sclera trepanation was carried out.

After analyzing the quantity of previous postoperative complications the safety and advantage of MDSE with microshunting was indicated as compared with fistulous operations [5].

The drainage in the remote period was supervised by the ultrasonic echography (Fig. 3). No drainage displacement was defined.

The hypotensive effect in the operated eyes remained during all term of the survey (12 months). In the remote postoperative period hypotensive drops were additionally appointed in 6 eyes (9,5 %) (4 eyes with ACG III and 2 eyes with OAG III) in 12 months. As the result IOP was estimated at 14,3±3,1 (12-20) mm of mercury. Antiglaucoma operation can be considered successful if in the remote terms after operation (in 12 months) the level of intraocular pressure is on the lower border without hypotensive medical preparations and relatively successful with use of preparations [5, 8].

No cases of induced cataract were noted during this survey. Though it was progressing in 3 eyes (4,7 %) with earlier diagnosed cataract . In 2-3 months phacoemulsification with implanted elastic intraocular lenses was executed to the patients.

Preliminary results of the new operation concerning modified deep scleroectomy with microshunting testify to its efficiency in surgical treatment of OAG and ACG as well.

Table 1

Classification of operated eyes on PG stages and form (n=63)

Glaucoma form and quantity of eyes	Glaucoma stages		
	Stage I	Stage II	Stage III
OAG (n=33)	-	21 (33,3%)	12 (19%)
ACG (n=30)	4 (6,3%)	17 (27%)	9 (14,3%)
Total (n=63)	4 (6,3%)	38 (60,3%)	21 (33,3%)

Table 2

Visual acuity of intraocular pressure (Pt) before MDSE operation on eyes PG (n=63)

Форма глаукомы и кол-во глаз	Visual acuity			Maclakov's IOP (mm of mercury)	
	0,03-0,09	0,1-0,4	0,5-1,0	26-32	> 33
OAG (n=33)	7 (11,1%)	12 (19%)	14 (22,2%)	29 (46%)	4 (6,3%)
ACG (n=30)	6 (9,5%)	9 (14,4%)	15 (23,8%)	27 (42,8%)	3 (4,8%)
Total (n=63)	13 (20,6%)	21(33,4%)	29(46%)	56 (88,9%)	7 (11,1%)

The literature

1. Zakharova E.K., Poskachina T.P., Malysheva L.B. Ethnic features of glaucoma at indigenous population (Sakha) in Viljujsky area group of the Republic Sakha (Yakutia)./Zakharova E.K., Poskachina T.P. et al.// Ophthalmology of Yakutia - 85: stages and perspectives of blindness prevention. Collect. of scient. works. – Yakutsk, 2010. – P. 31-37.
2. Zakharova E.K., Poskachina T.R., Malysheva L.B. Prevalence of glaucoma in Yakutia./ Zakharova E.K., Poskachina T.P. et al. / / The Yakut medical journal. – 2010. – P. 69-72.
3. Libman E.S., Chumaeva E.A., Elkina Y.E. Epidemiological characteristic of glaucoma./ E.S. Libman, E.A. Chumaeva et al. // Ophthalmology News. - M, 2007.
4. Libman E.S. Epidemiological characteristic of glaucoma./ E.S. Libman // Glaucoma (Appendix). - 2009. – №1. – P. 2-3.
5. Neroev V.V., Bykov V.P., Kvasha O.I., Belyovtseva T.A. Microdrainage surgical treatment of glaucoma. The literature review./ V.V. Neroev, V.P. Bykov et al.// Clinical ophthalmology. – 2009. – № 3. - P. 113-115.
6. Pashtaev N.P., Gorbunova N.U. Efficiency of antiglaucomatous operations with use of a new collagen copolymer drainage in refractive glaucoma treatment./ N.P. Pashtaev, N.U. Gorbunova et al.// Modern technologies of glaucoma treatment. Fedorov's readings - 2003: Coll. scient. works. Ĕ M, 2003. Ĕ P. 325-328.
7. Pashtaev N.P., Gorbunova N.J., Treushnikov V.V., Pastukhova N.V. A new digel drainage form in refractive glaucoma surgery./N.P. Pashtaev, N.U. Gorbunova et al.// The 3rd All-Russia ophthalmologist's school: Coll. scient. works. Ĕ M, 2004. Ĕ P. 123-126.
8. Cheglakov V. U. Results of non-penetrating deep sclerectomy with implanted hydrogel drainage at patients with pseudoexfoliative glaucoma./ V. U. Cheglakov // Glaucoma. - 2010. – № 2. – P.25-29.
9. Ishida K., Netland P.A., Costa V.P. et al., Comparison of Polypropylene and Silicone Ahmed Glaucoma Valves./ K. Ishida, P.A. Netland et al.// Ophthalmology. – 2006. – Vol. 113. – № 8. – P.1320–1326.
10. Kocur I. Level and the reasons of deterioration of sight. Geneva.
11. Maris P.J., Ishida K., Netland P.A. Comparison of Trabeculectomy with Ex-PRESS Miniature Glaucoma Device Implanted Under Scleral Flap./ P.J. Maris, K. Ishida et al.// J. Glaucoma. – 2007.

– Vol. 16. – № 1. – P. 14-12.

5. Quigli H.A. Broman A.T. The number of people with glaucoma worldwide in 2010 and 2020./ H.A.

Quigli, A.T. Broman // Br. J. Ophthalmol. – 2006. – Vol. 90. – P. 262-270.

13. Simon G. A Suprachoroidal Gold Shunt for glaucoma./ G. Simon // European Ophthalmic Review. – 2009. – № 1. – P. 42-44.

The resume

Today drainages play a key role in glaucoma treatment [5, 9, 10, 12]. A new form of microinvasive glaucoma treatment has been worked out by us which can be applied at out-patients with ACG and complicated OAG (The way of surgical treatment of primary glaucoma. The priority inquiry № 2011116957 from 28.04.11).

The aim of this survey is to estimate the remote results in modified deep sclerectomy (MDSE) with microshunting at patients with OAG and ACG.

Material and methods. There were 52 patients (63 eyes) aged 40 - 72, including 41,5 % women, 58,5 % men in the survey. According to a glaucoma form the investigated eyes were classified as follows: 52,4 % with OAG; 47,6 % with ACG.

Technical intervention: firstly deep scleral rag was formed for not-penetrating deep sclerectomy. To carry out cyclodialysis the sclera was cut through at the top of scleral rag. The anterior chamber paracentesis was performed in trabecular area. In cases of ACG the iridectomy was performed. The drainage "Repegel" manufactured by "Reper-NN" (Nizhni Novgorod) was used as an implant. [7, 11, 12]. The drainage was shaped like a sand-glass and implanted through the paracentesis into the anterior chamber by one end, and into the cyclodialysis slit by one (fig. 1, 2). As the final stage the superficial scleral rag was sewed to the edges by two knots, and the continuous seam was applied on the conjunctiva.

Results. No intraoperative complications were noted. The rate of early postoperative complications was rather low (5 cases – 8%). The drainage in the remote period was supervised by the ultrasonic echography (Fig. 3). No drainage displacement was defined.

The hypotensive effect in the operated eyes remained during all term of the survey (12 months). In the remote postoperative period hypotensive drops were additionally appointed in 6 eyes (9,5 %) (4 eyes with ACG III and 2 eyes with OAG III) in 12 months. As the result IOP was estimated at 14,3±3,1 (12-20) mm of mercury. [5, 8].

Preliminary results of the new operation concerning modified deep scleroectomy with microshunting testify to its efficiency in surgical treatment of OAG and ACG as well.

Authors:

1. Zakharova Ekaterina Kimovna, the head of YROC, the main non-staff ophthalmologist of MH RS (Y), Address: State Establishment RS(Y) YROC 15, Sverdlov street

677005 Yakutsk Phone: 89142757704, e-mail: katya1961@mail.ru

2. Poskachina Tamara Romanovna, the Kandidat of Medical Sciences, the head of ophthalmologic department of MI NEFU, Address: 28 flat, 5/1 Ordzhonikidze Str., Phone: 89248766662, e-mail: doka14@list.ru

3. Neroev Vladimir Vladimirovich, Professor, Dr. of medical sciences, the director FSE «Helmholtz Medical Research Institute of ocular illnesses» Ministry of Health and social developments of Russia. Address: 14/19 Sadovaya-Chernogryazskaya

105062 Moscow Helmholtz Medical Research Institute of ocular illnesses

4. Kiseleva Olga Alexandrovna, Dr. of medical sciences, the head of glaucoma department «Helmholtz Medical Research Institute of ocular illnesses» Ministry of Health and social developments of Russia".

Phone: (495) 608-40-65, e-mail: glaucoma@igb.ru.

Address: 14/19 Sadovaya-Chernogryazskaya 105062 Moscow Helmholtz Medical Research Institute of ocular illnesses

5. Bessmertny Alexandr Markovich, Dr. of medical sciences,

«Helmholtz Medical Research Institute of ocular illnesses» Ministry of Health and social developments of Russia". e-mail: glaucoma@igb.ru, Address: 14/19 Sadovaya-Chernogryazskaya

105062 Moscow Helmholtz Medical Research Institute of ocular illnesses

6. Nazarov Anatoly Nikolaevich, the head physician SE RS (Y) «YROC»,

Address: State Establishment RS(Y) YROC, 677005 Yakutsk, 15, Sverdlov street

Phone: 89142757704,677005 e-mail: nazarov_anatoly@mail.ru

INDICATORS OF THE PERIPHERIC BLOOD OF HIGHLY SKILLED SPORTSMEN OF THE ACYCLIC KIND OF SPORTS

E.I.Semyonova, G.E.Mironova

The Yakut Centre of Science Complex Medical Problems of the Siberian Unit the Russian Academy of Medical Science, Yakutsk

SUMMARY

A total of 169 athletes aged 18 to 28 years involved in acyclic sports, the control group consisted of 30 healthy students. Analysis of red blood foundin more than 20% of surveyed athletes edinobortsev signs of iron deficiency, iron deficiency anemia hypochromic mild was detected in 6.25%14.05% wrestlers and boxers.
Keywords: athletes, anemia, red blood cell morphology.

Modern sport demands continuous rising of volume and intensity of trainings that unfavorable influences on functional condition of sportsmen's organism [4], including on morphological indicators of a peripheric blood.

Blood indicators are used for the control in the course of training and restoration, an estimation of individual reaction of the sportsman on a load [2]. Known Finnish trainer Kalevi Rampotti named a blood «the guide in training», giving great value to quantity of erythrocytes and haemoglobin in blood [1] which play the important role in system of transport of oxygen [3]. At sports activity in saturation by oxygen of tissues and cells special value has morphfunctional indicators of erythrocytes.

Now changes of morphological indicators of a peripheric blood depending on sports kind in Yakutia are still a little studied.

The purpose of study was estimation of morphological indicators of a peripheric blood of highly skilled sportsmen of Yakutia which is engaged in acyclic kinds of sports.

Materials and methods of researches

Researches have been spent among sportsmen-combat fighters of official body of school of the higher sports skill (SHSS), state educational institution of the republican sports union of school of an Olympic reserve (SOR) of Republics Sakha (Yakutia). It is surveyed only 169 sportsmen at the age from 18 till 28 years which are engaged in acyclic kinds of sports: from them fighters of a freestyle are 112, boxers - 57 persons. Control group were 30 healthy students of Northeast Federal University by M.K.Ammosov, at the age from 19 till 25 years which are engaged in physical training under the general program of University.

Results of research and discussion

The analysis of hematological researches has shown that average indexes of morphological structure of a red blood at sportsmen-singlefighters, and in control group also correspond to the standard specifications, excepting level of a hematocrit at the boxers which indicators were below norm 137,0±0,9 (p=0,006).

The comparative analysis of blood indicators has revealed that at fighters indicators of erythrocytes, haemoglobin, a hematocrit and a colour indicator were above (p=0,004), and MCH, MCHC and an ESR more low (p=0,006), than at boxers. At fighters in comparison with control group authentic depression of indicators of an erythrocyte (p=0,001), and level of volume of erythrocytes and MCH above (p=0,001) becomes perceptible. At boxers the authentic difference in comparison with control group is revealed in all indicators of a red blood (p=0,05), except volume of erythrocytes. So, at boxers quantity of erythrocytes, a haemoglobin, a hematocrit and an ESR more low (p=0,001), and a colour indicator, MCH, MCHC above (p=0,003), than at control group.

At the same time, at analysis of indicators of a blood by its separate kinds dropping of quantity of erythrocytes at 3,57 % of fighters and 7,01 % of boxers is revealed, the hyperglobulia is revealed at 2,67 % of fighters. Reduction of concentration of haemoglobin is noted at 20,53 % of fighters and 26,31 % of boxers, rising - at 2,67 % of fighters. Low level of a hematocrit is noted at 17,86 % of fighters and at 28,07 % of boxers.

According to the received data, dropping MCV is revealed at 0,87 % of fighters and 8,77 % of boxers, rising - at 19,64 % of fighters and 8,77 % of boxers. Depression MCH is ascertained at 3,55 % of boxers, and augmentation at 11,61 % of fighters and 8,77 % of boxers. Dropping MCHC was observed at 4,46 % of fighters and 5,26 % of boxers, and rising - at 6,07 % of fighters and at 28,07 % of boxers.

As the basic groups of risk of development of anaemic conditions children, teenagers and women of genesial age always were considered. However, after in 1981 ode at 56 % of athletes from extensive group of almost healthy, activly training Danish runners, iron deficiency conditions have been discovered, classical groups of risk have been added by one more - professional athletes («Sports anaemia») [5,7,9].

Concerning the reasons of a sports anaemia the most various points of view express: a hemolysis of erythrocytes in capillaries of the bottom extremities at the runners, the raised destruction of erythrocytes as a result of augmentation of their fragility, system changes of an

exchange of fiber in reply to additional loads, etc. However the majority of experts are inclined to consider that one of principal causes of a sports anaemia is deficiency of the iron which reasons can be a diet with deficiency of iron, depression of absorption of the iron, the strengthened losses of iron as a part of sweat, and also through a digestive tube and uropoiesis system. Hence, occurrence of hypochromia conditions is preceded by many factors.

Unequivocally to separate an anaemia from a pseudo-anaemia we have studied morphology of

erythrocytes as at a hemodilution there is no change of degree of a saturation of erythrocytes by haemoglobin and their sizes.

The analysis of morphology of erythrocytes demonstrate a hypochromia of erythrocytes (availability of anulocyts) at 23 % of fighters and at 26 % of boxers, and a hypochromia with an anisocytosis (change of the size of erythrocytes) at 6,25 % of fighters and at 14,05 % of boxers.

Results of the received data have revealed that average indexes of a white blood at sportsmen-combat fighters are in limits of admissible normal amounts.

In too time, the differential analysis of the leukocytic formula has revealed a relative segmented neutropenia at 16,07 % of fighters and at 24,56 % of boxers and an absolute segmented neutropenia at 10,52 % of boxers. The relative lymphocytosis is noted at 23,21 % of fighters and at 28,07 % of boxers, and an absolute lymphocytosis at 6,25 % of fighters and at 7,02 % of boxers. The relative and absolute monocytosis is revealed at 28 % of fighters and at 43 % of boxers. Rising of all agranulocytes (monocytosis+a lymphocytosis) without augmentation of total number of leucocytes meets at 11 % of fighters and at 14 % of boxers.

It is known that at intensive exercise stresses of the submaximum power (fighters and boxers) are formed many metabolites, under oxidized disintegration products - low-molecular acids (lactic, pyruvic, etc). Penetration of a considerable quantity of acids into a blood leads to change of the important biological constant – an acidity indicator - causeticities (pH) to a blood. From references it is known that monocytes (macrophages) are activated by acidification of blood and a muscular hypoxia of various character that is a sign of a strain of nonspecific adaptive reaction of an organism owing to fatigue and a hypoxia [6,8].

Thus, the analysis of our data mainly indicators of a red blood testifies that more than 20 % of the sportsmen-combat fighters surveyed by us have signs of iron deficiency conditions, and 6,25 % of fighters and 14,05 % of boxers have a hypochromia iron deficiency anaemia of easy degree. The revealed changes from outside leucocytes of agranulocytic series (the monocytosis, a lymphocytosis), testifies to signs of fatigue and incomplete restoration of sportsmen.

The list of the used literature

1. Agadzhanjan N.A. Chrono adaptation and resistance of an organism / N.A.Agadzhanjan '/ Works of 14th congress of the All-Union physiological Society of I.P.Pavlova. - L, 1983. - V. 1.- p.393 - 394.

2. Volkov N.I. Influence of intense muscular work on hematological indicators of sportsmen / N.I. Volkov//The theory and practice of physiological culture.-1984. № 9.-p.22-24.

3. Volkov N.I., Volkov A.N. Physiological criteria of endurance of sportsmen / N.I.Volkov, Volkov A.N.//Human physiology. - 2004. - V. 30. - № 4. - p. 103-113.

4. Dembo A.G. Actual problems of modern sports medicine / A.G.Dembo. - M: Physical culture and sports, 1980. – p.295.

5. Durmanov N.D., Filimonov A.S. Diagnostics and correction of disturbances of an exchange of iron in sports of the higher achievements/N.D.Durmanov, A.S.Filimonov// Methodical references for doctors. - M, 2010. – p.84.

6. Kozinets G. I. Interpreting of analyses of a blood and urine their clinical value / G.I.Kozinets. - M: the Triad - X, 1998. – p.104.

7. Makarova G. A. Sports medicine / G.A.Makarova. - M, «the Soviet sports», 2003.-p.480.

8. Ulitko M.V. Role of monocytes-macrophages in adaptive reactions of a hemopoietic tissue at action on an organism of extreme factors: The dissertation… of Cand.Biol.Sci. / M.V.Ulitko. - Ekaterinburg, 2008. – p.183.

9. Dubnov G., Consyantini N.W. Prevalence of iron depletion and anemia in tor-level basketball players / G. Dubnov, N.W. Constantini // Int. J. Sport.Nutr.Exerc.Metab.-2004.- Vol.14,№ 1.-P.30-37

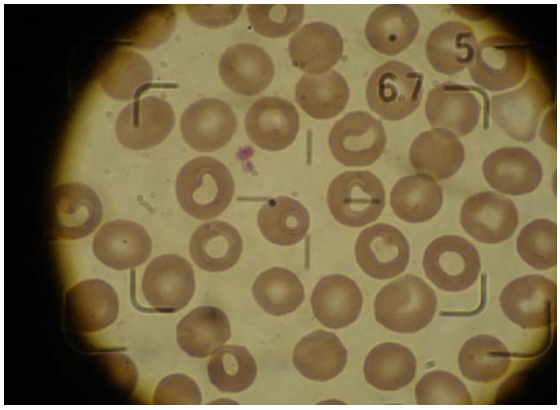


Рис. 1. Мазок крови спортсмена Х. .
Гипохромия, анизоцитоз.
а) – анулоциты б) – эритроциты с УПС.
Ув.10х100.Окраска по Романовскому-Гимзе.

Fig. 1. Dab of blood of sportsman X.
Hypochromia anisocytosis.
a) – anulocites b) – erythrocytes with CPS.
Inc.10x100. Coloring on Romanovsky-gimze/

PROSPECTS OF PERFECTION OF MEDICAL EDUCATION AS BASE OF PRACTICAL PUBLIC HEALTH SERVICES OF REPUBLIC SAKHA (YAKUTIA)

P.G. Petrova, N.V. Borisova, L.A. Aprosimov
Medical institute NEFU

The personnel selection of system of public health services within its modernization spent for Russian Federation, is directed on formation, development and professional perfection of the experts. A main role in formation of new generation of the professional staff the revival of the Russian educational system should play. In new socio-economic conditions the real value for public health services is represented by the only widely educated doctor capable flexibly to reconstruct a direction and contents of the activity in connection with inquiries of branch. The basic strategy of development of medical education is the necessity of preparation and improvement of professional skill of the experts in view of requirement of the state for concrete categories of the medical workers.

The selection of the staff for public health services of republic begins with selection of the entrants. Here again, first of all, it would be desirable to stop on target places. For satisfaction of requirements of regions in the medical staff the responsibility for a personnel condition in each concrete region to assign on the chiefs of imperous structures and managements of public health services, and also on the chiefs of high schools of region was offered. With the purpose of realization of the given offer in 2010-2011 and current 2011-2012 educational years the Government of Yakutia has made the State order to NEFU on preparation 175 doctors. All of them sign the contract about obligatory employment after the ending Medical Institute to village hospital. In turn, municipal administration should supervise progress of the future experts, organize for them of summer practice, beforehand prepare a place of the future work, and also necessary housing and other social conditions.

Unfortunately, on target places continue to act the entrants with low marks because of unsufficient selection work on places. On two rates 148 students are trained now, i.e. 27 men already have stopped study in connection by backlog in study.

Repeatedly we offered for qualitative preparation of the entrants from Arctic regions, to consider to Government of Yakutia additional pre-high school preparation through institute of vocational training, having opened special classes with the profound study of base disciplines. The students of such classes on the one hand, for year of training would adapt for student's life, with another, having arrived in institute on a contract basis, at reception of a trade, could work in the Arctic conditions. And today this question is urgent as never.

Now as to fastening the target staff. Us disturbs, that the mechanism of fastening of the medical staff in village and Arctic regions is unsufficiently advanced. One of the important aspects of fastening on workplaces of the young experts is the granting by him of the social guarantees, determined by the current legislation, on places. As an example it would be desirable to result the Samara region, where each young expert at employment in state or municipal establishment of public health services receives the lumpsum grant(manual) at a rate of 165 thousand roubles. Besides from means of the regional budget the means for support young doctors are in allocated. The republic already puts the means as State order, now it is necessary also to municipal formations to bring benefit, to support the young experts.

One of the urgent tendencies of perfection of medical education is the development of connections between different disciplines, which can be supplied with the new federal state educational standard, creation on the basis of modular and competition the approaches of the integrated programs, which would be not the simple sum of the programs of subjects, as now, and would make a single unit.

Basic difference of the new standards from former is the increase of a share of practical preparation during training, and since younger rates, and on the grown-ups it especially will amplify.

The system of processing of practical skills and skills is reflected by occurrence in the standard of the new block of disciplines incorporated in one group " Practical preparation ". In Federal Standards various mechanisms of expansion of base of methodical maintenance also are fulfilled at the expense of use of the electronic textbooks, information educational resources.

Unfortunately, now graduates are not always ready to mastering of postgraduate education. Frequently they within 3-4 months should be learned to elementary things: how to enter in operational how to impose seams. The task of ours Simulating centre is, that the student actively should be engaged in practical activity already on 4-5 courses. In NEFU with the purpose of improvement of practical skills of the students, doctors training on phantoms within the framework of the Program of development of university is created Simulating centre with imitation of a workplace of the practical doctor (hospital chambers, operational and maternity halls, procedural studies etc.). Thus, the medical institute will supply conditions allowing each trainee independent to carry out medical manipulations on robots, models and phantoms according to the programs of training, will raise quality of training of the students, doctors.

Now, as to employment of the graduates. After the system of state distribution of the graduates was cancelled, from year to year it became extremely difficult to direct to northern and Arctic areas even those who there from comes and with which the appropriate tripartite contracts were made. The unsatisfactory social conditions and, first of all absence of the inhabited area, absence of essential commodities, low wages, high prices for products of a feed and municipal services - reason low number of the doctors of the Arctic areas also do not promote fastening of the young experts, and their further labour activity. In many areas by administrations of municipal formations not enough attention gives to questions of fastening of the staff.

In the current year the medical institute finishes 206 men. From them the contract about employment in village hospital establishments have 145 graduates, but all of them will pass year postgraduate education and how many man after its passage will go to area according to the contract - question remains open.

The Government of Russian Federation the package of the amendments in the federal legislation called to involve of the young experts in village public health services is accepted. According to them to the experts with maximum medical education till 35 years moving to work in village occupied items per 2011-2012 years, will be allocated 1 000 000 of roubles elevating provided that the doctor incurs the obligation to fulfil in a countryside not less than five years. Money will be transferred to the applicants for free vacancy within 30 days from the date of the conclusion of the contract with a body of the executive authority of the subject of Russian Federation.

The given measure can promote attraction of the young experts. However completely problem of deficiency of the staff even the payment of the so essential sum, on my sight, will not decide. For this purpose to doctors it is necessary to guarantee social security - to ensure with habitation, to increase the salaries. To involve the graduates in areas with only one money compensation it is possible, but, that them there to keep, other approach to the decision of a personnel question - complex development of village medicine and infrastructures as a whole is necessary essentially.

The following major moment is a transition to continuous educational process, not on words, and on business. Here important role the information should play which as a whole should be completed by the end of 2012. The information of public health services now on all country more than primitive, by 2015 is expected progress up to a level parameters. All high schools should be included in uniform information space. The electronic library, electronic database, interactive opportunities of training, telemedical communications is that for 2-3 years should be made and that really will allow effectively to approach to system of crediting not by way of visiting any conferences, and real account of the received additional formation(education)

and effective utilization of results. In a result, system of crediting and new form postgraduate education will allow to change qualitative structure of branch, meaning that we should give stimulus to self-perfection to the working today doctors, both on the speciality, and on adjacent directions. All this will be accompanied by material stimulation, increase of wages. The function of the professional filter will be undertaken by medical community. For this purpose the rights will be given to medical communities to accredit the experts.

Thus, perfection of medical education, the quality of professional training of the staff plays the special role in conditions of modernization as the base of practical public health services of republic.

Petrova Palmira – MD, PhD, DM, professor, director of Medical Institute, NEFU
Borisova Natalia - MD, PhD, deputy director of Medical Institute, NEFU
Aprosimov Leonid - MD, PhD, director of Postgraduate Institute, NEFU

EVSEEVA S.A., BURTSEVA T.E., DRANAEVA G.G., CHASNYK V.G., GANICHEV S.N.

The appreciation of satisfaction of village population in Sakha Republic (Yakutia) with health care of children

Annotation. Beginning of the XXI century was marked by realization of scale all-Russian projects on health care of population in the country. Including, there is a priority national project "Health" and modernization of health protection. Basic problems of rural health protection in the republic is a necessity for consultations of doctors of narrow specialities (93,8%), decrepitude and dissatisfied state of the medical and preventive establishments (88,5%) and necessity of organization medicinal providing of population in the villages (72,4%). Swinging majority of villagers according to a constitutional right would like to get skilled medic domiciliary.

Introduction. It is known that the regions of Russia substantially differentiate on socio-economic, climate and geographical, medical and demographic parameters, on the structure of providing of medic care, development of connection and transport. Forming of the specific system of life-support of population on The Far North is assisted by the presence of plenty of under-populated settlements being on considerable distance, both administrative and medical centers, and also weak enough and simultaneously difficult development of modern transport infrastructure. The basic problems of organization of the system of health protection of РС(Я) are conditioned by territorial features. The basic problems of organization of the system of health protection of Sakha Republic (Yakutia) are conditioned by territorial features. It is a presence of little complete medical and preventive establishments for providing of availability of medic are, high requirement of population in an ambulance medical, including specialized and sanitary-aviation help, in organization of departure form of providing of medic are, both primary and specialized, high level of population's hospitalization [1-4]. Existing in the regions of The Far North the system of providing of consultative medical services supposes transporting of patient or documentations about him to the specialized centers and quite often departure of specialist for realization of consultation, that does not have medical expediency and economically unprofitable. During the realization of consultation in the medical center there are charges on passage. In addition, most of regional and territorial centers of North do not have the opportunity to give to the patient, and also to accompanying, inexpensive living-place.

Thus, the problem of satisfaction of the population in the area of children's health protection has special actuality.

Materials and methods. The anonymous questionnaire of parents resident in 12 districts of Sakha Republic (Yakutia) is conducted: Ust-Yanski, Ust-Maiski, Verkhoyansk, Aldanski, Olekminsk, Suntar, Abyeiski, Tattinski, Ust-Aldan, Namski, Megino-Kangalaski. 1028 questionnaires are filled in all.

Table 1

Assignment of the respondents in the regions of the Republic of Sakha (Yakutia)

Regions	Account of the respondents
Ust-Yanski	104
Ust-Maiski	97
Verhoyansk	129
Aldan	101
Oekminsk	98
Suntar	86

Abyeiski	31
Tattinski	100
Ust-Aldan	100
Namski	82
Megino-Kangalasski	100
In all	1028

Results and discussion.

The results of analysis of these questionnaires appeared some unexpected: on the average 88,3% of the polled villagers unsatisfied by the volume of medical services on places. Taking into account the remoteness of settlements the 63,5% of them are the habitants of the nearest to the district center settlements, 73,3% - habitants of the distant settlements and 92,8% are habitants of the remote, difficult to access settlements. The obtained data are very anxious and require development of the differentiated approaches in area of program development on the health care of population in rural locality.

Respondents consider that principal reasons of subzero quality of medical service are:

17 Absence of doctors-specialists of narrow profile (93,8% polled);
18 The medical and preventive establishments of settlement (92,8%) is not equipped enough;
19 Dissatisfaction of the state of material and technical base of medical establishment (88,5% specified);
20 Dissatisfied by the amount of medical personnel in settlements(82,1);
21 Absence of necessary medicinal facilities (72,4%);
22 Absence of skilled doctors (39,8%);
23 High prices of medicine (36,6%);
24 Not enough of laboratory methods of research (16,3%);
25 Dissatisfactory organizationally-methodical work of guidance of central district hospitals (11,4%).

One of problems of rural health protection is a problem of availability of the specialized and hi-tech medic care. In opinion of respondents, there is a problem, in particular, patients can not arrive to the inspection or treatment to the Central District Hospital because of spring and autumn slush in a kind of roads absence or roads bad state in summer time (36,2%), absence of money (34%), absence of transport (24,8%), durations of journey to the district center, near 8-10ч. (23,7%).

During the last years the medical and preventive establishments of republic organize departures of doctors to the districts of republic for the survey of population by the plan. However, respondents marked that many of them did not have time to show a child to all necessary doctors and the specialists because of the next reasons: specialists are there few days (52%), too large turns to the specialists (20%). 94,1% respondents specified that prefer the arrival of specialists from the Pediatric Center of the Republic Hospital №1-(the National Medical Center). 94% talk in behalf on the trust of population to the doctors of the Pediatric center the Republic Hospital №1- the National Medical Center and that proves the doctors' high professional level.

Thus, basic problems of rural health protection to date, in opinion of respondents, are the necessity for the narrow specialized doctors' consultations (93,8%), decrepitude and dissatisfied state of the medical and preventive establishments (88,5%) and necessity of the medicinal providing organization for population in the village (72,4%). Swinging majority of villagers according to a constitutional right would like to get skilled medic domiciliary.

A volume and quality of medical and social help to the rural population foremost depends on the remoteness from central district hospitals. It is set on results our analysis, that lack of roads, seasonal isolation of population, large distances - especially intensify dissatisfaction of habitants with the quality of medical supervision.

In the Ust-Yansk district 104 habitants are polled from Deputatsk (CDH), Ust-Kuiga. Distance from Ust-Kuiga to CDH is 224 km, transport is a car, time of way from 6 hours to 9 hours. From village Saiyulyuk to CDH is 120 km, time of way by car is 4 hours. From village Tumat to CDH is 363 km by car for 10 hours, in summer only in the helicopter. Especially respondents from Ust-Kuiga and Tumat dissatisfied, mainly, people do not know to whom and where to appeal at a toothache. There is not a laboratory in Saiyelyuk.

97 people are questioned in Ust-Maiski region. From village Pertopavlosk to the CDH is 8 km for 1 hour by the car, from Solnechnyui to the CDH is 266 km by car for 8-10 hours in winter, in summer – by boat, from Eldican to the CDH is 64 km for 4 hours in winter, in summer – by boat, by car and by plane, from the village Kuptsye and Tumul to the CDH is 64 km for 3 hours by car in winter and in summer people go by boat. Because of difficult roads almost s of the respondents can't go to the Central District Hospital.

In Tattinski district 100 persons are polled. 90% respondents mark the unsatisfactory state of the medical and preventive establishments.

In Ust-Aldanski district 100 questionnaires are got. The population from distant settlements (from Dyegdal - to CDH is 110 km for 4-6 hours by car, from Nayahi to CDH is 73 km is 2-3 hours by car, Dyupsya - to CDH is 56 km for 2-3 hours by car, Kyelaye - to CDH is 132 km for 4-5 hours in winter by car, for 5-7 hours in summer by car or by boat, from Cheriktei to CDH is 91 km for 3 hours by car) mark the absence of laboratory, doctors, departure brigades do not almost come, there is not a pharmacy that why there is no opportunity to get medicine.

In Namski district only 82 men are questioned. The population complains, mainly, on too large turns to the specialists or that departure specialists work too few days.

Questioning of rural habitants has educed the wide palette of opinions, judgments and suggestions, that it must be necessarily taken into account at development and introduction of the republican health care programs of population of republic.

