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The analysis of acute pneumonia morbidity in Republic Sakha (Yakutia) children

Morbidity statistic indexes and prophylactic medical examination of children with acute pneumonia in the Republic Sakha (Yakutia) was analyzed. In the group of children with acute pneumonia concomitant pathology, disease current features and treatment efficacy was studied.

Keywords: acute pneumonia, morbidity, children population, treatment efficacy.

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**MORBIDITY OF POPULATION OF REPUBLIC OF SAKHA (YAKUTIA)
BY PRIMARY CANCER OF LIVER**

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The analysis of the primary cancer of liver morbidity (1658 cases) for 1996-2007 in Republic Sakha is conducted. A retrospective analysis allowed to mark more than 4th multiple exceeding of indexes of morbidity of primary cancer of liver of yakutian population by comparison to indexes on Russia. The exposed distinctive information on prevalence of morbidity in the different medical geographic areas of republic can be used for development of measures of prophylaxis of this pathology.

Keywords: primary liver cancer, prevalence, structure, dynamics, prognosis.

Introduction. Actuality of problem of primary liver cancer (PCL) in the conditions of Yakutia is conditioned by high-frequency of distribution of morbidity, unsatisfactory organization of prophylactic work, difficulties of active exposure of disease on the early stage. In Yakutia the study of different aspects of problem of this pathology was conducted it is not enough. Meantime the detailed study of features of distribution of primary cancer of liver with the estimation of possible etiologic factors and reasons of unsatisfactory organizational measures would allow to perfect methods of primary prophylaxis and diagnostics of PCL in Republic

Sakha [1, 3, 4, 5]. On the regions of Russia prevalence of malignant new formations of liver and intrahepatic bilious channels is very heterogeneous [2, 6, 7, 8]. Index of morbidity at both population of Republic Sakha (Yakutia) it remains the primary cancer of liver (PCL) the greatest not only on territory of the Far-Eastern Federal district (FEFD) but also in Russia on the whole, that is presented in a table 1.

Table 1

Morbidity of PRP on territory of Far-Eastern Federal district (FEFD) in 1996, 2005
(world standard, on 100 000 population)*

Republic, area, edge	Men		Women	
	1996	2005	1996	2005
Republic of Sakha	26,41	22,10	13,30	10,20
Seashore edge	6,08	5,27	3,25	2,31
Khabarovsk edge	5,76	6,21	2,85	2,18
Evreyskaya autonomous region	-	4,44	3,38	1,37
Amur	3,54	5,92	2,10	1,55
Kamchatka	5,21	8,70	3,96	1,23
Magadanskaya region	13,52	8,24	6,99	2,05
Chukotskiy autonomous region	-	5,17	1,23	-
Sakhalinskaya region	10,38	14,46	2,92	3,84
Russia	5,88	4,38	2,63	1,98

*А.Е. Чиссов with coauthor. (1997, 2007)

Research purpose. To study prevalence of morbidity the primary cancer of liver for period from 1996 to 2007 in Republic Sakha.

Materials and research methods. Long-term morbidity of yakutian population PCL is studied for 1996-2007 Over the years 1 658 cases of morbidity of PRP were incorporated in a republic. From them men – 944 (56,9%) persons, women – 714 (43,1%), at correlation of men and women – 1,3:1,0. Treatment of material and calculations was carried out on the personal computer of IBM RS with the use of the application programs of MS Office. At the decision of statistical tasks the level of meaningfulness of $p < 0,05$ was accepted.

Results and discussion. At comparison of indexes of morbidity by the cancer of liver of population of Republic Sakha (Yakutia) and Russia for period with 1996 for 2007, exposed their exceeding in 4-5 times on Yakutia by comparison to the proper indexes on territory of Russian Federation (fig.1).

