



Original communication

Determination of substance overdose in two Iranian centers: Comparison between opioids and non-opioids

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ABSTRACT

Recently, new trend toward non-opioid substances is observed in Iran. This is, therefore, to compare overdose of opioids and non-opioids origin. We performed this investigation to provide more detailed information so that preventive actions are taken in future. Over 18 month, 1876 individuals with opioid (opium, heroin, compact-heroin, buprenorphine and opiates) or non-opioid (MDMA (ecstasy), LSD, hashish and cocaine) overdose were selected. They have been compared regarding sex, age, reason of overdose, method of substance use, occupation, marital status, history of addiction in parents/siblings, duration of hospital admission and educational level. There were 1782 and 94 persons with opioid and non-opioid, respectively. Inhalation was the method of choice and women were found to have more tendencies to hallucinogens rather opioids. Moreover, use of non-opioids was observed more in individuals with university education and moreover in whom none of whose parents/siblings was addict. Policies should be planned by the governments to prevent further addictions especially to non-opioids.

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1. Introduction

Addiction is a mental, physical and social illness that affects family and friends of the addicted person and influences person's performance in social, economic and business activities. In 2011, United Nations reported that 2.26 percent of 70 millions Iranian populations have addiction of various kinds which is devastatingly the highest in the world.^{1,2} In recent half-decade, however, Iran has witnessed a remarkable increase in addiction to substances other than opioids accompanied by dramatic rise in overdose deaths as well as further psychiatric disorders.^{3,4} Furthermore, accidental or suicidal use as well as what observed in body packers have been noticed as the causes of death.⁵

In order to facilitate further serious attempts to be made by the government against overdose and intoxication, more thorough

understanding of addiction and its aspects such as substance category, age and sex distribution, method of use and socioeconomic state of the individuals is required.

As no recent study has been designed on the mentioned issues, we performed this investigation to provide more detailed information so that preventive actions are taken in future.

2. Materials and methods

After approval of the institutional board for ethics, over 18 months (September 2007–March 2009) and in emergency departments (EDs) of Baharloo Hospital (affiliated to Tehran University of Medical Sciences, Tehran, Iran) and Loghman Hakim Poison Hospital (affiliated to Shahid Beheshti University of Medical Sciences, Tehran, Iran) all cases who had detected to have acute substance overdose with all synthetic, semi-synthetic and natural substances comprising non-opioids (3,4-methylenedioxy-N-methylamphetamine (MDMA or ecstasy), N,N- diethyl-D-lysergamide (Lysergic acid diethylamide, LSD), hashish, cocaine and crystal) and opioids (opium, heroin, compact-heroin (called in Iran crack), buprenorphine and opiates) were considered for the study and

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overdose symptoms and signs including breathing depression, loss of consciousness, pin-point pupils and hallucinations were assessed. Persons for whom determination of substance was impossible were excluded. In case co-ingestion with sedatives and/or antidepressants and/or alcohol was observed, inclusion to the study was enrolled only if prominent symptoms of the person represent substance overdose.

Thereafter, each person and/or the companions were inquired about sex, marital status, age, educational level, occupation, substance used, reason of overdose (accidental, suicidal, additional or occupational), and method of use, duration of hospital stay and history of addiction in addiction in parents/siblings.

SPSS 12 software was used for analysis regarding the descriptive values.

3. Results

Total number of 1876 patients (1559 (83.1%) men and 317 (16.9%) women) with substance overdose have enrolled to the study. From this amount, 1782 cases had opioid overdose whereas only 94 cases had overdose with non-opioids (Table 1).

Furthermore, number of patients in each of “opioids and non-opioids” groups categorized regarding the nine factors considered for the study (sex, age, reason of overdose, method of use, occupation, marital status, history of addiction in parents/siblings, duration of hospital stay and educational level) is summarized in Table 2.

Most of the involved cases belong to age group of 20–29 years of age for both families of substances (34.6%). Moreover, patients have mostly intoxicated due to their daily and usual use of substance (93%) and most of them have used inhalation or snorting way (49%). In addition, substance overdose was observed more in singles (47.9%), persons with less educational level (45%) but not the illiterate ones and persons whose parents/siblings were not addict (50%).

4. Discussion

In this descriptive cross-sectional study we tried to investigate the status of addiction through focusing on cases with overdose. The studied factor were gender, age, reason of overdose, method of substance use, occupation, marital status, history of addiction in parents/siblings, duration of hospital admission and educational level which can draw the attention of clinicians and specially government to change of trends in addiction.

In two studies performed on similar topic by Pajoumand et al in 1999 and by Gheshlaghi and Norouzpour between 2000 and 2001 in Loghman Hakim Poison Hospital, opium was responsible for overdose more than other substances.^{6,7} After a decade, however, compact-heroin has come to the top list of substances. In 2007,

Table 1
Number of patients with overdose of determined substance.

	n. (%)
Compact-heroin	878 (46.8%)
Opium	449 (23.9%)
Heroin	309 (16.5%)
Buprenorphine	92 (4.9%)
Opiate	54 (2.9%)
Crystal	38 (2%)
Hashish	36 (1.9%)
MDMA	16 (0.8%)
LSD	2 (0.1%)
Cocaine	2 (0.1%)
Total	1876

Table 2
Number of patients with opioids and non-opioids overdose.

