A Complex of Risk Factors for Developing Dependence on the Combined Abuse of Hashish and Tramadol

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Abstract

Introduction: The study of a set of risk factors for a social-premorbid narcological personality dependent on the combined abuse of hash and tramadol.

Materials and Method: 129 male patients were examined, which were divided into three groups. Group I (main) -41% of patients (n = 53) with a combined abuse of hashish and tramadol, Group II (1 control) -34% of patients (n = 44) with addiction from opiates abusing tramadol without a doctor's prescription, group III (2 control) - 24.8% of patients (n = 32) with a cannabis addiction F12.2. The influence of biological, socio-psychological and personality risk factors on the development of the formation of premorbid-social narcological personality was analyzed. To identify the strength of the relationship between exposure to the factor and the disease, the relative risk (RR) was calculated.

Results: An analysis showed a combination of factors of involvement in psychoactive substances: the presence of a family history of hereditary alcoholism and drug addiction in relatives of -62.3% ($P < 0.001$ and $P < 0.001$), transferred craniocerebral loss of consciousness injuries-39.6% ($P < 0.05$), inferior family-73.6% ($P < 0.01$; $P < 0.01$), single child-50.9% ($P < 0, 05$; $P < 0.05$) or senior - 41.5% ($P < 0.05$), unstable personality type - 50.9% ($p < 0.05$, $p < 0.001$).

Conclusion: The analysis of premorbid-social indicators revealed a relative risk of the formation of a narcological personality and thereby determined a new set of factors for which an algorithm of primary prevention measures was developed.

Keywords: *Concomitant abuse, cannabis, tramadol, risk factors.*

Introduction

According to the latest World Drug Report, in 2017 year approximately 271 million people, or 5.5% of the world's 15–64-year-old population, used drugs, and 35 million people suffer from drug-related disorders. Cannabis continues to be the most widely used drug in the world. A drug use survey showed that 4.7% of the population aged 15–64 years old used prescription opioids for non-medical purposes, with tramadol undoubtedly the most common in terms of opioid abuse. The proportion of patients with codependence is growing.[1] Mental and behavioral disorders caused by the simultaneous use of several psychoactive substances become an extremely relevant and rapidly growing problem in adolescence. Adolescents who use psychoactive substances are a high-risk group for the simultaneous administration of several psychoactive substances, in which use becomes abuse and often addiction. [2]

According to the narcological service of the Ministry of Health of the Republic of Uzbekistan over the past 10 years in the republic there has been a positive trend in the development of the narcological situation by its main indicators. However, the use of pharmaceutical opioids has increased. The Government Decree broadened the lists of prohibited and restricted in circulation narcotic drugs, psychotropic substances and their precursors

(substances used for the manufacture of drugs). In particular, Tramadol was included in list No. 2. [3] Today in Uzbekistan there is a tendency to a combination of abuse of cannabis and tramadol, tramadol and lyrics, tramadol and sedatives. Polydrug abuse is a debatable issue in narcology. Various types of interaction of psychoactive substances with their joint use are described. In foreign and domestic scientific reports, dissertations, the problem of epidemiology, the clinical features of intoxication and withdrawal syndrome, the medical and social consequences of the combined use of psychoactive substances, the aspects related to the study of risk factors, the features of the formation and patterns of development of multidrug are not covered enough.

The risk of formation of addictive behavior is the result of multifactorial interaction, where each of the factors or combination forms a dependence. [4,5] Prerogative risk factors include perinatal pathology, hereditary burden of substance abuse and mental illness, history of craniocerebral trauma, premorbid personality deviations, incomplete family composition, types of education, asocial microenvironment, early onset of use of psychoactive substances.[6,7,8] Separately distinguished as an effective factor is the composition and quality of the social environment.[9] Personality traits are an intermediate phenotype that mediates the development of various psychopathologies, including the development of dependence on psychoactive substances. Psychological trauma, stress at an early age increases the risk of developing a dependence on psychoactive substances.[10,11] Some authors say that for each type of psychoactive substance there are dominant risk factors for the development of addiction.[12] Although most studies have shown a high degree of association between cannabis use and the use of other illicit drugs, the predictors of the transition from cannabis to other illegal drugs remain largely unknown.[13] In the framework of the biopsychosocial model, the formation of a disease requires a combination of three groups of individual factors (domains): biological, personal and social. All domains are important for the onset, development and maintenance of the disease, are closely interrelated and cannot be considered separately.[14]

The study of risk factors for the development of addiction allows for primary prevention, already at the primary link. Knowledge of biopsychosocial factors allows you to choose the right prevention strategy for both primary and secondary.[15]

The aim of our study was to study a set of risk factors for a socially premorbid narcological personality, which is dependent on the combined abuse of hash and tramadol.

