

PROFILE OF POISONING CASES IN A TERTIARY CARE HOSPITAL, TELANGANA, INDIA

D. T. V. Naresh¹, Shailendra D², Subbaratnam Y³, Prasuna G⁴, K. Rajashekar⁵, Mary Rohini⁶

HOW TO CITE THIS ARTICLE:

D. T. V. Naresh, Shailendra D, Subbaratnam Y, Prasuna G, K. Rajashekar, Mary Rohini. "Profile of Poisoning Cases in Tertiary Care Hospital, Telangana, India". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 20, May 18, 2015; Page: 3032-3038.

ABSTRACT: BACKGROUND: Poisoning with various substances is an important cause of death and disability worldwide. The types of poisons that are encountered in the emergency medicine departments encompass a wide range of substances. Apparently, geographic location, socio-demographic factors, ease of availability of poisons and many other cryptic factors contribute to the wide spectrum of substances that cause poisoning. Pesticides, drugs and chemicals are reported to be the most commonly used poisons in India. Management of poisoning is quite challenging for the health care professionals globally. Factors such as the uncertainty in the identification of allegedly consumed poison, varied clinical features and the need for timely access to specific information for treatment, complicates poisoning management. This study was therefore conducted to explore the clinical features, management and outcomes of poisoning cases reporting to a tertiary care centre in south India. **OBJECTIVE:** To identify the spectrum of poisons and evaluate their clinical manifestations, medical management and clinical outcomes. **METHODOLOGY:** All cases of poisoning that were reported at a tertiary care hospital in South India for a period of 18 months from January 1, 2013 to June 30, 2014 were included in this study. A data abstraction sheet was designed to document demographic details (age and gender), poison consumed, duration of stay in the hospital, clinical features, treatment administered, need for life support and patient outcomes. **RESULTS:** A total of 145 poisoning cases were reported during the study period. Among them, 58.5% were males and 41.3% were females. Majority of victims were in the age group of 21-30 years. Intentional poisoning was observed in 86.2%, whereas the rest were accidental poisonings. Organophosphorus (OP) poisoning was the most common poisoning encountered in this study. It accounted for 25.5% of the total cases of poisoning. The nature of poison was undetermined in 8.9% of the cases. Apart from organophosphorus poisoning, significant proportion of poisoning comprised of several other substances like hair colours, home remedies for medical ailments and chemicals used in the household. Though, they were small in numbers independently, cumulatively they contributed to a significant proportion of poisoning cases. All of the poisoning cases had complete recovery. **CONCLUSION:** Organophosphorus poisoning was the most common type of poisoning. Several chemicals like hair colours, phenyle, urea and drugs like norethisterone and thyroxine were used with suicidal intention. There were no casualties. Timely management of poisoning according to evidence based guidelines potentially minimises morbidity and mortality due to poisons and helps improve patient outcomes.

KEYWORDS: Poisoning, Organophosphorus, Hair colour, Herbicide, Clinical profile.

ORIGINAL ARTICLE

INTRODUCTION: Everyday around the world, almost 700 people die from poisoning and, for every person that dies, several thousands more are affected by poisoning. Poisoning occurs in all regions and countries and affects people in all age and income groups.⁽¹⁾ According to WHO (2008) global burden of diseases, in India death rate due to poisoning, was 1.7 per 1000 in those aged between 0-14 years, 9.9 per 1000 for those aged between 15-59 years and 3 per 1000 in those aged 60 and above.⁽²⁾

Though poisoning with an array of substances are documented in literature, pesticides have been reported to be the most commonly used poisoning agents for intentional poisoning in India.^[2]

The spectrum of poisoning includes common and uncommon substances. Medical management of uncommon poisoning presents a real challenge to emergency medical staff due to scarce data on clinical manifestations and limited information for their management. Information on clinical features and outcomes of such uncommon poisons help in designing protocols for appropriate and timely management of such poisonings. The purpose of this study therefore, was to explore the pattern of poisoning and their clinical profile, medical management and treatment outcomes in a tertiary care hospital.

MATERIALS AND METHODS: The present study was a retrospective study conducted during March 2015 with medical records dated between January 2013 and June 2014. The case sheets were obtained from the medical records department in a tertiary care hospital, Medchal, Telangana. 145 cases of acute poisoning due to drugs, chemicals, Snake bite and Scorpion sting were included. Insect bites, food poisoning and allergic reaction to drugs were excluded. Data pertaining to age, sex, type of poison consumed, time and month of intake, route of exposure, and outcome of poisoning were collected from the hospital records. The data were extracted onto a structured data abstraction sheet.

DATA ANALYSIS: All the data were entered and analysed in Microsoft Excel 2007. Continuous data were summarized and expressed in terms of mean and standard deviation. Categorical data were summarized as proportions (percentages).

