ORIGINAL ARTICLE

Prevalence of symptoms in patients poisoned with Iranian crack in Ahvaz Razi Hospital in 2008-2013

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Abstract

Background: Crack is a strong and smoking form of cocaine, but Iranian crack is different from common crack cocaine, having symptoms and side effects similar to those of heroin. This study was to investigate the prevalence and clinical symptoms in patients poisoned with Iranian crack poisoning hospitalized in Ahvaz Razi Hospital in the years 2008-2013.
Methods: In this study, 63 subjects with Iranian crack poisoning referred to the poisonings center of Ahvaz Razi Hospital, Khuzestan Province, Iran, between 2008 and 2013. The information collected from their records based on hospital data includes reference data, demographic data, prevalence and clinical symptoms and treatment.
Results: Of 63 subjects, 88.9% were male. The mean age of the subjects was 25 years. The majority of the subjects were single. Most of them used another substance along with Iranian crack. The first clinical symptoms of more than half of them were loss of consciousness. 54% of them needed antidote; 69.8% admitted to ICU. 6.3% of the subjects died.
Conclusion: We concluded that the most prevalent pattern and the first signs of Iranian crack overdose are similar to heroin consumption and not crack cocaine. Therefore, more studies are required for clinical management of acute or chronic toxicity of this illicit drug and to reduce further damages.

Keywords: Crack; Crack Cocaine; Heroin; Iran

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INTRODUCTION

Cocaine is one of the strongest cases of drug abuse and crack is a strong and smoking form of cocaine. “Crack” is named so because of the sound produced when heated for smoking. Crack cocaine is the biggest universal health problem not only in developing societies but also in most developed countries (1). It is used regularly by approximately 5 million Americans. It may be used by sniffing, smoking or injection in decreasing order of frequency (2). Therefore, the maximum effects are achieved more rapidly, which can lead to suppose that the potential for crack abuse and addiction is greater. Moreover, reports show that crack users are 1.6–1.9 times more likely to present cocaine dependence criteria than people who take it within less than a year after the first use (3).

The mechanism of crack cocaine is inhibition of re-uptake of catecholamines and serotonin into the neurons in the brain which leads to stimulate the brain neurons by releasing these neurotransmitters (4). The adverse effect of crack cocaine on the central nervous system includes alertness, euphoria, insomnia and increased energy (5). In the other organs, it leads to thrombosis in vessels due to infarction of organs such as heart and brain, which can cause death (6, 7).

Crack in Iran, however, is different from common crack cocaine in the world due to its difference in clinical and withdrawal signs. Clinical signs of Iranian crack, even several hours after use, include pupil constriction, rhinorrhea, epiphoria, pupillary and pain that can be treated with methadone or buprenorphine. These reports demonstrate that chemical combination, symptoms and side effects of Iranian crack are different from common cocaine and that they are similar to symptoms and side effects of heroin (8). Iranian crack is inodorous, prepared rapidly, used conveniently, and highly addictive (9). In Iran, reports show that crack is the second substance used by addicts after opium (10). Therefore, the widespread use of crack in Iran has become a serious problem in drug abuse in the Iranian society. Despite the increased use of crack in Iran, cross-sectional and epidemiological data documenting the patterns of crack use remain limited, particularly among poly drug-using populations, such as injection drug users.

In this study, we aimed at investigating the demographic features, drug abuse patterns and identification of clinical symptoms in the addicts who referred to this treatment center to provide the required information for better planning against the Iranian crack.

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METHODS

This is a cross-sectional study based on hospital data that was conducted among the patients affected with Iranian crack admitted to Ahvaz Razi Hospital, Khuzestan Province, southwestern Iran in 2008 to 2013. The study was approved by the Research Ethics Committee of Ahvaz Jundishapur University of Medical Science (IR.AJUMS.REC.1393.05). We investigated the information of 63 cases registered. Age, sex, marital status, type of addiction, duration of drug, medication or substance consumed together, the first sign of intoxication, administration (intravenous, inhalation, oral), duration of hospitalization, the need for antidotes, dose of antidote, required hospitalization in ICU and mortality were the variables examined in this study.