Materials and Method

A clinical study was conducted among 129 patients who were treated for drug addiction in the City Narcological Dispensary and the Republican Narcological Center from 2016 to 2018. All male patients, aged 21 to 45 years. The examination was carried out using clinical, psychopathological and anamnestic method with filling in a specially developed patient map, indicating the clinical and dynamic characteristics of the disease, biological, social and individual psychological risk factors. All patients were divided into 3 groups. Group I (the main group) included 41% of patients (n = 53) with a diagnosis of F19.2 - combined abuse of hash and tramadol, group II (control group) -34% of patients (n = 44) with a diagnosis of F11.2, patients with opiate dependence, abusing tramadol without a doctor's prescription in order to achieve euphoria, who did not consume other opiates before taking tramadol. Patients with addiction to opiates who abused tramadol for economic reasons (high cost of psychoactive substances) or other reasons (difficulty in access to psychoactive substances, conflict with the law, and fear of being detained) were excluded. Group III (control) included 24.8% of patients (n = 32) with a diagnosis of hash addiction F12.2. In all three groups, the second stage of the disease was diagnosed. The duration of the disease in the examined ranged from two to five years. Criteria for exclusion from the study were comorbid mental pathology, dependence on other types of psychoactive substances.

The results obtained in the study were evaluated using the statistical program R-studio. In order to establish the statistical significance of differences between groups of qualitative characteristics, we used the contingency table using the Pearson $\chi 2$ criterion. To identify the strength of the relationship between exposure to the factor and the disease, the relative risk (RR) was calculated. If RR = 1, then there is no connection between the factor and the disease. For RR> 1, it shows a direct connection, and for RR <1, reverse connection. Differences were considered statistically significant at $P < 0.05$.

Results

The average age in the three studied groups at the time of admission to the medical institution corresponded to the first period of adulthood - 21-35 years. Patients with a combined dependence on hashish and tramadol occupied a median position of 31.2±1.89 years. A younger age is the prerogative of tramadol dependence - 28.1±1.61 years. Hashish addiction amounted to - 32.0±2.59 years.

When studying the narcological history of patients, it was found that the formation of the syndrome of dependence on combined abuse of hashish and tramadol corresponds to the general principles of the formation of dependence (Table 1).

Table 1: The main clinical and dynamic indicators of the formation of the syndrome of dependence on the combined abuse of hash and tramadol.

Indicator	I group (n=53)		II group (n=44)		III group (n=32)	
	Abs	%	Abs	%	Abs	%
Age of the first intake of hashish (years)	18,2±0,59		15,5±0,59**		16,09±0,60*	
Duration of episodic use (month)	3,69±0,28		2,5±0,19***		3,7±0,31^^^	
Duration of systematic use before withdrawal syndrome (years)	2,47±0,19		2,2±0,18		2,7±0,26	
Average dose of psychoactive substances consumed per day	1-2 cigarettes - 5-6 tramadol tablets		20-25 Tablets of tramadol		2 cigarettes	

Note: * - Differences regarding the data of group I are significant (* - P <0.05, *** - P <0.001); ^ - differences relative to the data of group II are significant (^^^ - P <0.001).

Discussion

The formation of dependence on the combined abuse of hash and tramadol began with the consumption of cannabinoids and the subsequent accession of opioids, in particular tramadol. They began to use them earlier by about 18-22 months compared with the start of the use of tramadol. The duration of episodic administration depended on the prevailing effect in the state of intoxication of the first hash samples. If the first samples were characterized by a subjectively pleasant experience of euphoria, then the duration of episodic administration did not exceed 3 months. With the development of unpleasant sensations associated with general intoxication disorders, the episodic stage increased on average to 4 months. The episodic stage was of a group nature with the transition to a systematic reception in solitude. The prevailing motives for the transition to polinarcotism were ataractic - 39.6% and submissive - 22.6%. Not worn in character.

