

ORIGINAL ARTICLE

A Clinico-Epidemiologic Study on Patients with Opium Toxicity Treated at Ardabil Hospitals, Iran, 2014-2015

ESMAEIL FARZANEH¹, FIROUZ AMANI^{1,*}, FATEMEH ETEMAD¹

¹Faculty of Medicine, Ardabil University of Medical Sciences, Ardabil, Iran

Abstract

Background: Every day, people with addiction cause heavy economic and cultural damage to society. In some circumstances, opioids are used as a tool for suicide, which is often seen in youth. The aim of this study was to investigate the clinical signs of toxicity associated with opium in patients referred to Ardabil city hospital.

Methods: This is a cross-sectional study that has been done on opium toxicity patients referred to Ardabil Sabalan hospital from 2014-15. Patients' information such as individual characteristics (age, gender, living location, job and marital status), drug type, poisoning cause, poisoning season, history of physical and mental illness, and clinical symptoms were obtained from patients and then analyzed using statistical methods in SPSS.16 software.

Results: 180 hospitalized patients were entered in the study. 75 persons (42%) used Tramadol, the most commonly used drug in opium intoxication. Most patients (80.6%) were male and in the age group 20-30 years (37.8%). 155 patients (86.1%) lived in this city, and the most patients (55 cases, 35.5%) had a primary education level. 39% of cases were seen in spring, the most common season for referring intoxications. Of all patients, 160 (88.9%) consciously took the drug (by choice).

Conclusion: Results showed that poisoning by Tramadol was the most common form of opium intoxication in patients. Opium intoxication can be prevented by decreasing the arbitrary use of drugs and also increasing the awareness level of personnel about care of these patients, and raising awareness to all people in society about opium and drug toxicity.

Keywords: Drug Toxicity; Epidemiology; Iran; Overdose; Tramadol

How to cite this article: Farzaneh E, Amani F, Etemad FA. Clinico-Epidemiological Study on Patients with Opium Poisoning Treated at Ardabil Hospitals, Iran, 2014-2015. *Asia Pac J Med Toxicol* 2016;5:111-4.

INTRODUCTION

Nowadays, due to high drug production, increased purity and their low price, drug issues expanded in the world had become a burden on society. Many infectious diseases such as AIDS, hepatitis, and tuberculosis caused by addiction and in future addiction can lead to social and economic issues in society. Iran because of cultural reasons and geographic location with having two largest drug manufacturers, has very critical and acute conditions with drug use. Addiction causes many economic and cultural damages to society people every day and according to registered statistics, it is the second leading cause of death after accidents in suspicious deaths (1,2).

In a study in Mashhad, most poisonings referred to hospital were female at 52%, and the most common causes of the intoxication in patients were drug use (at 64.6%) and then opium (at 2.9%) (3). Mehdizadeh et al showed that the most common causes of toxicity in patients referred to hospital were drug use at 73.3%; Benzodiazepines was the most common drug used (4).

In some circumstances, the opioid is used as a tool for suicide, which was often seen in youth. Because of higher

mortality rate due to poisoning (48%) in Iran and also, the higher rate of young people in Iran, investigate this opium toxicity has been important in the future for Iran (5). Some studies showed that the rate of drug intoxication can be affected by patients' age and sex, and the effects of opioid take place on specific receptors and mainly in central nervous, respiratory, cardiovascular and digestive system in the body. These interactions are primarily showing its effects on the central nervous system and respiratory system, cardiovascular system and digestive system (6,7).

Low doses use of opioids can affect the hearth and also its more use can lead to inhibition of respiration, pulmonary and non-pulmonary edema, hypoxia and pneumonia in the respiratory system (8). Currently, the pattern of opioid uses change from Traditional Drugs to chemical drugs, which has far more damaging effects. The aim of this study was to investigate the clinical manifestations and factors associated with opioid intoxication in patients referred to Ardabil city hospital during 2014 and-2015.

METHODS

This is a cross sectional study that has been done on 180 patients referred to Ardabil Sabalan hospital who were

*Correspondence to: Firouz Amani; Associate professor in Community Medicine, Faculty of Medicine, Ardabil, Iran.

Tel: +98 453 351 37 77, Email: biostat.f@gmail.com

Received 24 September, Accepted 14 October

hospitalized with opium toxicity (Opiates, methadone, crystal, crack, Tramadol, and heroin). The data collection tool used was a checklist that includes individual characteristics (age, sex, place of residence, occupation, and marital status), type of opioid intoxication, the intoxication, history of mental illness and the symptoms. Because of the retrospective nature of the study there is no need to obtain informed consent from patients. Collected data analyzed by statistical methods such as table, graph chi-square test in SPSS 16 Software. A p-value less than 0.05 was considered as significant.

RESULTS

75 (42%) of cases were intoxicated with Tramadol, 61 (33.9%) with opium, 31 (17.2%) with methadone, and 13 (7.2%) with Crystal, Crack and Heroin combined are the opioid toxicity sources in patients.

