ORIGINAL ARTICLE

DRUGS-FACILITATED STREET AND TRAVEL RELATED CRIMES: A NEW PUBLIC HEALTH ISSUE

Taj Muhammad Khan[1], Muhammad Tariq Mehr[2], Hashmat Ullah[3], Amjad Abrar[4]
[1]Department of Medicine, Gomal Medical College, D.I.Khan, [2]Hayatabad Medical Complex, Peshawar, [3]Faculty of Pharmacy, Gomal University, D.I.Khan, and [4]Department of Cardiology, DHQ Teaching Hospital, D.I.Khan, Pakistan

ABSTRACT

Background: Trends in poisoning are changing in our country. Street and Travel related poisoning is emerging as a new public health issue. This is the first study in this region to know the types of drugs used for street & travel related poisoning and to know the mode of poisoning.

Material & Methods: This descriptive cross-sectional study was conducted at Khyber Teaching Hospital, Peshawar, Pakistan, from July 2010 to July 2011. A total of 100 cases were enrolled after exclusion criteria. After clinical examination and all relevant investigations their urine, blood and stomach samples were sent for chemical and toxicological analysis.

Results: A total of 100 patients between 15-65 years were included in this study, 84(84%) were males and 16(16%) females. Among the drugs benzodiazepines were 60%, opium derivatives 32%, phenobarbitone 4%, while 2% each were rat killer poison, mixed benzodiazepines and opium derivatives. The mode of delivery of drugs were soft drinks 54%, fruits 38% and food in 8% cases. Among the victims there were passengers 60%, pedestrians 20%, Taxi drivers 8%, marriage function attendants 6% (females) and others 6%.

Conclusion: Street and travel related poisoning is emerging as a new social and public health issue in our country. The mode of poisoning is usually drinks, fruits and food mixed with benzodiazepines and opium derivatives. This often happens due to low level of education, lack of awareness, poor law and order situation, easy availability of drugs, poor drugs rules implementation due to corruption, un-employment and attitude of the people.

KEY WORDS: Crime; Poisons; Travel; Street drugs; Benzodiazepines; Opium; Public Health.

This article may be cited as: Khan TM, Mehr MT, Ullah H, Abrar A. Drug-facilitated street and travel related crime: a new public health issue . Gomal J Med Sci 2014; 12: 205-9.

INTRODUCTION

Poison refers to any substance which when administered by any route, is capable of producing disease, death or impairs normal physiologic function in human beings.[1] Poisoning has been described since ancient times, as early as 17th century.[2] Poisoning is traditionally described as accidental, suicidal or homicidal.[3] However trends of poisoning have been changed in our region. Drug-facilitated street and travel related poisoning is emerging as a new public health issue in our country. Because of easy availability of sedatives, hypnotics and opium derivatives these agents are used for induction of sedation and snatching the belongings of the travelers and for the purpose of pick pocketing of pedestrians in the streets. The common pattern of poisoning in our region is different from that of western world.[4-8] The poisoning agents involved in our region are different from the western world because of the lawlessness, unemployment, poor socio-economic status of the people, educational level, lack of awareness of people and availability of drugs. Most of the drugs used for this purpose are easily available everywhere. It is the easy availability of such agents which results in big crimes that is why crime rate is high in our region as compare to rest of the developed world.

The purpose of this study is to know about various drugs used for this purpose and to know about their mode of administration.

Corresponding Author:
Dr. Taj Muhammad Khan
Assistant Professor
Department of Medicine
Gomal Medical College, D.I.Khan
Pakistan
E-Mail: khantajmarwat@gmail.com

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted at Khyber Teaching Hospital, Peshawar, Pakistan, from July 2010 to July 2011. The inclusion criteria was that all unconscious suspected poison-

ing cases admitted to medical department through casualty who were brought by police collected from roadside and streets, age between 15 to 65 years and patients or their attendants' who gave written consent where as exclusion criteria was that all unconscious patients secondary to trauma, stroke, food poisoning, insect or snake bites or other metabolic disorders due to organ failure, patients or their attendants' who were not willing to give a written consent.

