

Acute Poisoning and its Medicolegal Aspects in Patients Presenting at a Tertiary Care Hospital of Sindh

1. Waheed Ali 2. Pardeep Kumar 3. Mohammad Qasim 4. Aisha

1. Asstt. Prof. of Forensic Medicine, LUMHS Jamshoro 2. Asstt. Prof. of Forensic Medicine, LUMHS Jamshoro
3. Senior Lecturer of Forensic Medicine, LUMHS Jamshoro 4. Lecturer of Forensic Medicine LUMHS Jamshoro

ABSTRACT

Objective: To assess acute poisoning and its medicolegal aspects in patients presenting at a tertiary care hospital of Sindh.

Study Design: Observational Study

Place and Duration of Study: This study was carried out at Liaquat University Hospital Jamshoro/Hyderabad from April 2014 to June 2015.

Materials and Methods: 240 cases of acute poisoning were studied presenting at the outpatient departments and emergency wards of the Liaquat University Hospital Jamshoro/Hyderabad. Acute poisoning cases were selected according to inclusion and exclusion criteria. Tools used for gathering information were the; information obtained from attendants/relatives, history of patients him/herself, clinical presentation, clinical signs and symptoms, laboratory findings and moreover response to anti poisoning therapy. Data was analyzed on *statix software* 8.1 (USA). Data was analyzed using student's t-test and Chi-square test for continuous and categorical variables respectively. P-value ≤ 0.05 was taken significant statistically.

Results: Of 240 subjects, 147 (61.25%) were male and 93 (38.75%) were female. ($p=0.01$). Most of study subjects belong to low social class in present study. Mean age of subjects was 45 ± 7.7 years. Male outnumbered to female as regards the acute poisoning ($p=0.001$). Acute poisoning for suicide purpose was noted in 54.1 % ($n=130$) of study subjects. Kacha sharab, organophosphate and diazepam were the most commonly used agents for poisoning purpose.

Conclusion: Acute poisoning is increasing due to commonly available poisons such as drugs and pesticides. The public sector authorities should take measures for the proper implementation of handling of drugs, poisons and pesticides.

Key Words: Acute poisoning, Suicide, Organophosphates, Drugs, Sindh

Citation of article: Ali W, Kumar P, Qasim M, Aisha. Acute Poisoning and its Medicolegal Aspects in Patients Presenting at a Tertiary Care Hospital of Sindh. Med Forum 2015;26(10):49-52.

INTRODUCTION

Acute poisoning has become a major social and health problem of developing countries.¹ The acute poisoning may be intentional or accidental. The intentional cases are raising this days.^{2,4} The published literature shows a considerable rise in the overall cases of acute poisoning.⁵

Most cases of poisoning are reported as self administered intentionally with young age groups. The commonest poisons used for suicide purpose include pesticides, corrosives, and some of the vegetable toxins which are easily available.⁶ Acute intentional poisoning often proves life taking and usually culminates in death of the person in most of the cases.¹

Acute self administered poisoning either by a drug or a chemical is a serious medical emergency and resulting mortality is very high.¹ Increasing incidence has been

suggested due to illiteracy and ignorance, both of which are prevalent in developing countries and contribute to the poisoning at the most. Currently, the chemicals and drugs are easily available hence frequently used for the acute poisoning whenever and wherever needed.⁵

The Suicide attempts are influenced by the religious beliefs, cultural norms and more over the social and financial problems of the era. Currently, the drugs had frequently been used for the suicide purpose and a rise has been noted and reported.⁷⁻¹⁰ The nature and profile of acute poisoning is variable from social class of a society, to country or a geographical locality.^{1,5}

Like any developing country in World, similar are conditions of ignorance prevalent in Pakistan in handling and sale of poisons, drugs and chemicals. There are big gaps in the surveillance system in Pakistan and there is no prohibition of drug sale and purchase although the laws are present but implementation is not followed properly. Easy access to poisonous substances is a risk, all the time present in society. Implementation, if proper, of the laws to handle the poisons may decrease the acute poisoning cases. Patterns of poisoning are changing from time to time

Correspondence: Dr. Waheed Ali,
Asstt. Prof. of Forensic Medicine, LUMHS Jamshoro
Cell No.: 0335-2294474
E-mail: dr_waheednahyoon@yahoo.com

hence new information of the prevalent situation must be updated, this will help in the effective management of acute poisoning as early as possible and effective. The present study was conducted at our tertiary care hospital to study the patterns of acute poisoning and its medico-legal aspects.