Most patients were male (n=145, 80.6%) and aged 20-30 years (n=68, 37.8%) (Table 1). 166 (92.2%) of patients were married. Most of the patients (n=86, 47.7%) were unemployed and 86.1% were in Urban areas. 55 (35.5%) have an elementary school level of education. Many of patients (39%) were referred in spring season.

31% of all patients had history of Psychosis, 15% had a history of physical illness, 12% had history of physical and mental illness and 42% of patients were without illness.

Poisoning in 166 patients (92%) was informed, and all other poisonings were not informed. Of all patients, 150 patients (83.3%) had clinical symptoms. Symptoms were seen in 100% of consumers of crystal, crack and heroin, and

the lowest percent of symptoms seen was in the methadone groups at 77.4%. According to Table 2, the rate of all used opioids in patients with clinical symptoms were significantly more than other patients (p=0.001).

From 151 patients, 31 (20.5%) have Asthma. The majority of asthma was in opium users at 40.5%. 27 (18.1%) had restlessness. From all patients with ocular symptoms, 38 (16%) have muse. Most of ocular symptoms were seen in Heroin users (60%). From all patients with clinical symptoms, 27(18%) had Nausea and vomiting, with the majority being seen in Heroin users at 66.6%. From all patients with Digestive symptoms, 7 (7.6%) have Hypertension, and most of the cases were seen in Crack users. From all patients with Kidney symptoms, 20 (77%) had Urinary Retention and most of the cases were seen in Crack users.

Of all patients with clinical symptoms, most patients had neurologic symptoms (87.4%) (Table 3).

DISCUSSION

Drug intoxications is one the most common causes of poisoning in patients referred to emergency of hospitals and can lead to serious damages and even death in admitted patients by poisoning. However, many of them are controlled and do not die but it has only economical and healthy outcomes for patients in future.

Most poisonings were seen in the age groups 20-30 which was similar with other study results (7-10). In this study the mean age of patients was 31.5 years and in Farzaneh study,

Table 1. Frequency of age groups by sex in patients

| sex Age groups | Male n (%) | Female n (%) | Total |
|-------------------|---------------|-----------------|-------|
| <20 | 22(15.1) | 5 (14.3) | 27 |
| 20-30 | 56 (38.6) | 12(34.3) | 68 |
| 30-40 | 33(22.8) | 8(22.9) | 41 |
| 40-50 | 16(11) | 7(20) | 23 |
| >50 | 18(12.4) | 3(8.6) | 21 |
| Total | 145(80.6) | 35 (19.4) | 180 |

Table 2. Frequency of patients with and without clinical symptoms by type of used drugs

| Groups Opioid type | Patients without clinical symptoms | | Patients with clinical symptoms | |
|-----------------------|------------------------------------|------|---------------------------------|------|
| | n | % | n | % |
| Opium | 10 | 16.4 | 51 | 83.6 |
| Methadone | 7 | 22.6 | 24 | 77.4 |
| Tramadol | 12 | 16 | 63 | 84 |
| Crystal | 0 | 0 | 7 | 100 |
| Crack | 0 | 0 | 4 | 100 |
| Heroin | 0 | 0 | 2 | 100 |
| Total | 29 | 16.1 | 151 | 83.9 |

Table 3. Type of Clinical symptoms in study patients

| Clinical Symptoms | Number | Percentage |
|---------------------------|--------|------------|
| Respiratory symptoms | 52 | 34.4 |
| Neurologic symptoms | 132 | 87.4 |
| Eye symptoms | 83 | 55 |
| Gastrointestinal symptoms | 92 | 61 |
| Cardiovascular symptoms | 24 | 16 |
| Symptoms of kidney | 26 | 17.2 |

the mean age of patients was 34.5 years(11). Results showed that poisoning in females and single patients were 19.4% and 7.8% lower than male and marriage patients, respectively. These findings were different than other studies that can be related to lower rate of opium use and overdoses among females (12-13).

In this study, most patients were deliberately poisoned, which revealed that the toxicity in this study was opium use not only for suicide but for other uses. In Guloglu et al study in Turkey most of patients used opioids for suicide and only from them about one percent deal to death (14).

In this study, 75 patients (42%) were poisoned with Tramadol which was the most commonly used drugs, similar to what has been found in other studies (11, 15-16). Also, our study results were different from American studies because of the rate of Tramadol use (17-18).

Of patients taking tramadol, 20% had tension which was lower than other studies (17). 87.4% of patients had neurological symptoms such as restlessness, headache, dizziness or loss of consciousness which was similar to Eizadi study results. From these results it was revealed that because of tramadol inhibitory effects on monoamine reuptake, severe CNS toxicity can be occurred in patients (19). In this study, the most common side effect of opioid use as well as poisoning with Tramadol was Neurological symptoms in patients.

According to the studies done in other places, respiratory symptoms as well as decreased level of consciousness, respiratory depression and meiosis, suppressed respiratory symptoms were the most common symptoms and it can said that many factors such as history of drug abuse, food intake and many other causes were associated with occurrence of symptoms in patients (20-22).

CONCLUSION

Results of this study showed that use of Tramadol has a main role in poisoning of patients who admitted to emergency of hospitals which was related to indiscriminate selling of drugs and selling drugs without a prescription at pharmacies of Ardabil cities. Doing studies in future for reduction tramadol arbitrary use among people, programing to treat opioid-dependent patients, and doing training courses to raise patients and hospital emergency personnel awareness for appropriate initial treatment of poisoned patients is necessary.