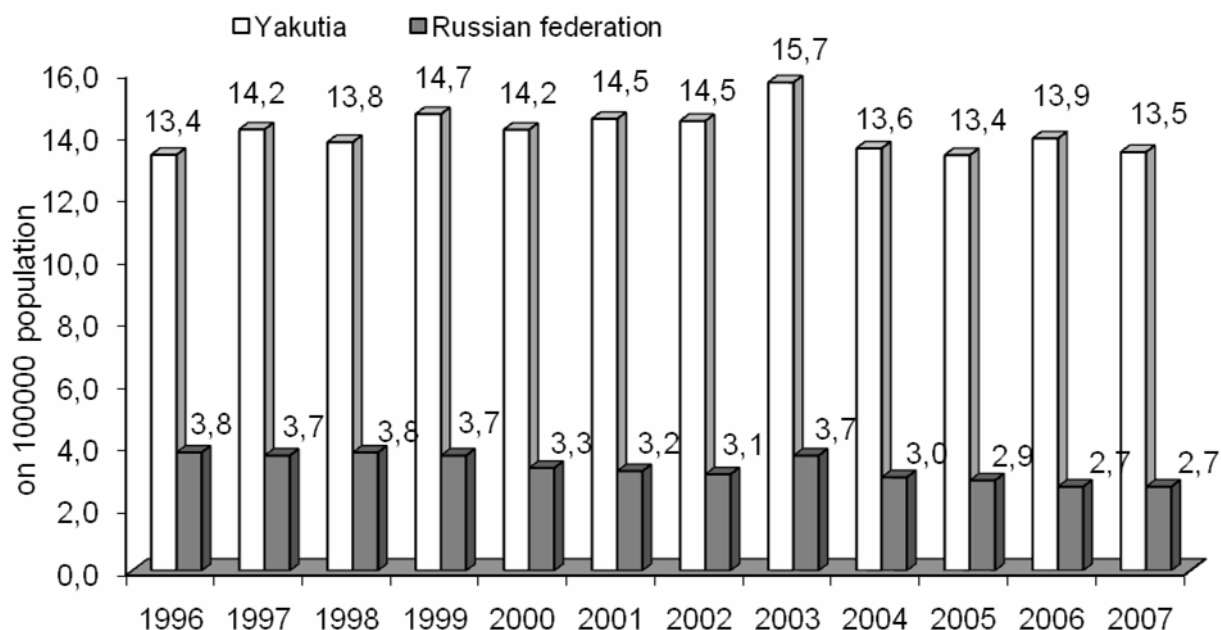


Fig. 1. Indexes of morbidity by the primary cancer of liver of population of Yakutia by comparison to Russian Federation in a period with 1996 2007 to (on 100 thousands of population).

In the dynamics of morbidity in Republic Sakha the greatest index $15,7^{0}_{0000}$ registered in 2003, with stabilizing of indexes in subsequent years, both in Yakutia and on territory of Russian Federation.

In 2007 in the structure of malignant new formations at a masculine population the cancer of liver occupied the third place ($7,4 \pm 0,9\%$). The first two places reserved the cancer of lung ($21,7 \pm 1,4\%$) and stomach ($12,4 \pm 1,1\%$). At a womanish population the cancer of liver went out into sixth place ($5,3 \pm 0,7\%$), the first two places unchanging occupied the cancer of suckling gland ($18,0 \pm 1,7\%$) and lung ($10,6 \pm 0,3\%$).

For probed period with 1996 for 2007 the primary cancer of liver met practically in all of age-dependent groups, regardless of floor. The analysis of age-dependent structure of morbidity of PCL retuned that most often this disease met at persons in age 70 years and more senior (fig.2).

