

Spectrum of Drug & Chemical Poisoning in Rural Community of Sindh

* ** *** **** ***** *****
Salman Ahmed Farsi Kazi, Qararo Shah, Sajjad Ali Kazi, Sadia Kazi, Haji Khan Khoharo, Naveed Kazi

ABSTRACT

Objective: To investigate the drug and chemical poisoning in rural community of sindh.

Study design: Observational study

Place and Duration: Murk General Hospital and Al-Haj Suleman Roshan Hospital Tando Adam from December 2012 to November 2013.

Material and Methods: 120 patients with history of acute poisoning were studied. The diagnosis of poisoning was based on history of patients and by relatives, clinical signs and symptoms, and response to therapy. The age, sex and social class were noted. Enquiry was made for the intention of poisoning as accidental, homicidal or suicidal. A pre-structured profroma was used for data collection. The data was analyzed on SPSS version 21 for windows release. A p-value = 0.05 was considered significant.

Results: The mean age of subjects was 39±7.9 years. Of 120 subjects, 74 (61.7%) were male (p=0.001). Acute poisoning was found more in male 61.7% (n=74) compared to female 38.3 % (n=46) (p=0.001). Most common acute poisoning was noted because of Tharo (Kacha Sharab) in 29.2% (n=35) followed by insecticides/organophosphates and diazepam in 24.2% (n=29) and 19.2% (n=23) subjects respectively. Undetermined poisoning agent was found most common in suicidal attempts. The reasons for poisoning were economical loss, marital problems, familial disharmony, and failure in love, chronic illness and social hatred.

Conclusion: The present study concludes that the acute poisoning is rising to day. Mortality may be reduced by implementing rules which are already formulated on the use of these agents.

Key words: Tharo (Kacha Sharab), Organophosphates, Drugs, Poisoning, Rural Community.

INTRODUCTION:

Acute poisoning is a major public health problem of low and middle income countries¹. Acute poisoning may be accidental or intentional;

however, most cases are of intentional poisoning²⁻⁴. The reported incidence reveals a considerable increase of poisoning in the recent years⁵. The intentional poisoning has increased a lot and most cases are self administered. The corrosives, pesticides and vegetable irritants are commonly ingested poisons for suicidal purpose because of easy access⁶. Intentional poisoning proves potentially lethal, eventually culminating in death in most of cases¹. Self poisoning by drugs or chemicals is a serious medical emergency, and reported mortality is very high¹. The ignorance and illiteracy are prevalent in our country, and both contribute much to poisoning. Easy access to drugs and chemicals otherwise causes increased incidence of poisoning⁵. The socioeconomic problems, cultural behaviours and religious

- * *Assistant Professor, Deptt. of Forensic Medicine/ Faculty of Medicine & Allied Medical Sciences, Isra University, Hyderabad.*
- ** *Deputy Director, Ministry of Health, Govt. of Pakistan.*
- *** *Assistant Professor, Deptt. of Community Medicine, Isra University, Hyderabad.*
- **** *Assistant Professor, Deptt. of Pharmacology, Isra University, Hyderabad.*
- ***** *Assistant Professor, Faculty of Medicine & Allied Medical Sciences, Isra University, Hyderabad.*

Correspondence to:

Dr. Haji Khan Khoharo

Assistant Professor Faculty of Medicine & Allied Medical Sciences.

ISRA University, Hyderabad.

Cell: 0331-2662501

Email: drhajikhan786@gmail.com

beliefs influence the suicidal attempts at the most. The suicidal attempts with drugs have increased as a method of suicide in recent days⁷⁻¹⁰. The nature and profile of poisoning varies according to social class within a society, country or a geographical area¹⁻⁵. In developing countries like Pakistan, there is lack of surveillance system for handling of poisons; the drugs and chemicals. There are gaps in the drug and chemical rules and implementation, usually not followed properly. Hence easy access to drugs and chemicals place the people at greater risk of poisoning. The knowledge of acute poisoning prevailing in the rural community surely will help in early institution of therapy. Gathering information of poisoning agents should be analyzed from time to time to keep the doctors aware and updated for the management of acute poisoning at the earliest and effective most. The present study investigated the drug and chemical poisoning in rural community of Sindh.

MATERIAL & METHODS:

One hundred and twenty patients with a history of poisoning were studied at Murk General Hospital and Al-Haj Suleman Roshan Hospital Tando Adam from December 2012 to November 2013. Record of hospital handles acute poisoning cases separately

Acute poisoning was defined as recent poisoning with a deleterious agent causing threat to life of subject. The diagnosis of poisoning was based on history of patients as disclosed by relatives, clinical findings, investigations and response to treatment. All cases of acute poisoning presenting at emergency room of hospitals were included. Patients with history of drug intake or an insecticidal agriculture poisoning were included, while late presenting patients, children and those with snake bite were excluded.

The age, sex, social class, cause and types of poison were noted on a pre-structured proforma designed for the study. The data variables were analyzed on SPSS 21.0 for windows release (IBM Corporation, USA). The continuous and categorical variables were analyzed using student's t-test and Chi-square test respectively. The results were presented in tables and charts as mean±S.D, frequencies and percentages

respectively. A p-value =0.05 was taken statistically significant.

RESULTS:

A sample of 120 patients was studied at Murk General Hospital and Al-Haj Suleman Roshan Hospital Tando Adam. The mean age of subjects was 39±7.9 years. The most affected age group was 20-29.9 years (n=86) (71.7%), followed by 30-39.9 years (n=22) (18.3%) (p=0.001). The demographic data is shown in table-1. Of 120 subjects, 74(61.7%) were male and 46(38.3%) were female (p=0.001). The male to female ratio was 1:1.10. The gender distribution is shown in table 1. Of 120 cases, 42 (35%) were unmarried and 78 (65%) were married subjects.