Factor	Substance category	Opioids	Non-opioids	Total
		n. (%)	n. (%)	n. (%)
Sex	Male	1504 (84.4%)	55 (58.5%)	1559 (83.1%)
	Female	278 (15.6%)	39 (41.5%)	317 (16.9%)
Age	≤19	162 (9%)	32 (34%)	194 (10.3%)
	20–29	608 (34.2%)	42 (44.7%)	650 (34.6%)
	30–39	457 (25.6%)	12 (12.8%)	469 (25%)
	40–49	373 (21%)	3 (3.2%)	376 (20.1%)
	50–59	93 (5.2%)	3 (3.2%)	96 (5.1%)
	≥60	89 (5%)	2 (2.1%)	91 (4.9%)
Reason of overdose	Suicidal	95 (5.3%)	2 (2.1%)	97 (5.1%)
	Additional	1661 (93.2%)	82 (87.3%)	1743 (93%)
	Accidental	8 (0.5%)	2 (2.1%)	10 (0.5%)
	Occupational	18 (1%)	8 (8.5%)	26 (1.4%)
Method of substance use	Ingestion	543 (30.5%)	18 (19.1%)	561 (30%)
	Inhalation	847 (47.5%)	74 (78.8%)	921 (49%)
	Injection	392 (22%)	2 (2.1%)	394 (21%)
	Occupation	670 (37.6%)	13 (13.8%)	683 (36.4%)
Occupation	Jobless/house keeper	159 (8.9%)	3 (3.2%)	162 (8.6%)
	Retired	183 (10.3%)	10 (10.6%)	193 (10.3%)
	Building/factory worker	123 (6.9%)	12 (12.8%)	135 (7.2%)
	Office worker	331 (18.6%)	21 (22.3%)	352 (18.8%)
	Self-employed	67 (3.7%)	8 (8.5%)	75 (4%)
	School student	200 (11.3%)	25 (26.5%)	225 (12%)
	University student	49 (2.7%)	2 (2.1%)	51 (2.7%)
	In military service	582 (32.7%)	12 (12.8%)	594 (31.7%)
Marital status	Married	835 (46.9%)	64 (68%)	899 (47.9%)
	Single	279 (15.6%)	11 (11.7%)	290 (15.5%)
	Divorced	86 (4.8%)	7 (7.5%)	93 (4.9%)
	Widowed	919 (51.6%)	20 (21.3%)	939 (50%)
Addiction in parents/siblings	Yes, 1 person	625 (35.1%)	7 (7.4%)	632 (33.7%)
	Yes, more	238 (13.3%)	67 (71.3%)	305 (16.3%)
Duration of hospital stay	No	1070 (60%)	82 (87.2%)	1152 (61.4%)
	>1day	712 (40%)	12 (12.8%)	724 (38.6%)
Educational level	≤1day	53 (3%)	3 (3.2%)	56 (3%)
	Illiterate	831 (46.5%)	13 (13.8%)	844 (45%)
	Elementary/junior high school	632 (35.5%)	25 (26.7%)	657 (35%)
	High school	266 (15%)	53 (56.3%)	319 (17%)
	University			

similar report by Rafiei et al has proposed that heroin and compact-heroin are being substituted for opium.⁸ This can be due the high price of opium and, at the same time, cheapness and achievability of compact-heroin.

Additionally, women's tendency to non-opioids is remarkable. Only 15.6% of women were victims of opioid overdose whereas 41.5% of women had overdose with non-opioids. This is however, on the contrary of past reports.^{6,7}

During last decade, moreover, the method of substance use has been changed as well. These days, inhalation is the preferred method (49%), however, ingestion was the main way of substance use according to the mentioned studies.^{6,7}

Ironically, this is noticeable that the trend to the non-opioids is the results of tendency of higher educated people to these substances as 53% of their users belong to persons with university education while opioids are still noticed by the people with lower education but not the illiterates. This can be an alarm for the society that influences a generation and therefore the future of a country.

Furthermore and after the individuals of 20–29 years of age group are the most vulnerable population to overdose in both groups, individuals of 30–39 years of age have more tendency to opium whereas non-opioids look more tempting for the below 20 age group.

This must be perceived by the government as well as the aforementioned issue and schools should be observed regarding addiction through tougher rules than before. In western countries, however, opioid dependence is more prevalent in younger male individuals.⁹

Our findings are consistent with the results of mentioned studies regarding age and occupation of the addicts as young people and jobless ones encounter overdose more than others.^{6,7}

Last but not least, overdose with non-opioids was seen more in persons none of whose parents/siblings were involved, however, opioid overdose seems to be learned from parents or siblings. This can be due to the traditional character of opium in Iran that granted sort of permission.

According to World Drug Report 2010, opioids are much more common in Iran than non-opioids whereas in western countries such as UK, Germany, Austria and USA non-opioids (e.g. cocaine, MDMA and amphetamines) are the most prevalent substances.¹⁰ However and according to our findings, the increasing trend in Iran to non-opioids especially within the 3 groups of women, the youth and university-educated individuals is the matter of great concern and governments much be alarmed to consider more fundamental approaches toward addiction especially of non-opioids.

Conflict of interest

No conflict of interest.

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Ethical approval

None.

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