

Crack in Iran: is it Really Cocaine?

Kazemifar Amir Mohammad^{1*}, Solhi Hassan² and Badakhshan Dariush³

¹Clinical toxicologist, Assistant professor, Qazvin's University of Medical Sciences, Iran

²Clinical toxicologist, Assistant professor, Arak's University of Medical Sciences, Iran

³chemistry, Head officer of laboratory of Arak's Legal Medicine Center, Iran

Abstract

Objectives: The illicit drugs currently being distributed across European countries under street- name "crack" contain to a large extent alkaloids derived from cocaine and later on were classified as stimulant drug. However this same street name prevalent in Iran seemingly have no stimulant effects but sort of opioids being produced in clandestine laboratories likely to be made of heroin. In current study we carried out an analysis on illicit drugs under street name of crack discovered and confiscated by Iranian law enforcement police in Arak city in 2009 to make its true formulation clear.

Material & Methods: The current observational descriptive cross sectional study was carried on twenty-two samples under street name "crack" as is common name among drug peddlers or law enforcement police. Following sample extraction, screening test was conducted by thin layer chromatography (TLC) only to be later on confirmed through gas chromatography with mass spectrophotometry (GC/MS).

Results: Diacetyl morphine (heroin) was found in twenty-one unit of twenty-two analyzed samples using TLC method. In addition morphine, codeine, caffeine, noscapine, papaverine, dextromethorphan and acetyl codeine were discovered in samples applying GC/MS method.

Conclusion: Heroin with relatively high purity is the main constituent of the illicit drugs under street name "crack" in Iran. Medical and public awareness raising and education about true nature of this illicit drug and its adverse effects needs to be run to prevent the widespread abuse particularly among teens.

Keywords: Crack; Iran; Heroin; Analysis; TLC; GC/MS

Introduction

Adolescent substance use and abuse is still a major public health concern [1]. Crack cocaine use is increasingly observed in some countries [2]. Crack is street name referring to cocaine in western countries. It is a highly addictive drug [3]. Cocaine is processed with baking soda or ammonia only to be later on transformed into a more potent smokable form. The name refers to the crackling sound heard when it is heated then smoked. It is a potent form of cocaine which results in rapid and striking stimulant effects while being smoked [4]. Crack cocaine was first developed during 1970s and its use has enormously become popular in the mid-1980s. Today it remains a highly problematic and popular drug.

During past few years an illicit addictive drug under street name "crack" has found its way in illegal market in Iran with deceptive propaganda about its highly pleasurable effect as well as low dependency risk. Some consumers consider it as a psychoactive drug. It sells 40\$ per 1 gram. Consequently its affordable price match up to crack cocaine price in Europe has raised suspicions about its true constituents. Although there has been some suggestions about the nature of drug, but there has not been any published controlled study conducted on the issue yet. The objective of present study is clarification of actual chemical constituents of Crack in Iran.

Material & Methods

In an agreement with law enforcement police, a sample from the whole illicit drugs confiscated by law enforcement police during march 2009 to September 2009 (for 6 months) and recognized as crack by police experts and/or drug dealers was sent to laboratory of Arak Legal Medicine Center, a large city in central Iran. A total twenty-two samples were included in the study.

Preliminary test was carried out on samples by means of thin layer chromatography (TLC) method after being prepared and extracted.

Then confirmatory test were conducted by gas chromatography with mass spectrophotometry (GC-MS). TLC & GC-MS methods were applied to due to reference book on drugs analysis [5].

Results

All of the samples were in powder form ranging from white to black-brown color. In all but one samples diacetyl morphine (heroin) was discovered with no trace of cocaine. Acetyl codeine, monoacetyl morphine, papaverine, noscapine and morphine were also found in 95%, 91%, 91%, 91% and 73% of samples respectively. Chemical component of each sample was shown in Table 1. Total ion chromatograms of 2 samples were shown in Figures 1 and 2.

Discussion

While Americans has been congratulating itself on curbing increases in alcohol and illicit drug use and a decline in teen smoking; controlled prescription drugs, opioids, central nervous system depressants and stimulants abuse and addiction have stealthily though sharply been on the rise. The all existing statistics and figures continue to show that prescription drug abuse is escalating to a large extent coming with it an increase in emergency department visits and unintentional deaths due to prescription controlled substances [6].