MATERIALS AND METHODS

A sample of 240 cases of acute poisoning was studied presenting at the outpatient departments and emergency wards of the Liaquat University Hospital Jamshoro/Hyderabad. Study was conducted from April 2014 to June 2015. Acute poisoning cases record was kept separately. Study subjects were recruited through non probability purposive sampling. Adult patients of acute poisoning presenting at the casualty department wards were approached and included in the study protocol. While patients of snake bite, food poisoning and children were excluded from study. Acute poisoning was defined as poisoning of recent onset with lethal chemical or drug agent which might jeopardize life of victim. Tools used for gathering information were the; information obtained from attendants/relatives, history of patients him/herself, clinical presentation, clinical signs and symptoms, laboratory findings and moreover response to anti poisoning therapy. A pre-structured Proforma was designed for collection of patient's information. Age, gender, society class, and in particular the poisoning agent and its cause of intake were noted. Data was analyzed on *statix software 8* (USA). Data was analyzed using student's t-test and Chi-square test for continuous and categorical variables respectively. P-value ≤ 0.05 was taken statistically significant.

RESULTS

Of 240 subjects, 147 (61.25%) were male and 93 (38.75%) were female. ($p=0.001$). The male to female ratio was 1.58:1. The gender distribution of study subjects is shown in table I. Most of study subjects belong to low social class in present study as shown in table I. And not the less, majority of subjects belonged to rural areas.

Table No. I: Demographic characteristics of study population (n=240)

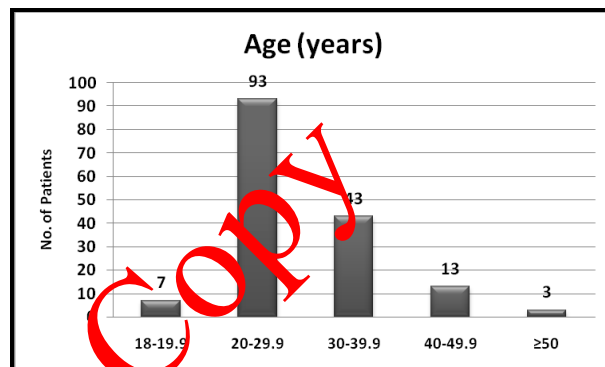
	No.	%
Male	147	61.25
Female	93	38.75
Lower social class	181	75
Middle social class	43	18.3
Upper social class	16	6.6
Rural	211	88.3
Urban	29	11.6

The mean age of subjects was 45 ± 7.7 years. Age wise distribution of study subjects is shown in graph-1. Most of subjects belonged to third decade of life. More male

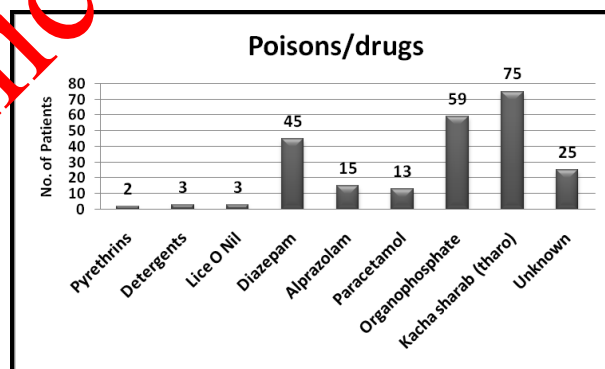
were found suffering from acute poisoning compared to female ($p=0.001$).

