



N. V Khoyutanova, N.P.Matveeva, N. A. Bokhan, S. A. Ivanova, Z.N.Krivoshapkina, E.A. Igotti

Clinical and Dynamic Features of Formation and Course of Alcoholism at Women Depending on Climatic and Geographical Living Conditions in the Territory of the Republic of Sakha (Yakutia)

ABSTRACT

The features of clinical manifestations of alcoholism among various ethnogeographical groups of the indigenous female population of the Republic of Sakha (Yakutia) are studied. The mortality rate of women due to alcohol abuse amounts from 40,6 to 57,89% and tends to grow. A high-gradient type of the course of alcoholism at women Sakha living in the moderate zone is established. Some biochemical deviations in blood composition at women abusing alcohol are revealed.

Keywords: alcoholism, women, Sakha, Evens, indigenous people, Arctic North, current, Republic of Sakha (Yakutia).

TOPICALITY. The ethnocultural features of the epidemiological characteristic of alcoholism and alcohol psychoses in different regions of Siberia and the Far East which are characterized by ethnic, geographical and gender features, features of a metabolism of ethyl alcohol and a form of alcoholism at representatives of various ethnoses was established by the famous domestic scientists in the field of addictology [3, 6, 8-12, 16].

In the Republic of Sakha (Yakutia) the indicator of prevalence of alcoholism is rather high and takes the 4th place in the Far East Federal District (FEFD) [1].

In 1991 the morbidity of women alcoholism in the Far East exceeded the all-Russian indicator and was the highest in the country - 524,6 on 100 thousand female population. Further this indicator continuously increased, and made 574,1 in 1995 and 616,6 in 1999 on 100 thousand population respectively. It is natural that morbidity of women alcoholism reached the peak in the most problem (in the narcological relation) subjects of the Far East region: Chukotka Autonomous Area – 1586,8; The Magadan and Sakhalin areas – respectively 1277,2 and 933,7 on 100 000 women [9].

The gender causal investigative interrelations reflecting clinical and pathogenetic and clinical and dynamic stages of formation of alcoholism and alcohol psychoses was established by the leading researchers of addictology [2, 5, 12, 15, 17].



The analysis of dynamics of alcoholism and its consequences at the population of the Far East and Siberia showed that the indigenous female people on average dies of alcoholism at much younger age, than the drinking indigenous man's and alien female people. One of the alcoholism reasons at indigenous people is loss of folk customs, traditions, family foundations, self-beliefs, and dynamics of the alcoholism depends and from climatic and geographical conditions of accommodation. It proved relevance of the accounting of ethnic and cultural features, ethnic and geographical conditions of accommodation when studying a problem of female alcoholism for improvement of preventive and medical measures.

Thus, studying of questions of female alcoholism and its transformation in the conditions of the Arctic North is an actual problem of circumpolar medicine.

The objective of this research was studying of clinical and dynamic aspects of formation and the course of alcoholism among the women suffering from alcoholic addiction and living in different climatic and geographical zones of the Republic of Sakha (Yakutia).

MATERIALS AND METHODS. The clinical sampling including 261 women suffering from alcoholic abuse, representatives of native nationalities of the Republic of Sakha (Yakutia) – Sakha (Yakuts) and Evenks was surveyed. From their number 4 ethnogeographical groups are allocated: the women Sakha living in the moderate zone (**SMB**)-53, Sakha, living in the subarctic and Arctic zones (**SSAAB**)-33, the Sakha of vilyuysky group of regions (**SVGR**)-30, Evenks of subarctic and Arctic belts (**ESAAB**) – 69 pers. The control group included 29 women Sakha which middle age made 48,5 years, and 47 Evens at the age of 46 years (only 76 women). The material is gathered during the period from 2009 to 2014 on the basis of the Yakut republican narcological clinic, and also during forwarding departures to Eveno-Bytantaysky, Verkhoyansky, Nizhnekolymsky and Srednekolymsky national regions of the Republic of Sakha (Yakutia).