ACKNOWLEDGEMENT

Authors would like to thanks all Ardabil Sabalan hospital staff for their help in doing study.

Conflict of interest: None to be declared.

Funding and support: The result of this study was financially supported by Ardabil University of Medical Science.

REFERENCES

- Klaassen CD. Casarett & Doull's Toxicology: the basic science of poisons. 8th ed. McGraw-Hill: United States of America; 2013.
- Hejazi A, Zare GH, Zeid Abadinezhad MB, SHakeri MT. Epidemiologic study of deaths related to opiate abuse in Khorasan legal medicine center from March 20, 2004 to March 20, 2006. *Med J Mashhad Univ Med Sci* 2009; 2:101-6.
- Shakeri MT, Afshari R, Aghajani H, Dinmohamadi E, Hadianfar A. Study geographical distribution of poisoning cases referred to the emergency department of Imam-Reza Hospital Mashhad: 2013. *Mashhad Univ Med Sci* 2016;59:171-8.
- Mehdizadeh Gh, Manouchehri A, Zarghami A, Moghadamnia AA. Prevalence and causes of poisoning in patients admitted to Shahid Beheshti hospital of Babol in 2011-2012. *J Babol Univ Med Sci* 2015; 17:22-8.
- Farzaneh E, Mehrpour O, Alfred S, Moghaddam HH, Behnoush B, Seghatoleslam T. Self-poisoning suicide among student in Tehran. *Psychiatr Danub* 2010; 22:34-8.
- Pawłowicz U, Wasilewska A, Olański W, Stefanowicz M. Epidemiological study of acute poisoning in children: a 5-year retrospective study in the Paediatric University Hospital in Białystok, Poland. *Emerg Med J* 2013 Sep;30:712-6.
- Ghazi-Khansari M, Oreizi S. A prospective study of fatal outcomes of poisoning in Tehran. *Vet Hum Toxicol* 2006; 37(5): 449-52.
- Singh O, Javeri Y, Juneja D, Gupta M, Singh G, Dang R. Profile and outcome of patients with acute toxicity admitted in intensive care unit: Experiences from a major corporate hospital in urban India. *Indian J Anaesth* 2011; 55: 370-4.
- Moghadamnia AA, Abdollahi M. An epidemiological study of poisoning in northern Islamic Republic of Iran. *East Mediterr Health J* 2002; 8: 88-94.
- Turhan E, Inandi T, Aslan M, Zeren C. Epidemiology of attempted suicide in Hatay, Turkey. *Neurosciences (Riyadh)* 2011; 16:347-52.
- Farzaneh E. Epidemiology of poisoning with opium in Ardabil. Emergency Congress; 2009; Tehran.
- Zare-fazlohahi Z, Maleki M, Shaikhi N. Epidemiology of Adult poisoning In Talegani Hospital of Urmia 1383-1386. *J Urmia Nurs Midwifery Fac* 2010; 8: 69-74.
- Ozkose Z, Ayoglu F. Etiological and demographical characteristics of acute adult poisoning in Ankara, Turkey. *Hum Exp Toxicol* 2002; 18:614-8.
- Guloglu C, Kara IH. Acute poisoning cases admitted to a university hospital emergency department in Diyarbakir, Turkey. *Hum Exp Toxicol* 2005; 24:49-54.
- Shadnia S, Soltaninejad K, Heydari K, Sasanian G, Abdollahi M. Tramadol intoxication: a review of 114 cases. *Hum Exp Toxicol* 2008; 27:201-5.
- Spiller HA, Gorman SE, Villalobos D, Benson BE, Ruskosky DR, Stancavage MM et al. Prospective multicenter evaluation of Tramadol exposure. *J Toxicol Clin Toxicol* 1997; 35: 361-4.

17. Marquardt KA, Alsop JA, Albertson TE. Tramadol exposures reported to statewide poison control system. *Ann Pharmacother* 2005; 39: 1039-44.
18. Clarot F, Gouille JP, Vaz E, Proust B. Fatal overdoses of tramadol: is benzodiazepine a risk factor of lethality? *Forensic Sci Int* 2003; 134: 57-61.
19. Eizadi N, Sabzghabaee AM, Safdari A, Yaraghi A. Clinical Signs, Hospitalization Duration and Outcome of Tramadol Intoxication. *J Isfahan Med Sch* 2011; 28: 1187-93.
20. Amouei M, Taremian F. Report of 109 mortality cases from opium referred to Forensic organization. *Sci J Forensic Med* 2002;8:21-6.
21. Farnaghi F, Jafari N, Mehregan FF. Methadone Poisoning among Children Referred to Loghman-Hakim Hospital in 2009. *Pajohandeh J* 2012; 16:299-303.
22. Sherman SG, Cheng Y, Kral A. Prevalence and Correlates of Opiate Overdose among Young Injection Drug Users in a Large U.S. City. *Drug Alcohol Depend* 2007; 88: 182-7.