Table No.2: Problems in study subjects with suicidal attempt

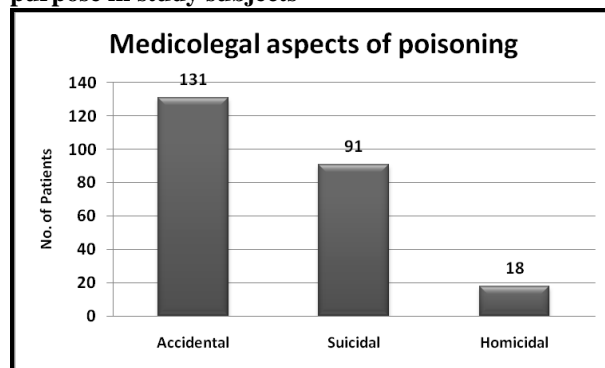
	No.	%
Financial problems	45	34.6
Family problems	23	17.69
Social problems	11	8.46
Marital issues	9	6.92
Chronic illness	8	6.15
Failure in love	16	12.30
Unknown/undetermined	18	13.84



Graph No.1: Age categories of study subjects



Graph No.2: Poisons and drugs used for suicide purpose in study subjects



Graph No.3: Medico-legal aspects of poisoning

Table 2 counts the frequency of problems faced by study subjects with suicidal attempts. Family problems

and financial problems were the commonest noted problems.

Acute poisoning for suicide purpose was noted in 54.1 % (n=130) of study subjects. Poisons and drugs used for committing suicide are shown in graph 2. Kacha sharab, organophosphate and diazepam were the most commonly used agents for poisoning purpose.

DISCUSSION

The present study is the first being reported from our tertiary care hospital on acute poisoning and its medico-legal aspects. Acute poisoning incidence is increasing in our country. This may be because of social problems, economical issues and family conflicts. Lack of money is another issue of lower social class these days which is contributing much to the problems. On the other hand, the community has free access to the drugs, poisons and chemicals because of no implementation of laws and rules. National registries are nonexistent, hence cases of acute poisoning are un reported and under reported.

Acute poisoning for suicide purpose was noted in 54.1 % (n=130) of study subjects in present study. Kacha sharab, organophosphate and diazepam were the most commonly used agents for poisoning purpose. Acute organophosphate poisoning was the second frequent cause of poisoning in present study. This is because of lack of handling of pesticides by the villagers and farmers, which puts them at risk of serious poisoning.¹¹ A previous study¹⁴ reported aluminum phosphide poisoning while in present study kacha sharab (hand-made local alcohol) was commonest, this contrast is because of prevailing situation and availability of the poisons.

Similarly, drugs like hypnotics and tranquilizers are easily purchased from chemists and are used for illicit purpose including suicide. Our finding of benzodiazepines misuse is consistent to a recent study reported from developing country, the Bangladesh.¹

The male gender was frequently affected as noted in present study; our findings are consistent to a previous cited study.¹² In present study, the male to female ratio 1.58:1 which is consistent to above study.

Majority of our study subjects belonged to rural areas of lower social class. The lower social class is suffering a lot of anxiety and family problems mostly because of socio economic crisis. Our finding is comparable to previous studies¹³⁻¹⁵ which reported approximately 2/3 poisoning cases belonged to lower social class.¹³⁻¹⁵

Organophosphate pesticide poisons was noted in 59 of cases which is a large number and this indicates un controlled use of pesticides. Our finding is consistent to previous studies¹⁶⁻¹⁹, but contrary to another study in terms of number or organophosphate poisoning.⁵

Previous studies¹²⁻¹⁵ had reported suicidal and homicidal poisoning as common which is contrast to our present study as we observed majority cases of

accidental poisoning. It is concluded that the laws should be strictly implemented to save the lives of innocent community members. Mortality and disability of society members may be saved by proper sale of drugs and proper handling of pesticides.

