

ANALYSIS OF CLINICAL CHARACTERISTICS OF NON-MEDICAL USE OF TROPICAMIDE BY DRUG ADDICTS IN THE REPUBLIC OF KAZAKHSTAN

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Abstract

The article presents data on the issue of non-medical use of tropicamide in the Republic of Kazakhstan. The authors analysed the clinical characteristics of the polydrug abuse as a result of combined use of opioids and tropicamide by sampling drug addicts seeking narcological aid. Results indicate malignant state of substance addiction associated with the underlying opioid addiction.

Keywords: Tropicamide, polydrug abuse, opiates

Introduction

Currently the Republic of Kazakhstan faces a steady growth in chemical addictions as a result of increased circulation of traditional drugs and the emergence of new psychoactive substances.

Since November 2013 the government has been actively focusing on the over-the-counter drug problem, taking a number of measures to restrict the distribution of psychotropic medications. Such medications include pharmaceutical forms that contain desomorphine, codeine, ephedrine and cyclopentolate.

To prepare most of the over-the-counter drugs, a drug addict would have to perform a number of interim chemical reactions at home, which requires the use of certain precursors.³³ This fact to some degree deters the expansion of desomorphine, codeine and ephedrine abuse in our country. Cyclopentolate (tropicamide), unlike other medications, is a solution for ocular administration and therefore can be used by addicts without any preliminary treatment. Furthermore, tropicamide is often used in combination with such traditional drugs as the opioids (heroin), effectively offsetting negative vegetative effects of the latter.³⁴

Over the three quarters of the year 2013, retail sales of tropicamide in the Republic of Kazakhstan increased 226 per cent in the amount of units sold and 216 per cent in monetary terms, compared to the same period of 2012.³⁵ These figures leave us wondering about the real growth in the popularity of this medication among drug addicts in our country.

³³ Shibanova, N. I. (2006). On some issues of the use of narcotic or potent substances based on the results of intoxication evaluations. *Narcology*, 6, 53-56.

³⁴ Mokhnatchov, S.O., Rokhlina, M.L., Usmanova, N.N. (2012). Clinical manifestations of tropicamide abuse. *Narcology*, 2, 44-50.

³⁵ Monitoring of retail sales of eye-drop medications in the Republic of Kazakhstan
http://viortis.kz/files/35_roznica_ls_1_20

At the same time, no official statistical monitoring of the extent of non-medical use of tropicamide is being done. Furthermore, there is scarcity of research on this subject matter.³⁶

The purpose of our research consisted in the analysis of the extent, as well as the study of characteristics of non-medical use of the tropicamide medication by drug addicts seeking narcological medical aid.

Materials and Methods

By design, this research can be described as an observational and cross-section study.

The research subjects were drug addicts with polydrug addiction to opioids and tropicamide, who underwent the inpatient course of treatment at the Republican Scientific and Practical Centre for Medical and Social Problems of Drug Addiction during the period between October 2013 through September 2014.

The sample was formed retrospectively and continuously. The inclusion criterion was the diagnosis of combined (polydrug) addiction to several psychoactive substances pursuant to ICD-10 F19.2, with one of the psychoactive substances being tropicamide. The research excluded under-age persons, persons with associated mental disorders or decompensated somatic pathologies. The selection formed using the criteria above consisted of 118 persons. Prevalence of tropicamide addiction among patients receiving care during the study period was 23.9%.

The study utilised patient history data, as well as the objective status and dynamic characteristics of the study group's patients' condition, gathered from the medical records (inpatient and outpatient card). The study employed the sociological, clinical psychological and statistical research methods.

Results of the research

Men formed the largest part of the study group: 99 persons (83.9%). Average age of the group was 29.1±6.4 years, with youngest age being 18, and the oldest — 41. Table 1 presents the age distribution of the group. All group members were of socially active age. Majority of the group members were married (official or civil marriage) — 67 persons (56.8%) and had the immediate microsocial environment — 90 persons (76.3%). 38 persons (32.2%) were unemployed, with only 23 persons (19.5%) had a regular job.

