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Prevalence of Alcohol Dependence in Therapeutic In-Patients

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Abstract

The paper's objective was to study the prevalence and risk factors of alcohol dependence in somatic patients in one of the municipal hospitals of Izhevsk. The subjects (323 patients aged from 18 to 59 yrs) were selected using the method of continuous sampling. It has been established that the prevalence of hazardous alcohol drinking, such as frequent heavy drinking (FHD) and frequent drinking (FD), among men and women is high and accounts for 83% and 16% respectively. The prevalence of alcohol addiction was 42.9% in men and 9.7% in women. Socio-demographic correlates of alcohol addiction were the male gender, low level of education and unemployment. The rate of remission during the past year in patients with alcohol addiction was 13.8%. The comorbidity of alcohol addiction was statistically significant for digestive system diseases and tobacco addiction. Knowledge of risk factors can contribute to early detection and adequate treatment of alcohol dependence in patients of somatic hospitals.

Keywords: Alcohol dependence; Hazardous alcohol drinking; Risk factors; Somatic hospital

Introduction

According to scientific literature, alcohol dependence, along with depression and organic mental disorders, is the most frequent comorbid psychiatric disorder in therapeutic and surgical units [1-4]. Researchers emphasize that the prevalence of alcohol dependence in hospitals is higher than in general population [4]. Despite high epidemiological indicators, alcohol dependence is often left undiagnosed, which leads to worsening of somatic pathology, increased resistance to therapy and increased risk of disability and mortality [5]. Treatment in patients with alcohol dependence, especially complicated by somatic diseases, is crucially important. The effect of alcohol on internal organs manifests itself in the severity of their lesions, which depends on the duration, frequency and amount of alcohol consumed. Rapid development of these lesions accelerates with already existing somatic diseases which, in turn, worsen as alcoholization continues. This vicious cycle of the mutually reinforcing concomitant diseases makes them more severe. The increasing proportion of alcohol dependence among patients in general hospitals requires a comprehensive study of clinical characteristics of alcohol dependence combined with somatic diseases and development of comprehensive and more active therapy methods for this category of patients.

At the moment, studies of alcohol dependence in therapeutic in-patients in Udmurtia are limited*. The paper's objective was to study risk factors, the comorbidity and the prevalence of alcohol dependence in hospitalized somatic patients of Izhevsk.

*In Izhevsk, alcohol dependence was studied in another population group. In 2005, a joint study was carried out by Izhevsk State Medical Academy and London School of Hygiene & Tropical Medicine to identify the causes of premature death among working-age men of Izhevsk. In that study, relatives of 1, 750 men who died from October 2003 to October 2005 at the age from 25 to 54 were interviewed. Additional unbiased information about the deceased was obtained in the Registry Office, the Pathoanatomical Bureau and the Forensic Medical Bureau. According to the study findings, 40% of deaths were directly or indirectly related to alcohol consumption. Smoking and alcohol abuse caused 80% of men deaths. These are the two risk factors that are most commonly associated with deaths of working-age men of Izhevsk [6-8].

Materials and Methods

The research was carried out in Izhevsk, the capital of the Udmurt Republic, Russia, in therapeutic department 1 of City Hospital No. 5. The hospital had two therapeutic departments. Therapeutic department 1 (65 beds) was intended for prearranged and emergency hospitalization of the working-age and retired patients from the district the hospital is formally assigned to serve (with an adult population of 57,000 people, about 70% of whom are working age). Therapeutic department 2 was intended for the population with the official status of 'participants and disabled veterans of the Great Patriotic War' (Russian name for World War II) and equivalent categories of patients from Izhevsk. The average annual number of patients hospitalized to the first department was 1, 220 people, more than a half of them aged 50 and older.

The subjects were selected using the method of continuous sampling. The study group included every patient aged 18 to 59 referred to the first hospital department. The average length of hospitalization per patient was 18.3 days. A total of 352 patients were selected for the study, but 29 of them (11 men and 18 women) were not included in the study for various reasons (refusal, severe somatic condition, etc.).