Statistical analysis

The data were coded and analyzed with SPSS software, version 16.0 (SPSS, Inc., Chicago, IL, US). Continuous variables are expressed as mean±SD. Comparison of mean value was performed by one-way analysis of variance followed by the Tukey's Post Hoc Test. Student's *t*-test and Pearson's method of correlation were used. Statistical significance was set at $p < 0.05$.

RESULTS

In the present study, a total of 63 subjects were registered, among whom 56 were in the male group (88.9%) and 7 in the female group (11.1%). The mean age ranged from 15-25 years in 16 subjects (25.4%) and 26-40 years in 41 subjects (65.1%). The majority of the referrals (50 subjects) were single (79.4%). Crack alone with the frequency of 24 subjects (38.1%) was the major form of drug abuse. Substances along with crack were then methamphetamine > opium > hashish > methadone > and heroine. Almost 28 of the subjects had duration of addiction more than 24 months (44.4%) (Table 1). Forms of drug abuse included intravenous in 26 subjects (41.3%), ingestion in 17 subjects (27%) and inhalation in 11 subjects (17.5%). Loss of consciousness was the main clinical symptom observed in 33 subjects (52.4%). 63 subjects were admitted to the ICU (69.8%). Duration of hospitalization in 26 of them was between 24 – 48 hours (46%). Almost the majority of the subjects (34 of them) needed antidote (54%). 4 of the subjects died (6.3%) (Table 2).

DISCUSSION

So far, no study has been conducted based on demographical data in Iranian crack addicts. The data presented here demonstrate a frequency and relative distribution of prevalence of symptoms in patients poisoned with Iranian crack based on demographic characteristics in Ahvaz Razi Hospital in 2008-2013. The mean age of onset of Iranian crack consumption was 25 years. Majority of the subjects were single. The most common form of drug abuse was intravenous. No significant relationship was observed between the abused Iranian crack and age, sex, marital status, type of addiction, duration of drug abuse, medication or substance consumed together, duration of hospitalization, the need for antidotes, dose of antidote, and mortality. The present results indicate that there is a significant relationship between the abused Iranian crack and the first sign of intoxication, administration (intravenous, inhalation, and oral) and required hospitalization in ICU.

The chemical combination of Iranian crack includes heroin, codeine, caffeine, morphine, thebaine, acetaminophen and a significant amount of acetylcodeine and it does not contain stimulant substances such as cocaine, sedatives, and tricyclic antidepressants (11). Our results showed that the main sign of intoxication or overdose in Iranian crack customers is loss of consciousness, which is related to heroin symptoms, not stimulants such as cocaine. Similar with our results, *Sadeghi et al.* showed that Iranian crack is heroin-based and different from crack in the West (11). *Kazemifar et al.*

Table 1. Frequency and relative distribution of the subjects based on demographic characteristics

Variable	Level	Frequency	Percent
Gender	Male	56	88.9%
	Female	7	11.1%
Age (year)	15-25	16	25.4%
	26-40	41	65.1%
	>40	6	9.5%
Marital Status	Married	13	20.6%
	Single	50	79.4%
Type of addiction	Crack	24	38.1%
	Crack & Methamphetamine	12	19%
	Crack & Opium	6	9.5%
	Crack & Hashish	8	12.7%
	Crack & Methadone	5	7.9%
	Crack & Opium & Hashish & Heroin & Methamphetamine	8	12.7%
Duration of drug	3-6 Month	8	12.7%
	7-12 Month	14	22.2%
	13-24 Month	13	20.6%
	>24 Month	28	44.4%

Table 2. Frequency and relative distribution of the subjects based on demographic characteristics