Table 1. Social and demographic indicators of the study group

	Study group (n=118)	
	Absolute Amount	Percentage
Age range		
18–24	31	26.3%
25–35	64	54.2%
Over 35	23	19.5%
Marital status		
single	31	26.3%
married	44	37.3%
civil marriage	23	19.5%
divorced	20	16.9%
Closest circle		
parents	32	27.1%
family	46	39%
relatives	10	8.5%
friends	2	1.7%
unaided living	28	23.7%

³⁶ Zabransky, T. ed. (2012). *National Report on the Drug Situation in the Republic of Kazakhstan for 2012 (Drug Situation 2011)*. Astana/Prague: Republican Scientific and Practical Centre for Medical and Social Problems of Drug Addiction, CADAP, 114.

Employment		
regular employment	23	19.5%
temporary job	52	44.1%
unemployment	38	32.2%
education	5	4.2%

Hereditary burden of chemical addictions and psychiatric disorders is presented in Diagram 1. It was established that the group presents almost evenly with hereditary burden of both chemical addictions and psychiatric disorders (schizophrenia, manic depressive psychosis, adaptation disorders).

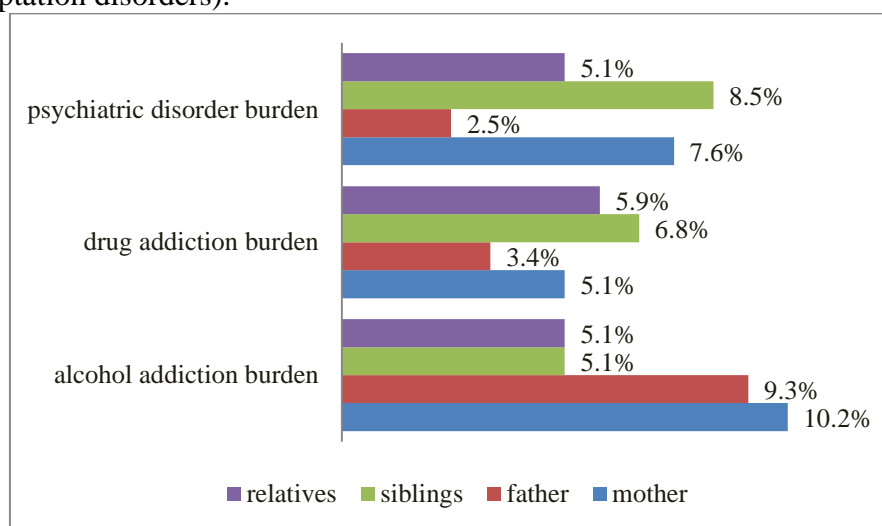


Diagram 1. Hereditary Burden in Study Group Patients (n=118)

Average length of tropicamide abuse in the study group amounted to 3.47 ± 2.1 years, in the 1–9 year range.

Along with tropicamide abuse, 17 persons (14.4%) were addicted to natural opium, 92 persons (78%) — addicted to heroin, and 9 persons (7.6%) — to synthetic opiates (tramadol, desomorphine).

The following reasons were given for the first use of tropicamide: search for new sensations — 23 persons (19.5%), submissive motive (peer pressure) — 44 persons (37.3%), to compensate for the shortage of opiates — 51 persons (43.2%).

As factors contributing to systematic tropicamide use after the first tries the following were named: general over-the-counter availability — 39 persons (33.1%); cheap price when compared to traditional drugs — 51 persons (43.2%); more pleasant experience — 28 persons (23.7%).

In all cases tropicamide addiction was of secondary nature and complicated the primary opioid addiction. Length of polydrug abuse of the primary drug and tropicamide averaged at 22.7 ± 11.3 months. Etiopathogenesis of the polydrug addiction was of the substitution variety (to compensate for the lack of the primary drug) in 52 cases (44.1%), corrective variety (for attenuation of unwanted side effects of the primary drug) in 47 cases (39.8%) and of true variety (a prominent tropicamide addiction competing with the primary drug addiction) in 19 cases (16.1%).

