

Retrospective Analysis of Trends of Poisoning cases at a Tertiary Care Teaching Centre

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ABSTRACT

Background: Poisoning is an important medical emergency. The nature of poison used varies in different parts of the world and may vary even in different parts of the same country depending on the socioeconomic factors and cultural diversity. Hence; we planned the present study to assess poisoning trends among a known population.

Materials & Methods: The present study included assessment of trends of poisoning among a known population. We obtained data records of all the patients that were admitted to the emergency department of the institute due to poisoning. Complete demographic details of the all the subjects were collected along with their clinical and physical status. Follow-up records and investigations details of these patients were obtained including their duration of stay in the hospital, outcome and time of occurrence.

Results: Among the 50 subjects included in the present study, in 56 percent of the cases, poisoning was suicidal while in 36, percent of the cases, the posing was accidental.

Conclusion: Suicidal cases are among the most common type of poisoning cases encountered.

Key words: Population, Poisoning, Trend.

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INTRODUCTION

Poisoning is an important medical emergency. The nature of poison used varies in different parts of the world and may vary even in different parts of the same country depending on the socioeconomic factors and cultural diversity.¹⁻³

Management of these critically ill patients will greatly improve if the common causes of poisoning are properly defined. Organophosphorus poisoning occurs very commonly in southern India, where farmers form a significant proportion of the population who commonly use organophosphorus compounds like parathion as insecticides.⁴⁻⁶ Thus, due to the easy accessibility of these compounds, a large number of suicidal cases are encountered in this region. In addition to that, snakebite is a common acute medical emergency faced by rural populations in tropical and subtropical countries with heavy rainfall and humid climate.⁷⁻⁹ Hence; we planned the present study to assess poisoning trends among a known population.

MATERIALS & METHODS

The present study was planned in the department of forensic medicine, Sakshi Medical College and Research Centre, Guna,

Madhya Pradesh (India) and included assessment of trends of poisoning among a known population. Ethical clearance was obtained from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. We obtained data records of all the patients that were admitted to the emergency department of the institute due to poisoning. Complete demographic details of the all the subjects were collected along with their clinical and physical status. Follow-up records and investigations details of these patients were obtained including their duration of stay in the hospital, outcome and time of occurrence.

All the results were recorded on Microsoft excel sheet. All the results were analyzed by SPSS software. Student t test and chi-square test were used for assessment of level of significance. P-value of less than 0.05 was taken as significant.

RESULTS

A total of 50 subjects were included in the present study. Among them, most of them (36 percent) belonged to the age group of 31 to 40 years. 22 and 20 percent of the patients belonged to the age

group of 21 to 30 years and 41 to 50 years respectively. Only 2 patients belonged to the age group of more than 50 years. Out of 50, 74 percent of the subjects were males while the remaining were females. Among the 50 subjects included in the present study, in 56 percent of the cases, poisoning was suicidal while in 36, percent of the cases, the posing was accidental.

Table 1: Distribution of subjects according to age

Age group (years)	No. of subjects	Percentage
Less than 10	3	6%
10 to 20	6	12%
21 to 30	11	22%
31 to 40	18	36%
41 to 50	10	20%
More than 50	2	4%
Total	50	100%

Graph 1: Distribution of subjects according to gender

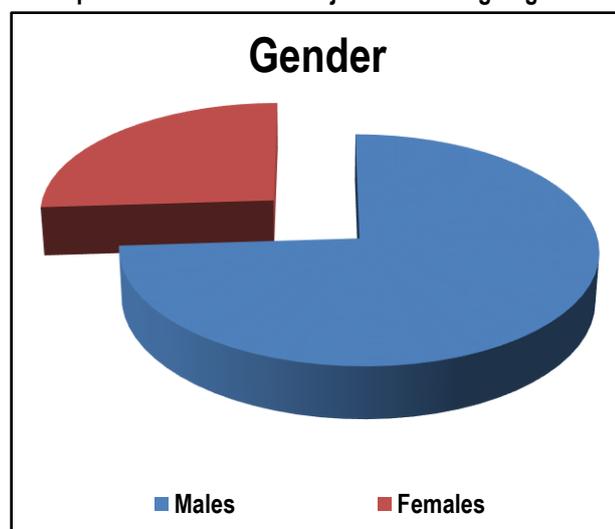


Table 2: Distribution of subjects according to manner of poisoning

Type of poisoning	No. of subjects	Percentage
Accidental	18	36%
Suicidal	28	56%
homicidal	4	8%

DISCUSSION

In the present study, we observed that poisoning cases were more common among males and most of them were suicidal in nature. Kumar SV et al characterized the poisoning cases admitted to the tertiary care hospital, Warangal district, Andhra Pradesh, Southern India. All cases admitted to the emergency department of the hospital between the months of January and December, 2007, was evaluated retrospectively. They reviewed data obtained from the hospital medical records and included the following factors: socio-demographic characteristics, agents and route of intake and time of admission of the poisoned patients.