Biological Factors: When comparing biological factors in the main group and control groups, a number of statistically significant differences were revealed. The presence of alcoholism and drug addiction among relatives was significantly more common in the main group - 62.3% (P <0.001 and P <0.001), which is an important risk factor for the development of dependence on psychoactive substances. The quantitative characteristic of hereditary burden-degree, [16] which was analyzed by the number of relatives with addiction, determined a "high" degree of hereditary burden in the group with combined abuse of 35.8% (P <0.01 and P <0.01), for no indicator of an "average" degree of hereditary burden in the studied groups revealed significant differences (P> 0.05). The prevalence of traumatic brain injury with loss of consciousness in the main group (39.6%) than in the control groups (P <0.05), which can play the role of a pathoplastic factor, is noteworthy. In pathologies from other systems, no differences were found (P> 0.05).

Socio-psychological factors: It all starts with the family, a small social group that performs a set of functions, where such functions as emotional, educational and spiritual and moral often fall out. The vast majority of the studied in group I - 73.6% (P <0.001; P <0.001) were brought up in single-parent families. Guardianship was not a significant factor among the subjects (P> 0.05).

Table 2: The frequency of occurrence of clinical and biological risk factors for the formation of a narcological personality in the studied groups

Clinical and biological risk factors		I Group(n=53)		II group (n=44)		III group (n=32)		R_1	R_2
		Abs.	%	Abs.	%	Abs.	%		
One parent's alcoholism		17	32,1	16	36,4	12	37,5	0,88	0,86
Alcoholism in 2 parents		7	13,2	8	18,2	5	15,6	0,73	0,85
Alcoholism and drug addiction in relatives		33	62,3***^^^	12	27,3	7	21,9	2,28	2,85
Mental illness in relatives		3	5,7	5	11,4	3	9,4	0,50	0,60
The degree of hereditary burden in the family	Addiction in father	8	15,1	4	9,1	4	12,5	1,66	1,21
	Addiction in 2 x-3 relatives	19	35,8**^^	4	9,1	3	9,4	3,94	3,82
Incidence of upper respiratory tract diseases		8	15,1^	7	15,9	11	34,4	0,95	0,44
Traumatic brain injury with loss of consciousness		21	39,6*^	9	20,4	5	15,6	1,94	2,54
Hepatitis		5	9,4	6	13,6	4	12,5	0,69	0,75
Neurotic disorders		12	22,6	11	25,0	9	28,1	0,91	0,81
Chronic gastritis		7	13,2	12	27,3	4	12,5	0,48	1,06
HIV infection		2	3,8	3	6,8	0	0	0,55	

Note: * - Differences relative to group II data are significant (* - P <0.05, ** - P <0.01, *** - P <0.001); * - differences regarding group III data are significant (^ - P <0.05, ^^ - P <0.01, ^^^ - P <0.001)

Intra-family relations give an important role in the development of a person who is prone to drug addiction in the future. Intra-family relations are the first instance of interaction with society. When studying the role of the family (Table 3), it was found that the predominant type of upbringing in the first group was the dominant hyperprotection - 60.3% (P <0.001; P <0.001), in the second group, the concurrent hyperprotection was 38.6% (P <0, 05), and in group III, hypoprotection is 43.7% (P <0.01). The vast majority of all studied (52.7%) noted an unfavorable psychological climate in the family, with a lack of understanding of each other. Family relationships could be affected by the birth order of the child in the family. So, those examined in the main group were more often the only sons - 50.9% (P <0.05; P <0.05) or the eldest in the family - 41.5% (P <0.05), and for groups I and II it was common to be the middle or youngest child - 52.3% (P <0.001) and 53.1% (P <0.001).

Table 3: The role of the family in the development of the pre-narcotic personality of the studied groups

Family Relationship Factors		I group (n=53)		II group (n=44)		III group (n=32)		R_1	R_2
		Abs	%	Abs.	%	Abs.	%		
Type of parenting	Hypoprotection	7	13,2^^	10	22,7	14	43,7	0,58	0,30
	Dominant Hyperprotection	32	60,3***^^^	11	25,0	7	21,9	2,42	2,76
	Indulgent hyperprotection	9	16,9*	17	38,6	5	15,6	0,44	1,09
	Emotional rejection	2	3,8	4	9,1	4	12,5	0,42	0,30
	Cruel relationship	2	3,8	2	4,5	0	0	0,83	
	Increased moral responsibility	1	1,9	0	0	2	6,2		0,30
Family Birth Order	The only son	27	50,9*^	12	27,3	8	25	1,87	2,04
	Older child	22	41,5*	9	20,4	7	21,9	2,03	1,90
	Middle or junior	4	7,5***^^^	23	52,3	17	53,1	0,14	0,14

Note: * - Differences regarding the data of control group 11.2 are significant (* - P <0.05, *** - P <0.001); ^ - differences regarding the data of the control group 12.2 are significant (^ - P <0.05, ^^ - P <0.01, ^^^ - P <0.001)

The data suggest that the microsocial conditions considered could influence the formation of the pre-narotic personality.