All unconscious suspected cases of poisoning were thoroughly examined on admission to the medical department through casualty. A total of 100 cases were enrolled after applying exclusion criteria. Provisional diagnosis was made on the basis of police and attendants statements and clinical examination. Regarding the clinical profile about 60% of the patients had a GCS of >10 and about 40% had GCS >8 but less than 10. Vital signs were in normal range in majority of patients. About 32% had pinpoint pupils and rest had their pupils in the mid-position. About 60% of the patients had flexor plantar response, 25% had equivocal and 15% had bilateral extensor plantar response. Diagnosis was confirmed on the statement of the patients after regaining consciousness and analysis of the various specimens collected from the patients (Blood, urine and stomach wash).These specimens were checked for various drugs and chemicals in the Forensic laboratory of Khyber Medical College Peshawar. Other relevant investigations like FBC, RBS, urea & creatinine, arterial blood gasses, LFTs, PT/APTT, x-ray chest and ECG were done to exclude other possibilities. All the information were recorded in the pre-designed Performa and results are given in the form of tables and figures.

RESULTS

A total of 100 patients between age group of 15-65 years were included in this study. Out of this 100 cases 84 (84%) were males and 16 (16%) were females. Among the drugs benzodiazepines were of the highest 60% (50% males and 10% females), followed by opium derivatives 32% (all were males), phenobarbitone 4% (all were females), while 2% each were Rat killer (all were females) and mixed benzodiazepines and opium derivatives (all males). The substances used for the delivery of drugs were

Table 1: Age distribution of victims

Age range in years	Number of patients	Percentage
15-25	10	10
26-35	26	26
36-45	24	24
46-55	22	22
56-65	18	18

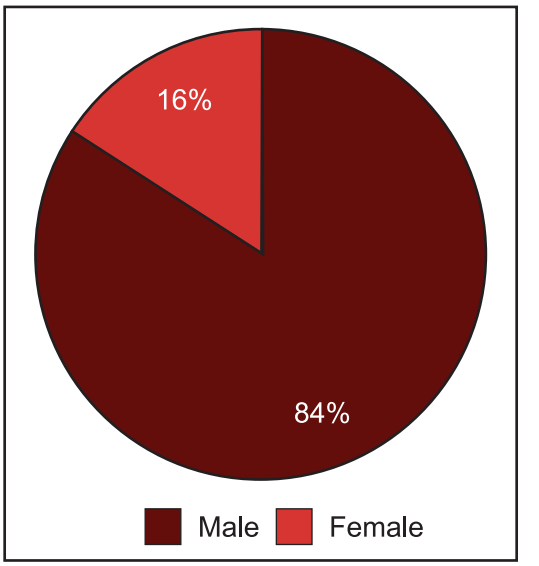

Figure 1: Gender distribution of victims for street and travel poisoning (n=100)

Table 2: Pattern of poisoning in male victims for street and travel poisoning (n=84)

Type of drugs /poisons	Number of Patients	Percentage
Benzodiazepines	50	50
Opioid derivatives	32	32
Mixed Benzodiazepines & Opioid derivatives	2	2

Table 3: Pattern of poisoning in female victims for street and travel poisoning (n=16)

Type of drugs /poisons	Number of Patients	Percentage
Benzodiazepines	10	10
Phenobarbitone	4	4
Rat killer	2	2

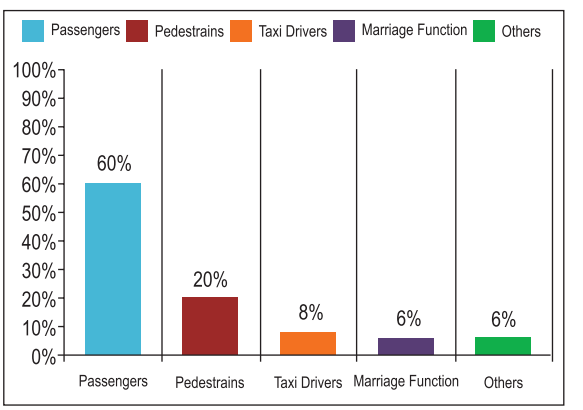

Figure 2: The pattern of types of the victims for street and travel poisoning.