Bibliography

1.Aleksandrov V.L. Organization of hi-tech centers of the specialized medic care in the conditions of The Far North (on materials of the Republic of Sakha (Yakutia)): autoref. dis… doctor of med.science M, 2003. 35p.

2.Bourtseva T.E. Ethnic heterogeneity and natural and climate conditions as factors of planning of medic care for child's population of the Republic of Sakha (Yakutia)): autoref. dis… doctor of med.science. StP., 2010. 42p.

3.Lyaskovik A.Ts. Scientific ground of conception of organization of medic care for child's population living in the regions of The Far North with low-density population: autoref. dis… doctor of med.science. SPb., 2004. 40p.

4. Nazarov V.I.. Scientifically-organizational bases of perfection of medical and preventive help to the villagers of the Republic of Sakha (Yakutia)): autoref. dis… Cand. of med.science. M, 2003. 23p.

THE POTENTIAL OF IMPLEMENTING GOODMAN' TEST FOR ESTIMATING MENTAL HEALTH IN CHILDREN AND ADOLESCENTS IN SAHA REPUBLIC (YAKUTIA).

N.B.Semyonova, T.F.Martynova

Mental health according to WHO definition (1979) is specific reserve of human powers, which makes possible to overcome unexpected stress or difficulties, which result from extraordinary circumstances. In our country there are substantial territorial and regional distinctions between mental health indices, caused by social, economic, climate, geographical, ethnic and culture variety of different areas.

Negative peculiarities of mental health in population of Saha Republic (Yakutia) is high level of suicidal cases, which significantly exceeds average in the world. The level of suicides is especially high in northern districts (RN(Y)) of Yakutia, where native people prevail. The share of adolescence suicides is alarming. It is evident that the measures for protecting mental health in children and adolescents in RN(Y) need to be improved.

The approach to providing children with psychiatric assistance in our country is focused on psycho medicinal therapy with sharp deficit of pediatric, correction psychological and social pedagogical measures. From another side, medical assistance can be provided in a limited way, because of territorial dispersion and remoteness of populated areas in northern districts of the country. This concerns psychiatric assistance to great extent. So, mental health problems in children and adolescents can not be resolved on the account of public health system only. The structure of providing medical assistance should have inter-institutional character. Definite functions in mental health protection can become the responsibility of school medical psychological divisions. In particular, they can fulfill the task of timely diagnosis for children with mental disturbances.

At present there is worldwide practice to reveal children with border-line neuro-psychic disturbances using screening questionnaire, proposed by professor R.Goodman of London Psychiatry Institute [4]. Estimation of effectiveness of R.Goodman's questionnaire had shown its high correlation with clinical psychiatric examinations [3, 6]. Questionnaire had been translated into many languages of the world and is successfully implemented in developed and developing countries. In Russia R.Goodman's questionnaire was used firstly by professor E.N.Slobodskaya

for schoolchildren from Novosibirsk, which confirmed high information value of Russian version and its efficiency [1, 5].

In distinction from M.Rutter questionnaire, R.Goodman's can be used not only by psychiatrists but also by specialists of mental health divisions (pediatricians, psychologists) who possess professional tools. As world practice shows, R.Goodman's questionnaire is economically reasonable in the countries with the lack of qualified medical workers [2].

Aim of the Research: to study psychic health in adolescents, inhabitants of the Extreme North, using R.Goodman's standard questionnaire.

Materials and Methods.

We examined schoolchildren of the 5th to 9th Forms in secondary schools of the following villages of Ust-Yana district: Deputatskiy, Kazachye, Sayulyk, Ust-Yansk, Ust-Kuyga. We examined 393 subjects (214 boys and 179 girls). Psychic health was evaluated by Russian version of R.Goodman's standard screening questionnaire "Strengths and difficulties" [4]. Statistical processing of the results was made by software STATISTICA for Window Version VI. Statistical analysis of quantitative signs was carried out by calculating an average for the meaning (M) and 95% confidential interval (95% CI). To study the intensity of indices interconnection we calculated Spierman coefficient (r).

Tests were held due to Resolution № 583 of Saha Republic (Yakutia) Government dated December 24, 2009 "Approval of Inter-institutional preventive measures against destructive conduct in under-age in 2010 – 2012 "I choose the life" ".

Результаты и обсуждение

R.Goodman's questionnaire scopes the main characteristics of emotional and behavior disturbances, which were marked in a child during last six months. Points were distributed by five scales: emotional symptoms, behavior problems, hyperactivity, poor attention, peer problems and pro-social behavior. The total of the first four scales is evaluation of problems as a whole. The research was carried out for adolescents in ages from 11 to 16 years.

While examining schoolchildren we didn't reveal any psychic disturbances in 317 adolescents (80.7%). In 76 subjects (19.3%) we revealed border-line neuro-psychic disturbances. Their frequency resulted from testing adolescents by R.Goodman's test (19.3%), and went in conformity with indices of disturbances prevalence, received by M.Rutter's test (21.4%).

Among 76 adolescents with neuro-psychic disturbances, 23 children (5.8%) needed psychiatric consultancy and 53 children (13.5%) needed psychiatric assistance.

Group of children, who needed psychiatric assistance, included 7 boys and 16 girls. Psychic disturbances were shown by symptoms of disturbed behavior (in 15 children – 65.2%),

symptoms of emotional disturbances (in 11 children – 47.8%) and hyperactivity symptoms (in 4 children – 19.0). In 12 children (57.2%) we revealed neuro-psychic disturbances represented by one type of pathology, in 11 children (47.8%) we marked combinatory forms of disturbances. The following comorbide disturbances were marked more often: combinations of emotional disturbances with behavior disturbances (8 children – 72.7%). Children, who needed psychiatric assistance were less of all adapted to children team. There were problems in contacting other children in 18 subjects (78.3%). The majority of children (60.9%) marked that these difficulties upset them, or pain, create barrier to friendly relations, study, or impede their lives at home.

Group of schoolchildren, who needed psychiatric assistance consisted of 31 boys (58.5%) and 22 girls (41.5%). In children the disturbances in external or internal behavior did not correspond to clinical level, but required special care in order to timely render psycho-correction measures. Behavior disturbances prevailed in these schoolchildren (in 30 children – 56.6%). Besides, hyperactivity signs were found in 19 children – 35.8% and emotional symptoms in 16 children (30.2%). Combinations of hyperactivity signs with emotional disturbances were marked in 11 children (20.8%). Adaptation opportunities in these children were lowered: in 30 subjects (56%) we marked problems in relationships with other children of the group. 20 children (37.7%) believed that their problems prevent them from study, relationships with schoolmates and other friends or relatives.

Making comparative analysis of intensity of psychic disturbances symptoms under the process of study, we revealed higher evidence of symptoms in schoolchildren of 5^{th} and 9^{th} Forms. At the same time in Forms from 6^{th} to 8^{th} there were less evident symptoms (Table 1). To great extent this concerned emotional disturbances (Table 1). So, average index of emotional symptoms in the 5^{th} Form was 3.4 (CI=2.9 – 3.9). In Forms from 6^{th} to 8^{th} there was lowering of emotional tension: in the 6^{th} Form M=2.4 (CI=1.9 – 2.9), in the 7^{th} Form M=2.7 (CI=2.2 – 3.3), in the 8^{th} Form M=2.3 (CI=1.8 – 2.8). Up to the 9^{th} Form the index of emotional symptoms increased again up to 2.9 (CI=2.6 – 3.4). Such progress in emotional disturbances can be explained by increased emotional tension in the 5^{th} Form caused by transition to aspect learning, which leads to exertion of adaptation mechanisms. We explain higher index of emotional symptoms in schoolchildren of the 9^{th} Form by forthcoming exams. As for the signs of behavior disturbances and hyperactivity symptoms, the increase of the mentioned indices also related to the 9^{th} Form.

The revealed disturbances in psychic health demand timely correction, because emotional disturbances and behavior abnormalities lead to the lowering in adaptive abilities in adolescents,

which was confirmed by dynamics of the indices of pro-social scale in the process of study. So, in the 5th Form the index of pro-social scale is 7.3 (CI=6.8 – 7.7), in the 6th to 8th Forms we marked its increase: in the 6th Form 7.6 (CI=7.2 – 7.9), in the 7th Form 7.4 (6.9 – 7.8), in the 8th Form 7.6 (CI=7.1 – 8.1). In the 9th Form there was the lowering of the index to 6.7 (6.4 – 7.1).

Disturbances in psychic health lead to the growth of problems and difficulties in interrelations between schoolmates. This has been proved by the results of correlation analysis, which revealed positive correlation interconnections between the presence of common problems and difficulties in relationships between counterparts ($r=0.58$, $p<0.001$).

Comparative analysis of psychic health indices didn't reveal considerable distinctions between native and alien adolescents according to main scales of the questionnaire (Table 2). But native adolescents showed lowered adaptive abilities, confirmed by index of pro-social scale: in native adolescents M=7.0 (CI=6.8 – 7.3), in alien adolescents M=7.8 (CI=7.4 – 8.2), $p<0.001$.

We carried out anonymous interviews in order to ask schoolchildren about the need for psychic assistance in educational establishments. By the opinion of 136 subjects out of 161 (81.6%), psychological services should be available at schools together with providing psychological assistance to schoolchildren. 82 subjects (51.8%) told they personally need psychological assistance. To great extent psychological assistance is necessary for native adolescents, living in small villages (Kazachye, Sayulyk, Ust-Yansk, Ust-Kuyga). They told about their need in psychological assistance in 60.5% cases, in distinction from schoolchildren, living in a large village (20.6%), $p<0.001$.

Conclusion.

We studied psychic health in adolescents by R.Goodman's standard screening questionnaire "Strengths and difficulties". We revealed border-line neuro-psychic disturbances in 19.3% schoolchildren. The highest intensity of symptoms was marked in schoolchildren of the 5th and 9th Forms. We didn't find considerable differences of psychic health indices in between native and alien adolescents. But natives showed lowered adaptive abilities. These groups of children needed timely psychic or psychotherapeutic assistance.

We recommend to use R.Goodman's questionnaire by medical psychological specialists as their professional tool in order to reveal timely children and adolescents, who are in need for specialized psychological or medical assistance.

REFERENCES.

1. Slobodskaya, E.R. Psychosocial Factors of Emotional Problems and Deviations in Adolescent Behavior / E.R.Slobodskaya, R.Goodman, T.I.Ryabichenko // Psychiatrics – 2006. – № 2. – P. 28-36.
2. Alyahri, A. Validation of the Arabic Strengths and Difficulties Questionnaire and the Development and Well-Being Assessment / A. Alyahri, R. Goodman // East Mediterranean Health J. – 2006. – Vol. 12. – P. 138-146.
3. Goodman, R. Comparing the Strengths and Difficulties Questionnaire and the Child Behavior Checklist: is Small Beautiful? / R. Goodman, S. Scott // J. Abnorm. Child Psychol. – 1999. – Bol. 27(1). – P. 17-24.
4. Goodman, R. Psychometric properties of the Strengths and Difficulties Questionnaire (SDQ) // Journal of the American Academy of Child and Adolescent Psychiatry. 2001. V. 40. P. 1337-1345.
5. Goodman, R. Russian child mental health: a cross-sectional study of prevalence and risk factors / R. Goodman, H.R. Slobodskaya, G.G. Knyazev // European Child and Adolescent Psychiatry. – 2005. – V. 14. – P.28-33.
6. Strengths and Difficulties Questionnaire Added Value Scores: evaluating effectiveness in child mental health interventions / T. Ford, J. Hutchings, T. Bywater, A. Goodman, R. Goodman // Br. J. Psychiatry. – 2009. – Vol. 194(6). – P. 552-558.

Table 1

Intensity of Symptoms under Psychic Disturbances in schoolchildren of different forms after R.Goodman questionnaire results

M (95% CI)

Questionnaire scales	the 5th Form	the 6th Form (n=68)	the 7th Form (n=76)	the 8th Form (n=58)	the 9th Form (n=92)
Emotional symptoms scale	3.4 (2.9-3.9)	2.4 (1.9-2.9)	2.7 (2.2-3.3)	2.3 (1.8-2.8)	2.9 (2.6-3.4)
Behavior problems scale	2.1 (1.8-2.5)	2.1 (1.7-2.5)	2.3 (1.9-2.6)	2.1 (1.7-2.5)	2.6 (2.3-2.9)
Hyperactivity scale	2.9 (2.6-3.4)	2.6 (2.1-3.0)	3.1 (2.7-3.6)	2.7 (2.3-3.1)	3.3 (2.9-3.7)
Problems with counterpart scale	3.2 (2.8-3.6)	3.1 (2.6-3.5)	3.1 (2.8-3.5)	2.7 (2.2-3.1)	3.2 (2.8-3.5)
Scale for total number of problems	11.7 (10.6-12.8)	10.1 (8.9-11.3)	11.4 (10.1-12.7)	9.7 (8.5-11.0)	11.9 (11.0-12.8)
Influence estimation scale	0.6 (0.3-0.9)	0.2 (0.03-0.3)	0.8 (0.5-1.2)	0.6 (0.3-0.9)	0.5 (0.3-0.7)
Pro-social scale	7.3 (6.8-7.7)	7.6 (7.2-7.9)	7.4 (6.9-7.8)	7.6 (7.1-8.1)	6.7 (6.4-7.1)

Table 2

Ethnic Distinctions between the indices of psychic health in adolescents after the results of self-estimation (R.Goodman's test).

M (95% CI)

Questionnaire scales	Alien adolescents (n=110)	Native adolescents (n=283)	p
Emotional symptoms scale	2.8 (2.4-3.2)	2.8 (2.6-3.1)	>0.05
Behavior problems scale	2.3 (1.9-2.5)	2.2 (2.1-2.4)	>0.05
Hyperactivity scale	3.2 (2.8-3.5)	2.9 (2.7-3.1)	>0.05
Problems with counterpart scale	3.1 (2.8-3.4)	3.1 (2.9-3.3)	>0.05
Scale for total number of problems	11.3 (10.4-12.3)	11.1 (10.4-11.7)	>0.05
Influence estimation scale	0.7 (0.4-0.9)	0.5 (0.3-0.6)	>0.05
Pro-social scale	7.8 (7.4-8.2)	7.0 (6.8-7.3)	<0.001

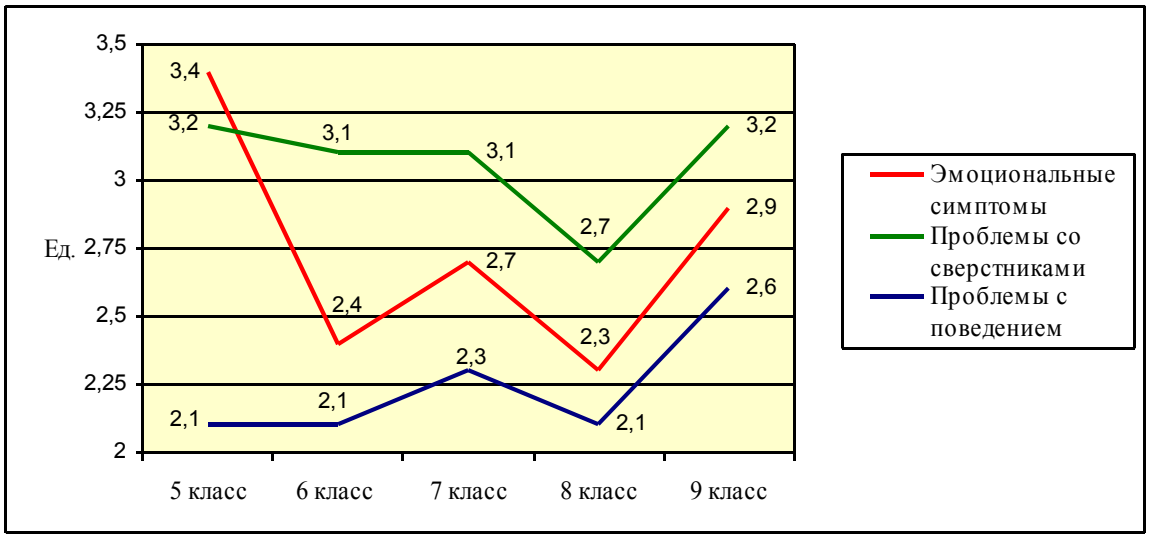


Chart 1. Intensity of symptoms of psychic disturbances in schoolchildren of 5 to 9 Forms.

ABSTRACT

Research was carried out in order to evaluate the possibility of using R.Gudman's standardized screening questionnaire «Strength and difficulties» (for adolescents aged from 11 to 16 years) in the course of every day practice by specialists in psychic health in schools of Saha Republic (Yakutia). Evaluation of psychic health in adolescents revealed neuro-psychic disturbances in 19.3% of schoolchildren of border-line level. This coincides with indices of disturbance prevalence, obtained by M.Rutter test (scale B2 – for teachers). The highest intensity of disturbances was marked in schoolchildren of the 5^{th} and 9^{th} Forms. The majority of the children, who have problems with psychic health, mark that the difficulties, which they faced, upset them or pain them, create barrier to friendly relations and study or impede their lives at home. This group of children needs timely psychological or medical assistance.

Key words: children, psychic health, R.Goodman's test.

AUTHORS' DETAILS.

Mrs.SEMYONOVA Nadezhda Borisovna – Leading Scientific Worker in the Department for somatic and psychic health in children. SSRI of Northern Problems of SD RAMS. Professor
Home address: Russia, 660095, Krasnoyarsk, ul.Kommunalnaya, d.18, kv. 62.
Mobile phone: 7-913-53-98-602,
Office phone: 7 (391) 228–06–83,
E-mail: org@impn.ru

Mrs.MARTYNOVA Tatiana Fedotovna – Deputy Director for Teaching and Methodical Work, SEE «RC of psychological medical social care» ME SR (Y)
Home address: Russia, 677013, Yakutsk, ul. Kalandarishvili d.21/2, kv. 64
Mobile phone: 7-914-107-0847,
Office phone: 7 (4112) 42-28-92,
E-mail: rubicon_2002@impn.ru

AN ADAPTABLE POTENTIAL OF SPORTSMEN OF YAKUTIA, WHO GO IN FOR SINGLE COMBAT

V.S.Golokova[1], F.A. Zaharova[2]
[1]The specialized school of the Olympic reserve, Yakutsk
[2] Medical institute of SVFU, Yakutsk

Modern sport of the higher achievements puts before sportsmen necessity to overcome the heaviest, and in some cases both other-wordly psycho emotional and physical activities.

Necessity of growth of sport achievements make to raise continuously volumes and intensity of trainings, therefore loadings increase that usually adversely influences on a condition of health.

The aim of research: to estimate degree of pressure functional and regular systems of an organism of young sportsmen of Yakutia, who go infor a single combat depending on sports qualification.

There was carried clinical and laboratory investigation of 100 qualified sportsmen (50 boxers and 50 fighters of a freestyle) of Yakut nationality, male, at the age from 17 till 26 years (middle age 18,2±2,3), pupils of the State budgetary establishment «School of the higher sports skill» (GBU Sh.V.S.M) and the Specialized School of the Olympic reserve name after R.M. Dmitriev (GOU SSOR) of Yakutsk (basic group). All surveyed were winners and prize-winners of the international and All-Russia competitions with the experience of going in for sports from 9 till 16 years, with sports qualification a candidate in master of sport (CMS) (48 %) and a master of sport MS (52 %). By results of the profound medical inspection, annually spent by experts of the Republican physical clinic all are recognized as healthy.

As a comparison group investigation of 100 beginning sportsmen (pupils of the specialized school of the Olympic reserve and sports schools) 15-16 years (middle age 15,6±0,6) with the sports experience from 3 till 4 years (juniors) is carried. Among them there were 57 boxers and 43 fighters. According to medical inspection all have been recognized as healthy and are admitted to trainings.

Into control group have entered almost healthy 50 male students of Medical institute SVFU who never went in for sport professionally. At the moment of inspection at active poll students didn't show complaints to a state of health and had (within last 6 months) no instructions on presence of the sharp or transferred aggravations of any chronic diseases. On national and age stuff the group was representative to the basic group (middle age 17,0±1,5).

Inspection of sportsmen included: questioning, gathering of the sports anamnesis, clinical survey by different experts, functional, laboratory and hardware-software research methods.

The computer express diagnostics of level of adaptation to physical activities spent on a hardware-software complex "Omega-S" (the state Registration FS №022a 2005/1434-05 from 18.03.05). Defined:

A - level of adaptation to physical activities;

B - level of training;

C - level of power maintenance of an organism;

D - psycho emotional condition;

H - an integrated indicator of "the sports form»

Table 1

The average indexes of a physical condition (M±m)

	Indicators	CMS, MS (n=100)	Juniors (n=100)
A	An adaptation to physical activities	67,04±18,21	53,1±21,9*
B	The training	69,36±23,02	59,9±27,8*
C	About Power supply	59,46±17,30	53,5±19,9*
Д	The psycho emotional condition	61,57±14,72	55,0±18,9*
H	The Sports form	60,96±21,10	55,1±21,0*

* - the difference is statistically significant ($p<0,05$)

The basic indicators of a physical condition (PC) are calculated in percentage (the norm from 60 to 100 %). The decrease of indicators below norm border testifies about decrease of functional reserves of an organism and an overstrain of adaptable processes.

The histogram. By the received results the average integrative indicators of the adaptive-kompensatorny reactions (PC) at young sportsmen have turned out below norm and more low than at sportsmen of the basic group.

This computer method of diagnostics defines more than 1000 various conditions of an organism which are divided into three basic groups for convenience:

1-high and normal level PC = 4-5 points

(The satisfactory condition, all systems of an organism work optimum),

2-average level PC = 3 points (pressure of systems of an organism, the reserve possibilities of an organism are spent not effectively),

3-low level PC = 1-2 points (the unsatisfactory condition, organism reserves are lowered, the organism is in a stress condition, adaptation failure is possible

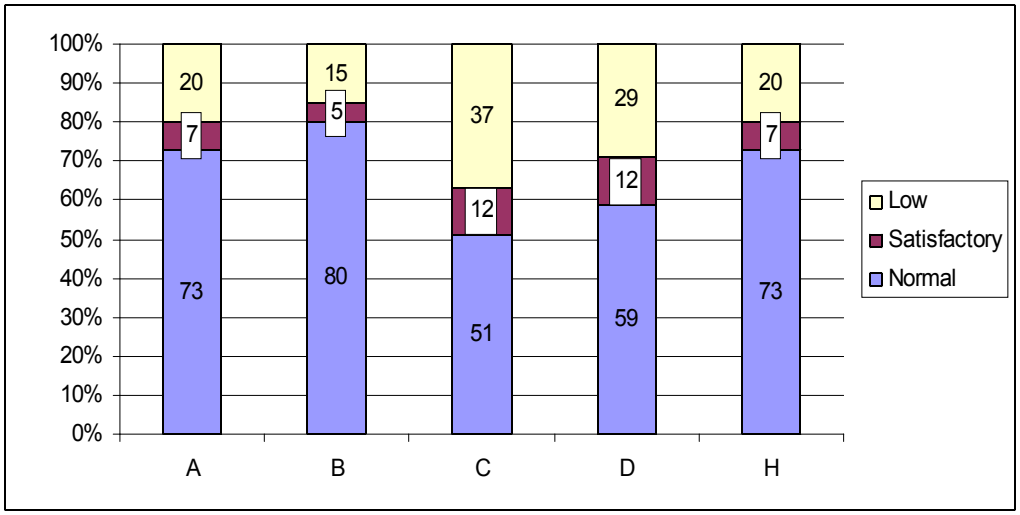


Fig. 3 Distribution of the qualified sportsmen on indicators PC (in %)

At the individual analysis the high and normal level of indicators is revealed: A-adaptations - at 73 %, B-training–80 %, C-power supply – 51 %, D- psycho emotional condition-59% of experienced sportsmen.

The indicator of "the sports form», equal 4-5 points is revealed at 73 %, 3 points – at 7 % and to corresponding 1-2 points – at 20 % of sportsmen.

Thus, at inspection of the qualified sportsmen it is established that the lowered adaptable potential to physical activities 20 % surveyed had, the lowered level training -15 %. In 20 % of cases the integrated indicator of "the sports form» corresponded to an unsatisfactory physical condition.

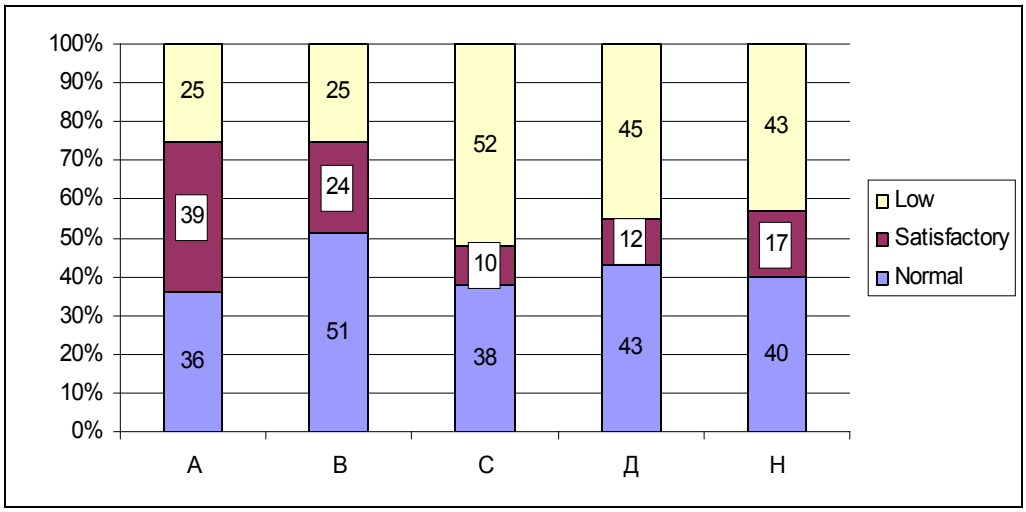


Fig. 2 Distribution of juniors on indicators PC (in %)

By the results of the spent researches (a Fig. 2) high and normal level of adaptation (A) is established at 36 juniors (36 %), average – at 39 %, and low level – at 25 % surveyed. High and

normal level training (B) is revealed at 51 %, the average level – at 24 %, low at 25 % (among them, 10 % had a minimum level) surveyed. A- level of power maintenance (C) within "norm" and «the maximum values» is revealed at 38 %, low level at 52 %, «signs of an exhaustion of power resources» are revealed at 4 % of the surveyed. The psycho emotional condition (D) is estimated as excellent and good at 43 % surveyed, signs of a nervous overstrain are revealed at 45 % (among them signs of nervous stress and depression – at 4 %). An indicator of «The sports form» (H), corresponding 4-5 points 40 %, 3 points – 17 % and 1-2 points – 43 % of juniors.

Thus, low level of adaptation and training is revealed at 25 % of the surveyed young sportsmen. 43 % surveyed had the integrated indicator of the sports form, correspond to an unsatisfactory (1-2 points).

At the comparative analysis the average indicator physical condition sports form has made 3,2±1,0 points at juniors, at the qualified sportsmen 3,8±0,8 points that testifies about bigger degrees of adapted ness of an organism of the qualified sportsmen to physical activities.

The condition of vegetative regulation of systems of an organism estimated on scatterogramme and to a pressure index (PI):

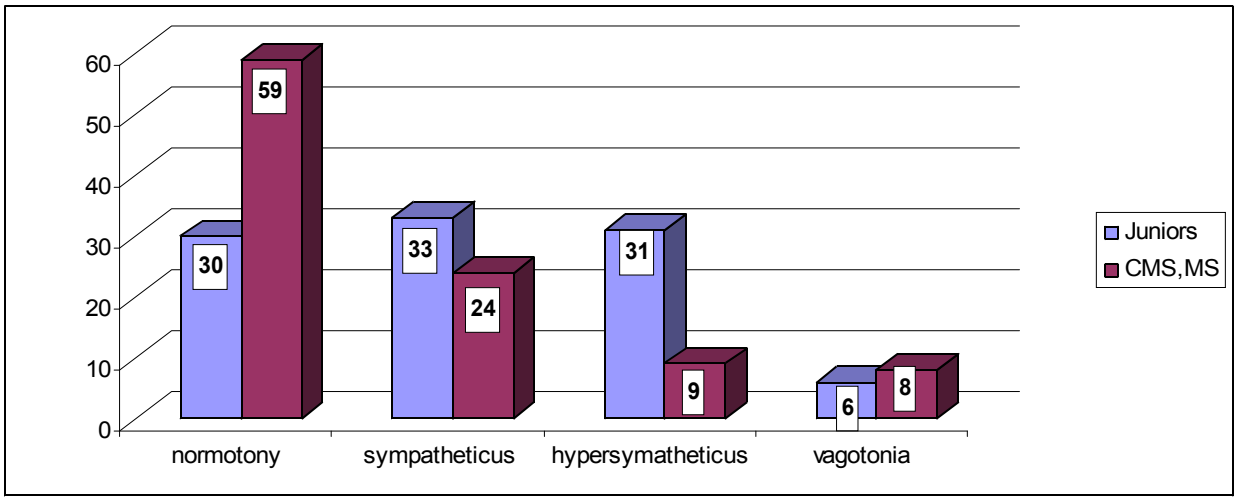


Fig. 4 A vegetative status of juniors and the qualified sportsmen

By results of the spent researches (fig. 4) at sportsmen with sports qualification CMS and MS prevailed normotonical regulation type (59 %), the sympathetic type of regulation has made 33 % of cases and parasympathetic type 8 of %. At juniors the sympathetic type of regulation (64 %) prevailed. The normotonical type is revealed at 30 % and parasympathetic at 6 %.

To early objective signs of disadaptation of vegetative nervous system concern a replacement of a normotonical vegetative tone sympathetic, increasing of an index of pressure that testifies about strengthening of influence of a sympathetic tone and increasing of degree of centralization of management by a rhythm, restoration delay. It is known that at lower adaptive

possibilities there is a strengthening activity sympatheticus nervous system that is a sign of the big power inputs regular organism systems on homeostasis support.

Conclusions:

1. An adaptable potential at qualified sportsmen in 2 times above than at juniors
2. Decrease of an adaptable potential is revealed at 20 % of the qualified sportsmen (MS and CMS) and 43 % of the beginning sportsmen
3. At the qualified sportsmen prevalence normotonical type of vegetative regulation (59 %), and at juniors – sympathetic type (64 %) is established

Practical recommendations:

1. It is necessary to carry out computer express diagnostics of a physical condition (PC) sportsmen on a hardware-software complex «Omega - S» regularly and to divide surveyed on 3 groups:

The persons having high and normal indicators of the sports form (4-5 points)

The persons having average indexes of the sports form (3 points)

The persons having low indicators of the sports form (2-1 points)

2. The sportsmen, who have low points, it is necessary to survey in dynamics after rest and then to solve a question on the admission to competitions.
3. At sportsmen with raised tone CNS is it necessary to exclude stress presence, to remove a psycho emotional pressure, to adjust training loading.
4. Medical supervision in dynamics, individual correction of training loading, a correct mode of time of trainings and the rest, the balanced food, reception adaptogens is recommended to all sportsmen having signs of an overstrain of adaptive processes (disadaptation).

The used literature:

1. Demin of I.V.scope, possibilities and restrictions of use of system of complex computer research of a physical condition of sportsmen of "Omega-S2". – the Basic directions of development of single combats: a science and practice: The materials of All-Russian scientific-practical conf., the chair devoted to the 5 anniversary «Theories and techniques of single combats» (Chaikovsky, CHGIFK on February, 7-9th 2008.) / I.V.Dyomin, M.U.Stepanov, F.H.Zekrin, V.D.Medvedkov, V.V.Zebzeev. – Chaikovsky, 2008. –P. 14-18.

2. Sokolovsky V. S. Modern aspects of human organisms adaptation to intensive muscle activity (in Rassian) / V.S. Sokolovsky // Physical training in preventive maintenance, treatment and rehabilitation.-2006. - №2, (17).-P.13-19.

3. Stepanov M. U. An estimation of a functional condition of an organism of sportsmen on the basis of the analysis of characteristics of variability of a warm rhythm by results of performance of specific loading / M.U. Stepanov, I.V. Demin//the Sports heritage of the University game-2013: materials of the international scientific-practical conf., -quays Boats: Kam GAFKSiI, 2010. – P. 336-339.

4. Stepanov M. U. The complex control of management by training process kikbo[ers, applied in CHGIFK/M.U.Stepanov//Preparation of matrial artists: materials of Vseros. scientific-practical conf., devoted 30 anniversary CHGIFK. – Chaikovsky, 2010. – P. 114-118.

5. Shinkorenko O. V, the Basic directions of formation of requirement for regular employment by physical exercises at students of technical college/ O.V.Shinkorenko, V.I.Logunov//the Theory and practical of culture physical. -2008. - №6. –P. 25-28.