The result of the study of the level of education among patients did not significantly differ (p> 0.05) (Table 4). A characteristic field of activity was revealed for the main group, which is represented by trade and sales of 43.4% (P <0.05) and for group II, marketing and advertising in 36.4% (P <0.01), and characteristic for group III labor activity is not identified.

Table 4: Distribution of subjects by level of education and labor activities in the study groups

Figures		I group (n=53)		II group (n=44)		III group (n=32)		R_1	R_2
		Abs	%	Abs.	%	Abs.	%		
Level of education	Secondary education	20	37,7	21	47,7	12	37,5	0,79	0,91
	Specialized secondary education	25	47,2	15	34,1	13	40,6	1,38	1,07
	Incomplete higher and higher	8	15,1	8	18,2	7	21,9	0,83	0,60
Type of activity	Transport and logistics	18	34	11	25,0	13	40,6	1,36	0,84
	Trade and sale	23	43,4*	9	20,4	9	28,1	2,12	1,54
	Marketing and advertising	7	13,2**	16	36,4	7	21,9	0,36	0,60
	State service	3	5,7	1	2,3	3	9,4	2,49	0,60
	Education	2	3,8^	7	16	0	0	0,24	
Total		**53**	**100**	**44**	**100**	**32**	**100**		

Note: * - Differences relative to group II data are significant (* - P <0.05, ** - P <0.01); ^ - differences relative to group III data are insignificant (P> 0.05)

When studying family status, it was determined that patients with cannabis addiction were significantly more likely to be divorced - 37.5% (P <0.05).

When studying personality factors, the personality type was considered (Table 5). Patients with a combined dependence of 50.9% (p <0.05, p <0.001) were characterized by an unstable type, with a pronounced craving for entertainment and with the desire to remain without mother's control, with a tramadol dependence - hysterical 22.7% (P <0, 05), and for hash-epileptoid personality type - 31.5% (p <0.01).

Table 5: The distribution of subjects by type of personality

Personality type	I group (n=53)		II group (n=44)		III group (n=32)		R_1	R_2
	abs	%	abs	%	abs	%		
Asthenic	1	1,9	0	0	3	9,4	1,66	0,20
Psychasthenic	6	11,3	3	6,8	7	21,8	0,00	0,52
Schizoid	0	0	1	2,3	0	0	1,25	
Cycloid	3	5,7	2	4,5	1	3,1	0,33	1,81
Epileptoid	2	3,8^^^	5	11,4	10	31,5	0,33	0,12
Hysterical	4	7,5*	10	22,7	3	9,4	1,72	0,81
Unstable	27	50,9*^^^	13	29,5	4	12,5	0,00	4,08
Paranoid	0	0	1	2,3	0	0	0,92	
Insensitive	10	18,9	9	20,4	4	12,5	1,66	1,51

Note: * Differences regarding the data of control group 11.2 are significant (* - P <0.05); ^ - differences relative to the data of the control group 12.2 are insignificant (^^^ - P <0.001)

Conclusion

A correlation analysis of the influence of risk factors for initiation of combined abuse of hashish and tramadol, which lead to the formation of a socially premorbid narcological personality among the studied groups, allows us to conclude that patients with a combined pathology of the cannabinoid group and tramadol have a large history of hereditary burden of alcoholism and drug addiction in relatives with a "high" degree, the presence of hereditary burden in parents does not affect the formation of drug addiction oh personality. Craniocerebral trauma with loss of consciousness is directly related to poly-narcotism. Addiction syndrome was consistent with the general principles of addiction, but they started using cannabis later than other patients. The analysis showed that excessive control of parents over their attempts to do something, limitation of activity, independence, abuse of fault, and not an explanation lead to psychological strangulation. Moreover, the children were the eldest or only child. The dominant hyperprotection was explained by the family climate and family inferiority, which led to the development of an unstable personality type in patients with combined dependence. All these factors are interrelated and thereby create a complex of risk factors predisposing to the formation of a combined dependence on the cannabinoid group and tramadol.

The selected complex of risk factors allows us to develop an algorithm for primary prevention of identifying and deactivating risk factors, on the principle of the relationship between teachers of an educational institution, general practitioners and a narcological dispensary, law enforcement agencies, neighborhood gatherings and youth movements.

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