Consequently, the study sample was 323 patients, including 147 (45.5%) men and 176 (54.5%) women. Ethnic background of the study population: 214 (66.3%) Russians, 77 (23.8) Udmurts and 32 (9.9%) other. All participants were divided into the following age groups: 18-39 yrs-37%, 40-49 yrs-31% and 50-59 yrs-32%. 71.5% of the study

population were hospitalized due to exacerbation of a chronic somatic disease and 28.5%-due to an acute somatic disease.

All subjects were asked to answer the questions from the Russian version of the Brief International Neuropsychiatric Questionnaire (MINI 5.0.0.) [9]. Additionally, the survey used the diagnostic criteria of ICD-10 for organic mental disorders and the criteria for tobacco dependence. MINI is a standardized diagnostic interview for major mental disorders according to DSM-IV and ICD-10. The reliability and validity of MINI correspond to SCID-P and CIDI, but an important advantage of MINI is that interviewing requires less time.

Information on somatic diagnoses, psychiatric consultations and prescribed psychotropic medications was obtained from medical records (medical history, patient records). Socio-demographic questions (gender, age, marital status, ethnic background, education and job) are part of MINI.

Participation in the study was voluntary; the patients were informed of their right to refuse to participate. In case of consent, complete anonymity was guaranteed. Questioning and interviewing in each case were conducted during the first 72 hours of hospitalization. The diagnostic survey was conducted by three medical doctors who had been trained to use MINI at the Department of Psychiatry of Izhevsk State Medical Academy.

To analyse the data, STATISTICA 5.0 was used. The following tests were used: the t-test to compare average values (average age, etc.), the chi-square test to assess qualitative characteristics (gender, ethnic background, social status, etc.). To analyse comorbidity, Epi Info, Version 6 [10] was used. The comorbidity of alcohol dependence was determined as follows: the probability index of concomitant disease in the population with alcohol dependence was divided by the probability index of concomitant disease in the population without alcohol dependence.

To characterize the patterns of alcohol drinking over the past 12 months, we used a modified classification of M. A. Lara-Cantu et al. [11] which included the following evaluation criteria: 1) Frequent heavy drinking (FHD): drinking 5 or more units of alcoholic a day (one unit is equal to 50 g of vodka, or 200 g of wine, or 500 g of beer) on 2 or more occasions a week, or binge drinking ('zapoi') from 3 days in a row. 2) Frequent drinking (FD): 5 or more units a day on 1 to 4 occasions a month; or less than 5 units a day on 1 or more occasions a week; 3) Moderate drinking (MD): less than 5 units a day on 1 to 3 occasions a month; 4) Infrequent drinking (ID): drinking less than once a month; 5) Abstaining (AB): drinking less than once a year, or never drinking alcohol.

Results

Only 3.4% of men and 22.2% of women of the sample (Table 1) fell into the Abstaining (AB) category and 96.6% of men and 77.8% of women consumed alcohol. Among men, the following patterns of alcohol consumption predominated: frequent heavy drinking (FHD) and frequent drinking (FD). Among women, moderate drinking (MD) predominated (the difference between men and women is significant, $p<0.001$).

Pattern of alcohol consumption	Men (n=147)		Women (n=176)		Total (n=323)	
	abs.	%	abs.	%	abs.	%
Frequent heavy drinking (FHD)	49	33.3	14	8.0	63	19.5
Frequent drinking (FD)	73	49.7	14	8.0	87	26.9
Moderate drinking (MD)	16	10.9	73	41.5	89	27.6
Infrequent drinking (ID)	4	2.7	36	20.5	40	12.4
Abstaining (AB)	5	3.4	39	22.2	44	13.6

Table 1: Patterns of alcohol consumption in the study sample.

The prevalence of alcohol dependence in the sample was 24.8%. As shown in Table 2, the number of alcohol-dependent persons grew in parallel with the increase in the frequency of alcohol consumption. Among respondents who consumed alcoholic drinks almost every day (or were in the state of 'zapoi'), there were 61.3% of alcohol-dependent persons and there were no alcohol-dependent ones among those who consumed alcohol less frequently than once a month.