GABRIELJAN K.G. THE PHYSICAL ACTIVITY AND THE INDICATORS OF INDIVIDUAL HEALTH OF STUDENTS / GABRIELJAN K.G.//THE THEORY AND PRACTICE OF CULTURE PHYSICAL.-2008. -№11.-P.31-34.

LAPTEVA N.I., YAKOVLEV A.A.

EPIDEMIOLOGIC EVALUATION FACTORS THAT INFLUENCE THE DEVELOPMENT OF COMBINED FORMS OF HIV WITH PARENTERAL VIRAL HEPATITIS AMONG THE POPULATION OF SAKHA REPUBLIC (YAKUTIA)

Administration of the Rospotrebinspection of the Sakha Republic (Yakutia), State Formations of Management of the Higher Vocational Training the Vladivostok State Medical University of the Ministry of Health and Social Development of the Russian Federation.

UDC 616.36-002+616-097-022:578.828.6 (571.56)

This work based on analysis of case histories of individuals with mixed infections (HIV + parenteral hepatitis viruses) in comparison with mono HIV and parenteral hepatitis viruses, given the epidemiological evaluation of risk factors are potentially able to influence the formation of associated forms. Demonstrated the leading role of age, sex and intravenous drug use.

Key words: epidemiology, risk factors, HIV, hepatitis B and C.

Introduction. One of the features of the modern period, the spread of infections is increasing in the share structure of the infectious diseases combined (mixed forms) of various etiologies [12]. The cause of this phenomenon remains poorly understood. By according to Selivanov A.A. [7], Yakovlev A.A., Pozdeeva E.S. [15] the emergence of infections of mixed etiology should be treated with interspecies ecological point of view, not only as an accident caused the association. It is known that the mix - a form caused by viruses parenteral hepatitis, as well as their combinations with agents of other infections (tuberculosis, HIV, etc.) are characterized by greater potency hroniogennoy and often unfavorable course of infection [14].

The Sakha Republic (Yakutia) in its harsh climate, remoteness, poor infrastructure, active migration as a foreign labor, and citizens of the Russian Federation, is a disadvantaged region of the incidence of infections with a transmission mechanism gemokontaktnym (HIV, hepatitis B and C) [4]. For decades, the incidence of hepatitis B in the 3-3.5 times higher than the all russian figures [8]. In the period from 2005 to 2009 marked a permanent increase in the incidence of chronic hepatitis C achieve a maximum level of 51.9 per 100 thousand population [6]. In recent years, recorded increases in HIV prevalence among foreign nationals and 33%, and the inhabitants of various regions of Russia, who arrived with an established diagnosis, up to 38% of newly diagnosed in 1996 [9]. In connection with the common ways of infection might be expected, as in other areas [5, 11], and the combination of a high frequency of HIV with HCV-

infection and HBV and/or other hepatotropic viruses. However, the problem of combined forms of these infections in the Republic was not considered.

The purpose of this study was the evaluation of epidemiological factors, presumably contributing to the formation of HIV infection in combination with parenteral viral hepatitis.

Materials and methods. The starting material the history of the disease during the period from 2006 to 2010 persons admitted to the infectious diseases hospital PO "Yakutsk city hospital," hospital records of patients undergoing outpatient monitoring at the PA "Yakut Republican Center for Prevention and Control of AIDS." Taken together, analyzed some 600 medical records and outpatient charts. Necessary data on patients with combined forms of parenteral viral hepatitis with HIV (200 case histories and outpatients) were recorded in a specially designed case report. Epidemiological evaluation given to the most important factors used in the descriptive and evaluative studies [1] that may affect the way we thought and the formation of associated infections. Also take into account available information [10, 15] on the factors influencing the incidence of infections with a population of Far Eastern Federal District gemokontaktnym transfer mechanism and the results of our previously conducted epidemiological studies [4]. As a comparison group used data from 200 case histories of patients with HIV (without addition of viral hepatitis) and 200 - chronic mono infections with hepatitis B (CHBV) and hepatitis C (CHCV), because it is chronic forms of viral hepatitis in recent years, dominated in the Republic.

Statistical analysis of the material was carried out by conventional methods with the calculation of average values (M) and standard error of the mean values (m). In an epidemiological evaluation of risk factors in the development of mixed - infection rate was calculated odds ratios (OR) and confidence interval (CI) to it [2].

Results and discussion. As the results of investigations of cases (table 1), dominated by individuals with a diagnosis of HIV in combination with CHBV (85 ± 7,7%). Second place was taken by patients with mixed forms of HIV with CHBV and CHCV (6,5 ± 2,4%). The combination of HIV only with CHBV was observed in 5 ± 2,1% cases. HIV in combination with chronic hepatitis B, C and D (CHDV) was recorded at 2 ± 1,4%. In rare cases, met mixed form of HIV with chronic hepatitis G (GHGV) and C (1,5 ± 1,2%).

Table 1

Most HIV in combination with viral hepatitis was reported (73,5 ± 5,9%) in males (table 2). Presumably this is due to the fact that the infection primarily occurred in intravenous drug use, namely, males account for the risk among drug users [13]. In addition, as you know, males dominate considerably among patients with hepatitis C [3], and we are examining a sample of combined forms of CHCV met the 90% of cases. However, as shown in Table. 3, no significant

differences in being male patients with mixed - and mono forms of hepatitis have been identified by us. Most HIV in combination with viral hepatitis was registered in the age group 20-29 years (68.5 ± 5.1%, OR = 2.2, 95% CI 1.7-1.8). In second place people aged 30-39 years (14.5 ± 3.2%).

Table 2

The patients are related to the socio–dizadaptirovannoe non-working population (drunkers, addicts etc.) were more common among patients infected with HIV, and indiscriminate sex on the risk of essentially mixed - forms had no effect (table 2). Consequently, the risk of mix - mono infection or HIV in the disordered sexual relationship is almost identical. However, this risk is much less impact on the possibility of infection how or parenteral virus hepatitis (table 3).

Table 3

Evaluation of epidemiological history of patients with HIV in combination with viral hepatitis showed that more than half of the patients (52.5 ± 1.6%) were drug addicts who used psychotropic drugs intravenously. Moreover, as shown in table 3, among patients with mono hepatitis people who use drugs were found only in 2%. The duration of drug use in 45.2% of patients with mixed infection of less than one year and from year to two years or more - 54.8%.

Conducted numerous epidemiological studies have shown that co-infection is the result of either sequential infection (superinfection) or simultaneous (coinfection) [4]. Because the fact that intravenous drug use is less often observed with mono hepatitis patients (2.0%) were significantly more likely - only infected with HIV (27%) and almost more than half of patients with combined forms (52.5%), it is possible to think that this co-infection led to their development. In turn, this indicates a significant extent in modern times, reservoir for infections gemokontaktnym mechanism of transmission in the Sakha Republic (Yakutia) are those with mixed - forms of parenteral viral hepatitis and HIV who use drugs.

Conclusions:

1. The most common form of mixed forms of HIV infection with parenteral viral hepatitis is a combination of HIV with chronic hepatitis C (85 + 7.7%).
2. Contributing to the formation of mixed - infection factors on the classification of Belyakov V.D. [1], the age of cases ranged from 20 to 29 years and male gender. Factors contributing include injecting drugs. Less important are disordered sexual relations.

Used literature:

1. Belyakov V.D, Semenenko T.A, Shraga M.H. Introduction to the epidemiology of infectious and noninfectious diseases in man .- Moscow.: Medicine, 2001 – 264 p.

2. Zueva L.P. Epidemiological diagnostics / L.P. Zueva, C.R. Eremin, B.I. Aslanov - 2nd ed. rev. and add. - SPb: OOO "Foliant". - 2009. – 312 p.

3. Zueva L.P. Epidemiology / L.P. Zueva, R.H. Yafaev - SPb: 2005. - 746 p.

4. Lapteva N.I. The integration approach a lot of study of the dynamics of morbidity by infections with heamocontact mechanism of transfer (HIV, hepatitis B and C) of the Sakha Republic (Yakutia) and epidemiological estimation of factors its determining / N.I. Lapteva, A.A. Jakovlev // Yakut medical journal. – 2011. – N.3. - P.58.

5. Larin F.I. HIV and parenteral hepatitis in the Krasnoyarsk region / F.I. Larin, V.V. Lebedev, A.N. Redko // Microbiology journal.-2005. – N.3. - P. 79 – 82.

6. Likhanova M.M. Clinical and epidemiological characteristics of chronic hepatitis C in the Sakha Republic (Yakutia) / M.M. Likhanova, S.S. Sleptsova, N.N. Tikhonova // X Republican School of hepatologists of the Sakha Republic (Yakutia) dedicated to the memory of the doctor of medical sciences, professors Alekseevoj M.N. «New developments and prospects of modern hepatology»: materials of republican scientifically-practical conferense -Yakutsk: The IB Semenov. - 2011.- P. 28-31.

7. Selivanov A.A. Infection of the mixed etiology - chance or regularity / A.A. Selivanov // Patterns of epidemic process: Proceedings of the Institute by name Pasteur. -V.61. -1983. - P.47-49.

8. Sleptsova S.S. The characteristic of a chronic hepatitis B in the Sakha Republic (Yakutia) / S.S. Sleptsova, M.N. Alexeeva, U.V. Lobzin // X Republican School of hepatologists of the Sakha Republic (Yakutia) dedicated to the memory of the doctor of medical sciences, professors Alekseevoj M.N. «New developments and prospects of modern hepatology»: materials of republican scientifically-practical conferense -Yakutsk: The IB Semenov. - 2011.- P. 9-11.

9. Terekhova M.V. The epidemiological situation of HIV in Yakutsk during the implementation of priority national project «Health» / M.V. Terekhova, G.F. Shakhnovich, A.A. Kozhevnikov / / X Republican School of hepatologists of the Sakha Republic (Yakutia) dedicated to the memory of the doctor of medical sciences, professors Alekseevoj M.N. «New developments and prospects of modern hepatology»: materials of republican scientifically-practical conferense -Yakutsk: The IB Semenov. - 2011.- P. 89-93.

10. Trotsenko O.E. HIV infection in the Far East Federal District of Russian Federation (the epidemiological characteristics) / O.E. Trotsenko / / Avtoref. dis ... .doctor of med. sciences. - M.- 2005. – 48 p.

11. Rakhmanova A.G. Chronic virus hepatitises and liver cirrhosis / A.G. Rakhmanova, A.A. Yakovlev, E.N. Vinogradova and others. - SPb: SpetsLit.- 2006.-413 p.

12. Cherkassky B.L. Guidance on the general epidemiology / B.L. Cherkassky – M.: Medicine. – 2001. -558 p.

13. Sharkova V.A. Features of the immune status genetic phenotypic characteristics of the drug addiction / V.A. Sharkova // Avtoref. dis ... .doctor of med. sciences.: 03.00.70 – Vladivostok. - 2007.-25 p.

14. Shlyahtenko L.I. Viral hepatitis of combined etiology and new challenges for the control of these infections / L.I. Shlyahtenko, S.L. Mukomolov, I.A. Levakova // Rus. journal of gastroenterology, gepatology, coloproctology -2000. – N.3. - P.28-31

15. Yakovlev A.A. Integrative epidemiology of hepatitis B and C in the Primorye Territory / A.A. Yakovlev, E.S. Pozdeeva - Vladivostok: Medicine Far Eastern. - 2011. – 116 p.

Information about the authors:

1) Anatoly Yakovlev the doctor of medical sciences, the professor, the professor of chair of epidemiology and military epidemiology of the Vladivostok State Medical University. Home address: Vladivostok, 690087, st. Kotelnikov 8 kv.40. E-mail: yakovlev-epid@yandex.ru, cell phone 89089709337.

2) Nurgustana Lapteva post-graduate student of epidemiology and military epidemiology of the Vladivostok State Medical University, leading specialist-expert of the part epidemical department of Administration of the Rospotrebinspection of the Sakha Republic (Yakutia). Home address: Yakutsk, 677000, st. Belinsky 32 kv.14. E-mail: lapteva.nurgusta@mail.ru , cell phone 89644170625.

Table 1

The most common mix - form of parenteral viral hepatitis and HIV and share some of their options in the general structure of associated infections

Options for a combination of viral hepatitis and HIV	Total of patients	% ± m
HIV+ CHCV	170	85 ± 7.7
HIV+CHBV+CHCV	13	6.5 ± 2.4
HIV+CHBV	10	5.0 ± 2.1
HIV+CHBV+CHCV+CHDV	4	2.0 ± 1.4
HIV+CHCV+CHGV	3	1.5 ± 1.2
Total	200	100

Table 2

The distribution of risk factors among patients with HIV in combination with viral hepatitis and HIV without

Risk factors	The proportion of patients with HIV	Percentage of patients with	The odds ratio (OR)	The confidence

	in combination with viral hepatitis who have a risk factor (% ± m)	HIV who have a risk factor (% ± m)		interval (CI)
Male	73.5 ± 5.9	61 ± 4.9	1.8	1.7-1.9
Age of cases 20-29 years	68.5 ± 5.1	50 ± 5.0	2.2	2.1-2.3
Drug use	52.5 ± 1.6	27 ± 4.4	3.0	2.9-3.1
Having sexual contact	48.5 ± 1.7	66 ± 6.4	0.5	0.4-0.6
socio–dizadaptirovannoe non-working population	24 ± 3.5	42 ± 4.9	0.4	0.3-0.5

Table 3

The distribution of risk factors among patients with HIV in combination with viral hepatitis and mono hepatitis

Risk factors	The proportion of patients with HIV in combination with viral hepatitis who have a risk factor (% ± m)	Percentage of patients with mono hepatitis with a risk factor (% ± m)	The odds ratio (OR)	The confidence interval (CI)
Male	73.5 ± 5.9	68 ± 4.9	1.3	1.2-1.4
Age of cases 29-29 years	68.5 ± 5.1	50.5 ± 0.7	2.1	2.0-2.2
Drug use	52.5 ± 1.6	2.0 ± 1.4	54.2	54.1-54.3
Having sexual contact	48.5 ± 1.7	14 ± 4.5	5.8	5.7-5.9
socio–dizadaptirovannoe non-working population	24 ± 3.5	23.5 ± 3.5	1.1	1.0-1.2

Control model of epidemic processes of hepatitis B, rubella and measles in Altai Krai

T.V. Safyanova, N.V. Lukyanenko

Higher educational establishment "Altai State Medical University"

Public health and social development ministry

Barnaul

Control system of the epidemic processes of hepatitis B, measles and rubella is presented as macrosystem formed by subsystems of epidemiological surveillance and control. Efficiency of surveillance can be ensured only with full-fledged maintence and realization of its subsystems – informational, diagnostic and management decision-making [1, 2, 3].

During the period of realization of the national project "Health", in segment "Additional immunization of population" since 2006 and implementation of the third stage of the measles' liquidation in Russian Federation since 2008, in Altai Krai there's been necessity of improvement in control system of the epidemic processes of infectious diseases, controlled by means of special prophylaxis. The system which is optimized in the area of organization of epidemiological control as many-level system of epidemiological surveillance by the use of developed indices of its efficiency and operational alteration depended on made management decisions.

Grounds for improvement of epidemiological surveillance system in Altai Krai are:

- specificity of the region;
- our own researches into regular occurrence of hepatitis B, measles, rubella, development of their epidemic processes during different periods of vaccinal prevention;
- expansion of the age cohort of vaccinated children and inclusion of adult population in massive immunization process. The expansion and the inclusion are related to realization of the national "Health" project in segment "Additional immunization of population".

Altai Krai has following peculiarities :

- low density of population;
- remoteness of some areas from the regional center;
- insufficient staffing of medical service in rural areas.

These peculiarities determine difficulties not only in data gathering about fullness, timeliness and quality of vaccination, but also in organization of vaccination in new conditions of strategy and tactics of immunization.

Standard system of epidemiological surveillance in Altai Krai is added with multilevel component, defined by regional and municipal levels and object sub-levels. Regional level is represented by the “Main Administration of Health and pharmaceuticals in Altai Krai” and “Federal service on customers' rights protection and human well-being surveillance in Altai Krai”.

Municipal level is represented by:

- administrations of the cities and areas;
- chief directorates of inter-regional medical districts;
- centers of medical prophylaxis;
- central city hospitals;
- central region hospitals;
- departments of the territorial administration of Federal service on customers' rights protection and human well-being surveillance in Altai Krai;
- federal medical institution "Center of Hygiene and Epidemiology” in Altai Krai.

Medioprophilactic clinics are referred to sublevels of epidemiological surveillance system.

All levels and sub-levels of epidemiological surveillance system are tasked with the adoption of certain administrative decisions.

On basis of the multi-level system of epidemiological surveillance over vaccine-preventable diseases, following adapted components were developed:

- improvement of informational support at the expense of “BARS” program. (Web-monitoring of public health);
- adoption of automated system of immunization control (ACS immunization) on every level and sublevel of the system, which ensured the free access to information distributed among databases of medical and preventive treatment facilities by the Main Administration of Health and pharmaceuticals in Altai Krai. Supplying information, as well as improvement in the organization of vaccination by substitution of existing manual planning methods for new ones, which consider more determining factors;
- development and adoption of the monitoring system of German measles in pregnant women, in the form of recommended methodology of clinical diagnosticate, epidemiological survey of rubella cases, proposed reporting form of surveillance and examination of pregnant women. These steps made possible a flexibility and adequacy of prophylactic measures and minimized the risk of rubella spreading.

One of the most effective and economically expedient measure in the system of epidemiological surveillance is a vaccinal prevention.

A system of organizing vaccination of infectious diseases (regional model) is created in Altai Krai. The system involves the interaction of three blocks. These blocks are defined by:

- national immunization calendar;
- national project "Zdorovie" in segment “Additional immunization of population”
- departmental target program “Vaccinal prevention” and municipal subprograms “Vaccinal prevention”, which regulate prophylactic vaccination.

The following components are represented in the structure of the model:

- administration system
- methodological support
- system of planning and carrying out a vaccination;
- storage and transportation of medical immunobiological preparations(MIBP).

The legal basis of the model are compiled from the following documents, approved at the regional level:

- the Law "On immunoprophylaxis of infectious diseases in Altai Krai" (№ 159 Decree of the Altai Regional Council of People's Deputies of 29.05.2000);
- "The program of measles elimination in Altai Krai for 2007-2011”;
- The program "Prevention of social diseases and their control for 2007- 2011”;
- “Retraining and advanced training of health workers" for 2007-2011;
- departmental target program "Vaccinal prevention" for 2007 - 2011.

The features of administration system are:

- •chain of command (from the krai’s administration to the Administrations of cities and districts, inter-district offices of the Chief Medical counties);
- •horizontal management (mutual exchange of information on the fulfillment of subordinate structures’ duties);
- •Unified targets.

The basic structural unit of the Main Administration of Health and pharmaceuticals in Altai Krai is a Regional center of medical prophylaxis. It provides analysis and synthesis of information on the organization of vaccination and subsequent management decisions under this section.

Krai’s administrative Institutions are estimated by immunization coverage of contingent (at least 96%) and by financial support of the municipal program " Vaccinal prevention ". A peculiarity of this component is that it is a part of evaluating criteria of any Krai’s administrative territory. It’s used as an indicator of socio-economic development and submitted to the Main Department of Economy and Investment in Altai Krai.

Within the framework of ACS Immunization the ACS-Warehouse system was created. It ensures control and, if necessary, correction of receiving\expenditure stocktaking of MIBP.

The adopted management system of epidemic processes of vaccine-preventable diseases, based on an integrated approach and a uniform system of immunization, has demonstrated high efficiency at the regional level. As the result of the introduction of this system in the Altai Kai were achieved the priority parameters for provision of the population with medical immunobiological drugs, vaccination certificates. Vaccination coverage of the decreed age is over 95% of number of subjected to vaccination. The number of seronegative during scheduled examination of various population groups does not exceed 7% for measles and 4% for rubella, as a result, the criteria for elimination of measles was met, and also morbidity of rubella and hepatitis B were significantly reduced in the region.

Bibliography:

10. Litkina I.N. Creation of unified system of control over epidemic processes of measles, rubella and epidemic parotiditis: abstract of a thesis. Doctor of Medicine / I. N. Litkina. [Web]. – 2011. – Access : http:// vak.ed.gov.ru.

11. Cherkasskiy B.L. Modern views of control system of epidemiological process / B. L. Cherkasskiy, E. G. Simonova // Epidemiology and infectious diseases. – 2006. – № 5. – P. 4-7.

12. Cherkasskiy B.L. Global epidemiology / B. L. Cherkasskiy. – M.: Practical medicine, 2008. – 447 p.

Сведения об авторах

Safyanova Tatyana Viktorovna – Senior Lecturer, Department of Epidemiology, PhD, HEE "Altai State Medical University" Health Ministry of Russia, Barnaul; applicant for the degree of Doctor of Medicine

656008, Altai Kai, Barnaul

Partizanskaya street , b. 146, apt. 37,

tel.: 8(3852) 68-96-70; 68-08-49,

mob.: 8 903-947-38-42,

E-mail: tysya_095@mail.ru

Lukyanenko Natalia Valentinovna – Head of the Department of Epidemiology, M.D., HEE "Altai State Medical University" Health Ministry of Russia, Barnaul;

656024, Altai Kai, Barnaul

Lyapidevskogo street, 1

Center of Medical Prevention, State Health Care Institution

«Regional clinic hospital»,

tel.: 8(3852)68-98-07, 68-96-70;

mob.: 89628071414,

E-mail: infec@yandex.ru

Control model of epidemic processes of hepatitis B, rubella and measles in Altai Krai

T.V. Safyanova, N.V. Lukyanenko

Higher educational establishment “Altai State Medical University”

Public health and social development ministry

Barnaul

Summary. Epidemiological surveillance over any infection provides for functioning of key subsystems: informational, diagnostic and management decision-making.

Efficiency of surveillance can be ensured only with full-fledged maintence and realization of these subsystems.

Standard system of epidemiological surveillance in Altai krai is added with multilevel component, defined by regional and municipal levels and object sub-levels. On basis of the multi-level system of epidemiological surveillance over vaccine-preventable diseases, following adapted components were developed:

- “BARS” Web-monitoring of public health;
- adoption of automated system of immunization control (ACS immunization) on every level and sublevel of the system;
- development and adoption of the monitoring system of German measles in pregnant women.

Within the framework of epidemiological surveillance a system of organizing vaccination of infectious diseases (regional model) is created in Altai Krai.

Key words: hepatitis B, rubella, measles, german measles, epidemic process, control sy

UDC: 614.777:628.1/3

Hygienic significance of high colour of drinking water after its primary disinfection by the use of chlorine-containing compounds for the population health of Mirny, the Republic of Sakha.

N.V. Frank, O.A. Uschkareva, N.A.Shainova, A.P.Gusev, L.S.Borhonova

Summary. The article is devoted to the burning problem of high colour of drinking water after its primary disinfection by the use of chlorine-containing compounds. Statistic data testify to evident influence of residual colour of drinking water and by-products of chlorination on the health of people in Mirny, which results in carcinogenic effect and pregnancy failure. It is shown that the primary disinfection method aimed at reduction of colour of water is inadmissible.

Key words: drinking water, colour of water, disinfection by the use of chlorine-containing compounds, the population health.

Colour is a natural quality of water determined by humic substances which appear in the soil as a result of microbiological destruction of organic compounds and due to synthesis by soil microorganisms of its new forms coming out from soil to water. The number of these substances is influenced by geological conditions, waterbearing formation, the soil character, swamps and peat bogs in the basin of rivers. To measure the level of colour a chromium-cobalt scale imitating the colour of natural water is invented, and the colour of water is measured in degrees. Water can be considered as almost colourless only if its colour is not visual and is no more than 20 degrees, exactly this index is used in the state standard on drinking tap water.

For a long time the hygienic significance of colour of drinking water has been based only on aesthetic views without taking into consideration its possible injurious effect on the population health [3]. Scientific works and data of social and hygienic monitoring have proved the interdependence of indices of residual colour of drinking water and the content of chlorination by-products, which represents a certain risk for the health of people [5]. In scientific researches [4] it has been proved that there is evident interdependence of indices of residual colour of drinking water and the content of chlorination by-products, which represents a certain risk for the health of people. High colour of water (from 45 till 180 degrees) is a pre-condition for formation in water after its chlorination of such chlorine-derived compounds (such as chloroform) which have carcinogenic and mutagenic effects. A direct evident correlation with high coefficient (r=0.96) between cancer death rate and the colour of drinking water has been proved [8].

The research of reproductive function of women has shown that the most cases of pregnancy failure and difficult births happened to women living in cities which consumed drinking chlorinated water with high residual colour of 45-190 degrees. To the most informative proofs of connection between pregnancy failure and quality of drinking water one should refer the number of spontaneous abortions. The direct correlation between colour indices and the number of spontaneous abortions is established with coefficient equal to 0.78, which probably is explained by the fact that pregnant women are hypersensitive to drinking water containing the complex of contaminants and, first of all, chlorine-derived compounds. Besides, twofold increase of the frequency of chromosome derangement on the basis of micronucleus test has been registered among children with multifactorial pathology [1,5,4,8].

In order to prove that high colour of water is the reason of formation of chlorine-derived compounds which have carcinogenic effect and cause pregnancy failure the research has been made on the following issues: household water supply, methods of water processing, the analysis of statistics on cancer diseases, pregnancy failure and death rate in Mirny city, the Republic of Sakha [2].

For the household water supply in Mirny the Irelyach water storage basin is used. The characteristic features of the surface basin are little capacity of reservoir, small flowage, permafrost soil, long ice period, water-logged grounds neighbouring the basin, supply from river and surface run-off. Hydrochemical regime of the water storage basin predetermines the regional peculiarities of chemical water composition [6]. In its perennial form water, used for household water supply from the basin, is characterized by low salinity, high permanganate water oxidizability and colour, low turbidity factor and insignificant content of suspended material, which is typical of water storage basin in the North with its vast water-logged territories in the permafrost region.

According to the laboratory research made by "The center of hygiene and epidemiology in Mirny region, the Republic of Sakha" the average annual rate of colour of water in the basin varies from 140 to 230 degrees. The complex of water-purifying system in Mirny carries out a five-phase scheme of water purification. At the first stage water filtration is made by means of drum filter. At the second stage water disinfection by sodium hydrochloride is made with the help of water electrolysis method and water is decolourized by primary chlorination. The third stage is coagulation. The fourth phase is flocculation. The fifth stage is water clarification through contact clarifiers.

Over a period of time from 2005 till 2009 the improvement of sanitary-chemical indicators of drinking water has not been registered. The number of special tests remains high – 71,2%, generally conditioned by high indices of colour 100% (**table 1**).

The authors of the article made the analysis of cancer diseases and death rate over the period of 5 years in Mirny in comparison with Udachny where the indices of residual colour of drinking water deviate from hygienic norms insignificantly and an average annual index isn't higher than 30 degrees. It is necessary to note that over period of time from 1976 till 1987 on the territory of Sakha republic 12 underground nuclear explosions were made and 9 of them were made on the territory of Mirny region in Udachny city and settlement Aichal. Two of these explosions were emergent, "Chrystal" and "Craton-3", and they were accompanied by radioactive waste release, which resulted in radioactive pollution of the environment. Therefore making comparative sickness rate assessment in Udachny one should take into account a stochastic effect in form of high level of oncology in this city. Judging from statistic data and comparative diagrams (**table 1, picture 1, table 3, table 4, picture 2, picture 3**) one can note a significant, almost twofold, increase of cancer diseases and death rate in Mirny in comparison with Udachny. The given data confirm the research results of other scientists and allow us to make a conclusion that high colour of water (from 45 till 220 degrees) is the reason of formation of chlorine-derived compounds with carcinogenic effect after the primary chlorination of water and the increased number of cancer diseases and death rate of Mirny population is connected with high colour of drinking water.

Statistic data on the number of spontaneous abortions and recurrent miscarriages of women of childbearing age in Mirny differ from the data in Udachny (**table 4, picture 4**). The number of spontaneous abortions of women of childbearing age in Mirny is 2-3 times greater than the analogous indices in Udachny, and is 10 times greater than the same indices in the Russian Federation. The research of reproductive function of women of childbearing age in Mirny has shown that the most cases of pregnancy failure and pathology in form of spontaneous abortions are caused by consuming drinking chlorinated water with high residual colour, which is explained by the fact that pregnant women are hypersensitive to drinking water containing the complex of contaminants and, first of all, chlorine-derived compounds.

Above mentioned information should be considered in the program of high quality water supply in Mirny, which needs to include a duplexed system of water supply [7]. Supply of drinking water conforming to norm by quality in respect of its colour [1] can be guaranteed by complex technological scheme without primary chlorination (**picture 5**).

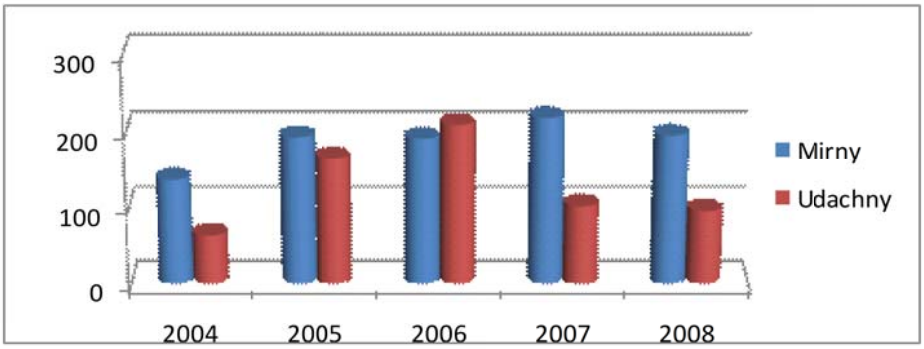
Table 1. Data of research on drinking water quality according to sanitary-chemical indices in Mirny.

Year	The number of water samples		
	total	Including special tests	Percentage of special tests
2005	421	300	71,25
2006	709	486	68,5
2007	1034	779	75,3
2008	1078	799	74,1
2009	505	360	71,2

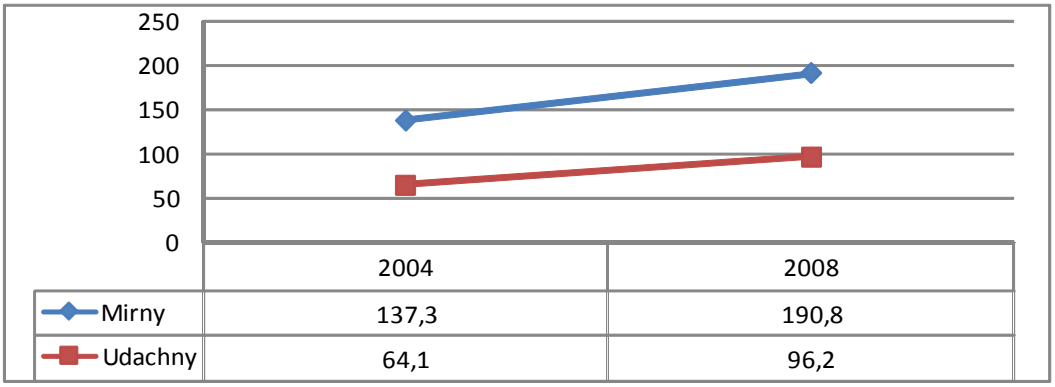
Table 2. Dynamics of cancer rate

Mirny city	2004	2005	2006	2007	2008
The number of sick persons	54	76	73	82	73
Index per 100 thousand population	137,3	193,2	191,5	218,5	195,8
Udachny city	2004	2005	2006	2007	2008
The number of sick persons	10	26	32	15	14
Index per 100 thousand population	64,1	165,7	209,6	102,7	96,2

Picture 1. Comparative dynamics of cancer sickness rate in years (per 100 thousand population)



Picture 2. Comparative dynamics of cancer sickness rate increase
sickness rate per 100 thousand of population



Increase of cancer diseases in Mirny from 2004 till 2008 is from 137,3 till 190,8 per 100 thousand of population, while in Udachny it is from 64,1 till 96,2 per 100 thousand of population. Rate of growth of diseases in Mirny is 42,6%, while in the Russain Federation it is 6,7%.