Variable	Frequency	Percent
Administration:		
Intravenous	26	41.3%
Oral	17	27%
Inhalation	11	17.5%
Injection & Oral	5	7.9%
Injection & Oral & Inhalation	4	4.3%
Duration of hospitalization:		
0-24 h	14	22.2%
24-48 h	29	46%
48-72 h	20	31.7%
Need for antidotes:		
Yes	34	54%
No	29	46%
Dose of antidotes:		
1-2 amp	17	27%
>2 amp	17	27%
Medication or substance consumed together:		
Yes	23	36.5%
No	40	63.5%
ICU Admission:		
Yes	44	69.8%
No	19	30.2%
Mortality:		
Yes	4	6.3%
No	59	93.7%
Onset of toxicity symptoms:		
Loss of consciousness	33	52.4%
Agitation	9	14.3%
Delusion & hallucination	4	6.3%
Seizure	3	4.8%
Abdomen pain & vomit	5	7.9%
Ataxia & tremor	3	4.8%
Muscle spasm	3	4.8%
Loss of vision & diplopia	3	4.8%

derivatives (12). *Razani et al.* showed that clinical sings and also the overdose signs of Iranian crack appear to be similar to those of heroin (13). The results of these studies show that heroin and its derivatives are main the substances in the Iranian crack (14-16).

According to the annual report of WHO in 2008, the prevalence age of opiate abuse observed in Iranian people was 15-64 years (17)**.** Investigations on addiction showed that the frequency distribution of addiction is highest among adults aged 20-35 years. Our study showed that the mean age of Iranian crack abuse was 25 years. In agreement with our study, *Amiri et al.* showed that the mean age of onset of drug abuse was 20 years. These results showed that addiction to Iranian crack is becoming more common among the youths and the onset age of addiction is consistently decreasing (18).

The mortality rate observed from 63 cases in this study is 6.3% that can be considered high, especially if we compare it with mortality rates found in previous studies (19). In a 3-year follow-up study, of 430 crack users, the mortality rate was reported to be 2.3%; in an 8-year follow-up study including 401 subjects, the mortality rate was presented to be 7% (20); and, in a 12-year follow-up study with 321 male veterans, the mortality rate was 8.7% (21). The differences in the results might fairly be related to sociodemographic sample variations.

In this study, drug dependence is more prevalent among men than women and single than married; in accordance with our study, some studies estimated the prevalence rate of addiction as being equal in both men and women (22). Addiction has also been reported more in the single than the married (23). Although, for years, opium inhalation was the main form of drug abuse in Iran, in the past two decades, heroin consumption increased the prevalence rate of intravenous drug abuse (24). In the present study, similar to heroin consumption, intravenous consumption of Iranian crack was the principal form of drug abuse, while in a study derived from a Canadian prospective cohort, the majority of crack users were willing to use inhalation (25). In this study, however, an important phenomenon was noticed; use of three methods (intravenous, ingestion and inhalation) was observed in Iranian crack addicts, while it was not observed in other types of addiction. Also, the individuals simultaneously using the three methods had duration of addiction more than 24 months and been admitted to the ICU.

No significant relationship was observed between the abused Iranian crack and age, sex, marital status, type of addiction, duration of drug abuse, medication or substance consumed together, duration of hospitalization, the need for antidotes, dose of antidote, and mortality. Similar to our study, in a cross-sectional study conducted in Semnan Province in 2009, no significant relationship was observed between the abused drug and age and marital status (24). Nonetheless, this study has some limitations that should be addressed. Individuals included in this study were part of a convenience clinical sample assessed in a single substance dependence in the Ahvaz Razi Hospital during the time the study was conducted. Therefore, we cannot generalize the results of the present study to all addicts in the general population.

CONCLUSION

No study has ever been conducted based on demographical factors in Iranian crack addicts. We concluded that the most prevalent pattern and the first sings of Iranian crack overdose are similar to heroin consumption and not crack cocaine. Therefore, more studies are required for clinical management of acute or chronic toxicity of this illicit drug to reduce further damages.

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