Criteria of inclusion in the studied selection were mature age (from 18 to 68 years), compliance of a clinical picture at the time of research to diagnostic criteria of the diagnosis on MKB-10, F10.2 corresponding to codes. The main material of the study has been the Card of standardized description of surveyed on a basis of the research work "Pathobiologic Foundations of Clinical Heterogeneity of Mental and Behavioral Disorders due to Use of Psychoactive Agents", it being elaborated in the Scientific Institute of Mental Health (authors: the member correspondent of the Russian Academy of Sciences, MD, professor N. A. Bokhan, MD, professor A. I. Mandel, etc.). The research is conducted according to the state contract No. 1134 from 17.06.2011 on carrying out the research work "The medical and social aspects of

alcoholization of the population of the Republic of Sakha (Yakutia)". The determination of activity of biochemical indicators was made on the automatic biochemical analyzer on the basis of laboratory of an immunopathology of FPBSI "Yakut scientific center of complex medical problems". Processing of results was carried out with use of a package of the applied SPSS 17.0 programs for Windows. The results are presented in the form of average sizes and a standard error of the average size ($M \pm m$). The assessment of reliability of distinctions of average sizes is carried out with use of t-criterion of Student. The significance value was considered reliable at $p < 0,05$.

Results and the discussion. Official data Sakha (Yakutia) Stat for 2009-2013 years testify to high prevalence of alcoholism among the female population of the republic. At the same time the indicator of primary incidence of alcoholism and alcohol psychoses among women for 2013 decreased by 27,5% (fig. 1).

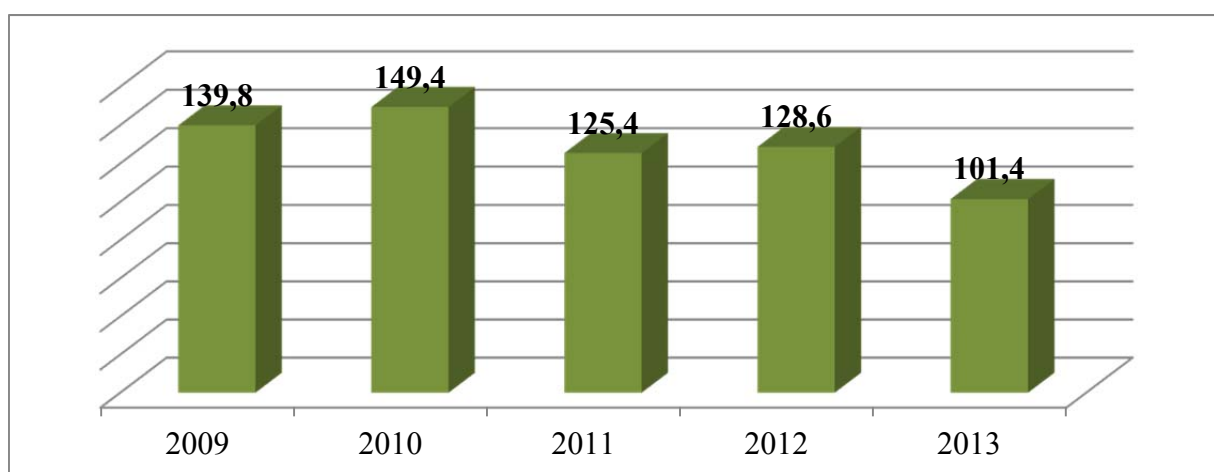


Fig. 1. Dynamics of primary incidence of alcoholism and alcohol psychoses among the female population of RS(Ya) on 100 thousand female population.

During the statistical analysis authentically significant interrelation of a level of primary incidence of alcoholism and alcohol psychoses among the female population with a mortality indicator among women because of alcohol was noted ($r=0,88$, $p=0,05$), the rate of it in the general mortality makes from 40,6 to 57,89% and tends to grow (tab. 1).