Of 120 subjects, 75% (n=90) belonged to lower social class. Most common acute poisoning was noted because of Tharo (Kacha Sharab) in 29.2% (n=35) followed by insecticides/organophosphates and diazepam in 24.2% (n=29) and 19.2% (n=23) subjects respectively (table-2). Undetermined poisoning agent was found most common in suicidal attempts. The reasons for poisoning were economical loss, marital problems, familial disharmony, and failure in love, chronic illness and social hatred (table-3).

The majority of cases were of accidental poisoning, medico-legal status of reported poisoning cases is shown in table-4.

Table 1: Demographic Characteristics of Study Population (n=120)

	No.	Percent
Age (years)		
-- 18-19.9	04	3.3
-- 20-29.9	86	71.7
-- 30-39.9	22	18.3
-- 40-49.9	06	5.0
-- ≥ 50	02	1.7
Male (M)	74	61.7
Female (F)	46	38.3
Social Class		
-- Lower	90	75.0
-- Middle	22	18.4
-- Upper	08	6.6

Table 2: Drugs & Chemicals Ingested for Poisoning Purpose (n=120)

	No. of Cases	%
Tharo (Kacha Sharab)	35	29.2
Insecticides-organophosphates	29	24.2
Diazepam	23	19.2
Alprazolam	08	6.7
Antihistamines	05	4.2
Isoniazid	03	2.5
Detergents	02	1.6
Pyrethrins	01	0.8
Lice O nil	01	0.8
Unknown drug/poison	13	10.8
Total	120	100

Table 3. Reported Cause of Suicidal Attempt (n=45)

Cause	No. of Cases	%
Economical Loss	6	5.0
Marital problems	8	6.6
Familial disharmony	5	8.3
Failure in Love	5	8.3
Chronic Illness	4	6.6
Social Hatred	8	13.3
Undetermined	9	15.0
Total	45	100

Table 4: Medico-legal Status of Reported Poisoning Cases (n=120)

Medico-legal Status	No. of Cases	%
Accidental	66	55
Suicidal	45	37.5
Homicidal	09	7.5

DISCUSSION:

Incidence of acute poisoning is on rise in our community because of economical decline, joblessness, social problems, and more over easy

access to drugs and chemical agents. Since there is neither a national database nor poisoning center reporting centers at national levels, hence majority of poisoning cases remain un-reported.

The present study shows high frequency of "Tharo" (Kacha Sharab) consumption which is easily prepared by less privileged villagers as they cannot afford costly liquors. This habit makes them very dangerous spectrum of mortality as "Tharo" has already caused many fatalities in country. The second most common agent was the acute organophosphate poisoning followed by drug ingestion. As reported previously in our published research work that the lack of awareness of farmers of handling the toxic organophosphate pesticides, makes them at higher risk of poisoning and the issue is seriously denied¹¹.

Drugs to be sold on prescription only like Diazepam are freely accessed by people and are ingested for suicidal purpose; this indicates a breach in the prescription rules of drug sale un-noticed by the authorities.

A recent study by Sarkar et al¹. has reported similar results of acute organophosphate poisoning and benzodiazepine ingestion from Bangladesh.

A previous study¹² has reported acute poisoning was more frequent in male (75.4%) vs. 24.6% in female; this finding is consistent with the present work. The present study observes frequency of poisoning in 61.7% male vs. 38.3% in female. Regarding the social class of victims, 75% cases belonged to low social class, the finding is comparable to most of previous studies, which reported that approximately two-third of the victims belonged to poor social class¹³⁻¹⁵.

In present study, out of 120 cases, 29 (24.2%) were due to organophosphate pesticide poisons. This is contrary to study of Padma⁵ et al, but comparable to previous studies¹⁶⁻¹⁹.

Gargi et al¹⁴. in their study from Punjab reported that aluminum phosphide as commonest poison followed by organophosphates and remaining poisons are rarely used for suicidal purpose. In present study, 55% poisoning were accidental in nature which is in contrast to previous studies¹²⁻¹⁵. Followed by suicidal and homicidal cases observed in 37.5% and 7.5% respectively.

CONCLUSION:

Most of victims belonged to low social background of rural areas. Incidence of acute poisoning was highest for the Tharo (Kacha Sharab) in rural community. The present study concludes that the acute poisoning is rising to day. Mortality may be reduced by implementing law on the control of drugs and chemicals use.

REFERENCES:

1. Sarkar D, Shaheduzzaman M, Hossain MI, Ahmed M, Mohammad N, Basher A. Spectrum of acute pharmaceutical and chemical poisoning in Northern Bangladesh. *Asia Pac J Med Toxicol*. 2013; 3:1-5.
2. Talaie 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.
3. 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.
4. Lalith S, Shaluka F, Patrick J, Nick A, Michael J, Dawson AH. Changing epidemiologic patterns of deliberate self poisoning in a rural district of Sri Lanka. *BMC Public Health*. 2012;12:593-8.
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. Camidge DR, Wood RJ, Bateman DN. The epidemiology of self-poisoning in the UK. *Br J Clin Pharmacol*. 2003;56(6):613-9.
9. Bertolote JM. Deaths from pesticide poisoning: a global response. *British J Psych*. 2006;189:201-3.
10. Hendin H, Ret M. *Suicide and Suicide Prevention in Asia: World Health Organization*. 2008
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. *Intl 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 June; 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.