International Journal of Pharmaceutical Science and Research
ISSN: 2455-4685
Impact Factor: RJIF 5.28
www.pharmacyjournal.net
Volume 3; Issue 3; July 2018; Page No. 22-25

Forensic and pharmaceutical analysis of addictive morbidity because of the use of narcotic psychoactive substances in Ukraine (retrospective aspect)

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Abstract
The article presents the results of the forensic and pharmaceutical analysis of the addictive morbidity in Ukraine for the period of 2005-2008 on example of narcotic psychoactive substances. Given out four codes of the International Classification of Diseases of the 10th revision, which correspond to addictive morbidity because of the use of narcotic drugs: F11 – opioid incidence; F12 – cannabinoid morbidity; F14 – cocaine incidence and F19 – polydrug addiction. Presented the indicators of the listed types of addictive morbidity in Ukraine (per 100 thousand population) in a retrospective aspect.

Keywords: forensic pharmacy, psychoactive substances, addictive morbidity, classification and legal groups, narcotic psychoactive substances

Introduction
In modern conditions among the population, irrational use and abuse by psychoactive substances of various classification and legal groups is widespread.
To study the causes and conditions that contribute to substance of abuse by the psychoactive substances and the occurrence of offenses necessary to create appropriate structures capable to help identify mechanisms for solving problems, improving regulations, finding innovative approaches in the pharmacotherapy of behavioral disorders (addiction, alcoholism, HIV/AIDS, tuberculosis, cancer, neuropsychiatric and other disorders of health) of the specific group of patients (heroin addiction, opium addiction, cannabinoid addiction, tramadol addiction, cocaine addiction etc.). Forensic pharmacy is a component of pharmaceutical law that studies the causes and conditions that may cause offenses in the pharmaceutical and medical sector of healthcare of Ukraine, studies illegal circulation of various nomenclature and classification of legal and regulatory groups of medicines to their prevention. The permanent or non-permanent use of psychoactive substances unavoidable results in the origin of psychical and physical dependence the consequences of which there are addictive health disorders of conduct and psychical of persons. In the abuse by psychoactive drugs in different patients' contingents. The destructive action of psychoactive substances results in irreversible changes in the systems and organs of organism. Many displays of deviant behavior observed among a sick population in which physical and psychical dependence expressly formed already. To the most widespread psychoactive substances which purchased wide distribution there is an alcohol. Psychical disorders for persons that practice upon psychoactive substances result in degradation of personality and draw worsening of demographic situation on state levels [1-8].
In addition, there were forensic and pharmaceutical researches concerning the scientific justification and the development of measures to strengthen state control over the circulation of drugs with psychoactive properties to improving pharmaceutical legislation and implementation of socially oriented approaches to the pharmaceutical correction of the drug-addicted patients based on forensic pharmacy. The results of the forensic and pharmaceutical studies on the effects of violations of psychoactive substances circulation and irrational use of psychoactive drugs proved growth in countryside of the crossing to some illicit drugs (lexon, spazmoleks, kodofemol, pentalhin-B, cyto-deyin) [9].
The purpose of the work was to conduct a forensic and pharmaceutical analysis of the addictive incidence because of the use of psychoactive substances in Ukraine on the example of the classification and legal group "narcotic drugs" in a retrospective aspect.
Materials and research methods. The experimental data of the forensic and pharmaceutical practice, the regulatory basis for the circulation of the psychoactive substances of various clinical, pharmacological, classification, legal and nomenclatural groups in Ukraine for the period of 2005 - 2008 used as research materials. During the research used legal and regulatory, documentary, retrospective, comparative, forensic and pharmaceutical analysis methods.
Results of research and their discussion. Forensic pharmacy accompanies every citizen in everyday life, because by the direction of "forensic pharmacy" the pharmaceutical law department has published over 1000 articles, monographs,

