Original Article

Current Trends of Acute Poisoning Reporting at Private Medical Center of Rural Sindh

Acute Poisoning

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ABSTRACT

Objective: The present study intends to evaluate the current trends of acute poisoning reporting at private medical center of Rural Sindh

Study Design: Descriptive/Retrospective study

Place and Duration of Study: This study was carried out at Murk General Hospital Tando Adam from January through December 2012.

Materials and Methods: Sixty patients with a history of poisoning were studied. The diagnosis of poisoning was based on history of patients as disclosed by relatives, clinical findings, investigations and response to treatment. The age, sex, social class, cause and types of poison were noted. The data was collected on a proforma. The variables were typed on SPSS version 21 for analysis.

Results: The mean age of subjects was 33±7.5 years. The most affected age group was 20-29.9 years (n=43) (71.6%). Of sixty subjects, 23(38.3%) were male and 27 (61.6%) female. (p=0.001). Of sixty subjects, 75% (n=45) are farmers belonging to lower social class of rural population, suffering from organophosphate pesticide poisoning (48.3%). Comparing rural to urban population, it shows rural population is suffering more; 88.3% (n=53) vs. 11.6% (n=7). The frequency of organophosphate poisoning is found high 48.3% (n=29) in patients coming from rural areas usually farmers. The accidental organophosphate poisoning is found most frequent in rural population. The alcohol is the second most frequent cause of acute poisoning found in 18.3% of cases.

Conclusion: Incidence of accidental poisoning is found very high from organophosphate pesticides. Sale of drugs, Diazepam and Alprazolam, must be prohibited without proper prescription. It is recommended that measures may be taken to make aware the farmers for using the organophosphate pesticides properly.

Key Words: Acute Poisoning, Organophosphate, Alcohol, Rural Sindh.

INTRODUCTION

Acute poisoning may be accidental or intentional; however, most cases are of intentional poisoning.[1-4] The reported incidence reveals a considerable increase of poisoning in the recent years.[5] 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 access.[6]

Intentional poisoning proves potentially lethal, eventually culminating in death in most of cases.[1] Self poisoning by drugs or chemicals is a serious medical emergency, and reported mortality is very high.[1] 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 poisoning.[5]

The socioeconomic problems, cultural behaviors and religious beliefs influence the suicidal attempts at the most. The suicidal attempts with drugs have increased as a method of suicide in recent days.[1, 7-10] The nature and profile of poisoning varies according to social class within a society, country or a geographical area. [1,5]

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 puts the people at greater risk of poisoning. The knowledge of trends of poisoning may help in early management of patients which determines the mortality and morbidity. Hence gathering information about trends of poisoning 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. This will help government to handle the poisoning substances for safety purpose by making new rules. The present study intends to study the current trends of poisoning these days.

MATERIALS AND METHODS

Sixty patients with a history of poisoning were studied at Murk General Hospital Tando Adam from January 2012 to December 2012. 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 presenting late, children and those with snake bite were excluded.

The age, sex, social class, cause and types of poison were noted. The data was collected on a proforma. The variables were typed on SPSS version 21 for analysis. The data was presented in tables and charts as mean±S.D, frequencies and percentages. The continuous and categorical variables were analyzed using student`s t-test and Chi-square test respectively.

RESULTS

A sample of sixty patients was studied at Murk General Hospital and Al-Haj Suleman Roshan Hospital Tando Adam. The demographic characteristics of study population of acute poisoning are shown in table. I.
The mean age of subjects was 33±7.5 years. The most affected age group was 20-29.9 years (n=43) (71.6%), followed by 30-39.9 years (n=11) (18.3%) (p=0.001). The age distribution of subjects is shown in table 1.

Table No. I: Demographic characteristics of study population

	No. of cases	%
Age		
- 18-19.9 years	02	3.3%
- 20-29.9 years	43	71.6%
- 30-39.9 years	11	18.3%
- 40-49.9 years	03	5%
- ≥ 50 years	01	1.6%
Male (M)	27	61.6%
Female (F)	23	38.3%
Social class		
- Lower class	45	75%
- Middle class	11	18.3%
- Upper class	04	6.6%
Rural	53	88.3%
Urban	07	11.6%

Of sixty subjects, 23(38.3%) were male and 27 (61.6%) were female. (p=0.001). The male to female ratio was 1:1.17. The gender distribution is shown in table 1. Of sixty cases, 21 (35%) were unmarried and 39 (65%) were married subjects. Acute poisoning is found more in male 61.3% (n=27) compared to female 38.3 % (n=23) (p=0.001).

Table No.2: Medicolegal classification of Poisoning

	No. of cases	%
Accidental	41	68.3%
Homicidal	09	15%
Suicidal	10	16.6%

Of sixty subjects, 75% (n=45) are farmers belonging to lower social class of rural population, suffering from organophosphate pesticide poisoning (48.3%).