Table 3. – Death rate caused by malignant neoplasms in Mirny in comparison with Udachny

The number of died	2004	2005	2006	2007	2008
Mirny	56	43	45	54	29
Udachny	10	9	12	4	6
Index of per 100 thousand of population					
Mirny	142,4	109,3	118,1	143,9	77,8
Udachny	64,1	57,4	78,6	27,4	41,2

Picture 3. Comparative dynamics of death rate caused by malignant neoplasms per 100 thousand of population

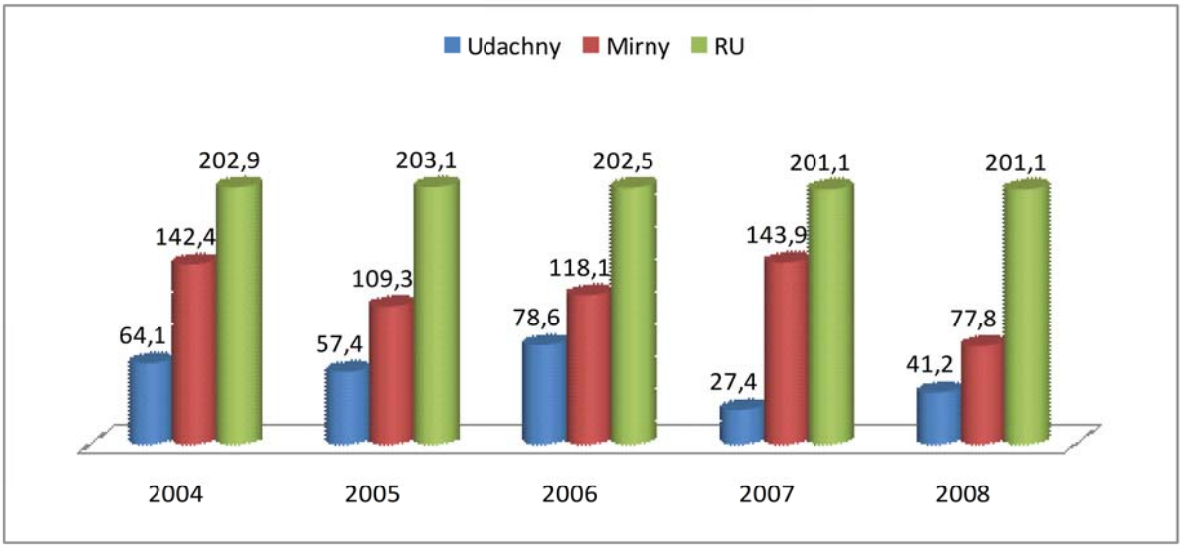
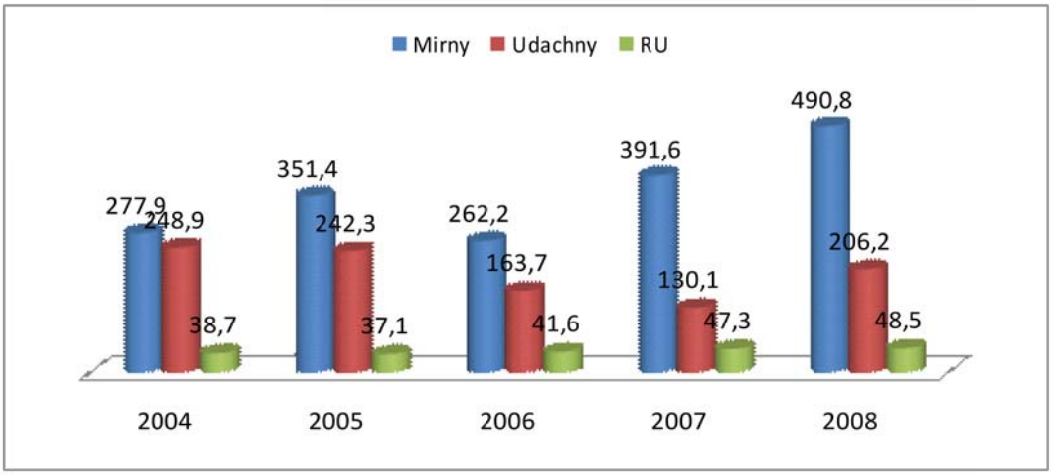


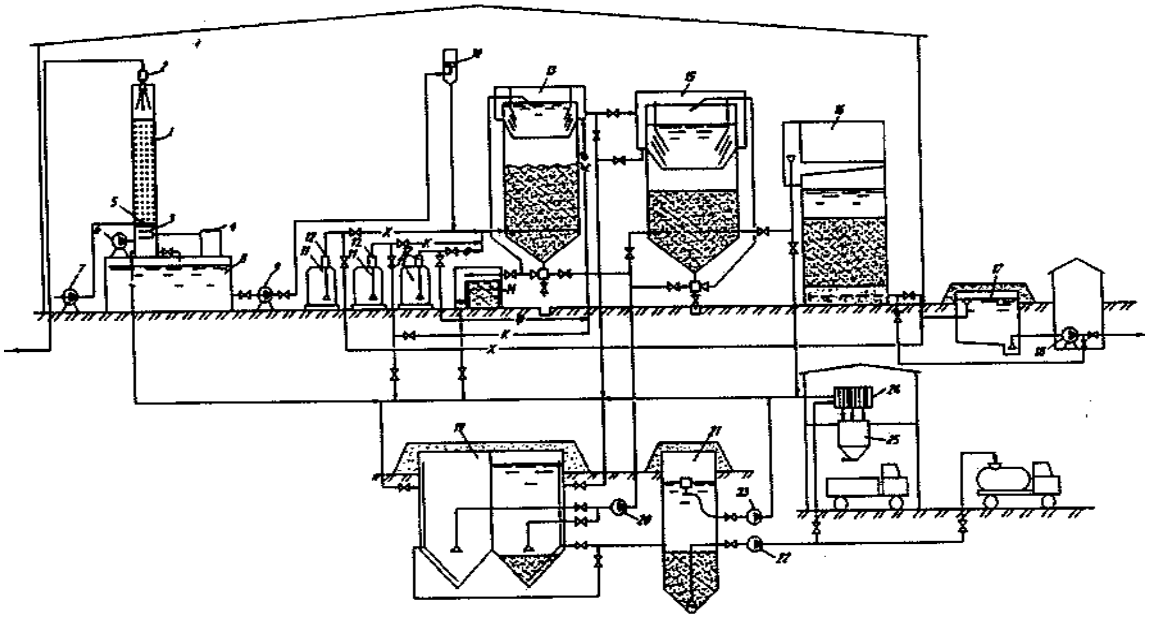
Table 4. Dynamics of spontaneous abortions of women of childbearing age in Mirny

The number of spontaneous abortions and miscarriages	2004	2005	2006	2007	2008
Mirny	106	134	100	147	183
Index per 100 thousand population	277,9	351,4	262,2	391,6	490,8
Udachny	38	37	25	19	30
Index per 100 thousand population	248,9	242,3	163,7	130,1	206,2
Russian Federation	55705	53207	59365	67279	68864
Index per 100 thousand population	38,7	37,1	41,6	47,3	48,5

Picture 4. Comparative dynamics of spontaneous abortions per 100 thousand of population



Picture 5. Complex technological scheme of water purification



The given scheme includes 9 units of different function. Unit 1 (position 1-7) is used for degasification, aeration, impurity oxidation by ozone-aerial mixture. Unit 2 (position 10-14) – the 1st stage of water clearing. Unit 3 (position 16) – water coagulation. Unit 4 (position 16) - water filtration. Unit 5 (position 17,18) – collection and storage of purified water. Unit 6 (position 11,12) – chlorination, coagulation, flocculation of water. Unit 7 (position 19, 20) – reagent purification, storage and recycling of rinsing water. Unit 8 (position 21-22) – sediment condensation and its delivery to dehydration and utilization. Unit 9 (position 24, 25) – utilization of water sediment.

Conclusion

Comparative analysis of cancer rate and pregnancy failure of women of childbearing age has shown a stable dynamics of increase of these pathologies and accordingly the physical impairment of population health of Mirny for the latest years. Prognosis will stay unfavorable if the old technological scheme of water purification is used and no measures are taken to improve the quality of drinking water according to its colour index.

Thus, the colour index of water for settlements of Mirny region of Sakha republic is at the same time the index of contamination by chlorine-organic compounds.

The research data testify to the necessity of providing the population with drinking water which has no more than 20 degrees of colour index in order to reduce the risks of damage to the population health by co-products of water chlorination.

A duplexed system of water supply without primary chlorination should be regarded as one of the variants of water supply system in Mirny.

THE LIST OF REFERENCES

Voitov E.L. Preparation of drinking water from sources with high anthropogenic pollution / E.L. Voitov [and co-authors]. // Sanitary inspector. – 2010. - №7. – P.55-61.

Report on results and main directions of work of Federal inspection of consumer protection and human welfare in the Republic of Sakha (Yakutia) in Mirny region, the branch of Federal state health-care agency "The center of hygiene and epidemiology in the Republic of Sakha (Yakutia)" in Mirny region for period from 2009 till 2012 // Mirny. – 2009. – 89 p.

Onischenko G.G. The strategy of ensuring sanitary-epidemiological health-care of population in conditions of social and ecological development of the Russian Federation in period till 2010/ G.G. Onischenko// Hygiene and sanitary science. - 2002. – № 2. - P. 3-9.

Onischenko G.G. The problems of assessment of the risk to the health population caused by environmental factors influence/ G.G. Onischenko. – Moscow, 2004. – 234 p.

Plenary session of inter-departmental scientific council on human ecology and hygiene of environment of the Russian Federation, December 15-16, 2002 / E.A. Borzunova [and co-authors] // www.erh.ru/konfer/konfer011.php

Slipchenko A.V. Chemistry and technology of water. – 1999. - V.12.-№4. - P.326-349.

Schepelev V.V. A duplexed system of water supply is the way to improve the quality and economy of drinking water resources/ V.V. Schepelev [and co-authors] // The questions of the regional hygiene, sanitary, epidemiology and medical ecology: Proceedings of international scientific conference. – Yakutsk, September 24-25, 2009. – Yakutsk, 2010. – P.138-140.

Schtikova A.V. On cancer diseases of population/ A.V. Schtikova [and co-authors]// Sanitary inspector, 2010. - №9. - P.34.

V.N. Makarov

Arsenic in the environment of Yakutia - potential health hazard

In view of the toxicological role of arsenic, the distribution of its mineral compounds in the environment of Yakutia is examined. The distribution of arsenic was studied in various components of the Yakutia's environment, including the atmosphere, snow cover, surface water and groundwater, and soils. The need for control of human exposure to arsenic compounds is substantiated.

Keywords: Environment, arsenic, mineral compounds, toxicants, health effects

Introduction. Throughout human history, arsenic has played a dual role. It has been known since ancient times as a strong poison capable of causing lung cancer or other illness on the one hand and as a component of bronze, paints, and remedies on the other. Arsenic minerals (orpiment and realgar) were used for centuries as a basis for medicines used to treat skin and blood diseases, syphilis, malaria, flu, and scarlet fever. Currently, arsenic is added to medical and veterinary drugs, insecticides used in agriculture and wood treatment, and some alloys. It is also used in microelectronics industry and laser optics technologies. Considering the toxicity of arsenic, this paper examines its levels in various components of the Yakutia's environment, including the atmosphere, snow cover, surface waters, ground water, soils and rocks.

Review of medical data. Arsenic is known to be highly toxic [2]. A few hundreds tons of arsenic are enough to poison the majority of the human population. The toxicity of arsenic depends on its valence state, solubility, and speciation. Most cases of toxicity manifestation are associated with the inorganic trivalent arsenic which is much more toxic than the pentavalent form. Inoragnic arsenic has been recognized as a poison since ancient times. If consumed in large amounts, arsenic can lead to a death.

According to Avtsyn et al. [11], arsenic deficiency syndromes in humans are not known. The main diseases, syndromes and symptoms of the toxic effects of excess arsenic in humans are given in Table 1.

Table 1

Major diseases, syndromes and symptoms of human overexposure to arsenic [11]

Arsenicosis is characterized by digestive disorders, conjunctivitis, opacity of the vitreous body and cornea, septal ulceration, stomatitis, laryngitis, tracheitis, bronchitis, papular and pustular rash, recurrent eczema, atrophyc chronic acrodermatitis, symmetrical punctate palmoplantar hyperkeratosis, nail fragility, premature loss and graying of hair. Neurological disorders in the form of intellectual and memory impairments, depression, polyneuritis with muscle atrophies, as well as in the form of retrobulbar neuritis, smell and taste disorders. Endemic arsenic poisoning from drinking water and food – 'black foot disease' (peripheral vascular changes as in obliterating endarteritis), verrucous keratosis of the palms and soles, anemia, cardiac disorders, peripheral neuropathy. Skin and lung cancers can develop.

Inorganic arsenic is associated with the high mortality rate from ischemic heart disease.

Exposure to arsenic and its methylated metabolites can lead to miscarriage and dead childbirths. Studies have shown a close relationship of arsenic exposure to neurological diseases, and impaired intellectual and physical development in children. Effects of arsenic on the respiratory system can result in lung cancer, diseases of the upper respiratory mucous membrane, lung emphysema, and reduced pulmonary function. Serious effects of arsenic on the endocrine system include pancreatic diabetes and some pathologies of the liver. Arsenic can irritate the gastrointestinal tissues it contacts. Severe arsenic poisoning cases exhibit nausea, vomiting, stomach cramps, and diarrhea. In rare cases, poisoning may lead to acute gastroenteritis resulting in circulatory collapse with kidney injury and death. Cancer of the skin, liver, bladder, and lungs can develop. Respiratory exposure to inorganic arsenic leads to the increased risk of lung cancer. It occurred in the workers exposed to arsenic in mines and chemical plants, as well as in the residents living near these facilities and arsenic waste disposal sites.

Skin ailments are the most common non-cancerous effects of chronic oral exposure to inorganic arsenic. They start with hyperpigmentation spots on the body which can progress into palmar and plantar hyperkeratosis [13, 14]. A major incident of a disease known as “black foot disease” occurred in Taiwan in the 1950s resulting from arsenic contamination of ground water [15]. The inorganic As concentration in ground water was 100 to 1810 μg/L, exceeding the admissible limit for drinking water by 2–45 times. The symptoms of the disease, a form of dry gangrene, are changes in color of the extremities to brown or black (**Fig. 1**).

Thickening and cracking of the skin leads to ulceration and eventually to gangrene. If poisoning is untreated, the result may be foot amputation [14]. Black foot disease was also found in China, where its severe form – arsenicosis – may be associated with malnutrition.

The largest mass poisoning with arsenic occurred in Bangladesh where a large number of tube water wells were drilled in the mid 1980s within the areas of elevated arsenic levels. Ironically, the wells were dug to improve drinking water quality. Consumption of drinking water with high arsenic concentrations (approximately 14 mg/L, 300 times over the WHO recommended limit) affected 53 million people – about half of the country’s population [15]. It is believed that certain geological conditions – geochemical arsenic anomalies – contribute to the generation of heavy arsenic concentrations in ground water. Aquifers with high arsenic concentrations have been found to be associated with areas of endemic occurrences of arsenic-related diseases, such as Thailand, Mongolia, Taiwan, China, Mexico, Argentina, Chili, Hungary, and others. Large-scale investigations conducted in West Bengal, Bangladesh and India indicate that the endemic character of some diseases, such as diabetes, is related to the high

levels of arsenic compounds in shales and coals from which arsenic is leached by ground water and migrates to water supplies [8, 9, 10]. Arsenic concentrations in the latter may exceed 50 μg/L, sometimes reaching 3400 μg/L [2, 13, 14].

Results of geochemical investigations. Arsenic is the most abundant element in the ores of Yakutia. It is found in many quartz and quartz-carbonate lodes of the gold, polymetallic, tin ore deposits in the Verkhoyansk-Kolyma Folded Region and the Aldan Shield [6]. Arsenic concentrations in the ores of the Kyuchus, Nezhdaninskoe and Sarylakh are as high as 1-2%. The distribution of the main areas of ore mineralization and large geochemical arsenic anomalies in Yakutia is shown in **Fig. 2**.

Arsenic geochemical anomalies are widespread in the eastern, geosynclinal part of Yakutia (see Fig. 2), where arsenic contents in soils sometimes reach "hurricane" values of up to 1%, 2000 times of the background values and maximum contaminant levels (Table 2).

Table 2

Arsenic concentrations in ores, host rocks and soils in gold-antimony and gold ore deposits, eastern Yakutia

Rocks and Soils	As concentration, mg/kg	
	Avg.	Max.
Sarylakh Au-Sb deposit		
Ore body	100·n	1.6%
Enclosing rocks	55	150
Soils	80	460
Zaderzhnoe Au deposit		
Ore body	100·n	5400
Enclosing rocks	15	40
Soils	32	500
MCC_{soil}	2 – 10	

High arsenic concentrations are observed in rocks as well. For example, terrigeneous sandstones and shales in eastern Yakutia contain 3.1 to 7.4 mg/kg arsenic in the South Verkhoyansk Synclinorium and 15 to 48 mg/kg in the Kular District, exceeding the maximum contaminant concentration (MCC) for soils by about an order of magnitude.

In Yakutia, anthropogenic arsenic is released to the atmosphere with gaseous and particulate emissions from smelters, and with fertilizers and pesticides used in agriculture; it is contained in gaseous emissions and effluents from coal-fired cogeneration stations, as well as in non-ferrous sulfide mine tailings. Central Yakutia has a very clean atmosphere with arsenic concentration similar to the maximum value for the South Pole air of 0.05 ng/m^3. The areas of anthropogenic activity have considerably higher arsenic concentrations. In Yakutsk, for example, the average As concentration in the air is 5 to 20 times greater than the background values for central Yakutia. Several areas of high atmospheric As levels have been identified in the city whose locations indicate emission sources: the airport, power station, downtown area, and

modular building factory (**Fig. 3).**

Concentrations of arsenic in natural surface and ground waters of Yakutia are generally about 1 to 2 µg/L, but may be 2 to 3 orders of magnitude higher in contaminated areas or in areas where soils have elevated arsenic levels (Table 3).

Table 3

As concentrations in surface water in Yakutia, µg/L

#	Name	Water	Note
Rivers			
1	Irgichen	1-3	
2	Omchikandya	10	
3	Iekiyes	30	Suspended sediment
4	Bolshoi Kuranakh	4.4	
Lakes			
5	Lakes in Yakutsk	3-60	
6	Sosnovoe Lake (Nizhny Bestiakh)	25.3	
7	Labynkyr Lake	<1	
8	Bolshoe Tokko Lake	<1	
MCC		50	Hygienic Standards ГН 2.1.7.020-94

The ground waters commonly contain higher arsenic concentrations than the surface waters (Table 4). An important ecological process in ground water is methylation of arsenic in anaerobic conditions producing readily soluble (n·10 - n·100 mg/L) and highly toxic $(CH_3)_3As$.

Table 4

Arsenic concentrations in ground water, µg/L

Location	As, µg/L	Analytical technique
Nezhdaninskoe	<240	Semi-quantitative spectral analysis
Udachnaya diamond pipe	740	Atomic spectrometry
Sarylakh, subpermafrost water, 200 m	9	Semi-quantitative spectral analysis
Sentachan, subpermafrost water, 300 m	300	Semi-quantitative spectral analysis
Yakutsk, subpermafrost water, 260 m	2	Semi-quantitative spectral analysis
Bulus springs	25	Atomic spectrometry
MCC	50	

The most favorable conditions for As migration and accumulation in surface and ground waters exist in the weathering zone of the As-enriched gold-antimony and gold ore deposits hosted in inert terrigenous rocks. The waters in the dispersion halos of these deposits (Maltan, Sarylakh, Nezhdaninskoe and others) contain the highest arsenic levels – 10·n-100·n µg/L.

Serious health risk is associated with arsenic accumulated in mill tailings. Most of the arsenic (80% or more) contained in the As-rich ores gets into tailings after ore processing. Arsenic concentrations in the solid and liquid waste materials from the mills reach ‘hurricane’ values, sometimes exceeding the standard limits by 2-3 orders of magnitude (Table 5).

Table 5

Arsenic concentrations in mill tailings, mg/kg

Mill	Solid, mg/kg	Liquid, µg/L	Note
Allakh-Yunskaya gold mill-50	2000	200	Old tails
Deputatskaya mill	< 1000	< 100	Tailings pond
Duetskaya gold mill	500	n.d.	Gravity tailings
Kularzoloto gold mill	< 700	n.d.	Tailings pond
Kuranakhskaya gold mill	n.d.	< 2 800	Slurry
Nezhdaninskoe	< 970	< 240	Sedimentation pond
Samolazovskoe	< 1.5%	n.d.	Sedimentation pond
Sarylakhskaya mill	2 000	< 2000	Slurry
MCC	2	50	n.d – no data

In 1995, a new standard for As in soil was established in Russia, ranging from 2 mg/kg arsenic in sands to 10 mg/kg arsenic in clays. The standard recognized arsenic in soils as a class I toxic contaminant. In Central Yakutia, natural arsenic concentrations in permafrost-affected soils range from 0.4 to 4.4 mg/kg, i.e., within the acceptable limits. Elevated arsenic levels, 3.9-20 mg/kg, are observed in the soils in the sanitary landfill area near Yakutsk. Arsenic concentrations are even higher in the soils affected by ore mining activities (see Table 2), as well as in the urban areas located within geochemical anomalies [12], such as Aldan (Table 6).

Table 6

Arsenic concentrations in urban soils of Yakutia, mg/kg

City	Average	Minimum	Maximum	Note
Yakutsk	11.4	<1	150	MCC for soil 2-10 mg/kg
Aldan	18.0	<1	300	
Mirny	3.0	<1	200	

The biochemical role of arsenic has received little scientific study, although it is known to accumulate in mature leaves and root crops, with maximum levels found in edible mushrooms and mosses. Significantly elevated concentrations in vegetation occur near the tailings (Table 7).

Table 7

Arsenic concentrations in vegetation, mg/kg

Location	Moss	Lichen	Blueberry	Larch needle
Kuranakh mining district (according to *Artamonova*, 2000)				
Latyshsky Creek basin	< 0.5	0.69 – 1.4	< 0.5	< 0.5 - 0.63
Kuranakh tailings pond	0.5-4.7	0.57-1.26	До 0.52	0.85-2.5
Kuranakh tailings pond, downstream	14.7	2.8	0.71	No data
Kular mining district (according to *Yagnyshev et al.*, 2004)				
Kular gold mill tailings area	35.0	34,1	17.1 (mountain cranberry)	35.3 (bark)
Land plants [3, 4]	0.02			
Grasses, USA [3]	0.06-0.7			

Conclusions. Recent medical geology investigations indicate that arsenic has broad

effects on the human body and is associated with both non-cancerous and cancerous pathologies. The main sources of arsenic released to the environment of Yakutia are non-ferrous metals industry, mining activities, geochemical anomalies, some geological units, and active zones of the Earth's crust. High arsenic concentrations are widespread in various components of the Yakutia's environment, including the soils, rocks, air, snow cover, surface and ground waters, and vegetation. In the areas of arsenic-rich mineral deposits, geochemical anomalies and tailings, studies are required to assess possible inputs and health effects of inorganic arsenic into the lakes, streams, and aquifers used for water supply. The majority of the industrial and mining sources have been operating over many decades, significantly affecting the environment and population. It is therefore important to understand the occurrence and distribution of arsenic in the environment and to control human exposure to various forms of this element. Arsenic has a property to accumulate in animals and animal products such as milk and meat, reaching concentrations a few, or even tens or hundreds times greater than in soils, water or plants. In-depth research into relationships between cancer and the environment geochemistry, as well as coupled studies of arsenic occurrence in foods and environmental components are needed. Synergetic effects of arsenic and other toxic metals also deserve attention.

References

Vinogradov A.P. Average contents of chemical elements in main igneous rock types of the Earth's crust / Vinogradov A.P. // Geokhimia. – 1962. – № 7. – P. 555–571.

2. Ivanov V.V. Environmental Geochemistry of Elements: A Reference in 6 vol./ Ivanov V.V., edited by E.K. Burenkov; Moscow: Nedra, 1996. – Vol. 3: Rare ρ-elements. – 352 p.

3. Kabata-Pendias A., Pendias H. Trace Elements in Soils and Plants / Kabata-Pendias A., Pendias H. – Moscow: Mir, 1989. 425 p.

4. Kovalevsky A.L. Characteristics of Formation of Ore Biogeochemical Haloes / Kovalevsky A.L. - Novosibirsk: Nauka, 1975. 115 p.

5. Kokin A.V. The South-Verkhoyansk arsenic geochemical phenomenon / Kokin A.V. // Doklady AN SSSR. – 1984. Vol. 277, № 4. – P.206-209.

6. Lukyanova Zh. Kh. Arsenic / Zh.Kh. Lukyanova // Geology of the SSR. Vol. XVIII, Yakutskaya ASSR. Mineral Resources. Ed. Yu. V. Arkhipov Moscow: Nedra, 1979. - P.353-354.

7. Makarov V.N., Vinokurov I.P. Geochemical Search for Concealed Deposits in Permafrost Regions (Superimposed Cryogenic Dispersion Haloes) / Makarov V.N., Vinokurov I.P. – Yakutsk: Permafrost Institute SB AN USSR, 1988. - 108 p.

8. Medico-Geological Problems in the Exploration and Development of Coal Deposits// Vol'fson I.F., Kremkova E.V., Pechenkin I.G., Pronin A.P., Farrakhov E.G. Proceedings of the Russian Coal Meeting, VNIGRI Press – Ugol', Rostov-na-Donu, 2005. - P. 129-132.

9. Arsenic and its compounds: medico-geological aspects // *Vol'fson I.F., Petrov I.P., Kremkova E.V., Pechenkin I.G.* – Medical Geology: State of the Art and Aspects. Moscow: ROSGEO, 2010. - P. 90-99.

10. Arsenic contamination of waters in Bangladesh and India – the result of the geological structure of trans-border coal basins. //Mashkovtsev I.L., Saumitra Narayan Deb, Zakir Hossein.– «Ugol'», - № 5. – 2004. - P. 58-59.

11. Human Pathology in the North.// Avtsyn A.P., Zhavoronkov A.A., Marachev A.G., Milovanov A.P. – Moscow: Meditsina, 1985. - 416 p.

12. Environmental Geochemistry in Urban Areas of East Siberia //I.S. Lomonosov, V.N. Makarov, A.P. Khaustov et al. – Yakutsk: Permafrost Institute SB RAS, 1993. - 108 p.

13. A new look at the nature of the transitional layer at the K/T boundary near Gams, Eastern Alps, Austria, and the problem of the mass extinction of the biota. Russian smelter emissions// **Messrs** S.V. Ekimov, I.V. Samodova, I.M., Petrov, I.M., Troitsky, V.V. and Burstein, M.A. - Mining Journal, London. -2001. - 23. - P. 143-145.

14. Essentials of Medical Geology// Selinus O., Lindh U., Fuge R., Centeno J., Alloway B., Smedley P., Finkelman R. (eds.) // Impacts of the Natural Environment on Public Health. Elsevier Academic Press, 2005. – P.

15. Smith A.H., Lingas E.O., Rahman M. Contamination of drinking-water by arsenic in Bangladesh: a public health emergency/ Smith A.H., Lingas E.O., Rahman M. //Bulletin of the World Health Organization. – 2000, 78 (9), pp. 1093-1103.

Fig. 1. Plantar hyperkeratosis induced by arsenic poisoning [14]

Fig. 2. Location of main ore mineralization zones and arsenic geochemical anomalies in Yakutia.

1 – Siberian Platform; 2 – Mesozoic folding region; 3 – ore zones with arsenic occurrence: 1 – South Verkhoyansk. 2 – West Verkhoyansk, 3 – Derbeke-Nelgekhinskaya, 4 – Adycha-Tarynskaya, 5 – Kularskaya, 6 – Polousnenskaya, 7 – Chokhchur-Chokurdakhskaya; 4 – large geochemical anomalies of arsenic.

Fig. 3. Arsenic concentrations in atmospheric aerosols at Yakutsk, ng/m^3

1 - <0.5; 2 – 0.5-1.0; 3 – 1.0-2.0; 4 – 2.0-3.0; 5 – 3.0-3.13.

EFFICIENCY OF THE CLINICAL FOLLOW-UP OF TUBERCULAR PATIENTS IN AN UNFAVOURABLE EPIDEMIOLOGICAL SITUATION

E.V.Bardymova, N.S.Khantaeva, A.V.Poluektova
Irkutsk state medical university

Summary. One of the priority trends in the improvement of the epidemiological situation in our country is increasing the efficiency of treatment and clinical follow-up of tubercular patients. Efficiency analysis of the 6-year- clinical follow-up of tubercular patients showed a complex of medical and organizational shortcomings requiring emergency measures for their elimination.

Key words. Tuberculosis, efficiency of the clinical follow-up of tubercular patients, tuberculosis recurrence

Introduction. Decrease in the efficiency of the clinical follow-up and treatment of tubercular establishments contingents in the Irkutsk region was noted during an unfavorable epidemiological situation. Increase in the efficiency of the clinical follow-up of tubercular patients can be achieved by working out special purposeful measures based on knowledge of the present shortcomings in one or another kind of antitubercular aid to the population [2]. The work shortcomings are usually revealed by a direct check-up of all primary documents taken for tubercular patients and those of other groups of the clinical register, official registration forms, additional documents, interview with patients, etc. At the same time efficiency and quality of the clinical follow-up of tubercular patients can be assessed by a complex of statistical indices used in the analysis of work of the antitubercular establishments [1, 3].

Aim of study. To study the efficiency of the clinical follow-up of tubercular patients in an unfavorable epidemiological situation in the Irkutsk region.

Materials and methods. The figures of the official registration forms from the antitubercular establishments of the Irkutsk region during the period of 2005-2010 were used in the study.

Results and discussion. The dynamics of indices of tubercular morbidity, prevalence and mortality shows the maintaining strained epidemiological situation in the Irkutsk region during the whole analyzed period. Thus, tubercular morbidity increased by 20.3%, prevalence – by 11.6%, and mortality – by 22.1%. In 2010 the morbidity index comprised 147.3 per 100 thousand of people that tops the analogous index in the RF (77.4) by 47.5%, the prevalence index comprised 395.8 per 100 thousand of people (in the RF – 178.7) and the mortality index comprised 43.7 100 thousand of people (in the RF – 15.4).

Quality of the clinical work (diagnoses revision of tubercular patients, timeliness of their transfer from active groups to inactive ones, treatment efficiency, quality and timeliness of examination) can be judged by the index of the ratio of the number of registered patients at the end of the year over the number of patients registered for the first time.

The period of being registered depends on the localization of tubercular impairment. In this connection it is necessary to calculate the follow-up terms separately for the patients with the pulmonary and extrapulmonary tuberculosis. The dynamics of the duration index of the clinical follow-up of patients registered during the period of 2005-2010 including patients with tuberculosis in general and those with pulmonary (TP) and extrapulmonary tuberculosis (TEP) are shown in fig.1.

As shown in figure, the average period of the clinical follow-up of patients with TEP greatly decreased as compared with TP. Optimal value of the given index for the patients with TP comprises 3.0-3.5 years. The index exceeding shows a delay in being on the books of tubercular patients.

Authenticity of the duration index of the registered tubercular patients follow-up was assessed in comparison with the following indices: a) annual rate of decreasing of the number of

tubercular patients; b) clinical recovery; c) abacilliration of tubercular patients. A high level of both clinical recovery index and contingents abacilliration index and the rate of decrease in the number of tubercular patients should correspond to the real low index of duration of the registered tubercular patients follow-up. The optimal level of the annual rate of contingents decreasing showing a qualitative clinical work comprises 7.0-9.0%.

The average follow-up period tops the recommended terms of the clinical follow-up. Comparing with the given data we can affirm unauthenticity of the average period of follow-up of TP patients in 2006-2007 due to the decrease in the efficiency of treatment of tubercular patients and insufficient work on revision of the antitubercular establishments contingents.

Ensuring higher decreasing rates of tubercular contingents can be achieved by correct planning of the level of the clinical recovery and contingents abacilliration indices. When planning the transfer of patients from registration groups I and II to group III it is necessary to provide for the clinical recovery index to prevail the specific gravity of the first revealed patients with pulmonary tuberculosis among all patients with pulmonary tuberculosis no less than by 6.0-8.0%. The planned level of abacilliration index should prevail the specific gravity of the first revealed bacillary patients among all registered bacillary patients by 10.0-15.0%. Comparison of the planned and actual indices of clinical recovery and contingents abacilliration is presented in table 1.

Abacilliration index did not reach the planned figures for the whole analyzed period. Actual index of clinical recovery increased in 2008-2010 and prevailed the planned one.

Thus, prevailing of the average terms of clinical follow-up of tubercular patients shows a delay of patients on registration due to the decreased treatment efficiency, and the decrease is due to the increased index of clinical recovery in 2008-2010 and decreased TEP contingents.

The quality index of clinical work, validity of patients "movement" from one group to another and treatment efficiency is the index of tuberculosis recurrence rate in people cured of tuberculosis. This part of work can be analyzed by the calculation of some indices:

Index of tuberculous relapse rate in people cured of tuberculosis (per 100 thousand of people). On administrative areas with highly organized treatment and presence of documents of high quality at the moment of striking off the register the recurrence index should not exceed 5.0-6.0 per 100,000.

The early recurrence index allows to assess the nearest treatment results and validity of transfer of tubercular patients to registration group III.

The specific gravity of patients with recurrence among contingents ill with tuberculosis. On the territories with highly organized treatment the index should not exceed 1.5-2.0%.

The specific gravity of patients with tuberculosis reactivation among first revealed patients. Optimum level of this index should be 18.0-20.0% (tab.2).