scientific guidance, patents Ukraine, abstracts. Abroad direction "forensic pharmacy" is developed, designed numerous books and textbooks [10, 11]. It is necessarily to note the importance of the forensic and pharmaceutical researches concerning the development of preventive and prophylactic measures in counteraction of abuse of especially dangerous narcotic drugs using the forensic and pharmaceutical researches in conception of national safety of Ukraine. Within the framework of the forensic and pharmaceutical monitoring the features of offences, related to the illegal appeal of especially dangerous narcotic drugs on the example of plants of kind a poppy is somnolent (poppy straw) are investigational, plants of family hemps (cannabis, marijuana), opium, heroin. The forensic and pharmaceutical estimation of psychoactive medications which are used in criminal aims with the purpose of making of especially dangerous narcotic drugs is given. Investigational mode of control of tranquilizers of somnolent and calming action, that enabled to develop protected the patent of Ukraine method of pharmaceutical correction of patients with opium addiction. The results of the conducted researches as improvement measures of state control and instructional methodical documents on counteraction of illegal appeal of especially dangerous narcotic drugs are inculcated in activity of medicinal and pharmaceutical, law and enforcement structures and instrumental in the increase of national safety of Ukraine [12]. In the resolution Ukrainian scientific-practical conference with international participation "Dovzhenkivsky chytannya": resocialization and rehabilitation of people with the condition dependence of different origin "noted the need to improve judicial pharmacy in conducting scientific, theoretical and applied and basic research in the public system response anesthesia all segments of the population, and in the fight against the youth using drugs with psychoactive properties and is used to modify the illicit circulation in Ukraine of the especially dangerous narcotic drugs particularly hazardous [13]. According to the International Classification of Diseases of the 10th revision (ICD-10), addictive morbidity included to section F1 "Mental and behavioral disorders due to the use of psychoactive substances" [14]. A study of the addictive incidence rate registered in Ukraine because of the use of psychoactive substances for the period of 2005-2008 (Fig. 1) indicates an increase of 6% from 134.49 in 2005 to 143.14 in 2008, which is a factor of deterioration of the state of mental health of the population.

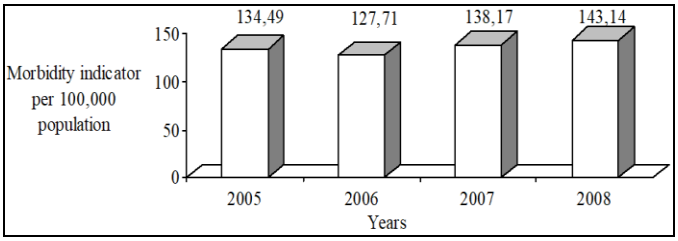

Fig 1: Registered addictive morbidity from psychoactive substances in Ukraine for 2005–2008 (per 100,000 population)

The forensic and pharmaceutical analysis of the addictive incidence in Ukraine (per 100,000 population) because of the use of psychoactive substances carried out for the period of 2005-2008 on example of indicators of morbidity from psychoactive substances from classification and legal group "narcotic drugs".

The most commonly encountered narcotic drugs in forensic and pharmaceutical practice include poppy straw, omnopon, morphine, promedol, tramadol, heroin, marijuana, hashish, cocaine, included to the lists of the Resolution of the Cabinet of Ministers of Ukraine No. 770 of May 06, 2000 "On approval of the list of narcotic drugs, psychotropic substances and precursors". The characteristics of these psychoactive substances according to the ICD-10 given in Table 1.

Table 1: Characteristics of psychoactive substances from the classification and legal group "narcotic drugs" in accordance with the ICD-10

Example of psychoactive substance from classification and legal group narcotic drugs"	Type of addiction	ICD-10 code
Poppy straw, omnopon, morphine, promedol, heroin	opioid	F 11
Marijuana, hashish	cannabinoid	F 12
Cocaine	cocaine	F 14
Tramadol + heroin, Cocaine + Marijuana etc.	polydrugse	F 19

From Table 1 shown, that the addictive morbidity due to the use of narcotic drugs in ICD-10 is represented by four codes: F11 – opioid incidence; F12 – cannabinoid morbidity; F14 – cocaine incidence and F19 – polydrug use.

At the next stage of the study, quantitative indicators (per 100,000 population) of the types of addictive morbidity because of the use of narcotic psychoactive substances in Ukraine were collected, systematized and analyzed. Thus, the incidence of registered incidence as a result of the use of psychoactive substances – opioids (F11) shown on Fig. 2, which shows that opioid morbidity is reduced by 33% from 2005 from 9.98 to 6.69 (2008).