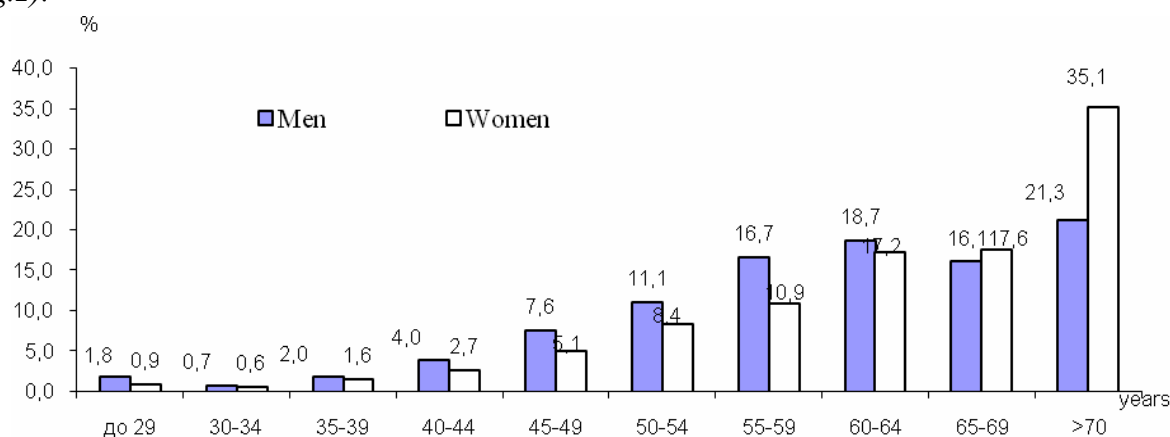


Fig.2. Specific gravity of PCL is in the different age-dependent groups of yakutian population for 1996-2007

Thus specific gravity of disease for women in 1,5 time was higher, than for men ($35,1\%$ and $21,3\%$ accordingly). Such tendency is explained predominance of womanish population in this age-dependent group. High was specific gravity of PCL among men and women in age 60-64 ($18,7$ and $17,2\%$ accordingly) and in 65-69 years ($16,1$ and $17,6\%$). However, and among a

young able to work population (to 39 years) the cases of disease the cancer of liver were diagnosed (4,0%).

For the exposure of features of distribution of this pathology on territory of Yakutia the analysis of morbidity of PCL was conducted depending on the socio-economic terms of life and ethnic composition of population, resident in medical geographic areas. The dynamics of morbidity is presented in a table 2.

Table 2
Dynamics of morbidity by the primary cancer of liver depending on the place of residence and ethnic belonging of yakutian population for 1996-2007

Year	Morbidity on 100 000 population			
	Urban population	Rural population	Unnative population	Native population
1996	12,9±1,4	27,4±2,8*	12,1±1,4	26,7±2,5**
1997	14,5±1,5	24,1±2,6*	10,1±1,3	28,9±2,6**
1998	13,5±1,4	20,3±2,4*	12,0±1,5	23,0±2,3**
1999	12,5±1,4	26,0±2,7*	7,5±1,1	30,7±2,6**
2000	12,6±1,4	21,7±2,5*	9,2±1,3	25,3±2,4**
2001	12,7±1,4	23,3±2,6*	7,9±1,2	27,0±2,4**
2002	11,6±1,4	22,9±2,5*	6,0±1,1	29,2±2,5**
2003	15,5±1,6	23,8±2,7*	9,3±1,4	28,4±2,5**
2004	11,9±1,4	22,6±2,7*	7,3±1,3	25,3±2,3**
2005	13,8±1,5	17,6±2,2*	8,3±1,4	23,6±2,3**
2006	12,5±1,4	22,1±2,6*	9,6±1,4	23,5±2,2**
2007	12,9±1,4	18,9±2,4*	8,4±1,4	22,2±2,1**
Prognosis on 2012	12,7	17,4	6,3	22,1

* difference statistically meaningfully as compared to the urban population of $p < 0,05$; ** difference statistically meaningfully as compared to unnative $p < 0,05$;

As be obvious from a table, during all of period of supervision (1996-2007) indexes of morbidity by the cancer of liver for villagers were higher in relation to the level of morbidity of townsmen. Correlation of indexes of PCL in 1996 among townspeople and countrymen was 1,0:2,0 (12,9±1,4 and 27,4±2,8⁰/₀₀₀₀, accordingly), and in 2007 1,0:1,5 made (12,9±1,4 and 18,9±2,4⁰/₀₀₀₀, accordingly).