As shown in table, recurrence rate indices in people cured of tuberculosis and those of early recurrence rate of TP exceed the optimum levels for the whole studied period that is the evidence of the following shortcomings: bad examination of patients when striking off the register, groundlessness of transfer of patients into inactive groups insufficient treatment efficiency. Quite small number of people with recurrence among the first revealed patients, when the number of admitted patients from other hospitals prevailed that of discharged patients, is the evidence of incorrect registration of patients with recurrence and groundless admitting them as arriving from other institutions.

Treatment efficiency of the first revealed patients (FRP) was assessed by the indices of bacterial discharge cessation and breakdown cavities closing dynamics of which is presented in fig.2.

According to the bacterial discharge criterion, treatment efficiency of first revealed patients decreased from 53.6% in 2000 to 52.6% in 2010 with the maximum values in 2005 and 2008, and according to the breakdown cavities closing criterion it increased from 43.8% to 45.1% respectively.

A definite influence upon the dynamics of FRP treatment efficiency indices is exerted by the efficiency of treatment of registered patients particularly the indices of clinical recovery and abacilliration (fig. 3).

As shown in figure, the indices had trend to the growth during the whole analyzed period. As compared with the FRP treatment efficiency the indices of people ill with tuberculosis greatly improved.

When assessing the treatment efficiency they use the indices of inclusion in the surgical treatment of TP patients and those with fibrous-cavernous tuberculosis. (FCT). The dynamics of the given indices is shown in fig.4.

Optimum criteria of activity in clinical patients recovery is the use of surgical treatment of PT patients in 10.0-15.0% and that of FCT patients in 10.0%. In accordance with the given recommendations, the range of surgical treatment of tubercular patients in the Irkutsk region for the whole period was insufficient. The work quality in the foci of tubercular infection was assessed by the following indices: the morbidity of people being in contact with tubercular patients per 1000,000 of the population, the morbidity of people being in contact with bacillary patients at an average annual number of registration group IV, the morbidity of people being in occupational contact at the number of registered people, number of people who fell ill due to the contacts among contingents and first revealed patients (tab.3).

Dynamics of the analyzed indices of work quality in the foci of tubercular infection shows its low effectiveness. However, it is necessary to note the improvement of the index of tuberculosis morbidity of people in occupational contact. Small range of hospitalization of FRP and contingents with bacterial discharge is due to the lack of in-patient fund. During 6 years the index of the ratio of clinically cured people over the dead from active tuberculosis reached its least level due to significant growth (by 24.1%) of death rate from tuberculosis in 2010 as compared with 2009.

Thus, decrease of indices of clinical follow-up of tubercular patients nowadays is due to the lowered efficiency of treatment of TP patients among FRP, insufficient range of surgical treatment, insufficient examination of patients when taking off the register from active groups of follow-up, groundless transfer of tubercular patients into inactive groups.

Literature

I.M.Son. Tuberculosis epidemiology/ I.M.Son, V.I.Litvinov, V.I.Starodubov.-M.:MNPTBT.-2003.-286p.

M.V.Shilova. The results of rendering antitubercular aid in Russia in 2003.//Problems of tuberculosis.-2005.-№3.-P.3-10.

M.V.Shilova. Tuberculosis in Russia in 2008/ M.V.Shilova.-M., 2009.-160p.

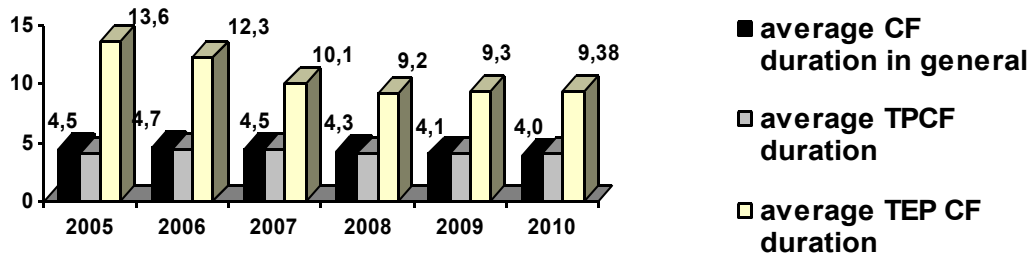


Fig.1. Average duration of the clinical follow-up (in years) of antitubercular institutions contingents during the period of 2005-2010

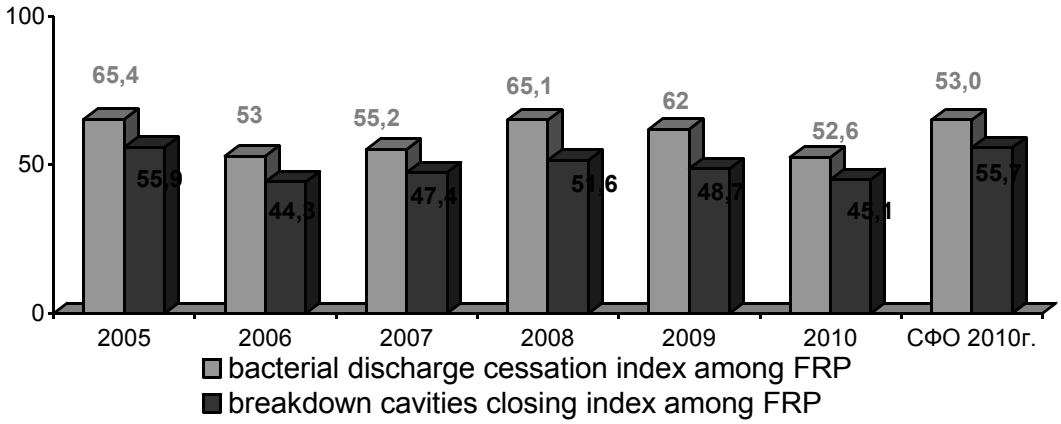


Fig.2. Dynamics of bacterial discharge cessation and breakdown cavities closing indices among FRP with tuberculosis in the Irkutsk region for the period of 2000-2010

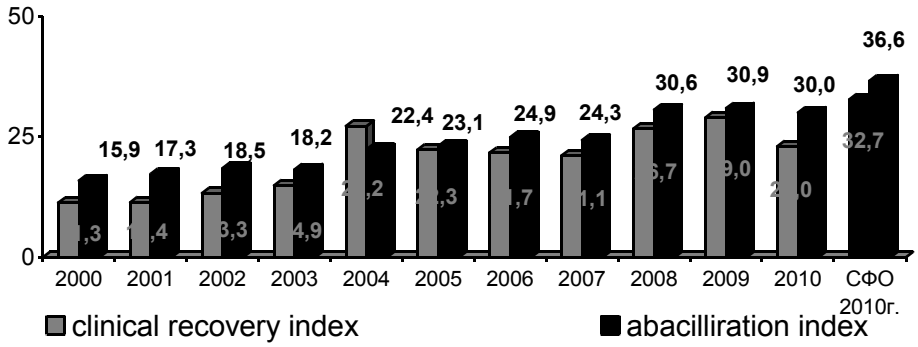


Fig.3. Dynamics of clinical recovery and tubercular contingents abacilliration indices in the Irkutsk region during 2000-2010. (%)

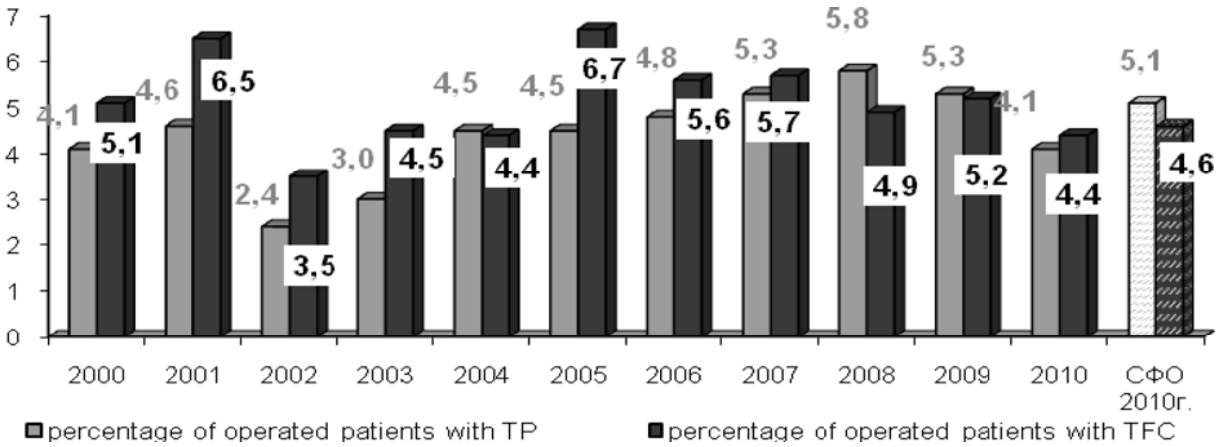


Fig.4. Specific gravity of operated patients with TP and TFC in the Irkutsk region during 2000-2010. (%).

Table 1.

Planned and actual indices of clinical recovery and abicilliration of tubercular patients during 2005-2010

Years	indices			
	Clinical recovery, %		Abacilliration, %	
	plan	fact	plan	fact
2005	23,7	22,3	33,8	23,1
2006	22,5	21,7	35,3	24,9
2007	23,3	21,1	36,7	24,3
2008	24,6	26,7	39,1	30,6
2009	23,3	29,0	37,0	30,9
2010	23,6	24,4	35,9	30,0

Table 2.

Indices of tuberculosis recurrence rate in the Irkutsk region during 2005-2010

Indices	Years					
	2005	2006	2007	2008	2009	2010
Recurrence rate in people cured of tuberculosis (per 100,000 of population)	10,6	9,2	9,5	10,2	9,6	9,3
Early recurrences rate in patients with TP (per 100 registered in CF group III)	3,0	3,0	2,8	3,8	2,9	3,0
Early recurrences rate in patients with TEP (per 100 registered in CF group III)	0,1	0,1	0,1	0,2	0,2	0,2
Recurrence percentage among followed-up patients (%)	0,6	1,5	1,4	1,5	2,0	2,3
Percentage of people with recurrence among first revealed patients (%)	11,4	8,6	8,1	8,0	8,0	7,6

Table 3.

Quality indices of work at the tubercular infection foci in the Irkutsk region during 2005-2010

Indices (CF efficiency criteria)	Years					
	2005	2006	2007	2008	2009	2010
Morbidity of people contacting with tubercular patients (0.2-0.3 per 100,000 of population)	3,6	4,2	3,9	3,1	3,6	3,5
Morbidity of contact people in bacillary foci (not more than 0.25 per 100 registered in group IV)	1,9	1,8	1,6	1,3	1,2	1,3
Morbidity of people due to occupational contact (not more than 0.25 per 100 registered in group IV)	0,6	0,4	0,7	0,25	0,2	0,2
Percentage of people falling ill due to contact among FRP (0.5-1.0%)	3,8	3,9	3,2	2,4	3,0	2,8
Percentage of people falling ill due to contact among contingents (0.2-1.0%)	0,6	0,8	0,7	0,6	0,7	0,7
Range of FRP hospitalization (98.0-100.0%)	88,6	83,6	85,0	81,4	81,3	78,2
Range of hospitalization of FRP with bacterial discharge (98.0-100.0%)	93,8	93,8	90,4	81,3	89,1	91,6
Range of hospitalization of contingents with bacterial discharge (98.0-100.0%)	71,3	71,9	73,1	75,1	60,7	63,9
Ratio of clinically cured people to those who died from active tuberculosis	2,5:1	2,8:1	2,7:1	3,1:1	3,3:1	2,2:1

Elena Vladislavovna Bardymova – cand. of med.sciences, assistant lecturer of the chair of community health and public health of the Irkutsk state medical university. 664003, Irkutsk, Krasnoye Vosstanye str., 1, SEE HPE ISMU, chair of community health and public health, tel. 8(3952)201082, fax 8(3952)201082, mob. tel. 89021783576

Nadezhda Sergeevna Khantaeva - cand. of med.sciences, assistant professor of the chair of community health and public health of the Irkutsk state medical university. 664003, Irkutsk, Krasnoye Vosstanye str., 1, SEE HPE ISMU, chair of community health and public health, tel. 8(3952)201082, fax 8(3952)201082, mob. tel. 89027675758, e-mail: hns.baikal@mail.ru

Anna Vladimirovna Poluektova - assistant lecturer of the chair of community health and public health of the Irkutsk state medical university. 664003, Irkutsk, Krasnoye Vosstanye str., 1, SEE HPE ISMU, chair of community health and public health, tel. 8(3952)201082, fax 8(3952)201082, mob. tel.89148839139

V.N.Neustroeva, G.I.Simonova, E.S.Kylbanova, O.V.Tatarinova, L.V.Scherbakova, E.G.Verevkin.

THE ANALYSIS OF ACTUAL NUTRITION OF ELDERLY POPULATION OF YAKUTSK

The study carried out on elderly and senile aged population of Yakutsk city, including long-livers, testifies to imbalanced diet on fatty and carbohydrate components, as well as energy value in different ethnic and sex age-groups.

Keywords: actual food, chronic non-infectious, elderly, senile age, long-livers, geriatrics, gerontology, epidemiology.

Introduction. For the last decades a higher amount of the aged all over the world has been noted. The ageing is considered to be a natural biological process. It is possible to slow down this process by keeping regular lifestyle and labour activity, arranging mode and character of work and rest, controlled physical activity, giving up bad habits and having healthy nutrition. The nutrition of older people should be of full value and balanced with the account of age features of their organism [3]. It has been established that indigenous population of the Far North sustains to fiber - lipid food causing the formation of a "polar metabolic type» [1, 2, 5]. Now in the north the population keeps various types of nutrition and the change of traditional food with climatic - geographical and business factors can lead to development of alimentary - dependent pathology. According to data of the epidemiological researches conducted, any nutrients affect on population's health, including occurrence of chronic non-infectious diseases (CND). Earlier conducted researches in Yakutia have revealed that food deficiency is subject to combined insufficiency of macro- and micronutrients [1, 2, 5] and more expressed at the elderly [2]. At the same time, the nutrition features of the elderly and senile aged people, including long-livers, have not been studied well in Yakutia. Considering the importance of nutrition factors in preserving health and active longevity, it is necessary to use certain methods of preventing and correcting nutrition factors in the development CND.

Aim: to study the structure of actual nutrition of elderly and senile aged urban population of Yakutia, including long-livers.

Materials and methods. In this work the results of epidemiological studies of CND risk factors have been presented. Inhabitants of Yakutsk city of both sexes at the age of 60 years and

more were the objects of the research. 575 people have been included in database for the analysis of actual nutrition (244 men and 331 women), 45,9 % of them referring to the Yakuts.

The research was conducted on the basis of SIH RS (Y) «Republican Hospital №3». Standardized questionnaires were used in the survey. This research has been approved by ethical committee at YSC CMS SD RAMS. The informed consent was obtained from all the surveyed for participation in the research for biochemical and molecular - genetic analyses of blood included.

The state of actual nutrition was studied by a frequency method [17]. A specially constructed mathematical model developed by SI SRI of Therapy SD RAMS (Verevkin E.G., Cand. Biol. Sciences, 2000) and tables of chemical compound of food substances [4] showed the content of following nutrients in daily ration such as: general fibers, fats, including sated fatty acids (SFA), mono-non-saturated (MNSFA) and poly-non-saturated fatty acids (PNSFA), general, complex and simple carbohydrates, as well as daily energy value. The ration energy value was calculated by means of standard calorie factors in kcal per 1 gram: 4 kcal for fibers and carbohydrates, 7 kcal for alcohol and 9 kcal for fats. A portion of consumption of the basic substances was determined in % of the daily general caloric content.

The statistical processing and data analysis were carried out by means of software package SPSS (11,5 version). Values $p < 0,05$ were considered authentic.

Results and discussion. The data obtained by us shows that the average energy value of daily ration in the surveyed elderly population sample was equal to 1824,8 kcal a day. Thus, the energy value among men was slightly higher than at women (Tab. 1). The energy value in the Yakut ethnic group was significantly lower than among the European ethnic group (Tab. 1) at the expense of simple carbohydrates at the latters.

The average fiber content has amounted to 62,1g in absolute values, this parameter corresponding to 13,8 % of ration energy. The fiber content in men's daily ration in absolute values was authentically higher as compared with women's, however, distinctions were not the same in relative value. The fiber daily consumption at indigenous population also in absolute values was essentially lower than at arrived ones, though in relative values these indicators did not differ in both ethnic groups (WHO recommendations in 10-15 %) (Tab. 1). The analysis of food ration in the sample detected the basic fiber sources estimated in 24,4 % of bakeries, flour and grain meals, 24,0 % of meat products, 18,3 % of dairy products.

The content of general fat in food ration was higher both in absolute (82,4) and in relative values (40,2 % of energy) (no more than 30 % of energy by WHO). Higher general fat content was noted among men, this parameter being higher than similar indicator among women. The general fat in daily consumption of the Yakut group was lower in comparison with the European

group. The portion of SFA energy was 15,4 % in food allowance of the surveyed, it being higher than recommended ones (WHO recommends less than 10 % of energy). In man's population the SFA content is higher than among women (Tab. 1). The SFA content was higher at Yakuts than at Europeans. Within the recommended values in the food ration of the surveyed there was 13,7 % of MNSFA energy (10-15 % of energy by WHO) (Tab.1). The MNSFA content was higher at men than at women, however authentic distinctions between ethnic groups have not been revealed. The portion of PSFA energy in ration of the surveyed has not shown authentic distinctions in sex and ethnicity (6-10 % is the level recommended by WHO) (Tab. 1). The ratio of PNSFA/SFA was 0,5, it being lower than the recommended values. This indicator testifies to the higher content of animal fats. The basic sources of fat in food ration of the surveyed consisted of meat products estimated at 36,2 %, dairy products - 15,4 % as well as oil and fats - 13,8 %.

The content of general carbohydrates in food ration of the surveyed was lower and has made 206,7 g per day, it corresponding to 45,6 % of energy of the ration (WHO recommends 55-75 %). The average daily consumption of general carbohydrates was higher at women and newcomers (Tab. 1). In case of the low consumption of general carbohydrates, the content of refined sugar has been increased in daily ration and has amounted to 15,8 % of daily caloric content. The rations of both men and women surveyed were also characterized by the high content of refined sugar. Besides, the consumption of refined sugar among the Yakuts was authentically lower in comparison with the similar indicator of the Europeans. The fiber content in food ration of the surveyed was 16,7g at average (WHO recommended level is 16-24g a day). The receipt of food fibers was higher at men and lower at indigenous population (14,6g) (Tab. 1). The starch content in food ration of the surveyed has made 27,4 % of energy value, it being relatively higher at men in comparison with women. The rations of the surveyed Yakut group contained less cellulose, lactose, however the starch receipt was higher in comparison with the European group (Tab. 1). In structure of carbohydrates the greatest contribution was provided by such foodstaffs as farinaceous foods and groats rated at 42,8 %, then sugar, chocolate and confectionery products - 23,9 % and dairy products - 7,9 %.

In comparing the actual nutrition by age criteria, there has been essential decrease in the content of some nutrients and energy values with the years (Tab. 2). The daily average content of fiber, general fat in relative values did not differ at the range of 60-89 years and higher in the group of 90 years and over. The SFA content in the group of 70-79 years has made 15,6 %, this parameter being higher than the similar indicator among the age group of 60-69 years estimated at 15,1 % of energy ($p < 0,05$), at the age of 80-89 years - 15,3 % of energy, and among long-livers this indicator was equal to 15,4 % of power value. The MNSFA content in food ration of

all the groups authentically differed only at long-livers rated at 15,0 % of energy (p <0,001). The higher rate of PNSFA content was estimated in the senior age groups (Tab. 2). The content of general carbohydrates was lowered with the years. The highest consumption was noted in the groups of 60-79 years - 46,2 % and 46,8 % of energy accordingly, while authentic distinctions were noted among long-livers of 80-89 years - 40,8 % and 45,7 % of energy accordingly (p <0,001). The rations of the surveyed were characterized by the high content of refined sugar which also decreased with the years. The starch content in food ration of the surveyed differed in the group of 70-79 years and among long-livers and has made 27,0% in the group of 60-69 years, 28,2 % at 70-79 years (p <0,05), 27,4 % at 80-89 years , 26,1% in group of 90 years and over (p <0,01). The consumption of food fibers has been lowered with the years, thus the minimum content was marked in the group aged 90 years and over.

«The pyramid of healthy food» was offered by WHO experts for practical implementation of the study, where the prior qualitative and quantitative ration content is presented. «The food pyramid» has also revealed disparity of basic products in the daily food ration (Fig. 1).

Conclusion.

26 The nutrition content of the surveyed sample aged 60 years and over has unbalanced character concerning to fatty and carbohydrate components: the high portion of general fat, including sated fat, the high content of refined sugar due to low consumption of complex carbohydrates both at men and at women of the Yakut and European ethnic groups. The consumption of food fibers is noted to be lower at the Yakut group. The general energy value of food ration is higher among the Europeans as compared with the Yakut ethnic group.

27 The gradual decrease of general power value in food ration, general carbohydrates with the content of refined sugar and low food fibers has been detected with the increase of general fat consumption, including MNSFA and PNSFA with the years.

28 «The food pyramid» does not correspond to the qualitative and quantitative structure of the ration.

Table 1

Characteristics of basic food substances and energy at men and women of Yakutsk city aged 60 years and over, M±SD

Nutrients	Total population (n=575)	Men (n=244)	Women (n=331)	The Yakut ethnic group (n=264)	The European ethnic group (n=298)
General protein, g/a day	62,1±0,9	68,4±1,5	57,4±1,1***	59,6±1,2	64,0±1,4*
General fat, g/a day	82,4±1,5	92,4±2,4	74,9±1,7***	79,7±2,0	84,2±2,2
SFA, g/a day	31,8±0,6	35,9±1,0	28,8±0,7***	31,2±0,8	32,1±0,9
MNSFA, g/ a day	28,1±0,5	31,9±0,9	25,3±0,6***	27,0±0,7	29,0±0,8
PNSFA, g/ a day	16,0±0,3	17,3±0,5	15,0±0,5***	15,5±0,5	16,3±0,4
PNSFA:SFA	0,5±0,01	0,5±0,01	0,6±0,01***	0,5±0,01	0,5±0,01
General carbohydrates, g/a day	206,7±3,4	223,2±5,3	194,5±4,3***	194,3±4,7	217,4±4,9**
Sugar, g/a day	74,1±1,9	74,7±3,2	73,7±2,4	62,4±2,5	84,2±2,8***
Starch, g/a day	121,5±1,9	136,9±2,7	110,1±2,4***	121,8±2,8	121,2±2,5
Lactose, g/ a day	9,2±0,3	9,6±0,6	9,0±0,4	8,2±0,4	10,1±0,5**
Cellulose, g/a day	6,2±0,1	6,2±0,2	6,1±0,2	5,4±0,2	6,8±0,2***
Food fibers, g/a day	16,7±0,3	17,4±0,4	16,1±0,4*	14,6±0,3	18,5±0,4***
Energy value, kcal	1824,8±28,2	2016,9±45,1	1683,2±33,9***	1747,1±38,2	1888,3±41,5**
% protein energy	13,8±0,1	13,7±0,1	13,8±0,1	13,8±0,1	13,7±0,1
% fat energy	40,2±0,3	40,8±0,4	39,8±0,3*	40,8±0,4	39,6±0,4*
% SFA energy	15,4±0,1	15,7±0,2	15,2±0,2*	15,8±0,2	15,0±0,2***
% MNSFA energy	13,7±0,1	14,1±0,2	13,4±0,1**	13,8±0,2	13,6±0,2
% PNSFA energy	7,9±0,1	7,8±0,2	8,0±0,1	8,0±0,2	7,8±0,1
% carbohydrate energy	45,6±0,2	44,6±0,4	46,3±0,4**	44,7±0,4	46,5±0,4**
% sugar	15,8±0,3	14,3±0,4	17,0±0,3***	13,9±0,3	17,5±0,3***

energy					
% starch energy	27,4±0,3	28,1±0,4	26,9±0,4*	28,5±0,4	26,5±0,4***
% lactose energy	2,0±0,1	1,8±0,1	2,1±0,1*	1,9±0,1	2,1±0,1
% cellulose energy	1,4±0,02	1,2±0,03	1,5±0,03***	1,3±0,02	1,5±0,03***
% food fiber energy	3,7±0,04	3,5±0,1	3,9±0,1***	3,4±0,1	4,0±0,1***

Note: M – average arithmetical parameter, SD – standard deviation. * p<0,05; ** p<0,01; *** p<0,001.

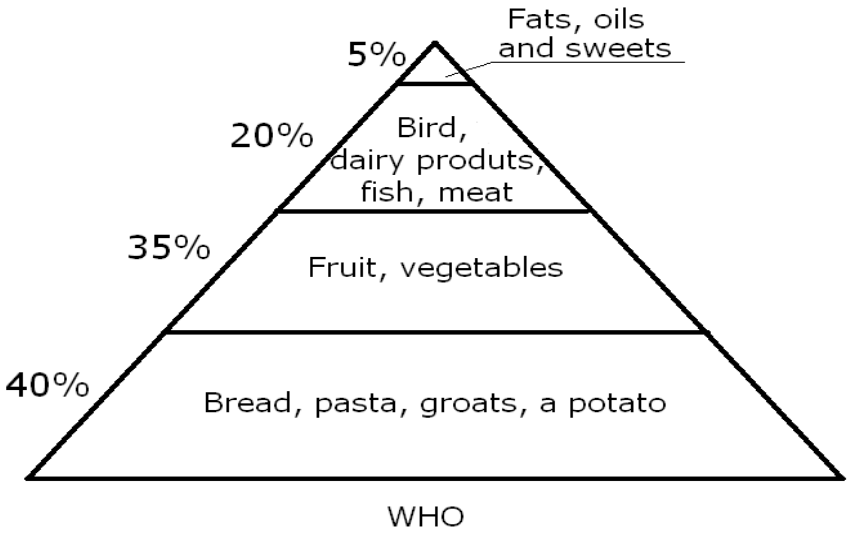
Table 2

Age-referred characteristics of basic food substances and energy in food ration of men and women of Yakutsk city

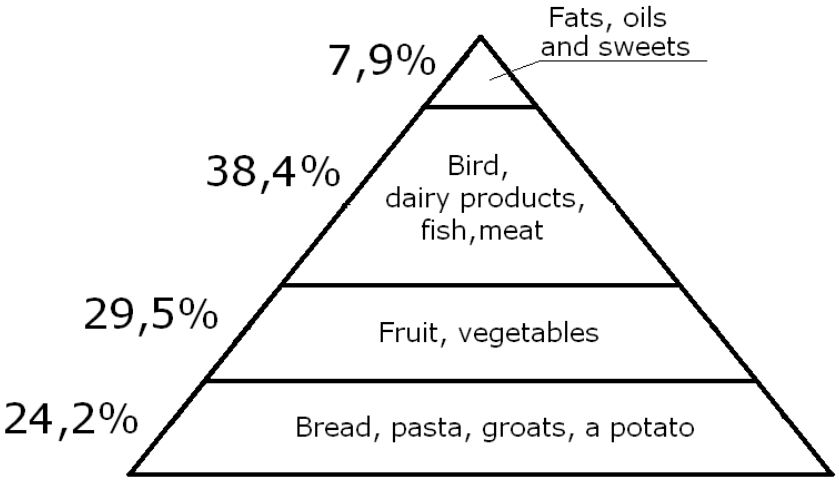
Age	60-69 years (I) (n=179)	70-79 years (II) (n=192)	80-89 years(III) (n=132)	90 years and over (IV) (n=72)	p
Nutrients	M±SD, g/ a day				
General protein	68,3±1,7	63,1±1,5	55,4±1,7	56,1±2,8	I- II*, I- III **, I-IV***, II-III***, II-IV***
General fat	89,5±2,6	82,7±2,2	75,2±2,9	76,8±5,3	I- III **, I-IV***, II-III**, II-IV**
SFA	34,3±1,1	33,1±0,9	29,0±1,3	27,1±2,2	I- III **, I-IV***, II-III***, II-IV***
MNSFA	30,8±1,0	28,1±0,8	28,1±0,8	26,2±1,8	I- II***, I- III **, I-IV***, II-III*, II-IV*
PNSFA	17,3±0,67	14,7±0,5	14,9±0,7	17,7±1,1	I- II*, I- III **, II-IV*, III-IV*
PNSFA:SFA	0,5±0,02	0,5±0,01	0,6±0,02	0,7±0,02	I- II***, I-IV***, II-III***, II-IV***, III-IV***
General carbohydrates	230,9±6,4	217,7±4,9	186,9±6,8	153,0±8,8	I- III **, I-IV***, II-III***, II-IV***, III-IV***
Sugar	85,3±3,4	76,7±2,9	68,6±4,2	49,8±5,6	I- III **, I-IV***, II-III**, II-IV***, III-IV***
Starch	133,5±3,9	129,2±2,9	108,4±3,1	95,1±3,8	I- III **, I-IV***, II-III***, II-IV***, III-IV**
Lactose	10,0±0,6	9,7±0,6	8,6±0,7	7,0±5,7	I- III **, I-IV***, II-IV**
Cellulose	7,2±0,3	6,5±0,2	5,3±0,2	4,3±0,2	I- II*, I- III **, I-IV***, II-III***, II-IV***, III-IV***
Food fibres	19,3±0,5	17,7±0,4	14,5±0,5	11,5±0,5	I- II*, I- III **, I-IV***, II-III***, II-IV***, III-IV***
Энергоценность, ккал	2012,1±52,3	1879,9±41,4	1651,2±55,4	1530,3±90,5	I- III **, I-IV***, II-III***, II-IV***, III-IV*

Note: M – average arithmetical parameter, SD – standard deviation. * p<0,05; ** p<0,01; *** p<0,001.

Fig. 1



WHO



MEN AND WOMEN

The literature

1. Bezrodnykh A.A. Issues of nutrition and vitamin provision in modern therapeutic clinic /Bezrodnykh A.A.// Issues of nutrition and vitamin provision in conditions of the North: collection of scientific works. - Yakutsk, 1989. – P.88.

2. Ivanov K.I. Clinical epidemiological picture of cardiovascular diseases in Republic Sakha (Yakutia): absr. diss … Dr. of medical sciences / K.I. Ivanov. - Rostov-na-Donu, 2006. – P.47.

3. Mataev S.I. Estimation of actual nutrition and qualitative analysis of nutrients in food ration of elderly patients with chronic obstructive bronchitis combined with ischemic heart disease /S.I. Mataev, T.N. Vasilkova //Issues of nutrition. - 2004. - №1. - P. 28-31.

4. Tutelyan V. A. About norms of physiological requirements for energy and food substances for various groups of population of the Russian Federation / V.A.Tutelyan // Issues of nutrition. - 2009. - №1 (78). - P. 4-15.

5. Tyaptirgyanova V.M. Hygienic estimation of actual nutrition of urban population of the Republic Sakha (Yakutia): absr. diss … Dr. of medical sciences / V.M.Tyaptirgyanova. - Irkutsk, 2004. – P.22.

NEUSTROYEVA Varvara Nikolaevna - the researcher of the Yakut scientific centre of complex medical problems SD RAMS, neusvn@mail.ru; **SIMONOVA Galina Ilinichna** – Dr. Medical sciences, the Honoured worker of science of the Russian Federation, Prof., the head of the clinical-population therapeutic and endocrine diseases laboratory SI of Therapy SD RAMS (Novosibirsk); **Kylbanova Elena Semenovna** –Dr. Medical sciences, the head of department of inner diseases and family medicine Institute of post-diploma training of doctors NEFU named after M.K.Ammosov; **TATARINOVA Olga Victorovna** –Cand. Medical sciences, the deputy head physician of the Republican hospital №2 - the Center of emergency medical aid, the senior researcher SC of complex medical problems SD RAMS; **Scherbakova Lilia Valierevna** – the senior researcher of the clinical-population therapeutic and endocrine diseases laboratory SI of Therapy SD RAMS (Novosibirsk); **Verevkin Evgeniy Georgievich** - Cand. Medical sciences, the senior researcher of the clinical-population therapeutic and endocrine diseases laboratory SI of Therapy SD RAMS (Novosibirsk).

Markova S.V., Petrova P.G., Borisova N.V., Antipina U.D., Pshennikova E.V., Egorova G.A.

Children of South Yakutia: Health state and element status

In Yakutia a number of projects, including working out of the Elkonsky deposit which will lead to some ecological-technological risks, to ecological-social and medical-ecological consequences is formed and realized. Level of a natural radiating background in settlements of Aldan area as a whole doesn't exceed the established specifications, but a little above republic values. At ranging on structure of diseases on the first place are registered illnesses of nervous system, on the second – illnesses of digestive organs, on the third – illnesses of respiratory organs, on the fourth – congenital developmental anomalies, on the fifth – illnesses endocrine systems.