Patterns of alcohol consumption	Daily or 'zapoi' lasting from 3 days a week abs. (%)	1 or 2 days a week abs. (%)	1 to 3 days a month abs. (%)	Less than once a month abs. (%)
Without dependence (n=243)	3 (1.2)	44 (18.1)	112 (46.1)	84 (34.6)
With dependence (n=80)	49 (61.3)	29 (36.3)	2 (2.5)	0
Total (n=323)	52 (16.1)	73 (22.6)	114 (35.3)	84 (26.0)

Table 2: Frequency of alcohol consumption among respondents with and without alcohol dependence.

The average number of units per day among the respondents without alcohol dependence those with alcohol dependence was 4.9 and 9.1 (p=0.000) respectively in men and 2.3 and 6.0 (p=0.000) respectively in women. The average age of starting drinking alcohol was 15.9 and 18.5 yrs in patients with and without dependence respectively (p=0.000).

65 people with alcohol dependence (81.3% of all alcohol-dependent persons) tried to quit drinking alcohol during their lifetime. 14 alcohol-dependent subjects (17.5%) turned to a narcologist for help. Only 9 people (13.8% of those who tried to quit) had been abstaining for a year at the time of the interview (the frequency of remission 13.8%).

Socio-demographic correlates of alcohol dependence were determined (Table 3): the male gender (4.2 times higher in men than in women), low level of education and unemployment (twice as high as in other groups).

Socio-demographic factor		Alcohol dependence (%)
	Total (323)	24.8 (N=80)
Gender	Male	42.9 (N=63)
	Female	9.7 (N=17)
	p (significance)	0.000
Age	18-39	28.3
	40-49	25.7
	50-59	19.6
	p (significance)	not significant (tendency)
Education	Primary and secondary	35.0
	Vocational and higher	16.7
	p (significance)	0.000
Social status	Physical labor	24.2
	Intellectual labor	7.6
	Disabled or retired	27.8
	Unemployed	69.2
	p (significance)	0.000
Ethnic background	Russians	23.8
	Udmurts	28.6
	p (significance)	*NS
Marital status	Married	22.6
	Widowed or divorced	29.3
	Single	26.2
	p (significance)	not significant (tendency)

Table 3: Alcohol dependence and socio-demographic factors.

There was no significant correlation between alcohol dependence and ethnicity of the respondents. There was a tendency (not significant) to the greater prevalence of alcohol dependence among widowed and divorced patients and patients in younger age groups. The structure of morbidity with concomitant alcohol dependence the sample is shown in Table 4.

Note: *In case of concomitant somatic diseases, only the principle diagnosis was considered.

Acute diseases predominated in the group of patients with respiratory system disorders (58.8%) and disorders of other organs and systems were mainly represented by chronic diseases (genitourinary system-78.3%, digestive system-78.8%, cardiovascular-94.8% and musculoskeletal-100%). Acute diseases were more often diagnosed in patients aged 18-39 (55.8%), while chronic forms predominated in the age groups of 40-49 yrs and 50-59 yrs-77.2% and 98.0% respectively. The average age at the onset of an acute disease was 32.2 yrs and it was 36.7 yrs (p=0.000) at the onset of a chronic disease.

The comorbidity of alcohol dependence with somatic diseases was statistically significant for digestive system diseases: odds ratio-7.61, 95% confidence interval 4.04-14.41. In comorbid cases, the average age at the onset of alcohol dependence was 26.6 yrs and the average age at the onset of a somatic disease was 35.9 yrs (p=0.000). Alcohol dependence was diagnosed at least twice as often in patients with digestive system diseases as in patients with diseases of the circulatory and respiratory systems.

Somatic disease*	Abs.	%	With alcohol dependence abs. (%)
Circulatory system diseases	96	29.7	14 (14.6)
Respiratory system diseases	85	26.3	21 (24.7)
Digestive system diseases	66	20.4	39 (59.1)
Other diseases	76	23.5	6 (7.9)
Acute diseases	92	28.5	23 (25.0)
Chronic diseases	231	71.5	57 (24.7)
Total	323	100	80 (100.0)

Table 4: Structure of somatic diseases and concomitant alcohol dependence.