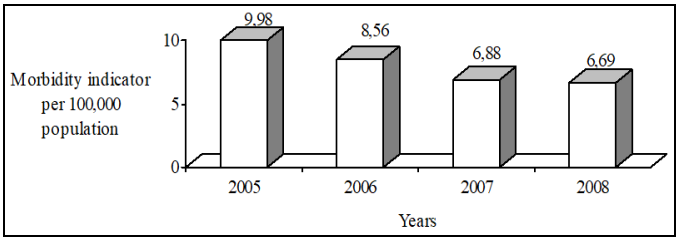

Fig 2: Registered opioid morbidity (F11) in Ukraine for 2005-2008 (per 100,000 population)

Need to note, that over the last decade the structure of addictive morbidity has changed significantly: a threefold decrease in the incidence of opioid addiction is accompanied by a more than twofold increase in the incidence of non-opioid narcotic and toxic drug addiction and polydrug use (combined use of several narcotic psychoactive substances, or narcotic psychoactive substances and psychoactive substances of other classifications and legal groups).

Indicators of the registered non-opioid incidence (narcotic and toxic addiction) in Ukraine for the period of 2005-2008 shown on Fig. 3, which shows that in 2008 the non-opioid incidence decreased by 4% compared to 2005 from 13.41 to 12.9 and increased by 14% compared to 2007.

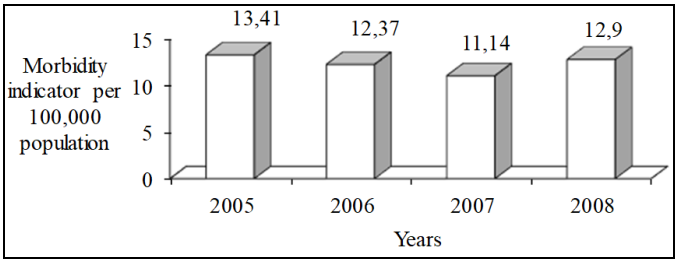

Fig 3: Registered non-opioid (narcotic and toxic addiction) in Ukraine for 2005–2008 (per 100,000 population)

In this period, the forensic and pharmaceutical monitoring of illegal consumption of psychoactive substances conducted among young people. The features of poly drug addiction studied among the youth environment. Control regime for psychoactive substances that are or can become abused among the youth environment were given [15]. On the next stage of forensic and pharmaceutical researches was established the tendency of increasing the number of underage consumers of psychoactive substances in different regions of Ukraine. Identified the main causes and symptoms of substance abuse among persons under 18 years of age. Investigated types of delinquency and provided them characteristic [16].

The greatest contribution to the overall incidence of non-opioid narcotic and toxic addiction is the morbidity caused by consumption of cannabinoids (F12). Analysis of registered cannabinoid morbidity in Ukraine for the period of 2005-2008 (per 100,000 population) indicates an increase of 21% from 1.26 in 2005 to 1.6 in 2008 (Fig. 4).

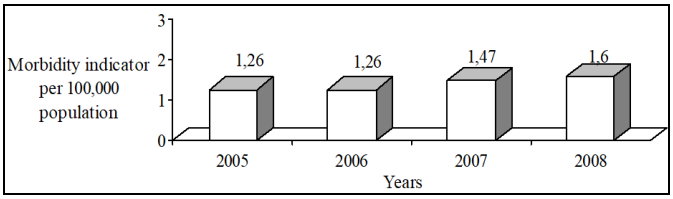

Fig 4: Registered cannabinoid morbidity (F12) in Ukraine for 2005–2008 (per 100,000 population)

Contribution of health disorders due to the use of psychoactive substance cocaine (F 14) in the overall incidence is significantly less than cannabinoids. Nevertheless, the analysis of cocaine morbidity in Ukraine (Fig. 5) indicates a slight increase in this indicator in 2008 by 0.01% compared to its zero value in 2005.