Probably, the decline of indexes is conditioned migration of rural population in a city. On the average for this period morbidity at a native population met the cancer of liver in 2,0 time more

frequent, than at unnative. In obedience to an analysis to 2012 relatively the high rate of decline of morbidity will be marked at persons, resident in rural locality (-36,5%) and mainly for the representatives of unnative nationality (-47,9%).

In obedience to findings, for period with 1996 for 2005 morbidity of PCL on separate 35 administrative territories (to the districts) varies in enough wide limits. Research results for evidentness were drawn a map (fig. 3). On the level of the standartized indexes of morbidity selected 4 groups of districts:

*1) **with the low level** of morbidity of PCL (to $10,0^0/0000$) – Aldanskiy, Lenskiy, Mirninskiy, Neryungrinskiy, Nizhnekolymskiy, Oymyakonskiy, Srednekolymskiy, Tomponskiy, Evenobyntantayskiy;*

*2) **with the low level** of morbidity ($10,1 - 18,1^0/0000$) – Amginskiy, Verkhnekolymskiy, Mountain, Nyurbinskiy, Khangalasskiy, Olekminskiy, Ust'-Mayskiy, Ust'-Yanskiy, Yakutsk;*

*3) **with the middle level of morbidity** ($18,2 - 27,8^0/0000$) – Abyyskiy, Anabarskiy, Vilyuyskiy, Zhiganskiy, Kobyayskiy, Megino-Kangalasskiy, Momskiy, Namskiy, Olenekskiy, Suntarskiy, Tattinskiy;*

*4) **with high morbidity** ($27,9 - 42,1^0/0000$) – Allaikhovskiyy, Bulunskiy, Verkhnevilyuyskiy, Verkhoyanskiy, Ust'-Aldanskiy, Churapchinskiy.*

Results of comparative analysis of morbidity of PCL on selected medical geographic areas of republic showed (tab.3) that the high indexes of morbidity in population had been registered in the area of central Yakutia, which exceeded a mean republican value substantially (in 1,7 times) ($24,9 \pm 1,6$ against $14,9 \pm 1,3^0/0000$, at $p < 0,05$). Statistically meaningful high morbidity was observed the cancer of liver in the areas of polar ($20,9 \pm 1,5$) and western ($19,2 \pm 1,4^0/0000$) Yakutia. The low indexes of morbidity are incorporated the cancer of liver in an east ($14,4 \pm 1,2$) area and for the habitants of large cities ($10,1 \pm 1,0$), South Yakutia ($9,9 \pm 1,0^0/0000$, $p < 0,05$).

Table 3

Indexes of morbidity by the primary cancer of liver
Yakutian population for 1996-2005

Medical geographic areas	On 100 000 population (M±m%)
Zapolyarnaya	20,9±1,5*
East	14,4±1,2
Western	19,2±1,4*
Central	24,9±1,6*
South	9,9±1,0*
Large cities	10,1±1,0*
Yakutia	14,9±1,3

* distinction statistically meaningfully as compared to to the middle republican indexes, $p < 0,05$;

Conclusion. Thus, morbidity of primary cancer of liver (PCL) on territory of Yakutia substantially differed in medical geographic areas. The most high and statistically meaningful indexes were exposed in districts, mainly natives (central, zapolyarnaya areas) and representatives of unnative population, which experience of stay in Yakutia is great at, live in which (Western area). The low indexes of morbidity registered in large cities, where majority a population is presented unnative habitants, busy on the enterprises of extractive industry, with the developed infrastructure, sufficiently with the high level of sanitary culture of population and treatment and prophylaxis help. The exposed information on prevalence of PCL in the different medical geographic areas of republic can be used for development of scientifically founded measures of prophylaxis of this disease.