Table 1

The mortality of the population connected with alcohol intake in RS(Y)

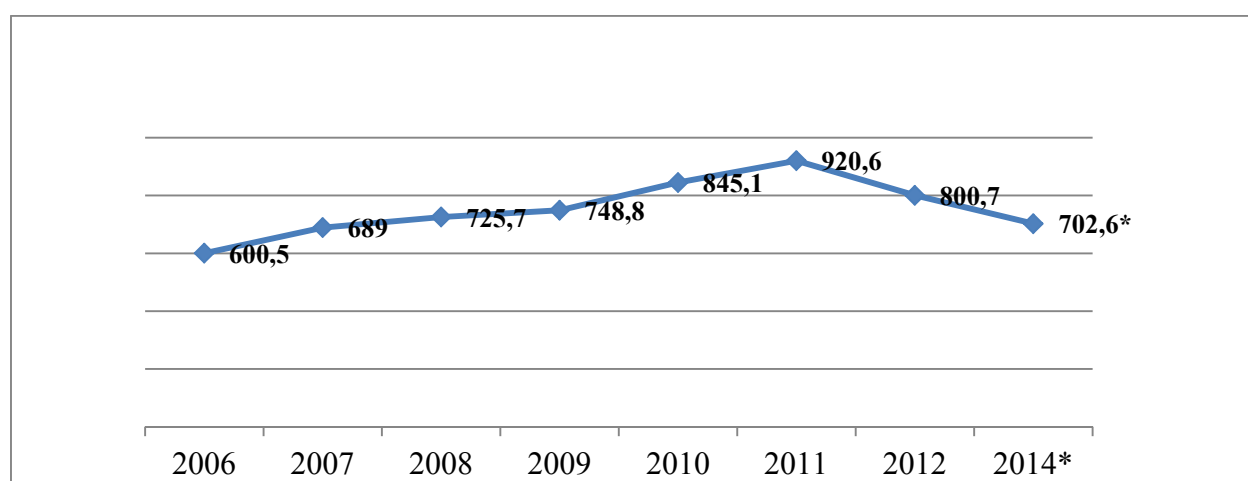
	2000	2005	2007	2008	2009	2010	2011	2012	2013
General mortality due to alcohol intake per 100 thousand adult	19,7	61,5	32,3	47,5	53,4	65,8	50,2	35,6	31,0

population

Mortality of women 8 28,3 15,9 27,5 28,9 32,9 22,2 17,7 16,3
due to alcohol intake
per 100 thousand

female population

A rate of women in 40,6 46 49,22 57,89 54,1 50 44,2 49,7 52,6
general mortality rate
due to alcohol intake,
%



* Data are provided from calculation of number of the female population on 01.01.2014.

Fig. 2. Dynamics of morbidity alcoholism of women in the Republic of Sakha (Yakutia) on 100 thousand female population

Morbidity alcoholism in the Republic of Sakha (Yakutia) among the female population tends to decrease. So, with 920,6 in 2011 the indicator decreased by 23,6% in 2014 (fig. 2).

In 2014 in the Yakut republican narcological clinic there were 22450 (2012 - 26234) people within a year who addressed with narcological frustration, among them – 4680 (2012 - 5381) women that makes 20,8% of all cases of addressed women to the narcoclinic and 1% of all female population of the republic. Thus 1606 (2012 - 1534) women lived in rural areas, of them 819 (2012 - 946) addressed for the first time in life that makes 34,3 and 17,5% (2012 - 28,5 and 17,6) from among the addressed women respectively. In the structure of narcological frustration the alcohol addiction syndrome for 2014 is diagnosed at 15521 people (2012-18454). In 2014 in 3452 women with alcohol addiction addressed to the clinic, of them the I stage of alcoholism



was noted in 414 (2012 - 572), II – 2974 (2012 - 3274), III-64 (2012 - 89) women 3452 (2012-3935). The number of women addressed for the first time amounted 485 against 551 in 2012. In total all over the the republic 704 (2012-782) cases of alcohol psychosis were registered, including 156 (22,2%) (2012 - 165) - among women, being diagnosed with alcohol psychosis for the first time - 80 cases (2012 - 81) or 24,2% of all cases with alcohol psychoses.