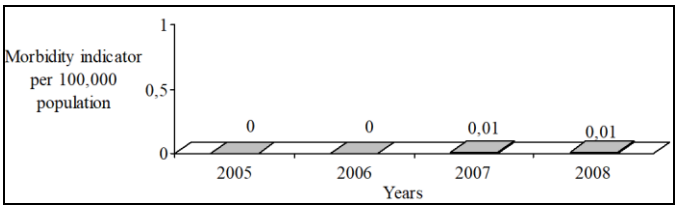

Fig 5: Registered cocaine morbidity (F14) in Ukraine for 2005-2008 (per 100,000 population)

Separately, need to note the morbidity because of the use of several psychoactive substances – polydrug use (F19). Indicators of registered polydrug use (F19) in Ukraine for the period of 2005-2008 shown on Fig. 6, which shows that since 2005 there has been an increase in the indicator of polydrug abuse in Ukraine by 35% from 2.14 in 2005 to 3.3 in 2008.

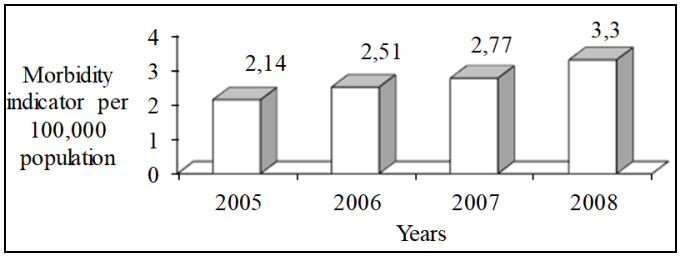

Fig 6: Registered polydrug use (F19) in Ukraine for 2005-2008 (per 100,000 population)

The growth of polydrug use at that time was due to attempts to transition patients with long-term addiction on opioids on less "heavy" psychoactive substances; attempts to transition from the injection form of psychoactive substances to tablets; large volumes of production and supply in the pharmaceutical market of psychoactive substance tramadol.

Research in the direction of "forensic pharmacy" at the Kharkiv medical academy of postgraduate education was established the pharmaceutical law board, which brings together such components as pharmaceutical law, medical law, forensic pharmacy, evidence-based pharmacy with national and universal significance within decisions and UN conventions, EU directives and international agreements of Ukraine.

Thus, presented the results of the forensic and pharmaceutical analysis of addictive morbidity because of the use of psychoactive substances in Ukraine on the example of narcotic drugs in a retrospective aspect.

Conclusions

During the forensic and pharmaceutical analysis of consequences of abuse by psychoactive substances on the territory of Ukraine in a period from 2005 to 2008 the following was established: 1) the addictive incidence of drug use in ICD-10 is represented by four codes: F11 – opioid morbidity; F12 – cannabinoid morbidity; F14 – cocaine incidence and F19 – polydrug use; 2) the structure of addictive morbidity has changed significantly over the past 15 years: a threefold decrease in the incidence of opioid addiction (F11) is associated with a more than twofold increase in the incidence of non-opioid narcotic and toxic addiction and polydrug abuse (F19); 3) cannabinoid morbidity makes the greatest contribution to the overall morbidity of non-opioid narcotic and toxic addiction (F12).

Analysis of the addictive incidence by psychoactive substances from classification and legal group "narcotic drugs" (F11, F12, F14, F19) registered in Ukraine for the period 2005-2008 showed that in 2008: a 33% decrease in the opioid incidence rate compared to 2005; an increase in the non-opioid incidence rate by 14% compared with 2007; an increase in the rates of cannabinoid and cocaine morbidity by 21% and 0.01% respectively, compared with 2005; an increase in the indicator of polydrug abuse by 35% compared with 2005.

Based on the conducted studies, further analysis of the indicators of addictive morbidity because of the use of psychoactive substances from classification and legal group psychotropic substances is of interest.

Acknowledgements
The research was conducted in accordance to the direction of science and research works "Forensic pharmacy, pharmaceutical legislation and evidence pharmacy" (state registration 0108U009172), «Improving of the organizational and legal procedure of provision with medicines for patients with positions of forensic pharmacy, organization and management of pharmacy" (state registration 0116U003137) of the Kharkiv medical academy of postgraduate education.

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