***Corresponding author:** Kazemifar Amir Mohammad MD, Clinical toxicologist, Professor, Qazvin's University of Medical Sciences, Iran, Tel: +98281332986; Fax: +982813356696; E-mail: dr.houshmand@yahoo.com

Received October 19, 2010; **Accepted** November 24, 2010; **Published** November 25, 2010

Citation: Mohammad KA, Hassan S, Dariush B (2011) Crack in Iran: is it Really Cocaine? J Addict Res Ther 2:107. doi:10.4172/2155-6105.1000107

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Sample number	Heroin	Acetyl codeine	Monoacetyl morphine	papaverine	noscipine	morphine	others
1	+	-	-	+	+	+	Caffeine, dextromethorphan
2	+	+	+	+	+	-	Codeine, Acetyl tebaol
3	+	+	+	+	+	+	Codeine, Caffeine, Diacetyl norcodone
4	+	+	-	+	+	-	Caffeine
5	+	+	+	+	+	+	Codeine, dextromethorphan
6	+	+	+	-	-	-	-
7	+	+	+	-	-	-	-
8	+	+	+	+	+	+	Codeine
9	+	+	+	+	+	+	Codeine, dextromethorphan
10	+	+	+	+	+	+	-
11	+	+	+	+	+	+	Acetyl tebaol
12	+	+	+	+	+	+	Acetyl tebaol
13	+	+	+	+	+	+	codeine
14	+	+	+	+	+	+	codeine
15	+	+	+	+	+	+	-
16	+	+	+	+	+	+	codeine
17	+	+	+	+	+	+	-
18	+	+	+	+	+	+	-
19	+	+	+	+	+	+	-
20	+	+	+	+	+	-	-
21	-	+	+	+	+	+	Codeine, Caffeine, dextromethorphan amitryptiline ,tolmetin ,Chloroquine
22	+	+	+	+	+	-	-

Table 1: Chemical component of tested samples.

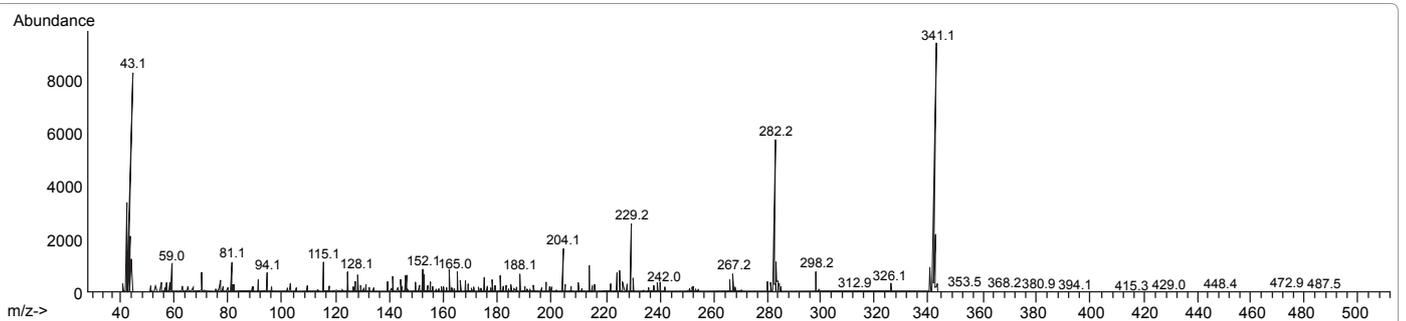


Figure 1: Total ion chromatogram of methanol extract of samp Show acetyl codeine, morphine, codeine and monoacetyl morphine.