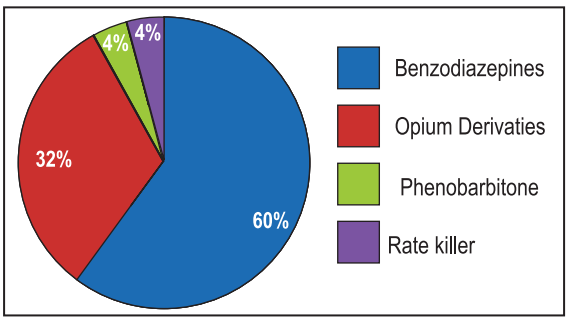

Figure 3: Percentage of drugs used for street and travel poisoning.

soft drinks 54%, fruits 38% and food in 8% cases. The pattern of types of the victims were; passengers 60%, pedestrians 20%, Taxi drivers 8%, marriage function 6% (females) and others 6%.

DISCUSSION

Our study is of first type in this region to highlight the drug facilitated organized, travel related crime for theft and hijacking the belongings of the victims.[9] In this study there was a higher proportion of males patients (84%) who became victim of street and travel related poisoning. Previous study conducted by Majumder et al,[10] males were 98% while in a study done by Howlader Mar et al[11] and Ahmad et al[12] in Bangladesh also show higher proportion of male patients 64% as compared to female patients 36%. In our study age range of 26-55 years were 72% of the total victims. This is similar to the findings of Howlader Mar et al[11] and khan et al.[13] This could be attributed to the more frequent travelling by males of this age group as compared to females. As they are the earning members of the family, the hijackers think that the money is kept with them and they are targeted more frequently.

Pattern of poisoning in males in this study showed that benzodiazepines ranked the highest (50%) among agents used for street and travel related poisoning. This finding is similar to other studies done by Majumder et al[10], Azhar et al[14] and Sarkar et al.[15] In industrialized nations beside alcohol and illict drugs benzodiazepines are also misused.[4-8,16-19] Criminals prefer these drugs as these drugs are rapid in their onset of actions.[20-21] LC-TOF MS analysis is a simple and sensitive method for the detection of benzodiazepines and other compounds.[22] Benzodiazepine in hypnotic doses is the drug of choice for the perpetrators of the crimes. This is probably due to the familiarity of the people with these drugs and its over the counter availability in our province because of the lack of implementation of drug rules.

Opium derivatives ranked second (32%) among these drugs used for street and travel related poisoning. This finding is peculiar to our province because of heavy cultivation of poppy crops in Afghanistan and our province porous border with this country. These drugs are easily available and are frequently used by criminals for street & travel related crimes. This is in contrast to other studies in which not a single case of opium derivatives poisoning was reported.[4-8,10-15]

Pattern of poisoning in females in this study showed that benzodiazepines ranked the highest (10%) among the poisoning agents. This finding is very close to the study findings by Hawlader Mar et al[11] in which benzodiazepines was the poisoning agent in 8.333% female victims. Phenobabitone was the poisoning agent in 4% and rat killer in 2% of the victims. Both these agents are easily available and can be used for criminal purposes.