Keywords: health, ecology, ecological factors, environment.

The list of the used literature

1. Agadjanyan N.A., Marachev A.G., Bobkov G.A. Ecological physiology of the man – M.: KRUK, 1999. - 398 p.
2. Agadjanyan N.A., Petrova P.G. Man in conditions of North - M.:AGMA, 1996 -179 p.
3. Borisova N.V., Petrova P.G. Ecology-physiological substantiation of formation of functional reserves at the inhabitants of Republic Sakha (Yakutia) // a Science and education, №2 (50), 2008, P. 55-61
4. Gorbanev S.A., Maimulov V.G., Vorobieva L.V. Monitoring of environment in view of natural and technogenic factors // Materials X of the All-Russia congress sanitary doctors (book II). - Moscow, 2007. - P. 634-638.
5. Ermakova N.V. An ecological portrait of the man in North and questions of ethnic physiology. // Materials X1 of the International symposium « Ecology-physiological problems of adaptation » -M.: RUPF, 2003 – P.183.
6. Kaznacheev V.P. A problem of adaptation of the man // Some results and perspective of researches of Novosibirsk, 1978 - P.56.
7. Nefedov B.N. Some ecology-technological risks of creation of large hydraulic engineering objects in north of Siberia // Materials of the IX International symposium on development of cold regions. - Yakutsk, 2010. - P. 42
8. Panin L.E. Homeostasis of the man in conditions of high breadthes // Materials of XIII International congress on Polar medicine, June 12-16, 2006, Novosibirsk. - Novosibirsk, 2006. - P. 12-13.
9. Solomonov N.G., Egorov I.Ya., Chernyavsky V.F. Modern condition and epydemiology the forecast on especially dangerous infections in territory of Yakutia in conditions of intensive industrial region (megaprojects) and global change of a climate // Materials IX of the International symposium on development of cold regions. - Yakutsk, 2010. - with. 228
10. Report on an ecological situation in Republic Sakha (Yakutia) for 2011г.

CHARCOT-MARIE-TOOTH DISEASE: MODERN CLASSIFICATION AND CLINICAL FEATURES

P.I.Guryeva

Summary: In this article consider classification and clinical features of Charcot-Marie-Tooth disease depending on the affection gene and inheritance type.

Keywords: Charcot-Marie-Tooth disease, classification, clinical features

Introduction

Charcot-Marie-Tooth disease – extensive group of genetically heterogeneous diseases of the peripheral nerves characterized by symptoms progressing polyneuropathies with primary defeat of muscles distal of departments of extremities [8]. The first clinical description of disease has been made by the French researchers J.Charcot, P.Marie (1886) and irrespective of them Englishman H. Tooth (1886) which have designated them as neural amyotrophy. This term is used till now for a designation of this group of diseases. However according to the international classification the term hereditary motor sensory neuropathies (HMSN) is accepted [7]. Frequency of all forms HMSN varies from 4,7 to 36 on 100 thousand population [12]. The greatest prevalence HMSN in Norway makes 36 cases on 100 thousand population, in Spain – 28,2 on 100 thousand population. Frequency in Cyprus has made 16 on 100 thousand population, in Serbia – 9,7 on 100 thousand population [13,23]. Result of Japanese research is frequency HMSN 10,8 on 100 thousand population. The least frequency is fixed in Nigeria – 0,14 on 100 thousand population. In Russia this indicator on the average makes 5,64 on 100 thousand population with fluctuations from 1,07 to 15,95 [1,11]. HMSN amazes all races and nationalities without age and gender distinctions, but people of young, able-bodied age (20-30 years) is more often suffer. The progressive course of disease with fast development of complications and absence of effective treatment in patients with HMSN leads to decrease in quality of life and early disability. In the families burdened on HMSN preventive maintenance of given hereditary disease is based on medical-genetic consultation and prenatal diagnostics [10]. Now it is identified about 30 various genes responsible for formation of phenotype HMSN. Till now new clinical variants, and also the new genes involved in formation of this pathology are described [26].

Classification

For more than centenary period, the past since the first description of Charcot-Marie-Tooth disease, sights at systematization and nosological independence of separate variants of this group

of diseases repeatedly changed. Creation of new classifications was promoted appreciably by development of diagnostic methods. Researches Dyck P. and Lambert E., performed in the sixties last century, it is shown that all hereditary polyneuropathies on the basis of the given electrophysiological and morphological methods of research it is possible to differentiate accurately 2 basic of type HMSN – HMSN I and HMSN II. Type HMSN I is characterized, by electrophysiological data, considerable decrease in speed of carrying out of nerve conduction velocity (than 38 km/s) and to sensitive fibers of peripheral nerves, and morphological – segmentary hypertrophic demyelination nerves with formation of "bulbous heads» («onion bulbs»). Thus, HMSN I type represents demyelination form of (mielinopathies). On the contrary, for HMSN type II primary defeat axonal peripheral nerves is characteristic, thus speeds of carrying out of an impulse on peripheral nerves within norm or are moderately lowered, and on a biopsy the myelin structure remains safe (axonal form of polyneuropathy, or axonopathies). As threshold value the indicator is accepted NCV (nerve conduction velocity) on impellent a component of a median nerve in 38 km/s. However families are described, at the amazed which members considerable variability of this parameter was observed (from 25 to 45 km/s), it has led to necessity of allocation of group of so-called, intermediate variants HMSN [3,7,8]. Besides the motor sensory polyneuropathies specified above two basic types, sometimes in the literature under heading HMSN allocate also a number of rather rare syndromes different from a classical phenotype by those CMT or other features of a clinical picture [2,25]:

a) HMSN III (Dejerine – Sottas disease) – is characterized by onset of symptoms throughout the first years of the life sharply expressed by a hypertrophy of peripheral nerves («hypertrophic neuritis»), the expressed decrease motor NCV (less than 10 km/s), early disability and quite often observable increase of level of fiber in spinal liquid;

b) HMSN IV (Refsum disease) – the independent disease connected with infringement of an exchange fitan of acid at which the impellent polyneuropathy is combined with an ataxy, an ichthyosis and other symptoms;

c) The rare forms HMSN characterized by a combination of mainly motor neuropathy with the bottom spastic paraparesis (HMSN V), an atrophy of optic nerves and deafness (HMSN VI), pigmentary retinitis (HMSN VII);

d) Congenital hypomyelination the polyneuropathy – is characterized by infringement of formation of a myelin cover of peripheral nerves since a birth, considerable backlog of the child in impellent development, sharp decrease in speed of carrying out of an impulse on peripheral nerves.

The majority of forms (HMSN I and II type) have autosomal dominant type of inheritance, considerably smaller number of forms is inherited on autosomal recessive type (HMSN III and

IV type), some forms have X-linked recessive (Xq24) and the X-linked dominant inheritance (locus Xq13) with intermediate values NCV (from 30 to 40 km/s) [7]. Now the classification structure NMSN based on etiological distinctions is offered (see the table).

Features of a clinical picture.

For HMSN development of chronically progressing weakness and an atrophy distal muscles of feet, depression tendon reflexes (first of all Achillov´s reflexes), sensitivity frustration on polineurithic to type, deformation of feet («foot of Friedreich´s»), gait frustration on type «steppag» are characteristic; at a late stage weakness and an atrophy distal departments of hands, deformation of brushes (drawing see) can join. We will consider the basic types HMSN.

HMSN1 Type. The most common form is HMSN1A with autosomal dominant type of inheritance which according to research Saporta, etc. (2011) is revealed at 55 % of the surveyed patients with HMSN [15]. The reason is the mutation in gene PMP22 (peripheral myelin protein). The basic type of a mutation in this gene – duplication of 1,5 Mb in area chromosome 17p11.2-12 [14,21,33,34]. HMCH1A begins on 1-2 decade of life, extremely seldom arises after 30 years. The first symptoms, as a rule, are exhaustion in feet at long walking, static loadings, instability of gait, frequent stumble, and incomplete dislocations of ankle joints. In process of progressing of disease gait gets character "cock" («steppag»). To thicket originally atrophies arise in muscles of feet, is more rare in muscles of a shin, the bottom third of hip. Later atrophy extends on muscles of the top extremities in a direction from distal departments to the proximal. On occasion atrophy at HMCH1 type is limited to selective defeat distal departments of extremities. Bone deformations of feet are regarded by the majority of researchers as obligate sign HMSN1 of type. Foot get the hollow form with the high arch, sometimes in the form of "stick" or « Friedreich´s» hollow foot with the high arch and extension a thumb. Owing to atrophical changes of muscles of a foot have the form of "the overturned bottle», "riding breeches", «feet of a stork». Limitation of volume of active movements, weakness and decrease in muscular force varies in a wide range: from an easy paresis to bottom distal paraplegias. An early symptom of illness is decrease Achillov´s reflexes which is observed practically at all patients. Frequent display HMCH of 1 type are sensitivity frustration. Patients complain of pains of various character (aching, shooting, painful muscular reductions on type crampy), paresthesia. Changes both superficial, and deep sensitivity come to light. Disturbance of superficial sensitivity on polineurithic to type, in a kind hyposthesia [11].

Exists allelic variant HMSN 1A type – hereditary neuropathy with liability to pressure palsies which results deletion from gene PMP22 in the field of a chromosome 17p11.2-12 [2,20]. Has autosomal dominant type of inheritance. Disease is shown recurrence by the paresis of peripheral nerves arising sharply after small traumas or pressure palsies. Duration of impellent

infringements fluctuates from one day about several months then there is a complete recovery of functions. In process of illness progressing hanging down foot, oppression tendon reflexes, "spotty" or total sensitivity frustration that pulls together clinical picture HNPP with semiology HMSN1 [4,18] can gradually develop symmetric or asymmetric an amyotrophy in distal departments of the extremities.

Other variants HMSN1. Rare enough variant HMSN1B which makes from 5 % to 7 % of all hereditary demyelination polineuropathies [11]. It is caused by mutations in a gene of the basic fiber of a myelin (MPZ – myelin protein zero), mapped on a chromosome 1q22.1 [16,27]. For this variant considerable decrease is characteristic NCV on peripheral nerves (indicators on a median nerve don't exceed 10 km/s). Mutations in gene MPZ, breaking adgezive to fiber function lead to occurrence demyelation polineuropathies, characterized by the early beginning, the expressed atrophies and weakness of muscles of shins, stop and brushes and considerable decrease NCV on peripheral nerves.

The following variant demyelination polineuropathies with autosomal dominant type of inheritance – 1C is caused missens by mutations in gene LITAF localized on a chromosome 16p13 [28]. This variant meets extremely seldom and has no specific clinical features. Variant HMSN1D is caused by mutations in gene EGR2 (early grow response), mapped on a chromosome 10q21-q22 [30]. Mutations in this gene stop an expression of structural genes of a myelin, such as MBP (myelin basic protein) and MPZ.

HMSN2 Type. The most common variant axonal HMSN is 2A type on which share it is necessary, by estimations of different authors, from 12 to 23 % of all diseases of this genetically heterogeneous group neurodegenerative to a pathology [6]. In overwhelming majority of cases the reason of development of disease are mutations in gene MFN2 mapped in the field of a chromosome 1p36 [22], and only in one family from Japan in quality etiological the factor the mutation in gene KIFlfiB localized in the same chromosomal region is considered [17]. Feature of this genetic variant, in comparison with widespread variants demyelination polineuropathies, the expressed defeat of muscles of shins and feet is, thus foot seldom gets the form eqinovarus or foot of Friedreich´s. More often it to become hollow or flat. It is in most cases observed frustration of deep sensitivity while superficial sensitivity changes not sharply. At patients with this genetic variant occurrence neurosensory relative deafness and atrophies of disks of optic nerves [7] is described.

Prominent feature HMSN 2B the type, caused by mutations in gene RAB7, is the expressed touch component and development of trophic ulcers of the bottom extremities. At HMSN2D – more distinct and early involving of hands. Other variants autosomal dominant axonal HMSN meet equal frequency and have no features of clinical displays [2].

HMSN4 Type. The most widespread variant autosomal recessive HMSN is 4A the type caused by mutations in gene GDAP1, localized on a chromosHMSN4 Type. The most widespread variant autosomal recessive HMSN is 4A the type caused by mutations in gene GDAP1, localized on a chromosome 8q13-q21.1 [24,29]. For this variant early demonstration of process which arises at the age from 1 year till 5 years, and also process distribution on muscles of hips, in communication is chromosome 8q13-q21.1 [24,29]. For this variant early demonstration of process which arises at the age from 1 year till 5 years, and also process distribution on muscles of hips, in communication is characteristic than, at duration of disease more than 10 years at patients can appear receptions of Govers. Deformation of feet and deformation of brushes on type of "a sharp-clawed paw» is marked also expressed eqinovarus. Early loss tendon reflexes from the bottom and top extremities, and also the expressed frustration of deep sensitivity, at a long absence superficial hypesthesia was prominent feature HMSN 4A type [5]. Other genetic variants HMSN 4 types meet extremely seldom and are described in individual families.

X-linked HMSN. Not less than 90 % from all X-linked HMSN it is necessary on share HMSN1X. Reason HMSN 1X are mutations in gene GJB1 localized on a long shoulder of the X-chromosome (Xq13.1). A product of this gene is connexin 32 [7,8,9,19]. It is By this time identified more than 300 various mutations in gene GJB1. The basic type of point-mutations: missens - and a nonsense-. Mutations with shift of a framework of reading [8] in rare instances come to light. Mutations in gene GJB1 are characterized varying expression and incomplete penetration at patients of a female. For the first time a family with neural an amyotrophy with the X-linked dominant type of inheritance has described Herringham in 1889. Disease demonstrates in an age interval from 10 till 35 years from occurrence of weakness and an atrophy of muscles distal departments of the bottom extremities, leading to occurrence steppag gait. In process of disease progressing are marked involving in process of interosseous muscles of brushes and occurrence of deformation of feet as "horse", "hollow" or eqynovarus, and brushes – on type of «a monkey's paw» or «a sharp-clawed paw». Characteristic signs of illness are frustration of all kinds of sensitivity in the field of the amazed muscles, and also tendon hypo- or areflexia. Frequent clinical display of disease happen a tremor of fingers of outstretched arms and fasciculation muscles which are regarded by a number of authors as consequence of interest of motor-neurons of a spinal cord. At 80 % of patients signs of an is sensitive-cerebellar ataxy come to light. By electroneuromiological data decrease in speeds of carrying out of an impulse on impellent fibers of all peripheral nerves and amplitudes of M-answers, along with increase distal the latent periods and duration of M-answers comes to light [9].

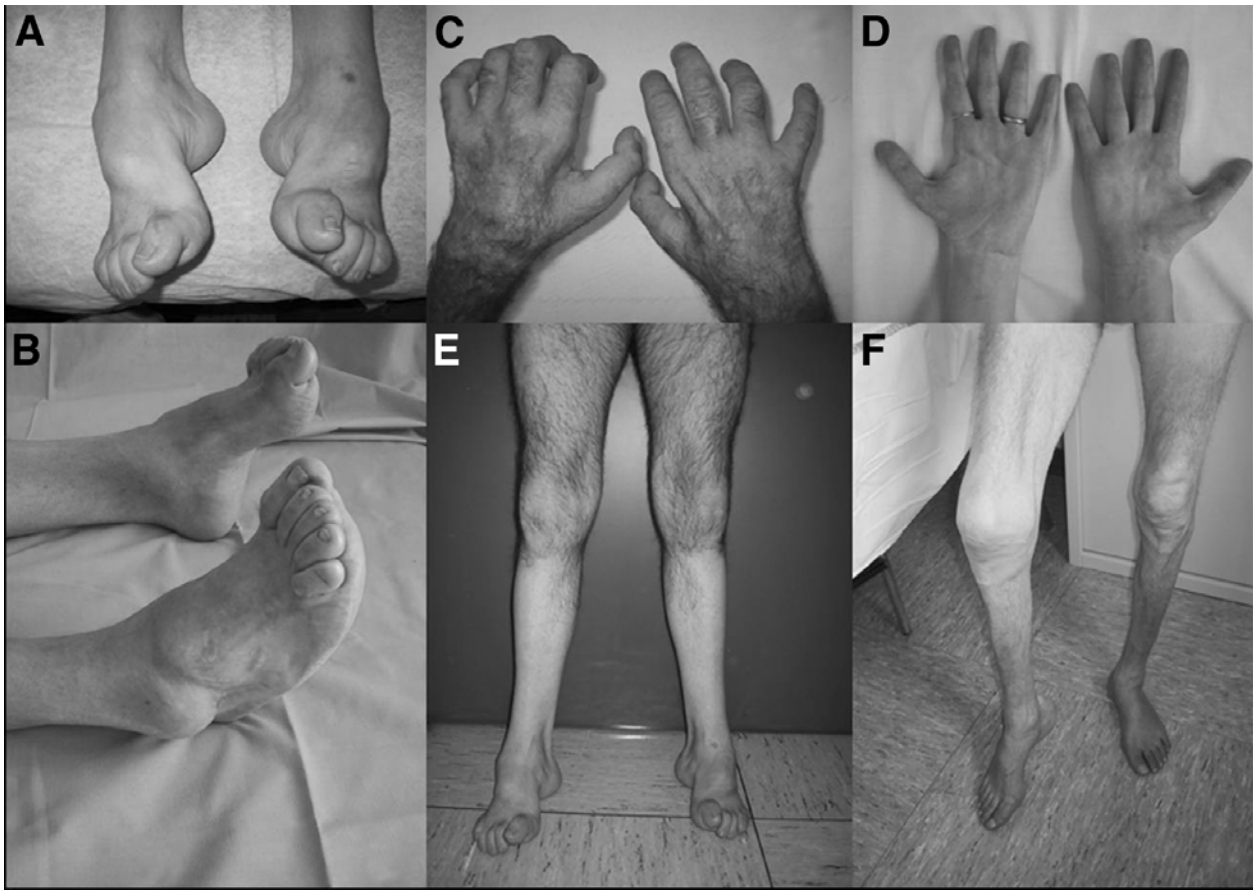
The conclusion

In a kind of the expressed heterogeneity hereditary motor and sensory neuropathies at considerable similarity of clinical displays there are considerable difficulties at identification of a genetic variant with use of expensive methods of DNA-analysis. However, considering high enough prevalence of separate forms hereditary neuropathies and their late diagnostics in daily neurologic practice, increase of vigilance of practising doctors (neurologists, pediatrists, general practitioners) for the purpose of early revealing of disease when therapy and rehabilitation actions are most effective is necessary. It will allow to slow down rates of progressing hereditary neuropathies and to improve social adaptation of patients.

Modern classification HMSN [Shagina O. A. et al., 2009]

The disease form	Inheritance type	Loci	Gene
HMSN tupe 1 (mielinopathia)			
HMSN1A	AD	17p11.2	PMP22
HMSN1B	AD	1q22-q23	MPZ (Po)
HMSN1C	AD	16p13.1-p12.3	LITAF (SIMPLE)
HMSN1 (HMSN1D)	AD	10q21.1-q22.1	EGR2
HMSN1 (HMSN1E)	AD	8p21	NEFL
DCC	AD	8qter	unknown
HMSN type 2 (axonopathia)			
HMSN2A	AD	1p35-p36	MFN2
HMSN2A	AD	1p35-p36	KIFIB
HMSN2B	AD	3q13-q22	RAB7
HMSN2C	AD	12q23-q24	unknown
HMSN2D	AD	7p14	GAPS
HMSN2E	AD	8p21	NEFL
HMSN2A	AD	7q11-21	HSPB1 (HSP2)
HMSN2П	AD	12q12-q13.3	unknown
HMSN2	AD	1q22-q23	MPZ
HMSN2L	AD	12q24	HSPB28
Autocomal-dominant HMSN intermediate type			
DI-HMSNA	AD	10q24.1-q25.1	unknown
DI-HMSNB	AD	19p12-p13.2	DNM2
DI-HMSNC	AD	1p34-p35	YAPS
DI-HMSN	AD	1q2-q23	MPZ
HMSN-P	AD	3q13.1	unknown
Low NCV	AD	8p23	APHGEF10
HMSN type 4 (autocomal-recessive mielinopathia)			
HMCH4A	AR	8q13-q21	GDAP1
HMCH4B2	AR	11p15	SBF2 (MTMR13)
HMCH4B1	AR	11q23	MTMR2
HMCH4C	AR	5q23-q33	SH3TC2 (KIAA1985)
HMCH4D	AR	8q24	NDRG1
HMCH4E	AR	10q21.1-q22.1	EGR2
HMSN4F	AR	19q13.1-q13.3	PRX
CCFDN	AR	18q23-gter	CTDP1
HMSN4G	AR	10q23	unknown
HMSN4H	AR	12p11.1-q13.11	FGD4
HMSN4J	AR	6q21	FIG4
HMCH type 4C (autosomal-recessive axonopathia)			
AP-HMSN2A (HMSN4C1)	AR	1q21.2-q21.3	LMNA
AP-HMSN2 (HMSN4C2)	AR	8q21.3	unknown
AP-HMSN2B (HMSN4C3)	AR	19q13.3	unknown
AP-HMSN2 (HMSN4C4)	AR	8q21	GDAP1

X-linked HMSN			
HMSN1X	XR/XD	Xq13.1	GJB1 (Cx32)
HMSN2X	XR	Xq24-q26	unknown
HMSN3X	XR	Xp22.2	unknown
HMSN4X	XR	Xp26-q28	unknown
HMSNX5	XR	Xq21.32-q24	PRPS1



Clinical features of Charcot-Marie-Tooth (CMT) disease. (**A,B**) Moderate to severe foot deformities in CMT1A and note the pes cavus, hammer toes, and callosities. (**C**) Severe wasting of intrinsic hand muscles in a male patient with CMT. (**D**) Wasting of hand muscles in a female patient with CMTX. Note that muscles of the thenar eminence are more severely involved than hypothenar muscles, suggesting that the median nerve is more severely affected than the ulnar nerve. (**E**) Patient with CMT1A and note the pes cavus, moderate wasting of leg musles and of the lower third of the thigh. (**F**) Patient with late-onset CMT2 associated with an MPZ gene mutation. Foot drop, severe wasting of lower limb muscles, no evidence of foot deformities. Differential diagnosis with acquired axonal polyneuropathy is extremely difficult in the absence of family history of neuropathy.

The literature:

1. Illarioshkin S.N. DNA-testing and mediko-genetic consultation in neurology / S.N.Illarioshkin – 2002. – M: Medical information agency. – P. 591.

2. Hereditary neuropathy with liability to pressure palsies / S.N.Illarioshkin [et al.] // Neurol. Magazine. - 1998. – №4. – P. 8-12.

3. Hereditary motor sensory polineuropathies type 4A / O.A.Shagina [et al.] // Magazine of Neurology and psychiatry. – 2010. - №5. – P. 13-16.

4. New allelic variant hereditary motor sensory neuropathia IIA type in the Udmurt family / O.A.Shagina [etc.] // Medical genetics. – 2007. - №3. – P.33-37.

5. Features of clinical displays and algorithms of molecular-genetic diagnostics of genetically heterogeneous variants hereditary motor sensory polineuropathies / O.A.Shagina [etc.] // Molecular-biological technologies in medical practice. The collection of proceedings. — Novosibirsk: the Alpha of Whist H – P, 2009. – V. 13. -183-193.

6. Tiburkova T.V. research of gene GJB1 in sample of the Russian patients with hereditary motor sensory neuropathia type I / T.V.Tiburkova, O.A.Shagina, E.L.Dadali // Medical genetics. – 2009. - №7. – P. 30-38.

7. Sharkova I.V. Hereditary motor sensory neuropathia IX type / I.V.Sharkova, E.L.Dadali, A.V.Poljakov, N.V.Baryshnikova // Medical genetics. – 2004. - №.3. –P. 113-118.

8. Schneider N.A. Estimation of quality of life of patients with hereditary neuropathies Charko-Marie-Tooth in Krasnoyarsk region / N.A.Shnaider, E.V.Glushenko, E.A.Kozulina // the Bulletin of the Siberian medicine. – 2011. - №2. – P. 57-62.

9. Schneider N.A. Hereditary neuropathia – heterogeneous group of genetically determined diseases of peripheral nervous system / N.A.Shnaider, E.V.Glushchenko // the Bulletin of clinical hospital.- 2009. -№51.-P.19-22.

12. Bertorini T. Charcot-Marie-Tooth Disease (Hereditary Motor Sensory Neuropathies) and Hareditary Sensory and Autonomic Neuropathies / T.Bertorini, P.Narayanaswami, H.Rashed // The neurologist. – 2004. – V.10. – P. 327-337.

13. Charcot-Marie-Tooth Disease in Cyprus: Epidemiological, Clinical and Genetic Characteristics / P.Nicolaou [et al.] // Neuroepidemiology. – 2010. –V.35. – P. 171-177.

14. Charcot-Marie-Tooth disease type 1A: Assosiation with a spontaneous point mutation in the PMP22 gene / B.B.Roa [et al.] // New Engl. J. Med. – 1993. – V. 329. – P. 96-101.

15. Charcot-Marie-Tooth Disease Sybtypes and Genetic Testing Strategies / A.S.D.Saporta [et al.] // Ann. Neurol. – 2011. – V.69. – P. 22-33.

16. Charcot-Marie-Tooth neuropathy type 1B is associated with mutations of the myelin P0 gene / K.Hayasaka [et al.] // Nat. Genet. – 1993. – V.5. – P.31-34.

17. Charcot-Marie-Tooth disease type 2A caused by mutation in a microtubule motor KIF1Bbeta / C.Zhao [et al.] // Cell. – 2001. – V.105, №5. – P. 587-597.

18. Clinical, electrophysiologic, and molecular correlations in 13 families with hereditary neuropathy with liability to pressure palsies and a chromosome 17p11.2 deletion / R.Gouider [et al.] // Neurology. – 1995. – V. 45. – P. 2018-2023.

19.Connexin mutations in X-linked Charcot-Marie-Tooth disease / J.Bergoffen [et al.] // Science. – 1993. – V. 262. – P. 2039-2042.

20. DNA deletion associated with hereditary neuropathy with liability to pressure palsies / P.F.Chance P.F. [et al.] // Cell. – 1993. – V. 72. – P. 143-151.

21. DNA duplication associated with Charcot-Marie-Tooth desease type 1A / J.R.Lupski [et al.] // Cell. – 1991. – V. 66. – P. 219-232.

22. Early onset severe and late-onset mild Charcot-Marie-Tooth disease with mitofusin 2 (MFN2) mutations / K.W.Chung [et al.] // Brain.-2006.-V.129.-P.2103-2118.

23. Epidemiology of Charcot-Marie-Tooth Disease in the Population of Belgrade, Serbia / J.Mladenovic [et al.] // Neuroepidemiology. – 2011. – V.36. – P. 177-182.

24. Genetics of Charcot-Marie-Tooth disease type 4A: mutations, inheritance, phenotypic variability, and founder effect / R.Claramunt [et al.] // J Med Genet.-2005.-V.42.-P.358-365.

25. Hereditary neuropathy. In: Emery A.E.N., (ed.). Neuromuscular disorders: Clinical and molecular genetics / V.Timmerman [et al.] // New York: John Wiley & Sons. - 1998. – P. 487-511.

26. http://www.ncbi.nlm.nih.gov/omim

27. Mersiyanova I.V. Screening for Mutations in the Peripheral Myelin Genes PMP22, MPZ and Cx32 (GJB1) in Russian Charcot-Marie-Tooth Neuropathy Patients / I.V.Mersiyanova, S.M.Ismailov, A.V.Polyakov // Human mutation. – 2000. – V.15. – P. 340-347.

28. Mutation of putative protein degradation gene LITAF/SIMPLE in Charcot-Marie-Tooth disease 1C / V.A.Street [et al.] // Neurology. – 2003. – V.60. – P.22-26.

29. Mutations in GDAP1: autosomal recessive CMT with demyelination and axonopathy / E.Nelis [et al.] // Neurology. - 2002. - V.59. - P. 1865-1872.

30. Mutations in the early growth response 2 (EGR2) gene is associated with hereditary myelinopathies / L.E.Warner [et al.] // Nat. Genet. – 1998. – V.18. – P.382-384.

31. Nelis E. Mutations in the Peripheral Myelin Genes and Associated Genes in Inherited Peripheral Neuropathies / E.Nelis, N.Haites, C. Van Broeckhoven. // Human mutation. – 1999. – V.13. - 11-28.

32. Pareyson D. Clinical and Electrophysiological Aspects of Charcot-Marie-Tooth Disease / D.Pareyson, V.Scaioli, M.Laura // NeuroMolecular Medicine. – 2006. – V.8. – P. 3-22.

33. The gene for the peripheral myelin protein PMP-22 is candidate for Charcot-Marie-Tooth disease type 1A / P.I.Patel et al. // Nat. Genet. – 1992. – V. 1. – P. 159-165.

34. Variable phenotypes are associated with PMP22 missense mutations / M.Russo [et al.] // Neuromuscular Disorders. – 2011. – V. 21. – P. 106-114.

35.

ZHUKOVETS I.

SYNTHESIS OF STEROID HORMONES DURING PREGNANCY (LITERATURE REVIEW)

The article presents current data on the synthesis of steroid hormones during pregnancy. Particular attention is paid to cortisol, since it is a key hormone in the implementation of responses to ensure homeostasis. Showing modern and informative methods of diagnosis of hormone levels in newborns.

Key words: hormones, pregnancy, cortisol, umbilical cord blood.

Hormonal regulation of gestational process by a single functional system mother-placenta-fetus. Endocrine function of each component of this system is independent and at the same time is strongly correlated with each other [7, 8, 16]. It is quite clear that the slightest failure of any stage will affect the whole process.

If pregnancy occurs physiologically proceeding restructuring of the mother's body, particularly the functional activity of the endocrine glands. There is an increase in testosterone, cortisol, estradiol, and progesterone [6, 8, 11, 14]. In I, II and III trimester of pregnancy is a gradual decrease in the concentration of follicle-stimulating hormone. The increase of production of glucocorticoids before birth, at the expense of the adrenal glands of the fetus. Increased catecholamines and thyroid hormones in the third trimester stimulates lipolysis in adipose tissue, it provides the energy necessary for breathing and muscle movements of the fetus [4, 15].

Beginning with the 12-14 week pregnancy, the placenta does the possibility of hormonal pituitary, ovaries, adrenal glands and other endocrine glands [4, 7, 8, 12]. It supports the adaptive-adaptive reactions of pregnant women, promotes the development of human chorionic gonadotropin, placental lactogen and prolactin. Under the influence of the placenta by the conversion of androgens into estrogens, progesterone is synthesized. The placenta is a source of tropic hormones. In the cytoplasm of chorionic simplasta at 24-40 weeks of gestation found glucocorticoid receptors [3, 5, 14]. The activity of cortisol is determined by the mother during labor and elaborated by the adrenal glands of fetal cortisol. When the concentration of sex hormones is disturbed utero-placental blood flow, occur morphofunctional changes of placenta, leading to depletion of the hormonal function of fetoplacental complex, the development of fetoplacental insufficiency, preeclampsia and fetal pathology [11].

The process of formation of steroid hormones in the mother-placenta-fetus is highly complex and begins with the first trimester of the precursors of cholesterol. According to the academician Lutsenko MT directly from 7 weeks of gestation in the placenta are determined by

cholesterol precursors: mevalonic acid, squalene, 7 degidroholestesterin [4]. This indicates that the early stages of development in the placenta of the system, ensuring the synthesis of cholesterol. As a result, reducing the amount of substrate on the stage of formation of cholesterol will decrease predictable end product of biosynthesis of the steroid directly [3, 4, 16].

The first stage of conversion of cholesterol into hormones, is common to all steroid molecules. The result is a substance called pregnenolone - a key intermediate of the synthesis of steroid hormones [3, 5]. This stage is controlled by corticotropin, angiotensin, serotonin and calcium ions. Implementation of its happening in the mitochondria. Active mitohondralnogo desmolaznogo complex is determined by two main mechanisms: a specific protein synthesis and negative feedback regulation of cholesterol. After the stage of pregnenolone may display different biosynthetic processes in several ways [14]. Pregnenolone in turn converted into progesterone. Later, when exposed to progesterone hydroxylation, then a cortisol [1, 7].

The basis of the biological activity of steroids is a strict complementarity structure of steroids and enzymes [12]. Slight deviations in the conformation of the steroid hormones produced by exogenous factors, will result in a reduction or loss of ability to bind with other agents that can not, will not affect the synthesis of hormones from cholesterol [3].