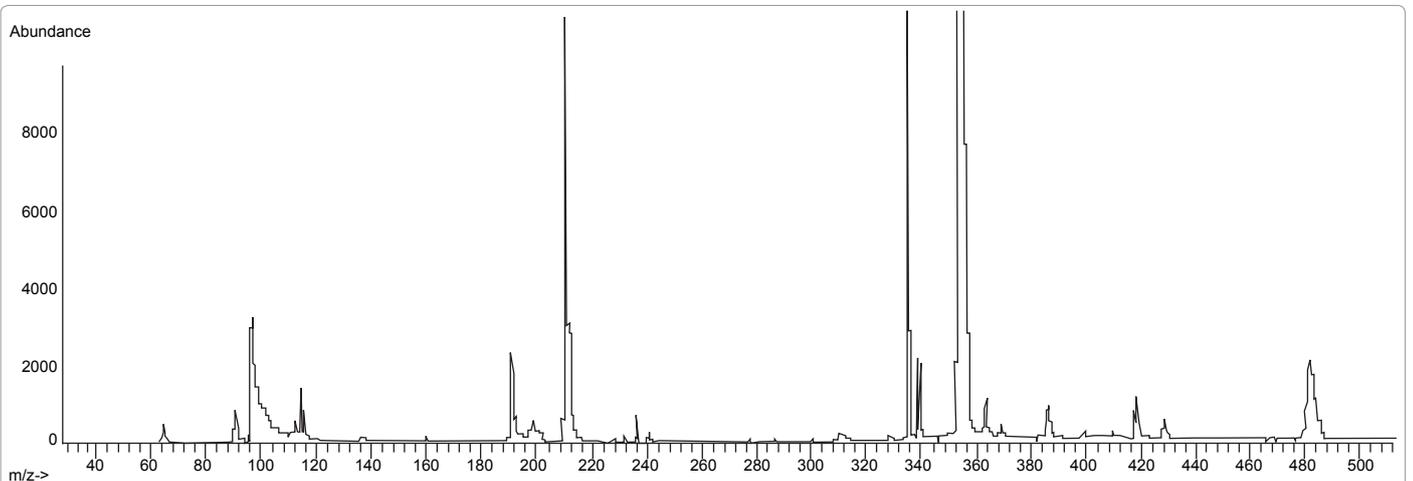


Figure 2: Total ion chromatogram of methanol extract of sample1 Show heroin, caffeine, acetyl codeine, monoacetyl morphine and papaverine.

Crack is a street name that has its own connotative meaning in western minds. Cocaine is a highly addictive substance; crack cocaine is substantially more addicting, as the drug is far more potent and is smoked. Crack cocaine abuse among illicit drug users is associated with a range of health and community harms [7]. It may be related to an increase in stroke, depression and psychiatric disorders risk [8-10]. It may also increase possibilities of illegally earned income activities or violent behaviors [11,12]. Users quickly develop a tolerance to crack cocaine, so need more substance to achieve the desired effects. Since the highness achieved by Crack cocaine is so short-lived, it contributes to abusers to smoke it repetitively in order to sustain the high state which in turn leads to an even faster onset of addiction.

In Iran similarly illegal drugs makers have directed their consumers' attention to a new drug called crack, possibly due to positive attitudes to crack among addicts. Though it is not actually crack; but brings about its unfavorable effects such as quickly developed tolerance, short-lived effects and faster onset of addiction. Similarly it can be used by smoking, snorting and needle injection. According to our study it was found that Iranian existing crack is not cocaine, it contains mainly heroin (possibly with higher purity compared to traditional heroin) as well as related byproduct compounds. Results of our analysis were compatible with different researches conducted on heroin [13-15]. Each producer has its own particular method of crack making; therefore the color and exact chemical ingredients may slightly vary. These variations contribute to a large extent to tracking Crack makers by law enforcement police [16].

Conclusion

Iranian crack is heroin in nature likely to spread into other countries including European nations and United States. The fact needs to be taken into account while managing a poisoned abuser referred to emergency wards especially in an unconscious state. Heroin is a semi synthetic opiod derived from morphine acetylation in clandestine laboratories. The color depends on the preparation method, additives and level of purity, so that it varies from white to black-brown. Raising public awareness initiatives and educational courses focused on actually true harmful nature of this illicit drug under street name "crack", as well as its adverse and deadly effects needs to be fulfilled to prevent its widespread use especially among Iranian teens.

Acknowledgments

The authors extend their thanks to Legal Medicine Research Center; Legal Medicine Organization of Iran for their financial and technical contribution to the study.

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