During the outbreak in 2007, 2,226 patients were admitted to the hospital with different poisonings; the overall case fatality rate was 8.3% ($n = 186$). More detailed data from 2007 reveals that two-third of the patients were 21–30 years old, 5.12% ($n = 114$) were male and 3.23% ($n = 72$) were female, who had intentionally poisoned themselves. In summary, the tertiary care hospitals of the Telangana region, Warangal, indicate that significant opportunities for reducing mortality are achieved by better medical management and further sales restrictions on the most toxic pesticides. This study highlighted the lacunae in the services of tertiary care hospitals and the need to establish a poison information center for the better management and prevention of poisoning cases.¹⁰

Ramesha KN et al assessed the pattern and outcome of acute poisoning cases in a tertiary care hospital in Karnataka. This is a retrospective hospital record-based study conducted in a tertiary care hospital attached to a medical institution in Karnataka. The study included 136 cases and data regarding age, sex, time elapsed after intake; circumstances of poisoning, name of the poisonous substance, chemical type, duration of hospitalization, severity and outcome were collected in the prestructured proforma. Incidence was more common among males (75.4%) compared to females (24.3). Most cases of acute poisoning presented among 20- to 29-year age group (31.2%) followed by 12- to 19-year age group (30.2%). A majority of poisoning cases (36.0%) were due to organophosphorus compound (OPC). Total mortality was found to be 15.4%. Mortality rate due to corrosives was significantly high compared with OPC poisoning ($\chi^2 = 4.12$, $P = 0.04$). Of the 56 patients of OPC and carbamate poisoning, 13 patients (23.2%) had respiratory arrest and required respiratory support. Time lapse had a significant role on the mortality in cases of acute poisoning ($\chi^2 = 10.9$, $P = 0.01$). Poisoning is more common in young males. The overall mortality is substantially high, mainly contributed by self-poisoning with insecticides and corrosives.¹¹

Srivastava A et al made queries on poisoning management (92%) and information (8%) about various products and functioning of the centre. The data were analysed with respect to age, sex, mode and type of poisoning. The agents belonged to various groups: household products, agricultural pesticides, industrial chemicals, drugs, plants, animal bites and stings, miscellaneous and unknown groups respectively. The age ranged from less than 1 to 70 years, with the highest incidence in the range of 14-40 years, with males (57%) outnumbering females (43%). The most common mode of poisoning was suicidal (53%), followed by accidental (47%). The route of exposure was mainly oral (88%). Dermal (5%), inhalation and ocular exposure contributed 7% to the total. The highest incidence of poisoning was due to household agents (44.1%) followed by drugs (18.8%), agricultural pesticides (12.8%), industrial chemicals (8.9%), animals bites and stings (4.7%), plants (1.7%), unknown (2.9%) and miscellaneous groups (5.6%). Household products mainly comprised of pyrethroids, rodenticides, carbamates, phenyl, detergents, corrosives etc. Drugs implicated included benzodiazepines, anticonvulsants, analgesics, antihistamines, tricyclic antidepressants, thyroid hormones and oral contraceptives. Among the agricultural pesticides, aluminium phosphide was the most commonly consumed followed by organochlorines, organophosphates, ethylene dibromide, herbicides and fungicides.

Copper sulphate and nitrobenzene were common among industrial chemicals. The bites and stings group comprised of snake bites, scorpion, wasp and bee stings. Poisoning due to plants was low, but datura was the most commonly ingested. An alarming feature of the study was the high incidence of poisoning in children (36.5%). The age ranged from less than 1 to 18 years and the most vulnerable age group included children from less than 1 year to 6 years. Accidental mode was the most common (79.7%). Intentional attempts were also noticed (20.2%) in the age group above 12 years. Their data may not give an exact picture of the incidence of poisoning in India, but represents a trend in our country.¹²

CONCLUSION

From the above results, the authors concluded that suicidal cases are among the most common type of poisoning cases encountered. However; future studies are recommended.

REFERENCES

1. Warrell DA. International Panel of Experts. The clinical management of snake bites in the South Asian region. *Southeast Asian J Trop Med Public Health*. 1999;1:1–84.
2. Kanchan T, Menezes RG. Suicidal poisoning in Southern India: Gender differences. *J Forensic Leg Med*. 2008;15:7–14.
3. Banejee RN. Poisonous snakes and their venoms, symptomatology and treatment. In: Ahuja MM, editor. *Progress in Clinical Medicine, Second Series*. India: Heinemann; 2003. pp. 136–79.
4. Rajasuriya R, Awang R, Hashim SB, Rahmat HR. Profile of poisoning admissions in Malaysia. *Hum Exp Toxicol*. 2007;26:73–81.
5. Law S, Liu P. Suicide in China: Unique demographic patterns and relationship to depressive disorder. *Curr Psychiatry Rep*. 2008;10:80–6.
6. Pajoumand A, Shadnia S et al. A retrospective study of mushroom poisoning in Iran. *Hum Exp Toxicol*. 2005;24:609–13.
7. Tagwireyi D, Ball DE, Nhachi CF. Poisoning in Zimbabwe: A survey of eight major referral hospitals. *J Appl Toxicol*. 2002;22:99–105.
8. Singh DP, Acharya RP. Pattern of poisoning cases at Bir hospital. *J Institute Med*. 2006;28:3–6.
9. Agarwal SB. Study of 190 cases of organophosphorus poisoning. *J Assoc Physicians India*. 1989;31:66.
10. Kumar SV, Venkateswarlu B, Sasikala M, Kumar GV. A study on poisoning cases in a tertiary care hospital. *Journal of Natural Science, Biology, and Medicine*. 2010;1(1):35-39. doi:10.4103/0976-9668.71671.
11. Ramesha KN, Rao KBH, Kumar GS. Pattern and outcome of acute poisoning cases in a tertiary care hospital in Karnataka, India. *Indian Journal of Critical Care Medicine : Peer-reviewed, Official Publication of Indian Society of Critical Care Medicine*. 2009;13(3):152-155. doi:10.4103/0972-5229.58541.
12. Srivastava A, Peshin SS, Kaleekal T, Gupta SK. An epidemiological study of poisoning cases reported to the National Poisons Information Centre, All India Institute of Medical Sciences, New Delhi. *Hum Exp Toxicol*. 2005 Jun;24(6):279-85.

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