The course (acute or chronic) of a somatic disease and the prevalence of alcohol dependence were not interrelated (Table 5).

Somatic disease*	Men with alcohol dependence abs. (%)	Women with alcohol dependence abs. (%)
Circulatory system diseases	13 (33.3)	1 (1.8)
Respiratory system diseases	18 (34.6)	3 (9.1)
Digestive system diseases	27 (69.2)	12 (44.4)

Table 5: Most common somatic diseases and alcohol dependence.

The comorbidity of alcohol dependence with other mental disorders was statistically significant for tobacco dependence only (the average age of starting smoking was 17) (Table 6).

Comorbid disorder	Subjects with alcohol dependence (%)	Odds ratio	95% CI
Organic mental disorders	27.0	1.3	0.76-2.25
Social phobias	20.9	0.78	0.33-1.80
Other anxiety disorders	4.8	0.14	0.01-1.02
Tobacco dependence	49.0	20.55	9.0-48.7
Depression	22.7	0.85	0.47-1.54

Table 6: Comorbidity of alcohol dependence with other mental disorders.

Discussion

In this study, alcohol dependence was diagnosed in 24.8% of the study participants – 42.9% and 9.7% of men and women respectively. The comorbidity of alcohol dependence was statistically significant for digestive system diseases and tobacco dependence (59.1% of patients with digestive system diseases and 49.0% of people with tobacco dependence were alcohol-dependent). Socio-demographic correlates of alcohol dependence were the male gender, low level of education and unemployment. The rate of remission during the past year in patients with alcohol dependence was 13.8%.

It is worth noting that the prevalence of hazardous alcohol drinking (with a high frequency of alcohol consumption and a big amount of alcohol consumed), such as Frequent Heavy Drinking (FHD) and Frequent Drinking (FD), is high – 83% and 16% of men and women respectively. Due to the high risk of death, patients with a hazardous alcohol drinking pattern need specialized medical care. Treatment of such patients should aim to reduce the amount of alcohol consumed (or quit drinking). RoereckeHYPERLINK "https://www.ncbi.nlm.nih.gov/pubmed/?term=Roerecke%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24434106" M. and his colleagues [12] found that if the amount of alcohol consumed is reduced by 12 g

of pure alcohol a day (one drink, one unit), the risk of death decreases 1.5 times (according to the results of RoereckeHYPERLINK "https://www.ncbi.nlm.nih.gov/pubmed/?term=Roerecke%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24434106" M., from 180 cases per 100,000 population to 120 cases per 100, 000 population a year). If the amount of alcohol consumed is reduced by 24 g of pure alcohol (two units), then the risk of death is almost halved (from 180 cases per 100, 000 population up to 95 cases per 100, 000 population a year).

Treatment of patients who drink alcohol hazardously usually includes medication therapy and psychosocial interventions. Evidence of the effectiveness of psychosocial interventions, such as motivational interviewing, was obtained [13]. Motivational interviewing described by Miller and Rollnick [14] is based on cognitive dissonance theories and is aimed at motivating people to reduce (or quit) alcohol consumption. The traditional authoritarian approach to a patient with alcohol addiction usually causes them to resist and argue against sobriety, thus reinforcing on-going alcoholization. Motivational interviewing encourages people to find a good reason to change their alcohol behaviour themselves. In 2008-2009, Izhevsk State Medical Academy and London School of Hygiene & Tropical Medicine conducted a joint study in Izhevsk on the effectiveness of motivational interviewing [15]. Researchers found that short-term motivational interviewing may be advantageous in Russia.

Conclusion

To sum up, the study findings indicate high prevalence of hazardous alcohol drinking in the sample and, accordingly, an increased risk of death in this category of patients. The study findings present the problem not only at the level of the studied hospital, but also at the level of the general population of somatic patients in the whole city. This can contribute to the purposeful development and implementation of practical recommendations for detection, treatment and prevention of alcohol use disorders in patients of general hospitals.

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