CONCLUSION

Acute poisoning is increasing due to commonly available poisons such as drugs and pesticides. If these agents are handled properly, the mortality may be reduced. The public sector authorities should take measures for the proper implementation of handling of drugs, poisons and pesticides.

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Sarkar D, Shaheduzzaman M, Hossain MI, Ahmed M, Mohammad N, Bashar A. Spectrum of acute pharmaceutical and chemical poisoning in Northern Bangladesh. *Asia Pac J Med Toxicol* 2013; 5:1-5.
2. Lalith S, Sharuka F, Patrick J, Nick A, Michael J, Dawson AJ. Changing epidemiologic patterns of deliberate self poisoning in a rural district of Sri Lanka. *BMC Public Health* 2012; 12:593-8.
3. Taleie H, Owliaey H, Pajoumand A, Gholaminejad M, Mehrpour O. Temperature changes among organophosphate poisoned patients, Tehran-Iran. *Daru J Pharmaceut Sci* 2012; 12 (52):1-5.
4. Schwake L, Wollenschlager I, Stremmel W, Encke J. Adverse drug reactions and deliberate self-poisoning as cause of admission to the intensive care unit: a 1- year prospective observational cohort study. *Intensive Care Med* 2009; 35:266-74.
5. Padmakumar K, Maheshkrisha BG, Jaghadheeswararaj J, Natarjan A. Incidence of poisoning reported at a tertiary care hospital. *South Ind J Med legal Asso* 2013; 5 (2): 58-62.
6. Umadethan B, Forensic Medicine, First edition, CBS Publishers and Distributors, New Delhi 2011:323-7.
7. Clark D, Murray DB, Ray D. Epidemiology and outcomes of patients admitted to critical care after self poisoning. *The Intensive Care Society* 2011.
8. Bertolote JM. Deaths from pesticide poisoning: a global response. *British Journal of Psychiatry*. 2006;189:201-3.
9. Hendin H, Ret M. Suicide and Suicide Prevention in Asia: World Health Organization. 2008
10. Camidge DR, Wood RJ, Bateman DN. The epidemiology of self-poisoning in the UK. *Br J Clin Pharmacol* 2003;56(6):613-9.
11. Khoharo HK, Kazi SAF, Rehman S, Shah Q. Current trends of acute poisoning reporting at a

- private medical center of rural Sindh. Med Forum 2013; 25:1-7.
12. Khodabandeh F, Emamhadi MA, Mostafazadeh B. Epidemiological Assessment of Acute Poisoning Death—One Year Survey. Int J Med Toxicol Forens Med 2012; 2(3):103-9.
 13. Guntheti B K, Singh U P. The pattern of poisoning in Khammam. J Ind Acad Forensic Med 2011; 33(4):145-8.
 14. Dash SK. Sociodemographic profile of poisoning cases. J Ind Acad Forensic Med 2005; 27(3):133-8.
 15. Gargi J, Rai H, Chanana A, Raj G, Sharma G, Bagga IJS. Current trends in Poisoning- A hospital profile. J Punjab Acad Forensic Med Toxicol 2005; 27(3):145-8.
 16. Kumar S, Pathak A, Mangal HM. Trends of Fatal poisoning in Saurashtra region of Gujarat. J Ind Acad Forensic Med 2011; 33(3):197-9.
 17. Srinivasulu, Mohanty M K. Study of Poisoning cases in a tertiary care Hospital. J South Ind Med legal Assoc 2011; 3(1): 14-8.
 18. Singh DMD, Jit MS, Seema T. Changing trends in acute poisoning in Chandigarh Zone-A 25 years autopsy experience from a tertiary care hospital in northern India. Am J Foensic Med Pathol 1999; 20(2):203-10.
 19. Abdollahi M, Karami-Mohajeri S. A comprehensive review on experimental and clinical findings in intermediate syndrome caused by organophosphate poisoning. Toxicol Appl Pharmacol 2012;258:309–14.

Electronic Copy