Since the pregnancy the principal place of formation of progesterone and estrogen becomes the corpus luteum of pregnancy with a powerful connection provisionally organ - the placenta [8.10]. In the synthesis of estrogens, androgens are intermediate, including degidroepianrosteron. DHEA is found in the chorionic villi is first of the second month of pregnancy. Last, the placenta becomes androstenedione, and most of the aromatized to estrone and estradiol. Placental estrogen synthesis is carried out regulatory attention pituitary and hypothalamus, and the mother is a direct indicator function of the placenta and indirectly - of the fetus [4, 10, 15]. However, several studies have established a direct correlation between the degree of reduction of estriol and the severity of the child at birth. Reducing the concentration of more than 50% is an indicator of fetal well-threatening.

An important hormone cortisol is fetoplacental complex [2, 3, 12, 15]. Recommendations to control cortisol levels during pregnancy in contemporary literature. Cortisol, according to the theory of Selye, is a key hormone in the implementation of reactions that provide homeostasis [16]. Cortisol - the main representative of glucocorticoids, which directly or indirectly regulate all physiological and biochemical processes. Cortisol is considered the most active steroid hormones and has a powerful impact on a number of multilateral processes, metabolism, activates glyukogenoliz and gluconeogenesis, stimulating lipolysis and increases the amount of free fatty acids, activates the exchange of proteins and increases the pool of free amino acids [3, 5, 15]. During pregnancy, cortisol is a hormone fetoplacental complex biosynthesis occurs

involving the placenta, liver and adrenal glands of the fetus. In the placenta is the initial stage of its formation from cholesterol by the enzyme, splits the molecule of cholesterol side-chain - cytochrome R450scc. Stage enzimatsii cytochrome R450s17 and tsithroma R450s21 occur in fetal organs, due to their lack of activity in the placenta [5, 14, 17]. The peculiarity of the synthesis of hormones in the placenta - in its regulation are not involved, those compounds that are active in other steroid organs [3, 4].

During pregnancy there is an increase of cortisol, which is physiologic for the period of pregnancy, due to higher content of transcortin [2, 13]. This level of glucocorticoid required to meet the increased metabolic needs of the body by activating a pregnant carbohydrate synthesis and lipolysis. Cortisol controls the transport of glucose across the placenta. Besides hormone is important for the formation of enzyme systems of liver, intestinal epithelium, the cells of fetal lung [3, 4, 15].

Relatively recently, it was found that pregnancy is characterized by flowing physiological balance of positive and negative aspects of glucocorticoid. The former is the activation of human chorionic gonadotropin production, the suppressive effect on cellular and humoral immunity, stimulation of growth and invasion of trophoblast to the second - the restriction of the cytokine-prostaglandin signaling system, inhibiting the growth of the placenta and the fetus due to the activation of inhibitor 1, as well as induction appoptoza. [1, 3, 12]. That is, to maintain homeostasis of pregnancy should be adequate cortisol. Reduction of cortisol can lead to gestosis, hypoglycemia, fetal adrenal hyperplasia and an increase - can cause a number of pathologies of pregnancy and the fetus [1, 11, 17]. Especially precarious increase cortisol directly in the placenta. In recent years a number of foreign scientists found that the increase in the amount of cortisol cross the placenta, can cause a number of diseases that may occur in childhood and adolescence [12, 15, 16].

There is also evidence of the important role of glucocorticoids in fetal programming of systemic disease developing in adulthood. Exposure to high concentrations of glucocorticoids during pregnancy may retard fetal growth and development and to reconfigure the state of the functional system of the hippocampus - the hypothalamus - pituitary - adrenal axis. Significant levels of glucocorticoid in the blood helps to change the number of steroid receptors in the aforementioned system [3, 13, 14]. The consequence of this pathology, will be higher than normal, the secretion of glucocorticoids in response to any stress influence, which will lead to a change in the activity of other functional systems. Among which the ratio of the growth hormone / insulin-dependent growth factor, the renin-angiotensin system [15]. Disturbed structure of the liver, which decreases the activity of glucokinase, as well as the pancreas of the fetus, where the

replacement of cells characteristic of the adult organism, and so on. Ultimately, these violations will lead to pathology in adulthood [11, 13].

Exposure to elevated concentrations of glucocorticoids in the prenatal period leads to the inhibition of proliferation of hippocamp neurons. Violation of the hippocampus leads to hyperactivity of the hippocampus - the hypothalamus - pituitary - adrenal axis. Recorded changes in other brain structures of the fetus (the brain stem, hypothalamus) [8, 12]. Cortisol levels are governed by DHEAS. The fall of the latter is an additional factor for the increase of cortisol, at the expense of the process of conversion into inactive forms [2, 3].

Also increased levels of cortisol in the blood may also contribute to reduction of the enzyme 11β - hydroxysteroid dehydrogenase type II. At physiological pregnancy, this enzyme converts 95% of cortisol to the inactive [13, 17]. This enzyme is very susceptible to external influence. Under the influence of exogenous factors, some researchers point reduction in the intensity of histochemical reaction for 11β - hydroxysteroid dehydrogenase type II, against the background of high levels of cortisol during pregnancy [5, 13, 17]. This will lead to a breach of carbohydrate, fat metabolism, reduce resistance to infectious diseases.

On the content level of hubbub and their effects on the fetus and newborn can reliably say Bole cord blood serum. In recent years, this area started from. We study the thyrotropic-thyroid system in newborn infants of mothers with hypothalamic syndrome [10,11]. The authors noted the formation of the latter instability and negative impact of the underlying disease of the mother. Evaluated the placental insufficiency of various origins on morphofunctional indices, including cortisol, umbilical cord blood in newborns [9]. Despite a number of research consensus on the interpretation of results is not, it may be associated with a small amount of research or study performance, regardless of cause. Investigation of anterior pituitary hormones and cortisol in cord blood of newborns, we consider a promising avenue for predicting violations not only in the neonatal period, but at puberty.

References:

•Avdeev M., Shcheglov LV features of neurohumoral regulation of the cardiovascular system in physiological pregnancy / MA Avdeev / / Obstetrics and Gynecology. - 2007. - № 4. - P. 3 - 4

•Andrievskaya IA State processes of steroidogenesis in the mother-placenta fetus with acute herpes infection / IA Andrievkaya / / Byulletenfiziologii and pathology of respiration. - 2004. - Issue 17. - S. 65-68.

•Dovzhikova IV Cortisol in pregnancy / IV Dovzhikova / / Bulletin VSNTS. - 2010. - № 6 (Part 1). - S. 226-230

•Lutsenko MT Fetoplacental system during exacerbation of herpes viral infection during pregnancy / MT Lutsenko, IA Andrievskaya, IV Dovzhikova, A. Soloviev - Novosibirsk - Blagoveshchensk, 2010. - 245s.

•Lutsenko MT Dynamics of cortisol activity in peripheral blood of pregnant women who have had herpes-viral infection / MT Lutsenko / / Bulletin of the physiology and pathology of respiration. - 2010. - Issue 38. - S. 51-54.

•Retz Y. Prognostic significance of the regulatory and adaptive processes in the mother-placenta-fetal outcome in pregnancy and childbirth / UV Retz / / Questions gynecology, obstetrics and perinatology. - 2008. - Vol.7, № 2. - S. 18-24.

•Sidelnikov, VM Endocrinology of pregnancy in normal and pathological conditions / VM Sidelnikov. - Moscow: MEDpress-inform, 2007. - 352.

•Sidorov, IS Clinical and diagnostic aspects of fetoplacental insufficiency / IS Sidorova, IO Makarov. - M.: Medical Information Agency, 2005. - 296.

•Strizhakov AN The state of the endocrine system of the fetus in uncomplicated pregnancies and placental insufficiency of varying severity / AN Strizhakov / / Proceedings of XI All-Russian Scientific Forum "Mother and Child." - Moscow, 2009. - S. 93-94

•Filkin, E. Biochemical parameters of placental cord blood, which characterize endothelial dysfunction in women with preeclampsia / EV Filkin, SB Nazarov, LV Posiseeva / / Proceedings of the Far East I Symposium "Problems of perinatal medicine." - Khabarovsk, 2009. - S. 229-233.

•Shalina RI Predicting preeclampsia in the first trimester of pregnancy: myth or reality? / RI Shalin, O. Konovalova, TS Normatovich, EV Lebedev / / Problems of gynecology, obstetrics and perinatology. - 2010. - V.9, № 4. - S. 82-87.

•Dodic M. Programming effects of short prenatal exposure to cortisol / M. Dodic, V.Hantzis, J. Duncan, S. Rees // The Faseb Journal.-2002.-Vol.16, №9.-P.1017-1026.

•Li Zhao-feng Imprinting of excess effect of glycocorticoids in prenatal period on 11β-hydroxysteroid dehydrogenase type I expression by liver of adult rats [Text] / Li Zhao-feng, Qu Xian-cheng, Wang Shun-lun, Sun G. // Acad. J. Second Mil. Med. Univ.-2005.-Vol.26, №1.-P.61-64.

•Michael A.E. Potential significance of physiological and pharmacological glucocorticoids in early pregnancy/ A.E. Michael, A.T. Papageorghiou // Human Reproduction Update.-2008.-Vol.14, N5.-P.497-517.

•Moritz K.M. Maternal glucocrticoid treatment programs alterations in the Renin-Angiotensin system of the Ovin Fetal / K.M. Kidney Moritz, K.Johnson, R..Douglas-Denton //Endocrinology.-2002.-Vol.43, №11.-P.4455-4463.

•Seckl J.R. Glucocorticoids and Fetal Programming / J.R. Seckl., M.J. Nyirenda, B.R. Walker, K.E. Chapman // Biochem. Soc. Trans.-1999.-Vol. 27.-P.74-78.

•Zhang J. Crystal structure of murine 11β-hydroxysteroid dehydrogenase1: An important therapeutic target for diabetes / J.Zhang, T.D. Osslund., M.N. Plant Clogston /Biochemistry.-2005.-Vol.44, №18.-P.6948-6957.

Zhukovets Irina V., к.m.n.
Associate Professor of Obstetrics and Gynecology
State Medical Amur State Medical Academy
t.sot. 89143811706
zhukovec040875@mail.ru

Opportunities for growing of ural licorice in Yakutia

Pavlova P.A., Semenova V.V., Fedorov I.A.

Institute for biological problems of cryolithozone SB RAS: Pavlova Polina Afanasievna, researcher, Semenova Varvara Vasilievna, Candidate of Biology, researcher, e-mail: vvsemenova-8@yandex.ru, Fedorov Innokenty Apollonovich, Candidate of Agricultural Sciences, senior researcher.

The article deals with the material on the study of an alien medicinal species – Ural licorice in the environment of Yakutia. The herb exhibits a slower phenorhythm and ontogenetic rate of development in the introduction. In general the species manifested itself as sustained, winter-hardy and producing mature seeds. It can successfully propagate itself by a vegetative way or by seeds

Key words: introduction, phenorhythm, alien species, ontogenesis, vegetative and generative periods.

The Ural licorice *Glycyrrhiza uralensis* Fisch belongs to the pea family *Fabaceae* Lindl. being one of the officinal herbs mostly used for a long time (Pavlov, 1947). It is popular with its diverse officinal, food and technical applicability. Sickly sweet taste mirrored the plant's name in different countries: it has the name – "sweet herb" in China, 'sweet root' in Mongolia and Greece. The underground parts of the licorice (rhizomes) have been successfully used as promising officinal raw material in the Chinese, Tibetan, Indian and Japanese medicine.

Drug worth of the licorice root is defined by the content of biologically active substances: glycyrrhizic and glycyrrhetic acids, flavonoids, glucose, saccharose, starch and cellulose. Essential oil, alkaloids and coumarins are found in the underground organs, vitamin C – in the leaves. Years ago the licorice was used as an expectorant to treat deceases of the respiratory tract, as a laxative with chronic constipation and as an agent regulating water-salt metabolism. Glycyrrhizic acid and some of its derivatives possess an anti-inflammatory action as well as an antibiotic action against streptococcus, staphylococcus and other bacteria. Glycyrrhizic acid is administrated at food intoxications and some infectious and allergic disorders such as eczema, nettle rash, asthma (Khadzhai, 1970). Long since the licorice root was widely used mixed with different herbs as officinal collections or teas; it is an ingredient for diuretic, pectoral and laxative teas. Recently the licorice root has beenused for preparation of a flavonoid drug - liquiviriton for treating gastritis, stomach and duodenal ulcers (Telyatiev, 1991). The licorice is part of many officinal drugs against cough (bromhexine, different mixtures, etc).

The Ural licorice does not occur in the indigenous flora of Yakutia. It grows in steppes, semi-deserts preferring sandy sites, along rivers, hills; rising until 2000 m high above sea level in the mountains. The plant occurs in the southern regions of Eastern Siberia – Minusinsk, Balagan, Bichur areas, down the Argun and Onon rivers, along the lakesides of Zun-Torei and Tsagan-Torei, the Shilka River, Western Siberia, Central Asia, Mongolia and Northern China (Flora of the USSR, 1948; Flora of Siberia, 1994; Telyatiev, 1991).

The Ural licorice was first planted in the Yakutsk Botanical Garden (YBG) in 1991. It was a seeding made by T.V. Andreyeva, by seeds from Novosibirsk (CSBG). The Ural licorice is a perennial herbaceous plant, long-rhizomatous, vegetative moving, with a powerful and deep lying root system developing a complex network of roots and rhizomes. Root dry weight of one plant may attain 800-1200 g. Stalks are tomentous, simple, upright or branched, 70-100 cm high or higher. Alternating leaf position, imparipinnate. Flowers whitish-violet, raceme-assembled, fruit –bared and solid bean, sickle-bent, tortuous, closely gregarious, dense ball-like.

Observation of licorice ontogenesis in the culture lasted for 20 years. Its vegetative period is about 5-6 years, further it enters the generative period.

The licorice is propagated by seeds or rhizome parts 15-30 cm long with 2-3 buds. It is planted in the early spring spaced 25-30 cm from each other with a 50-80-cm of row-spacing. Cuts are fixed upright 2-3 cm above the ground.

Seeds of the Ural licorice have a very solid hull, so to accelerate germination a pre-sowing scarification is needed. Straight before planting seeds are treated with the solution of strong sulphuric acid during 30 min. Sowing is made with thoroughly washed wet seeds at a 1.5-2.0-cm depth into well-fertilized and loose soil. Young growth appears in 8 days. During its first life year licorice plants are of 6-8 cm high (stooling stage). Plants enter the winter dormant period with soft green leaves. Therefore the Ural licorice is regarded as a plant with a slow rhythm of development..

During the first life year the major root grows to 18 cm in length with some lateral roots. In the 2nd year the major root goes on growing (28.0) together with abundant lateral roots and appearance of secondary roots

There is a substantial growth of all parts of the root system when the plant is 3-4 years old. By the end of the fifth year the main root attains 122 cm and lateral roots intensively lengthen developing a vegetative sphere. Roots grow very quickly and begin sprawling diversely occupying new sites. The major root attains 12 mm in diameter, and lateral roots average 5 mm. It is important because roots as drug raw material of the first commercial grade must be not less than 8 mm. The Ural licorice introduced in the CSBG had the primary root as long as 2.5 m being 15-20 mm in diameter, its lateral roots stretched out up to 5 m with diameter reaching 5-8 mm. 50% of roots were of commercial quality. (Trankina, 1973, 1975).

During the 6th life year the plant comes to a generative state.

V.P. Trankina and A.A. Diakonova (1973) verified that accumulation of extractive matters and glycyrrhizin occurs unevenly. In plants aged 1-3 there is their highest content totaling 42-46%, but their root weight is very low. Further the content of biologically active substances decreases owing to the generative change (15-17%). Since the sixth year their amount increases again and reaches 25% by the seventh year that satisfies the requirements of GosStandard of Russia.

During 19 years of study conducted in the YBG the licorice exhibited itself as a highly stable species in introduction. The plant annually increases its mass, flowers, yields fruits and produces ripe seeds. All this contributes to pre-requisites for the establishment of the local production of the species crude drugs. Moreover the licorice can be successfully planted in Central Yakutia by private owners in their backyards.

Under the condition of Yakutia the observation concerning the development rhythm of the introduced species evidence that this plant has a slow rhythm (Table 1). Plants' regrowth is marked only in early June whereas native species begin their regrowth in late April-early May. The booting stage is observed since mid-June lasting until early July. Budding comes in the end of the second July decade; flowering begins in the second August decade. It is established that the licorice begins flowering in the sixth year of life. Commonly ripening of licorice seeds occurs in the first decade of September, sometimes in unfavorable seasons its seeds do not become ripe.

Table 1

Phenological development of the Ural licorice in culture

Year	Spring regrowth	Booting stage	Budding		Цветение Flowering			Seed setting	Full seed ripening
			beginning	mass	beginning	масс.	end		
2007	4.06	16.06	15.06	18.06	9.07	12.07	23.07	11.07	24.08
2008	13.06	13.06	14.06	20.06	28.06	8.07	20.07	13.07	25.08
2009	14.06	25.06	29.06	4.07	19.07	23.07	27.07	23.07	25.08
2010	14.06	23.06	18.06	22.06	6.07	9.07	20.07	8.07	24.08

Morphological plant values, that we received, evidence about successful introduction of the Ural licorice in Central Yakutia (Table 2). Comparing morphometric parameters of the licorice grown in our environment and in Western Siberia we should justify that a vegetative sphere of plants in both regions is much similar. Average height of our plants (7-8 years old) is 90-95 cm sometimes reaching to 100 cm whereas in Western Siberia these values made up 60-70 cm. Much the same is leaf and inflorescence number on 1 shoot. In our conditions a bush of licorice has from 3 to 11 generative shoots bearing from 3 to 7inflorescences/shoot. Inflorescences length composes 4-6, their width 3-4 cm. An inflorescence may have as many as 30 flowers. During summer the stem becomes lignified and very elastic. One shoot may have 18-20 imparipinnate very dense leaves 16-20 cm in size and from 6 to 10 cm wide.

Success criterion of the species introduction lies in its efficient fruiting, i.e. seed formation. To know the features of seed propagation of plants is very important when they are introduced in culture. Percent of producing capacity shows the plants' viability (Golovkin, 1973).

Study of the seed yield of the Ural licorice evidences that the species successfully experienced the adaptation and can be grown under Central Yakutia conditions. An estimate of the reproductive ability of licorice plants was made by composing the following elements of productivity: average number of generative shoots per 1 individual, average number of flowers per a generative shoot, average number of seed buds in the flower ovary and average number of mature good seeds in a carpel. The number of set seeds in the carpel depends on ambient conditions and strongly varies from year to year. According to our data ripe seeds formation from seed buds made up 77%, i.e. real productivity as against potential was 1.5 times lower.

Table 2

Morphometric values of the Ural licorice in culture

Indices	2001 г.	2002 г.	2003 г.	2005 г.	2006 г.
Plant height, cm	96,5	101,3	91,0	90,0	86,0
Number of inflorescences on one shoot, pieces	5,75	3,2	12,0	11,0	10,0
Number of flowers in an inflorescence	29,7	28,7	26,0	35,3	33,0
Inflorescence: length, cm	5,9	5,7	5,1	6,1	5,8
width, cm	3,6	3,3	3,2	3,3	3,1
Leaf: length, cm	18,1	21,7	13,2	14,5	19,7
width, cm	7,2	9,9	5,9	8,6	7,8
Number of leaves in a shoot, pieces	18,0	20,0	18,0	17,0	19,0
Bush diameter in the root collar, cm	0,7	-	0,8	-	-

Thousand-seed weight equals 6.6±0.66 g and this is not different from the value of Western Siberia.

So, it should be noted that the growth rate of the Ural licorice in Central Yakutia is much different from the one in Western Siberia. It is explained by the fact that an alien plant slows down its phenorhythm and ontogenetic rate of growth. Generally, the Ural licorice does not yield to winter hardiness and passage of full cycle of development to the indigenous introducents. And its top even outproduces their kinsmen from Western Siberia. So we do not rule out the possibility of the industrial growing of this officinal plant under Central Yakutia conditions aiming at pharmaceutical purposes. The YBG has an available foundation stock in its nurseries of the indigenous herbaceous flora and drug plants for an accelerated seed and vegetative reproduction of the Ural licorice.

References

Golovkin B.N. Resettlement of herbaceous perennials to the Polar North region. Ecomorphological analysis. – L.: Nauka, 1973. – 266 p.

Pavlov N.V. Plant resources of Southern Kazakhstan. – M.: Nauka, 1947. – 203 p.

Telyatiev V.V. Healthy treasures: Plants, foodstuff of animal and mineral origin of Central Siberia and their therapeutic properties. – Irkutsk: Eastern-Siberian Publ. House, 1991. – 400 p.

Trankina V.P. On introduction of the Ural licorice in Western Siberia // Promising useful plants of Siberia flora. – Novosibirsk: Nauka, 1973. – P.84-91.

Trankina V.P. Experience on introduction into culture of the Ural licorice in solonets soils of Kulundin steppe // Rhythms of growth and productivity of plants of Siberian flora. 1975. – P. 124-132

Trankina V.P. Diakonova A.A. Impact of ecological conditions on accumulation of valuable substances in underground organs of the Ural licorice // Efficient and useful plants Of Siberia Flora. Novosibirsk: Nauka. 1973. – P. 203-212.

Flora of Siberia.- V.9. Novosibirsk: Nauka, 1994. - P. 152-153.

Flora of Siberia. - V.XIII. M.-L.: Publ.House of the USSR AS, 1948. – P. 236-237.

Khadzhai Ya.I. Pharmacological actions and clinical application of flavonoids // Proceedings of II Symposium on phenol compounds. – Alma-Ata, 1970. – 137 p.

CLINICAL EVENT: DUCTAL CARCONOMA IN SITU OF THE BREAST WITH MULTIFOCAL GROWTH

UDC 616-006.04:618.19

L.N. Korostyleva, A.D. Makarov, Z.D. Gurieva, N.M. Sleptsova, A.S. Innokentieva

The carcinoma in situ is a noninvasive form of the mammary gland cancer presented by malignant cells localized in the epithelium and not penetrating the basement membrane, but potentially, capable of invasion. The latest developments in the molecular genetics, discovery of oncogenes and tumor growth suppressing genes confirm the opinion that the carcinoma in situ is an early phase of the genuine breast cancer. These neoplacms possess various biological properties and differ in the risk of progressing into invasive cancer and treatment practices.

Key words: ductal carcinoma in situ (DCIS), mammography, ultrasonography, tumor biopsy, lumpectomy, mastectomy.

Recently, the world has been witnessing a growing trend of detecting clinically latent forms of the breast cancer: minimal forms and carcinoma in situ (CIS). It has become possible thanks to improved mammography and ultrasonography equipment along with new techniques of target biopsy of pathological focus. (1,2). In countries conducting the population mammography screening, carcinoma in situ accounts for 20-40% of all newly detected breast cancers. In some centers in the USA and Western Europe, one CIS occurs per every two cases of invasive breast cancer detected during mammography (5,6). The term 'carcinoma in situ', in fact, stands for two diseases: ductal carcinoma in situ (DCIS) and lobular carcinoma in situ (LCIS). In the TNM international breast cancer classification, carcinoma in situ is considered stage 0, with a primary tumor being coded as Tis. In the international classification, CIS is a minimum tumor with limited spread, requiring a thorough microscopic examination to be detected. Ductal carcinoma in situ often spreads in segments, sometimes involving two or more breast quadrants, so DCIS may be initially a diffused (multi-center) disease. It is proved by the fact that a morphological study of DCIS patients often reveals multiple foci of non-invasive and invasive cancer, sometimes. The more histological sections are studied, the more cancer foci are discovered. As stated in the medical literature, multiple foci occurs in 30% of DCIS patients (3,4). Clinical diagnostics of DCIS is difficult in cases when a tumor is not palpable and there are no nipple discharge. DCIS are divided into two groups: clinical - a tumor is palpable - and subclinical, when a tumor is detected by mammography, only. Treatment prognosis and tactics differ for these two forms. In most cases, DCIS is detected during mammography or ultrasound examination and often is characterized by micro calcification and rarely by the nodular pattern deformation. Radiological diagnostics of ductal carcinoma in situ is complicated since it declares itself by micro calcification foci, only. Palpable CIS forms are treated with US-controlled biopsy or stereotaxic biopsy. With non-palpable CIS, sectoral breast resection is conducted as a diagnostics final stage. The operation is performed after a thorough study of the pathological focus om mammography images. The morphological shape of carcinoma in situ is one of the important factors determining the disease treatment tactics. Surgical intervention remains the most efficient treatment of CIS, as an organ protection operation or mastectomy. First, the wide use of organ protection operations (sectoral resection with chemo or not) resulted in increased occurrence of local recurrence. After the organ protection operation, the recurrence reaches 30-50% (6,7). However, the currently common mastectomy in all DCIS patients is disputable. There is a continuous discussion on the extent of operations with DCIS as it is difficult to predict which treatment would be the best in this or that case, not leading to recurrence of the disease. In case of recurrence, about 50% of patients develop not CIS but invasive cancer, as the morphological study of the specimen shows.

Clinicians face an important task - to decide on the optimum DCIS patients treatment tactics. To do so, it is necessary to classify patients into groups: with favorable and unfavorable course of the disease. Different extent of the operation is caused by the biological properties of carcinoma in situ.

We are carrying out our own clinical study. Patient O., 48, entered the surgery ward № 1, Clinical Center, Republic's Hospital № 1-Center of Medicien, with a preliminary diagnosis – Suspisio cancer mammae sinistae. Accompanying diseases: grade 2 hypertensive disease, arterial hypertension 2, risk of cardie-vascular complications, 3риск ССО 3, type 2 insular diabetes, medium severity, chronic viral hepatitis C, minimally active, fatty liver hepatosis, chronic pyelonephritis. The general condition is relatively satisfactory. Height - 165 cm, weight - 97 kg, overweight – 36. Anamnesis: first discharges of serohemorrhagic nature from the left mammal gland (LMG) ducts appeared in autumn 2010. Gynecological anamnesis: menstruation started at the age of 15, set in at once, every 28-30 days. Pregnancies - 4, childbirths - 4, lactation after all childbirths to 11-12 months, a plugged duct in LMG. Menstrual and ovary irregularities started in 2009, the last menstruation in 2010. Status localis: macromastia, the mammal glands are symmetrical, the nipples and areolas are unchanged, no discharge at the moment of study. Palpation of the mammal glands reveals involutive changes, diffusive nodular stroma, mainly in the external quadrants projection, with no obvious nodular formations. The LMG upper external quadrant (UEQ) projection shows a dotty trace of biopsy, with no nodular formations below. Palpation detects enlarged lymph nodes in the both axillary zones, mobile, not knitted together, painless. The study conducted: color mammography (Picture 1,2), LMG tomosynthesis (Picture 3,4). Skin strips are thin, even along the entire length. The nipples are nit deformed. With the fatty involution in the background, there are areas of unpronounced fibrosis in stromal structures and remains of grandular tissues. At the edges of the LMG upper quadrants, there ares multiple pleomorphic micro- and macro calcification forms, located in segments with 39-41 mm range, some of them are visible in the retromammilary area in the form of clusters. Ultrasonography shows clear differentiation in the mammal gland tissues. The skin is a hyperechoic even strip. The nipples are unchanged. A fatty component dominates the stroma. With the subcutaneous fa in the background, there are visible Cooper's ligaments in the form of hyperechoic linear shadows covering the fat lobules. The grandular layer shows increased echogenicity, with hyperechoic linear nodules. The LMG shows widened to 4 mm retroaleolar ducts, in the UEQ they are widened to 3 mm, their walls are compacted, there are numerous minor hyperechoic signals visible. The regional lymph nods are invisible. Conclusion: Multiple pleomorphic segmental micro-macro calcification areas in the UEQ of the LMG. Is that ductal cancer? The histological stereotactical biopsy conclusion - a fibrosis tissue with cells suspicious of ductal cnacer, cytological conclusion - the cytogram is typical of the ductal cancer. On 06 March 2012 the operation was performed under general anesthesia - sectoral resection of the LMG with the skin being dissected in the biopsy place in the UEQ projection and removal of the subareolar zone. The result of the subareolar zone express biopsy - fibrocystic mastopathy with the duct epithelium cells proliferation, no malignant growth detected. Macroscopically, the removed breast section was represented by fatty tissue and wasn't subjected to express freezing. The final morphological study of the post-operation specimen diagnosed ductal cancer insitu in a large number of histological sections without any indications of the invasive growth (Fig. 1,2). Given the morphological conclusion received and impossibility to exclude other foci of ductal carcinoma in situ (multifocal growth) in the remaining breast tissue, the patient was taken ot hospital again for eradication. On 11 April 2012 the patient was operated - mastectomy on the left with axillary lymph-dissection. The planned histological study - a mammal gland with granulomatosis, with intraductal cancer structures detected in the same area. There are atypical ductal dysplasia in other areas of the breast. All studies of the lymph nods in the axillary area (14 pieces) failed to show metastases. The further morphological study of all post-operation specimen revealed the high grade of malignancy of the ductal cancer in situ (high grade DCIS). There was conducted the immune-histological-chemical study of the tumor - estrogen receptors

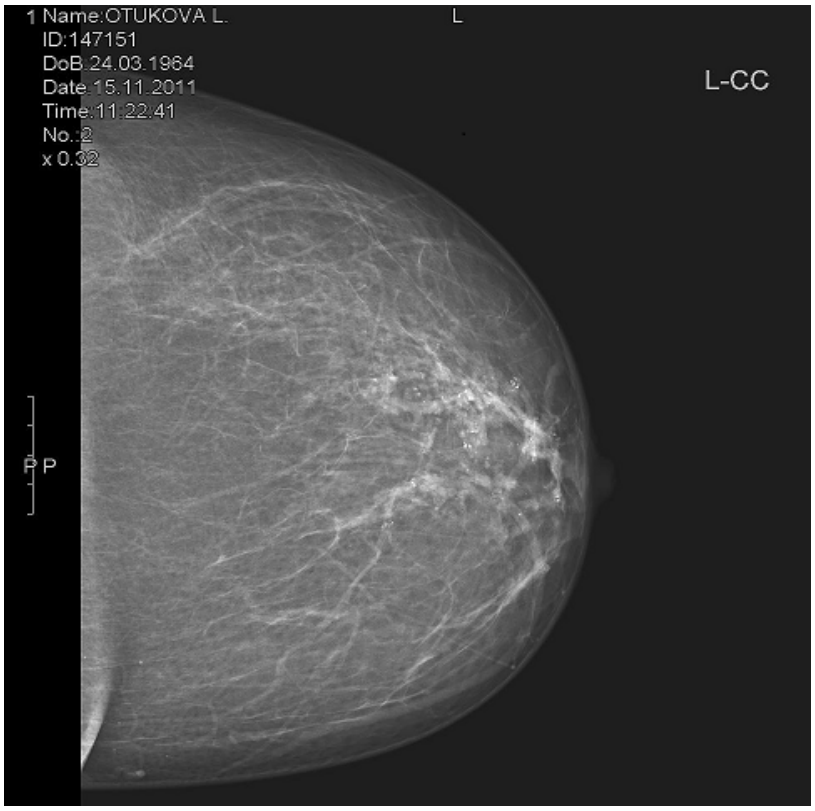
expression – positive (+) 4 (Fig. 3); progesterone receptors expression – positive (+)7 (Fig. 4); expression of mutant gene-supressor p53 - 3%; the proliferative tumor pool for expression Ki-67 - 0%. The post-operation period course was smooth, with immediate agglutination. Taking into consideration the positive expression of steroid hormones receptors in the tumor cells, the patient has been proscribed hormone therapy (tamoxifen 20 mg a day, for a long period).

In our clinical case, the decision on the operation extent was based on the following factors: 1) radiological indicators of the multifocal tumor growth - the segmental position of micro calcification in projections of several ducts and their branches with over 4 cm range; 2) the result of the morphological study - multiple foci of ductal carcinoma in situ in a large number of histological sections. The age of the patient, multifocal growth of ductal cancer in situ, the grade of tumor's malignancy present a high risk of recurrence. Therefore, mastectomy is the only radical surgical treatment for a similar group of DCIS patients with multifocal growth.

References.