All subjects administered both the primary drugs and tropicamide intravenously, on average 2-3 times per day. Drug doses were significantly higher than the maximum therapeutic doses — on average by 6.4 ± 3.2 ml per day. Maximum daily dosage reached 14.9 ± 5.9 ml.

Clinical course of tropicamide addiction was characterised by quick rate of onset of psychopathological symptoms. Psychological dependence in subjects developed within

9.1±3.8 weeks; regular use — at 12.1±4.1 weeks, and physical dependence developed within 14.7±4.4 weeks. Tropicamide abstinence lengths were shorter than those of opioids (7.5±4.7 and 8.5±6.9 months respectively).

Clinical complications resulting from tropicamide abuse were registered in 53 cases (44.9%): intoxicational psychosis in Hx — 19 subjects (16.1%); post-injection purulent complications of the soft tissues in Hx — 7 subjects (5.9%); cardiovascular toxicity — 11 subjects (20.8%); nervous system involvement — 21 subjects (39.6%).

Discussion of Results

The study revealed that the non-medical use of tropicamide is secondary to the opioid dependence. This fact correlates with previous research on pathomorphism of opioid addiction in the post-Soviet bloc.^{37,38} Tropicamide use among drug addicts in Kazakhstan is most commonly caused by the need to substitute the narcotic effect of heroin, inflow of which has been limited by the state anti-drug campaigns. Upsurge of "popularity" of this medication can be explained by the insufficiently effective measures toward treatment and rehabilitation of opioid dependence and constitutes its complication.

Clinical characteristics of tropicamide addiction revealed in this study are indicative of the malignant course of the addiction (high speed of addiction syndrome development, pronounced toxicity and high rate of complications). Also notable is the fact that tropicamide dependence is prevalent among persons of active social age with a developed immediate social circle, which can further contribute to popularisation of this substance. Analysis of the motivation behind trying such medications for the first time speaks to the necessity of strengthening measures to restrict the drug-store distribution of a number of medications through.

Conclusion

Study of the issue of non-medical use of medications like tropicamide remains a highly relevant topic for the addiction science of the Republic of Kazakhstan. Much needed is thorough clinical research which would allow identification of the targets for therapeutic interventions and development of medical and social rehabilitation programmes for the corresponding group of addicted individuals.

References:

- Shibanova, N. I. (2006). On some issues of the use of narcotic or potent substances based on the results of intoxication evaluations. *Narcology*, 6, 53-56.
- Mokhnatchov, S.O., Rokhlina, M.L., Usmanova, N.N. (2012). Clinical manifestations of tropicamide abuse. *Narcology*, 2, 44-50.
- Monitoring of retail sales of eye-drop medications in the Republic of Kazakhstan http://viortis.kz/files/35_roznica_ls_1_20
- Zabransky, T. ed. (2012). *National Report on the Drug Situation in the Republic of Kazakhstan for 2012 (Drug Situation 2011)*. Astana/Prague: Republican Scientific and Practical Centre for Medical and Social Problems of Drug Addiction, CADAP, 114.
- Mokhnatchov, S.O., Rokhlina, M.L., Usmanova, N.N. (2010). On abuse of cyclopentolate (cyclomed). *Narcology*, 10, 40-44.
- Tumilovich, Ye.Yu (2011). On the issue of non-medical tropicamide use in Perm region. *Meditinskaya ekspertiza i pravo*, 1, 17-19.

³⁷ Mokhnatchov, S.O., Rokhlina, M.L., Usmanova, N.N. (2010). On abuse of cyclopentolate (cyclomed). *Narcology*, 10, 40-44.

³⁸ Tumilovich, Ye.Yu. (2011). On the issue of non-medical tropicamide use in Perm region. *Meditinskaya ekspertiza i pravo*, 1, 17-19.