Among the groups of people who became victims of poisoning passengers ranked the highest (60%), rest were pedestrians (20%),Taxi Drivers (8%),females in marriage functions (6%) and (6%) were from other groups. Majority of people of this age group are going out of their houses for service destinations, purchase of routine items from bazaars and are frequently travelling through buses and coaches. The criminals first make relationship with the victims and then offer the drug mixed with drinks or food. As most of the victims are less educated, belong to a low socio-economic groups and unaware of the criminal intentions of the perpetrators, they accept the drinks or food in good faith. After sedation their belongings are hijacked by the criminals. This finding closely resembles to the study findings of Majumder et al.[10] Howlader Mar et al[11] and studies from western countries.[4-8]

Among the substances used for delivery of drugs and poisons to the victims by the criminals, drinks were more frequently used (54%), followed by fruits (38%) and food items (8%). The criminals are mixing the drugs with drinks, food stuffs or inject in fruits. The mixed items are then offered to the victims after making relationship with them and taking them in confidence. Similar results were reported in other studies.[4-8,10-11]

All the victims were brought to the hospital emergency department by the police or attendants and were then admitted to the medical department in unconscious or semiconscious stat. Regarding the clinical profile about 60% of the patients had a GCS of >10 and about 40% had GCS >8 but less than 10. Vital signs were in normal rang in majority of patients. About 60% of the patients had flexor plantar response, 25% had equivocal and 15% had bilateral extensor plantar response. These findings are very close to the results of studies conducted in CMCH Bangladesh, and in hospital in New Delhi.[10-11,23]

The severity of central nervous depression

was less in victims of travel related poisoning as compared to patients with organophosphorus poisoning.[24] The normal respiratory rates of most of the victims in our study suggest that the doses of benzodiazepines and other drugs used were not sufficient to cause respiratory depression. Almost all the patients were managed conservatively on the floor of the busy medical unit without any fatality. All the patients were safely discharged after 1-3 days of stay in hospital. This finding is similar to the study finding of Majumder et al.[10] This is in contrast with the high (17%) mortality of organophosphorus poisoning as reported in a study from Bangladesh.[24]

As benzodiazepines and opium derivatives are the drugs used in majority of the drug related poisoning victims in our study, we recommend the use of flumazenil and naloxone in unconscious patients to diagnose the etiology of unconsciousness as benzodiazepine or opium derivative poisoning, and as empirical therapy if available at low cost. Use of flumazenil for such purpose is also recommended in other studies as well.[25-27]

The purpose of this study was to highlight this problem for the public awareness and to bring it in the notice of the government authorities for more strict drugs rules /regulations and enforcement and mass media campaigns for public awareness, side by side improving law and order situation in the country to reduce street and travel related poisoning.

CONCLUSION

Street and travel related poisoning is emerging as a new social and public health issue in our country. The mode of poisoning is usually drinks, fruits and food mixed with benzodiazepines and opium derivatives. This often happens due to low level of education, lack of awareness, poor law & order situation in our country, easy availability of drugs, poor drugs rules implementation due to corruption, un-employment and attitude of the people.