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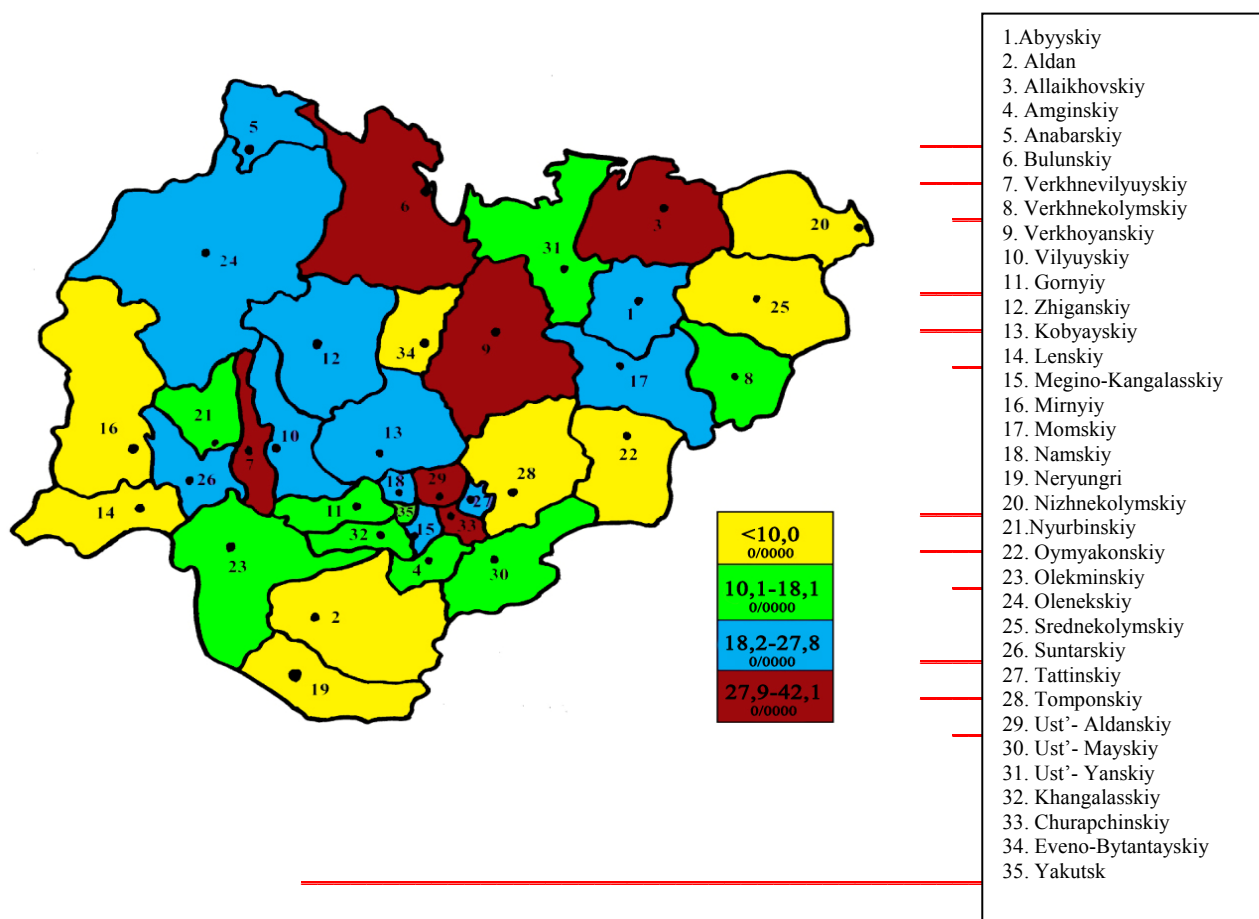


Fig.3. Standartized indexes of the PCL morbidity of yakutian population
(scale 1:4 000 000)