Average age of the surveyed was noted at Sakha women from the subarctic and arctic zones (further SSAAB) in $38,57 \pm 10,32$ years, Sakha from the moderate zone (further SMB) – $42,26 \pm 11,18$, Sakha of vilyuysky group of regions (further SVGR) - $39,30 \pm 7,65$, Evens of the subarctic and arctic zones (further ESAAB) – $41,28 \pm 10,00$ years. Clinical and the dynamic features of development of alcoholism were characterized by rather late beginning of systematic alcohol intake, on average: at SSAAB in $24,80 \pm 5,26$ years, at SMB in $28,29 \pm 9,18$, at SVGR in $26,00 \pm 7,71$, at ESAAB – in $27,60 \pm 7,97$ years, despite earlier experience of the first test of alcoholic drinks at SSAAB and SVGR in $18,7 \pm 3,58$ and $17,66 \pm 3,88$, and at ESAAB and SMB $20,13 \pm 6,87$ and $21,83 \pm 7,47$ of year respectively. Loss of quantitative control before all was formed at women SSAAB - in $28,26 \pm 7,47$ years, at the others it was on average noted in 30 years. The age of formation of an alcohol abstinence syndrome varied from 30 to 32 years. The age of the beginning of hard drinking alcoholism was defined: at SMB – $32,72 \pm 7,84$, at SSAAB – $32,19 \pm 8,2$, at SVGA- $30,73 \pm 7,02$, at ESAAB – $32,36 \pm 8,18$ years.

Despite the remoteness of Evens revealed on the basis of studying of mitochondrial DNA from other populations of Yakutia and close genetic relationship of populations central and the Yakuts from the vilyuysky region [16], the clinical and dynamics formation of alcoholism in the studied selections had the features. So, terms of formation of physical alcohol addiction at the women of indigenous ethnic origin living in different climatic and geographical zones RS(Ya) are determined: before all physical dependence is formed at women Sakha of the moderate zone - in 3 years since systematic alcohol intake, with identical term the first symptoms of physical dependence are shown at Evens of subarctic and Arctic belts and at Sakha of vilyuysky group of regions- in 4 years; most long physical addiction develops at the women Sakha living in the Arctic and subarctic RS(Ya) zones - in 7 years (tab. 2).

Thus, in 3 alcoholism studied groups the course is defined as average, including the group of the Even women. In the group of the women Sakha living in the moderate zone of Yakutia (in the central group of areas), alcoholism had a high progredient type. The established features in clinical dynamics of alcoholism at women from different ethnic and geographical

territories testify to necessity of further research of predictors of alcohol formation at natives of the Arctic North taking into account climatic and geographical living conditions.

Table 2

Features of clinical and dynamics of alcoholism at female indigenous population of RS (Ya)

Middle age	ESAAB n=69	SMB n=53	SSAAB n=33	SVGR n=30
Women with alcohol addiction	41,28±10,00	42,26±11,18	38,57±10,32	39,30±7,65
First test of alcohol	20,13±6,87	21,83±7,47	18,7±3,58	17,66*±3,88
Beginnings of systematic alcohol intake	27,60±7,97	28,29±9,18	24,80±5,26	26,00±7,71
Losses of quantitative control	30,17±8,4	30,95±9,07	28,26*±7,47	30,66±8,55
Formations of symptoms of intoxication	31,73±8,5	31,09±8,47	31,41±8,81	29,77±7,72
Formations of an alcoholic abstinence syndrome	32,36±8,18	31,67±8,41	32,04±8,87	30,73±7,02
Beginning of dipsomania	33,32±9,35	32,72±7,84	32,19±8,2	32,30±7,39
Assessment of progredient course of alcoholism according to N. Ivantsu	average (4,76)	fast (3,38r)	average (7,24л.)	average (4,73r.)