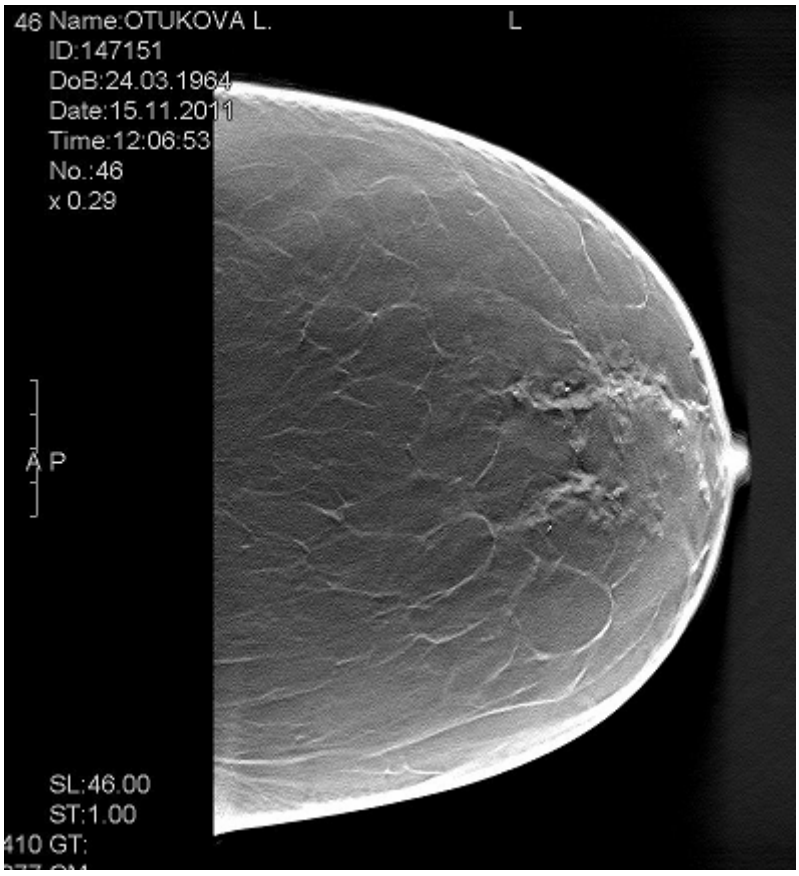
9. Neischtadt, E.L. Mastopathy. Is there a reason to worry? // Proceedings of the 1st International conference on Breast Cancer Diagnostics and Treatment. St. Petersburg, 2004, pp. 80-82.
10. Semiglazov, V.V. Clinical characteristics and treatment of noninvasive and minimally invasive forms of breast cancer. /St. Petersburg: Eskulap, 2004. p. 47.
11. Semiglazov V.V., Topuzov, E.ER. Breast cancer. Edited by Prof. Semiglazov, V.F., correspondent member of the Russian Academy of Medical Sciences. Moscow: MEDpress-inform, 2009. – 176 p.
12. Cornfield D.B., Palazzo J.P., Schwarz G.F., et al. The prognostic significance of multiple morphologic features and biologic markers in ductal carcinoma in situ of the breast: a study of a large cohort of patients treated with surgery alone. // Cancer. - 2004. – Jun 1/- Vol. 100 (11) - p. 2317-2327.
13. Gump F.E., Jicha D.L., Ozello L. Ductal carcinoma in situ A revised concept // Surgery 1987. Vol. 102. – p. 790 – 795.
14. Nakhlis F., Morrow M. Ductal carcinoma in situ. // Surg. Clin. North Am. - 2003. Vol. 4 – p. 821-839.
15. Sibbering D.M., Blamey R.W. Nottingham experience. // Silverstein M.G. (Ed.) Ductal carcinoma in situ of the breast. – Baltimore: Williams and Wilkins. - 1997. H. 367 – 372.

Picture 1. Digital mammography of the left mammal gland in oblique projection.



Picture 2. Digital mammography of the left mammal gland in frontal projection.

Picture 3. Tomosynthesis of the left mammal gland in oblique projection.



Picture 4. Tomosynthesis of the left mammal gland in frontal projection.

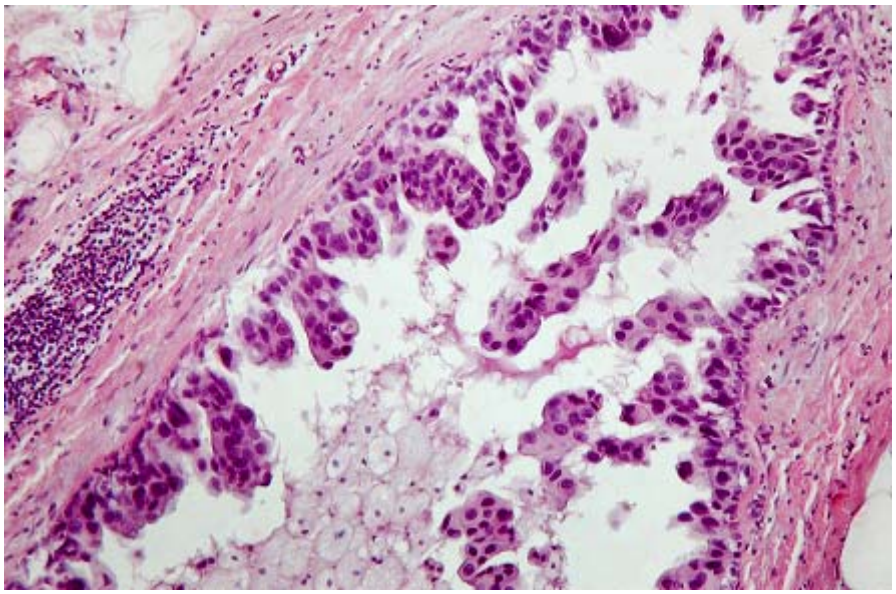


Figure 1. Histopathologic feature of ductal carcinoma in situ.
(Hematoxylin-eosin, magnification – x200)

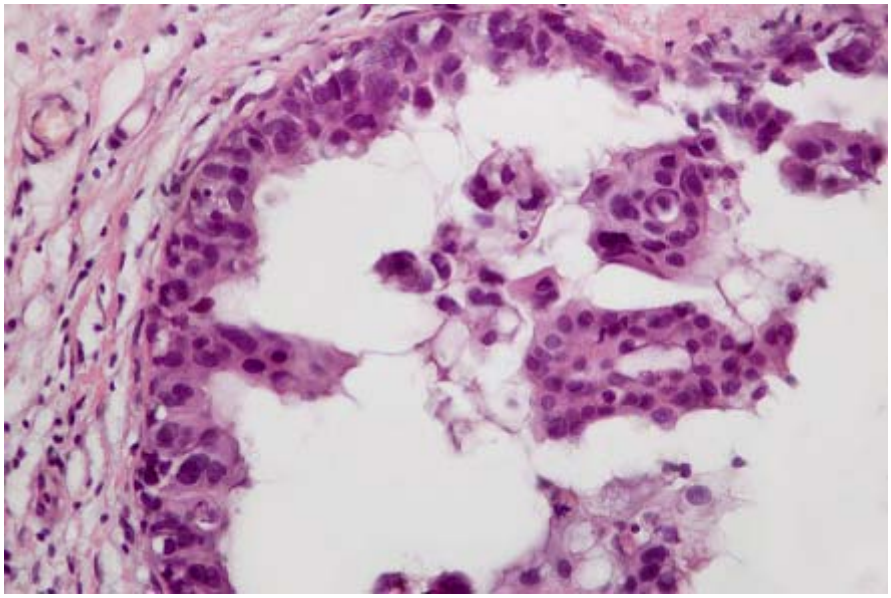


Figure 2. Histopathologic feature of ductal carcinoma in situ.
(Hematoxylin-eosin, magnification – x200)

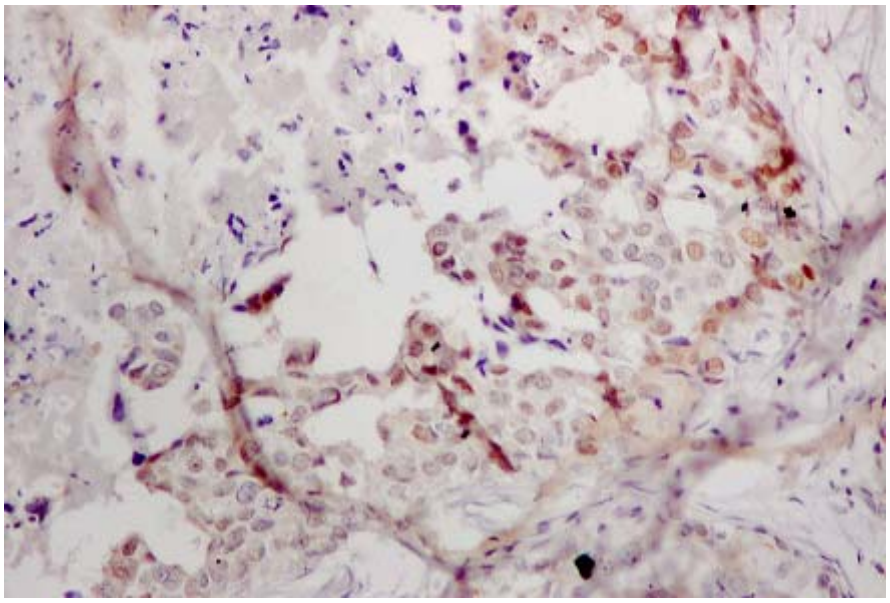


Figure 3. Immune-histological-chemical study of expression to estrogen receptors in a tumor. For most cells, the reaction is positive (brown coloration).

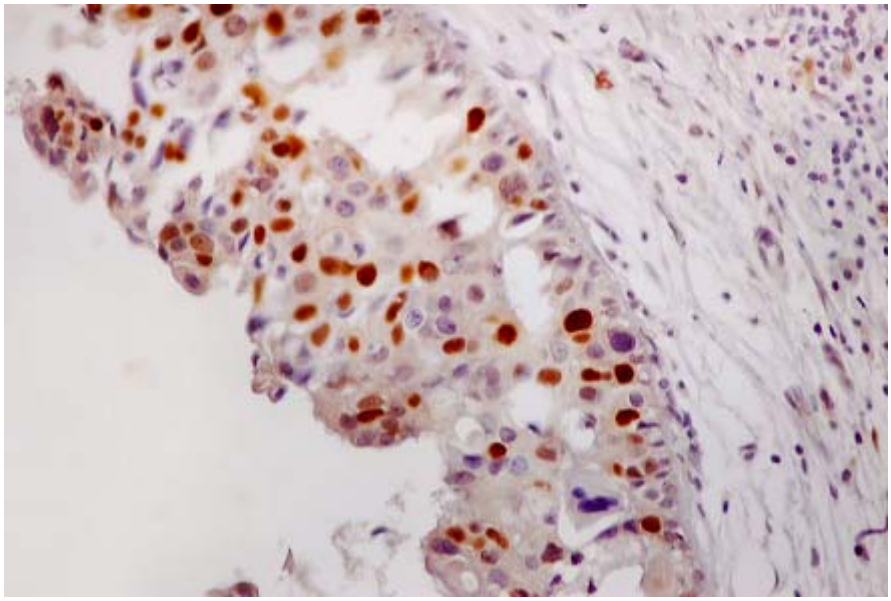


Figure 4. Immune-histological-chemical study of expression to progesterone receptors in a tumor. For most cells, the reaction is positive (brown coloration).

About the authors: Lyubov Nikiforovna Korostyleva, Candidate of Medical Sciences, Associate Professor, Department of Surgical Pathology and Dentistry, Institute for Post-graduate Medical Studies, North-Eastern Federal University, korln@mail.ru; Albert Dmitrievich Makarov, Candidate of Medical Sciences, Associate Professor, Department of Hospital Surgery, Medical Institute, North-Easter Federal University; the Republic's Hospital № 1 – Center of Medicine: Zinaida Dmitrievna Gurieva, oncologist-mammologist, Candidate of Medical Sciences; Natalia Mikhailovna Sleptsova, radiologist; Alexandra Stepanovna Innokentieva, pathomorphologist.

D. P. Skachkov, A.L. Shtilerman, A.A. Grigorenko

Amur State Medical Academy, Blagoveschensk

Impressions intrastromal implantation of amniotic membrane in the treatment of patients with endothelial - epithelial dystrophy of the cornea.

Summary

Results of treatment of patients with endothelial - epithelial dystrophy of the cornea by intrastromal implantation of amniotic membrane. The method can cut corneal syndrome, reduce the risk of disease recurrence.

Key words: amniotic membrane, cornea, intrastromal implantation.

Treatment of secondary endothelial - epithelial dystrophy (EED) of the cornea continues to be one of the most difficult problems in modern ophthalmology. This disease is a consequence of inflammation, injury of the eyeball. A large group of secondary dystrophies constitute postoperative dystrophy. According to some authors, the frequency of EED as a complication of ophthalmic interventions in general ranges from 0.6 to 13% [7,9,11,12]. Despite the experience of surgery small incisions, the improvement of microsurgical techniques, the advent of flexible intraocular lenses (IOL) and the new viscoelastic, with cataract extraction with implantation of posterior chamber intraocular lens corneal dystrophy develops in 0,1-11,3% of cases, and with the implantation of IOL to anterior chamber 14% [7].

Trigger the development of this pathology is damage to the corneal endothelial layer of it. In damaged cells, impaired production of cytokines responsible for collagenogenesis, which leads to a progressively increasing hydration of the corneal stroma with degeneration keratotsitov, detachment of the corneal epithelium and the appearance of symptoms. The latter fact makes the painful lives of patients, due to continued and in no way removed pain in the eye, tearing, and blepharospasm [7]. In this regard, the issue of prevention and treatment of EED is very important.

Existing treatments for EED can be divided into conservative and surgical. Conservative therapy, despite the use of modern drugs, physical therapy effects (helium-neon laser stimulation, magnetic therapy), provides a temporary effect, because it does not eliminate the cause of pathological transformation of the cornea [11].

Much more effective are surgical methods, among which are essentially divided into two groups: transplantation and not transplantation [2,6,12].
In recent years, increasingly for the treatment of EED was used amniotic membrane. Some authors propose to cover the surface of the cornea to protect the epithelium and its regeneration as soon as possible. Other implanted under the conjunctiva of the amnion to suppress excessive inflammatory response in the treatment of EED [1,3,4,5,6,8].

As is known, the mechanism of therapeutic action of the amnion is based on improving and maintaining the normal epithelialization of epithelial morphotype, inhibiting the formation of rough scar tissue. The advantage of amniotic membrane is its biological inertness of antigen [10.13]. In this regard, it is justified is the use of intrastromal implantation of amnion in the treatment of stage dalekozashedshih keratopathy.
Objective: To evaluate the effectiveness of intrastromal implantation technique of amniotic membrane in the treatment of patients with severe endothelial - epithelial corneal dystrophy.

Materials and methods.

In the clinical study included 28 patients (28 eyes) with a diagnosis of endothelial - epithelial corneal dystrophy. The patients' age 65,6 ± 3 years. Of these, 13 men (13 eyes) and 15 women (15 eyes). All patients developed EED after cataract extraction with IOL implantation. The severity of degeneration corresponded to 3.4 on the classification of the stages Gorgiladze T.W., Ivanovo, E.V. (1992). At the time of admission, all patients had marked pain and corneal syndrome, hydration layers of the cornea, bullous changes in the epithelium, extensive erosion of the cornea. The initial visual acuity of the patients was 0,01 ± 0,005. The thickness of the cornea according to pachymetry was within 768,6 ± 30,87 m. Indicators of the intraocular pressure-20,34 ± 0,2 mm Hg. of Art.
All patients underwent a standard ophthalmologic examination: visometry, biomicroscopy, pachymetry, tonometry. Studies were performed before surgery and after surgery.
Follow-up was 12 months.

All patients completed the operation of the ball intrastromal implantation of amniotic membrane application for the invention № 2011140131. "The method of operation intrastromal implantation of native amniotic membrane in the treatment of epithelial - endothelial dystrophy", priority of 03.10.2011.
We used the amniotic membrane, obtained from seronegative for hepatitis B and C, syphilis, TORCH-infections and women - donors during scheduled cesarean section.

After the standard treatment the patient made the operative field epibulbarnuyu anesthesia 0.4% solution oksibuprokainom, retrobulbar anesthesia 2% lidocaine.

The first stage of surgery was removed mechanically loose and altered corneal epithelium. In the upper half of the corneal incision is carried out not through the tunnel to the back of the plate boundary along the limb, 1-2 mm from it. The length of the notch corresponded to the diameter of the disc implanted amnion. Then stratify corneal stroma within the area of the implanted disc amnion. Graft implanted membrane is uniformly distributed in the pocket. The implant is pre-treated with an antibiotic solution - gentamicin and forceps for implantation in the corneal wound up his pocket. After performing surgery until complete epithelialization of the cornea in the operated eye superimposed therapeutic soft contact lens soaked actovegin stimulator of regeneration. In addition, postoperative conjunctival cavity 6 times a day, ciprofloxacin instilled solution and the solution of diclofenac, laid korneregel.

A favorable outcome of the operation was considered the absence of recurrent corneal syndrome, both in early and late in the postoperative period. Unfavorable - a relapse of corneal syndrome, implant. Despite the fact that this type of treatment is aimed at improving the quality of life of the patient, take into account the transparency of the cornea, affecting visual acuity.

Results of the study

In the course of surgery and postoperative specific complications were observed. Obtained in the course of the study data showed a slight, statistically significant increase in visual acuity in the operated patients. On admission the patients visual acuity averaged 0,01 ± 0,005, 12 months after implantation of intrastromal amniotic membrane 0,03 ± 0,01 ($p < 0,05$). After opertsi all 28 patients (28 eyes) was complete epithelialization, treatment of corneal syndrome. At 9 days, 82% of patients after implantation of intrastromal amniotic epithelialization was completed and 68% were stopped corneal syndrome. The transparency of the cornea throughout the observation period continued to rise. On the seventh day after surgery occurred a slight decrease in stromal hydration, shown a reduction of turbidity of the stroma, clearly contoured amnion due to edema of the corneal tissue. The structures of the anterior chamber (iris, pupil, etc.) are poorly visualized. On examination a month later reported greater transparency of the cornea. Continued to decrease hydration of the stroma, amniotic membrane clearly visualized in its layers. More clearly detailed the structure of the anterior chamber. After 3 months of the cornea is brilliant, mirror-like, covered with high-grade epithelium with no signs of over-hydration. Amniotic membrane is becoming more transparent. After 6 months of follow-up of patients significantly decreased hydration of the cornea and partially razvoloknilas amniotic membrane, leading to greater transparency of all

layers of the cornea.The degree of transparency of the cornea at one year corresponded to a six-month-old data.

7 days after implantation of intrastromal amniotic membrane corneal thickness was 744 ± 32,15 mm, 1 month - 716 ± 31,77 mm, 3 months - 681 ± 32,84 mm, 6 months - 650 ± 35,18. By 12 months of performance pachymetry was statistically decreased to 628 ± 34,03 m by an average of 18% (140 mm; p <0,05).

After surgery, we found no statistically significant change in intraocular pressure.On admission, patients had IOP within 20,34 ± 0,2 mm Hg. of Art., seven days after surgery 20,54 ± 0,2 mm Hg. of Art. In conclusion, our study intraocular Dalen rates ranged from 20,64 ± 0,2 mm Hg. of Art.

The results of these studies have confirmed the ability of the amniotic membranes during implantation of intrastromal corneal regenerative processes to stimulate and act as a semipermeable membrane.

Conclusion

To date, treatment of endothelial-epithelial dystrophy of the cornea is one of the most urgent problems of modern ophthalmology, as there is no universal method of treating disease. [7,9,11,12].

With intesifikatsiey eye surgery has increased the number of patients with stage dalekozashedshimi endothelial epithelial dystrophy of the cornea. That requires the development of alternative, organ, less expensive treatments, which aim to create biological barrier between the moisture and the anterior chamber of corneal stroma. By creating a barrier that can be done fast enough to reduce swelling of the cornea, removing corneal syndrome, as well as prepare the tissue of the cornea to the optic keratoplasty or keratoprosthesis.

Our proposed method - intrastromal implantation of amniotic membrane in the cornea - is aimed at creating layers of the cornea in a biological membrane that performs multiple functions. This is a semi-permeable membrane in the way of moisture in the anterior chamber of corneal tissue and also a powerful biological stimulant that activates the regenerative processes in the cornea, which suppresses excessive inflammatory response.

Thus, the dynamic observation of patients showed that there is a gradual increase in the transparency of the cornea due to the decrease of hydration and partial razvolokneniya amniotic membrane, statistically significant increase in visual acuity by an average of 0,02 (p <0,05) and a decrease in the thickness of the cornea at 18 % from 768 microns to 628 microns (p <0,05). Based on the analysis of changes occurring in the cornea after intrastromal implantation of amnion, we propose to use this method as a preparatory to penetrating keratoplasty.

Findings

The use of intrastromal implantation technique of amniotic membrane in patients with stage dalekozashedshey endothelial epithelial corneal dystrophy in the early postoperative period leads to permanent relief of corneal syndrome, improve visual acuity, bullous changes of the epithelium removal, reduced rates pachymetry, and cornealedema.

References.

1. Ambariumyan, A. Multilayer amniotic membrane transplantation in neurotrophic ulcers of various etiologies / A. Ambariumyan / / Collection of scientific works. The Russian national ophthalmology forum. - Volume 2, Moscow, 2009. -P. 251-255.

2. Gundorova, R.A. Microinvasive destsemetoplastika-transplant Descemet membrane and endothelium through a 2.0 mm incision / R.A. Gundorova, V. Nero, M.A. Vorobyov, O.G. Oganesyan, D. Daniel / / Collection of scientific works. The Russian national ophthalmology forum. -T. 2, Moscow, 2009. - P. 275-277.

3. Gundorova, R. A. Application of amniotic membrane in ophthalmology: a literature review / / R.A. Gundorova, O.A. Kiseleva, N.V. Sorokoletova / / Refractive surgery and ophthalmology. - 2007. - № 2. -P. 27-31.

4. Dravadzhyan, Z.H. The use of amniotic membrane in corneal perforation / Z.H. Dravadzhyan, A. Ambariumyan, A. Hovakimian / / Collection of scientific works.The Russian national ophthalmology forum. -T. 2 - M., 2009. - P. 280-284.

5. Juraev S.U. The first experience of amniotic membrane transplantation in the treatment of various diseases of the cornea / S.U. Juraev, T. Gelmanova / / Abstracts. Ninth Congress of Ophthalmologists of Russia. - M., 2010. - P. 304.

6. Egorov, V.V. Search for opportunities to enhance the effectiveness of the treatment of severe corneal dystrophies induced by excimer surgery / V. Egorov, V. Posvalyuk, E.L.Sorokin / / Ophthalmology. -2008.-Vol.5, № 3. - P. 35-40.

7. Kasparov, A.A. Postoperative Bullous keratopathy: transplant and transplant treatments / A.A. Kasparov, Kasparov, E.A., S.V.Trufanov / / Abstracts. Ninth Congress of Ophthalmologists of Russia. - M., 2010. - P. 307.

8. Kasparov, A.A. The use of amniotic membrane preserved for the reconstruction of the surface of the anterior segment of eye / A.A. Kasparov, S.Trufanov / / Journal of Ophthalmology. - 2003. - № 3. - P. 45 - 47.

9. Frost, Z.I. Modern aspects of keratoplasty / Z.I. Frost, J.P. Tahchidi, Y. Kalinnikov / / New technologies in the treatment of diseases of the cornea. Materials Conf. -M., 2004. -P.280-

288.

10. Momoze, A. The use of freeze-dried human amniotic membrane for treatment of the surface of the eyeball / A. Momoze, K. Xiao-Hong, A. Dzhunsuke / / ophthalmic surgery. - 2001. - № 3. -P. 3-9.

11. Moroz, Z.I. Modern trends of surgical treatment of diseases of the cornea/ Z.I. Moroz //Abstracts Ninth Congress of Ophthalmologists of Russia in 2010. - Moscow, 2010. - P. 298-299.

12. Mamikonyan, V.R. Sovremennye corneal transplant technology/ V.R. Mamikonyan, S.V. Trufanov// Abstracts. Ninth Congress of Ophthalmologists of Russia. - Moscow, 2010. -P.311.

13. Novitsky, J. J. Transplantation of amniotic membrane location in the treatment of corneal diseases involving neovascularization / I. J. Nowicki // Journal of Ophthalmology. -2003. -№6. - P.9-11.

EXPERIENCE OF RECONSTRUCTIVELY - PLASTIC OPERATIONS AT THE MAMMARY GLAND CANCER

T.I. Nikolaeva, T.N. Zharnikova, T.N. Migalkina, P.M. Ivanov

The Yakut center of science of complex medical problems FROM the Russian Academy of Medical Science, Medical institute of Northeast federal university it of M.K. Ammosov, the Yakut republican oncologic dispensary

The problem of a breast cancer is actual in the last some decades not only because of high disease, but also because of difficulties which women as a result of the spent treatment face. These are problems of drama change of external shape, a way of life and degree of a self-appraisal which arise after surgical treatment, especially if the mastectomy [2] was surgical operation. All it leads to serious psychological traumas which frequently attract irreversible changes in social life of the patient. Possibilities of reconstructive surgery are capable to move apart these frameworks, doing possible one-stage restoration of a mammary gland, and also allow to expand indications of preservations of organs to operations. The choice of the surgeon depends on a disease stage, namely from the size of a primary tumor, its localization, the relation of the size of a tumor to the size of a mammary gland, and also from age of the patient (as from the point of view of the disease forecast, so from the point of view of value of preservation of a mammary gland for the patient), forms of a mammary gland and other factors which can interfere with performance of safe operation.

Now a series of authors [1,5] recommend wider application of a primary plasty, specifying in its safety, favorable specifications of carrying out, the best cosmetic result, and also significant reduction of mental and physical traumas. The skin-sparing mastectomy with mammary gland reconstruction is 10 years a standard technique of performance of single-step reconstructive interventions at a cancer [4]. Conservation of a skin of a mammary gland in the course of a mastectomy allows to keep its natural contours and to minimize the area of cicatrixes on a mammary gland. Thus skin-sparing mastectomy the mastectomy doesn't contradict principles of Maddena [3].

In surgical unit GU JAROD of an expert of performance of single-step reconstructively-plastic operations at a mammary gland cancer has begun since 2008. First three operative measures have been executed together with leading surgeons of the Tomsk oncologic dispensary and the Municipal hospital of №1 of Novosibirsk in following variants: a sectoral resection of a mammary gland with defect replacement of thorako-dorzalnym flap, SAK-SAVING up (mammilary - areolar complex) a mastectomy with a mastoplasty an implant, a radical mastectomy on Madden with reconstruction by a TRAM-flap (a flap on direct muscles of a stomach). All women of young age till 45 years, with the established diagnosis of a cancer of a mammary gland in an early stage of disease. The variant of surgical treatment got out taking into account the size and a locating of a tumor, the sizes of a mammary gland, constitutional features and preferences of the patient. Results of the spent surgical treatment satisfactory, as from a postoperative current, oncologic principles of treatment, and a psychological condition of women and esthetic effect.

Since 2011 in surgical unit of the Yakut republican oncologic dispensary reconstructively-plastic operations are performed at a cancer of a mammary gland to four more patients. The age of patients had for the socially-active period of life - 36, 42, 43 and 51 year. The diagnosis of a cancer of a mammary gland to all women has been established after spent in oncology dispensary and other establishments of Yakutsk of a sectoral resection concerning assumed clinically and instrumental fibro adenomas. The size of a primary tumor didn't exceed 2 sm, formation localization in external squares, without lesion signs of regional lymph nodes. All patients had desire to keep the mammary gland form.

To two patients the hypodermic SAK-SAVING up radical mastectomy with conservation of both pectoral muscles and axillo-subscapural-subclavial lymph node dissection has been executed. Intraoperatively urgent histological research of ducts of under-mammillar zones which has allowed to execute the given volume of an operative measure is without fail conducted. Reconstruction of mammary gland thorako-dorzalnym flap in a combination to a silicone implant is made taking into account the sizes, the form and level of a ptosis of a mammary gland. The postoperative period at both women proceeded smoothly, high enough and satisfactory esthetic results of surgical treatment are reached (fig.1 and 2).

a) b)

Fig. 1. Patient T, 36 years. The diagnosis: the Cancer of right mammary gland T2N0M0.
a) Appearance before operation after a sectoral resection
b) Appearance in 6 months after operation

a) b)

Fig. 2. Patient E, 51 year. The diagnosis: the Cancer of left mammary gland T1N1M0.
a) Appearance before operation after a sectoral resection

b) Appearance after single-step reconstruction of a mammary gland

To the third patient the hypodermic SAK-SAVING up radical mastectomy with conservation of both pectoral muscles also has been spent. Reconstruction is spent by a mastoplasty in initially big size of an implant which has been chosen with the consent of the woman in the future to make possible enlarging mammoplasty the opposite side. In a kind of the constitutional features of the woman underestimated by us, such as the expressed oligotrophy of a subcutaneously-fatty layer and muscles of a forward thoracal wall, in the late postoperative period at the patient the regional necrosis of a skin with a tendency to a becoming infected has developed (fig.2).

a) b)

Fig. 2. Patient C, 42 years. The diagnosis: the Cancer of mammary gland T1N0M0.
a)Appearance before operation after a sectoral resection

b)Appearance after operation in 1 month, a regional necrosis of a skin in the field of cicatrix.

Considering risk of occurrence of complications (an implant becoming infected), to the patient the repeated operative measure in volume – excising of the amazed site of a skin and defect replacement by thorako-dorzalnym flap in a combination to an implant is spent. The postoperative period proceeded smoothly. Esthetic effect satisfactory (fig. 3).

a) b)

Fig. 3. Patient C, 42 years. The diagnosis: the Cancer of mammary gland T1N0M0.
a)External after repeated operation in 3 months: a side view
b)Appearance after operation in 9 months after operation.

To the fourth patient taking into account constitutional features the mastectomy with axillo-subscapural-subclavial lymph node dissection and mammary gland reconstruction of thorako-dorzalnym flap is made of skin-sparing mastectomy. The postoperative period smooth. Satisfactory esthetic results of treatment (fig. 4) are reached. In the subsequent to the woman it will be executed the delayed formation of a papillary complex.

a) b)

Fig. 4. Patient H, 43 years. The diagnosis: the Cancer of mammary gland T1N0M0.
a) Appearance before operation after a sectoral resection
b) Appearance in after operation

To all patients according to standards the combined treatment under the radical program is spent. During observation from 6 months and more after operation a condition of women satisfactory, from the generated mammary gland of negative consequences don't note, movements in an arm aren't limited.

In summary it is necessary to underline that tendencies in mammary gland surgeries at a cancer, existing in world practice, are referred on more conservative approach to surgical intervention volume. However carrying out possibility of organs preservation and reconstructively-plastic operations directly depends on a stage of disease and should be carried out under strict indications. Unfortunately for today, in republic Sakha (Yakutia), as well as to Russia, quantity of patients with for the first time taped breast cancer have a disease stage at which performance of organs preservation treatments isn't possible. The radical mastectomy in various updatings remains the basic method of surgical treatment of mammory gland cancer. This operation saves life the patient, but the serious esthetic injury causes to women.

It is necessary to notice that the data represents the short-term results of treatment based on initial experience. Further, the remote results of treatment based on enough and term of observation will be investigated.

The used literature:

1. Demidov, Century of the Item Primary reconstructively-plastic operations at a mammary gland cancer / Demidov V. P, Pak D.D.//Methodical references. M, 1999.
2. Malygin, S.E.reconstructively of an intervention at a mammary gland cancer. New standards and prospects / S.E.Malygin, E.N.Malygin, N.G.Rusakova.//Practical oncology. A mammary gland cancer. - T.11- № 4, 2010 – C. 253-257.
3. Audretsb, W. Tumor-specific immediate reconstruction in breast cancer patients/Audretsb W., Rezai M., Kolotas C. et al.//Perspectives in Plastic Surgery. – 1998. – VOL.11. - P.71-100.
4. Simmons, R.M. Local and distant recurrence rate in skin-sparing mastectomies compared with non-skin-sparing mastectomy / Simmons R.M.//Ann. Surg. Oncol.-1999, Oct-Nov.-Vol.6 (7).- P.676.
5. Chalnot, P. Le dedoublement du sein restant / Chalnot P., Michon J.Ann//Chir Plast 1958; 3:35.

Authors:
Nikolaeva Tatyana Ivanovna – Ph.D. in Medical Sciences, senior research scientist, the manager Surgical unit the Yakut republican oncologic dispensary;
Zharnikova Tatyana Nikolaevna – Ph.D. in Medical Sciences, senior research scientist, surgeon-oncologist the Yakut republican oncologic dispensary;

IVANOV Peter Mihajlovich – Doctor of Medical Science, the professor, laboratory chief, the manager. A course of oncology of Medical institute of Northeast federal university it of M.K. Ammosov;
Migalkina Tatyana Afanasevna – Surgeon-oncologist the Yakut republican oncologic dispensary
.

Potapov A.F[1]., Alekseev R.Z[1]., EfgrafovS.Yu[2].

The efferent therapyin treatment of severecoldinjury, complicated by the multiple organ dysfunctionsyndrome.

Northeasternfederal university by M.K. Ammosov

Medical institute[1]

Republichospital №2 – EmergencyCenter[2]

Republic of Sakha(Yakutia), Yakutsk.

Abstract

The analysis oftreatment of 12patients withseverecoldinjury,which was complicatedwith the development of the multiple organ dysfunction,was conducted. The method of hemodiafiltration was used inintensive care, which effectivelyreduced the level ofendotoxemia, improved the function ofthe respiratory systemand achieved a positiveclinical effect.

Keywords: cold injury, the multiple organ dysfunction syndrome, hemodiafiltration.