REFRENCES

1. Galio MA. History and scope of toxicology. In: Kiaassen CD ed. Toxicology – The Basic Science of Poisons 5th ed. New York McGraw Hill, 1996.
2. Lawson AAH. Acute poisoning. In: Edwards CRW, Bouchier IAD, Haslett C, Chilvers E. eds. Davidson's Principles and Practice of Medicine,18th ed. Edinburgh: Churchill Livingstone; 1995: p. 1126.
3. Bechtel LK, Holstege CP. Criminal poisoning: drug-facilitated sexual assault, Emerg Med Clin. North Am 2007; 25:499–525.
4. El-Sohly MA, Salamone SJ. Prevalence of drugs used in cases of alleged sexual assault. J Anal Toxicol 1999; 23:141–6.
5. Hurley M, Parker H, Wells DL. The epidemiology of drug facilitated sexual assault. J Clin Forensic Med 2006; 13:181-5.
6. Scott-Ham M, Burton FC. Toxicological findings in cases of alleged drug-facilitated sexual assault in the United Kingdom over a 3-year period. J Clin Forensic Med 2005; 12:175-86.
7. Scott-Ham M, Burton FC. A study of blood and urine alcohol concentrations in cases of alleged drug-facilitated sexual assault in the United Kingdom over a 3-year period. J Clin Forensic Med 2006; 13:107–11.
8. Uddin MJ, Shahed FH, Bhowmik SK, Rashid R, Ghose A, Rahman MR, et al. Transport related poisoning - an untapped public health problem. The Healer 2002; 9:40-2.
9. Majumder MMA, Basher A, Faiz MA, Kuch U, Pogoda W, Kauert G. Criminal poisoning of commuters in Bangladesh: Prospective and retrospective study. Forensic Sci International 2008; 180:10-6.
10. Howlader M. Changing trends of poisoning in Bangladesh. J Dhaka Med Coll 2011; 20:51-6.
11. Ahmed R, Shah R, Mortayezamin MM. Pattern and mortality rate of poisoning in Dhaka Medical College Hospital. J Med Teachers Fed 1995; 1:10-2.
12. Khan NI, Sen N, Haque NA. Poisoning in a medical unit of Dhaka Medical College Hospital in 1983. Bangladesh Med J 1985; 14:9-11.
13. Azhar MA. Poisoning cases in a district hospital of Bangladesh. JOPSOM 1992; 11:69-72.
14. Sarker ZM, Khan RK, Acute Poisoning-Scenario at a district hospital. Bangladesh J Med 2002;13:49-52.
15. McGregor MJ, Ericksen J, Ronald LA, Janssen PA, van Vliet A, Schulzer M. Rising incidence of hospital-reported drug-facilitated sexual assault in a Large urban community in Canada. Retrospective population-based study. Can J Public Health 2004; 95;441-5.
16. P, Kala M, Date-rape drugs scene in Poland. Przegl Lek 2005; 62 572–5.
17. Che` ze M, Duffort G, Deveaux M, Pe´ pin G. Hair analysis by liquid chromatography- tandem mass spectrometry in toxicological investigation of drug-facilitated crimes: report of 128 cases over the period June 2003–May 2004 in metropolitan Paris. Forensic Sci Int 2005; 153:3-10.
18. Gaillard Y, Masson-Seyer MF, Giroud M, Roussot JF, Prevosto MJ. A case of drug-facilitated sexual assault leading to death by chloroform poisoning. Int J Legal Med 2006; 120:241-5.
19. Schwartz RH, Milteer R, LeBeau MA, Drug-facilitated sexual assault (date rape). Southern Med J 2000; 93:558-61.
20. Goulle JP, Anger JP, Drug-facilitated robbery or sexual assault: problems associated with amnesia. Ther Drug Monit 2004; 26:206–10.

21. Pelander, I. Ojanpera¨ , S. Laks, I. Rasanen, E. Vuori, Toxicological screening with formula-based metabolite identification by liquid chromatography/time-of- Flight mass spectrometry. Anal Chem 2003; 75:5710-8.

22. Tabib SB, Pal UK. A study of acute poisoning cases in a district hospital. Northern Med J 1992; 1:1-5.

23. Faiz MA, Rahman MA, Ahmed T, Management of acute poisoning with organophosphorous insecticide. J Bangladesh Coll Physicians Surg 1994; 12:59–62.

24. Chern TL, Hu SC, Lee CH, Deng JF. The role of flumazenil in the management of patients with acute alteration of mental status in the emergency department. Hum Exp Toxicol 1994; 13:45-50.

25. Chern CH, Chern TL, Wang LM, Hu SC, Deng JF, Lee CH. Continuous flumazenil infusion in preventing complications arising from severe benzodiazepine intoxication. Am J Emerg Med 1998; 16:238-41.

26. Weinbroum A, Rudick V, Sorkine P, Nevo Y, Halpern P, Geller E, et al. Use of flumazenil in the treatment of drug overdose: a double-blind and open Clinical study in 110 patients. Crit Care Med 1996; 24:199–206.

27. Weinbroum AA, Flaishon R, Sorkine P, Szold O, Rudick V. A risk benefit assessment of flumazenil in the management of benzodiazepine overdose. Drug Saf 1997; 17:181-96.

CONFLICT OF INTEREST
Authors declare no conflict of interest.
GRANT SUPPORT AND FINANCIAL DISCLOSURE
None declared.