Comparing rural to urban population, it shows rural population is suffering more; 88.3% (n=53) vs. 11.6% (n=07). The frequency of organophosphate poisoning is found high (48.3%) in patients coming from rural areas usually farmers. (Table 4). The accidental organophosphate poisoning is found most frequent in rural population (Table 2). The alcohol is the second most frequent cause of acute poisoning found in 18.3% of cases. In 13.3% (n=8) cases, the type of poison was not ascertained and are labeled as unknown poisons as shown in table 4. The frequency and types of poisoning are shown in table. 4.

Table No.3. Monthly distribution of Poisoning cases

	No. of cases	**%**
January	3	5.0%
February	4	6.6%
March	5	8.3%
April	4	6.6%
May	8	13.3%
June	9	15.0%
July	5	8.3%
August	4	6.6%
September	7	11.6%
October	3	5.0%
November	4	6.6%
December	4	6.6%

Table No.4: Types of Poisoning substances

	No. of cases	%
Organophosphate	29	48.3%
Alcohol	11	18.3%
Insecticides	03	5.0%
Detergents	02	3.3%
Pyrethrins	01	1.6%
Lice O nil	01	1.6%
Diazepam	02	3.3%
Alprazolam	02	3.3%
Kerosene Oil	01	1.6%
Unknown poison	08	13.3%

The distribution of cases on monthly basis throughout the year is shown in table 3, and reveals high frequency of cases from May to September. However, the cases are presenting throughout the year. (table 3).
The serious patients with life threatening toxicity were referred to tertiary care hospitals. The cases of medico-legal importance of homicidal type were also referred to government hospitals after initial life saving measure have been taken. Mortality was not observed in present study; one reason is that we have referred all serious patients to tertiary care hospitals without delay.

DISCUSSION

The present study is original research work on acute poisoning cases conducted at Private Hospitals of Tando Adam. The hospitals cater a large number of

rural population of villagers which are engaged in agriculture work. The present study shows high frequency of organophosphate poisoning in farmers (Tables I and IV). The present study explores some of the characteristics of victims of acute poisoning. As the rules and regulations on the use of drugs and chemicals are lacking and if a few present, are not implemented properly by authorities. And moreover, lack of awareness of people, particularly the farmers handling the toxic organophosphate pesticides, makes them at higher risk of poisoning and the issue is seriously denied, puts people of at higher risk of acute poisoning.

The substances used are important cause of mortality. In present study drugs which are to be sold on prescription only like Alprazolam, Diazepam etc, were ingested by patients for suicidal purpose, this indicates a breach in the prescription rules of drug sale which remains uncontrolled.

The acute poisoning is most frequent in the 3rd decade of life in present study (table.1.) which is comparable to previous reported studies.[1,5, 11-14] A recent study of Khodabandeh[1] has reported a study from Iran on acute poisoning presenting at emergency room and reported more frequency of poisoning in male (75.4%) vs. 24.6% in female; this finding is consistent with our present work. The present study observes frequency of poisoning in 61.6% male vs. 38.3% in female.

Regarding the social class of victims, 75% cases belonged to low social class, our finding is comparable to majority of studies reported from India, which have reported that more than two-third of the victims belonged to poor social class. [5,12, 15,16]

The present study reports occurrence of poisoning throughout the year, but more in the months from May to September, the reason is not known, but may be the availability of organophosphates during these months. The findings are comparable to Padma[5] et al. However many other studies have reported similar pattern of increased incidence of acute poisoning during summer season. [11-14]

In present study, out of sixty cases, 29 (48.3%) were due to organophosphate pesticide poisons. This is in contrast to study of Padma[5] et al, but comparable to most studies reported from India. [11, 17,18]

Gargi et al. [15] in their study from Punjab reported that aluminum phophide as commonest poison followed by organophosphates and remaining poisons are rarely used for suicidal purpose.[5]

A 25 year autopsy based study reported that since 1992 when aluminum sulphide is available freely, it has reportedly overtaken all other forms deliberate poisons. Another observation in this previous study is the consumption of detergent solutions and pyrethrins are on the rise. [18] The present also observes intake of household poisons like Lice-O-nil, detergents and kerosene oil.

In present study, 41 (68.3%) were accidental in nature which is in contrast to previous studies. [11-16] This contrast is introduced because of rural set up of study population of present study and accidental poisoning while spraying the organophosphate pesticides on crops in agriculture lands and farmers are not aware of proper way of using the pesticide.

CONCLUSION

Most of victims belonged to low social background of rural areas. Incidence of accidental poisoning is found highest from organophosphate pesticides in present study. Sale of drugs, Diazepam and Alprazolam, must be prohibited without proper prescription, similarly that of alcohol. It is recommended that measures may be taken to make aware the farmers for using the organophosphate pesticides properly.

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