* $r=0,03$

The biochemical laboratory researches of the women with alcohol addiction revealed that the activity of lactatdehydrogenaza (LDG) was authentically high, the level of glucose tended to increase, the level of creatinine was authentically low (tab. 3).

The tendency to decrease in level of urea which is combined with authentically low level of creatinine, and also high activity of LDG and rather high level of glucose in comparison with the control that specify that intensive process of glycolysis is observed at the women abusing alcohol.

Table 3

The biochemical indicators of women with alcohol addiction

Biochemical tests	Controls (n=76)	Patients (n=28)
Lactate dehydrogenase, un/l	433,8±11,0	509,4±20,1*
Creatinphosphokinase Nac, un/l	60,8±4,3	71,7±10,1
Creatinphosphokinase MB, un/l	16,7±1,2	19,5±1,8
Alkaline phosphatase, un/l	228,4±9,1	218,0±11,0
Scale of glutamyl transferase, un/l	40,4±4,2	38,2±4,3
Alaninaminotransferase, un/l	11,5±1,1	14,8±1,7
Aspartate aminotransferase, un/l	25,7±1,6	29,6±2,8
Glucose, mmol/l	4,52±0,09	4,72±0,19
Urea, mmol/l	4,45±0,15	3,92±0,19
Creatinine, µmol/l	82,66±1,29	73,64±2,97*
General protein, g/l	77,79±0,43	77,09±0,90
Albumine, g/l	44,55±0,29	44,03±0,47
Triglycerides, mmol/l	0,96±0,05	0,88±0,07
Cholesterol, mmol/l	4,86±0,12	4,69±0,21
CS Lipoprot. of high density, mmol/l	1,29±0,05	1,44±0,07
CS lipoprot. of low density, mmol/l	3,16±0,10	2,85±0,18
CS lipoprot. of very low density, mmol/l	0,45±0,02	0,40±0,03
Potassium	3,27±0,20	2,41±0,18*

*- $p < 0,05$

Conclusions. It is established that the earliest systematic alcohol intake is observed at women Sakha of the subarctic and arctic zones - in 24,80±5,26 years that for 4 and 3 years earlier, than at Sakha from the moderate zone and at Evens of subarctic and arctic zones respectively. The high-progredient type of alcoholism is established at women Sakha of the moderate zone - in 3 years, average type - at Evens of the subarctic, arctic zones and Sakha from the vilyuysky region, subarctic and arctic groups of regions - in 4 and 7 years respectively.

Some biochemical deviations at the women abusing alcohol are revealed: the tendency to lowering the level of urea which is combined with authentically low level of creatinine, as well as high activity of LDG and rather high level of glucose in comparison with the control that indicates intensive process of glycolysis in abusing alcohol.

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Authors:

Federal public budgetary scientific institute "Research institute of Mental health", (Tomsk):

1) Bokhan Nikolay Aleksandrovich - corresponding member of the Russian Academy of Medical Science, MD, prof., director of institute, bokhan@mail.tomsknet.ru;

2) Ivanova Svetlana Aleksandrovna - MD, prof., the deputize for director;

Federal public budgetary scientific institution "The Yakut scientific center of complex medical problems":

3) Matveeva Nyurguyana Petrovna - Candidate of Medical Sciences, Head of the Laboratory, nyusakha@mail.ru;

4) Hoyutanova Nadezhda Vasilyevna - junior researcher, ysc@sakha.ru;

5) Krivoshapkina Zoya Nikolaevna - Candidate of Biol. Sciences, senior research associate; State Budgetary Institution RS (Ya) "Yakut republican narcological clinic":

6) Igotti Elena Alekseevna - addictologist, Head of the department.