RESULTS: The demographic data of cases included in this study are presented in table 1. The exposure substances identified as most commonly encountered in the emergency department in the descending order of frequency were: Organophosphorus (25.5%), Insecticide and Herbicide cumulatively (17.9%), snake bite (11%), undetermined poisoning (8.96%) , rodenticide (5.5%), drug induced poisoning (5.5%) , hair dye (1.3%) and kerosene ingestion (1.3%) . Drug induced poisoning category included Norethisterone, Phenytoin, Thyroxine, Alprazolam and a single case of multiple drug poisoning with Amlodipine and some unknown tablets. Details of various types of poisons and their frequencies are listed in presented in Table-2.

	Male	Female
Age in Years (Mean±SD)	30.7±11.66	28.6±10.7
Proportion of poisoning cases (%)	58.6%	41.3%

Table 1: Demographic Details of Cases Included in the Study

ORIGINAL ARTICLE

Type of Poisoning (n=145)	Number of Patients	%
Op Poisoning	37	25.5%
Super Vasmol Poisoning	2	1.3%
Snake Bite	16	11%
Scorpion Sting	1	0.6%
Herbicide Poisoning	5	3.4%
Insecticide Poisoning	21	14.4%
Bi nutri Poisoning	1	0.6%
Benzene Hydrochloride	1	0.6%
Kerosene Poisoning	2	1.3%
Datura Poisoning	1	0.6%
Phenol Poisoning	2	1.3%
Phenyle Poisoning	1	0.6%
Sika noleek (water proof agent)Poisoning	1	0.6%
Rodenticide Poisoning	8	5.5%
Chloroform Inhalation	2	1.3%
Zinda tilismuth Poisoning	1	0.6%
Organochloride (endosulfan)	1	0.6%
Multiple Drug Overdosage	3	2%
Super Phosphate Plant Booster	3	2%
Bleaching Powder Poisoning	1	0.6%
Thyroxine Overdose	2	1.3%
Norethisterone Overdose	1	0.6%
Transformer Oil Poisoning	1	0.6%
Tygon Poisoning	1	0.6%
Ammonium Phosphate Poisoning	1	0.6%
Glyphosate Poisoning	1	0.6%
Dettol Poisoning	1	0.6%
Acid Poisoning	1	0.6%
Harpic Poisoning	2	1.3%

ORIGINAL ARTICLE

Nail Polish Remover (acetone)	3	2%
Toulene Inhalation	1	0.6%
Alprazolam Poisoning	2	1.3%
Carbamate Poisoning	2	1.3%
Unknown Poisoning	13	8.9%
Urea Poisoning	1	0.6%
Phenytoin Poisoning	2	1.3%

Table 2: Frequency Distributrion Of Different Types Of Poisons

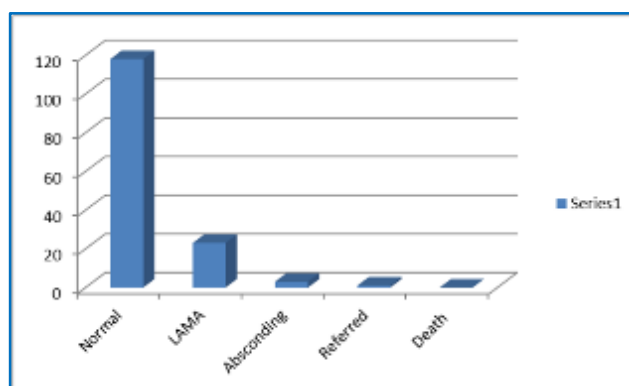


Figure 1: Observed Patient Outcomes

LAMA- Left against medical advice

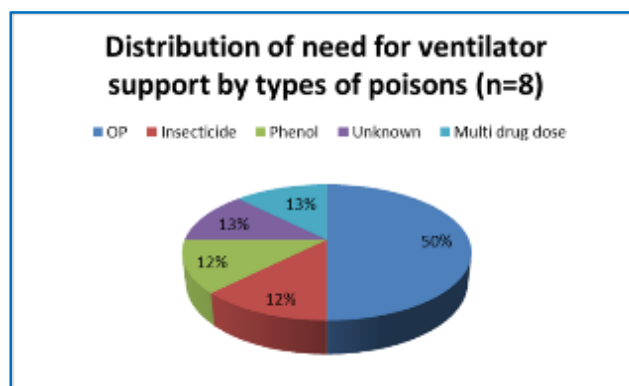


Figure 2: Need for Ventilator in Different types of Poisonings

DISCUSSION: Poisoning exposures observed in this study were grouped into 36 toxic substances. In this study pharmaceutical or medicinal drug use and chemical exposure were categorized into intentional poisonings, which included suicide, abuse and misuse. Unintentional

ORIGINAL ARTICLE

exposure included Snake bites, Scorpion sting and a single case of chloroform inhalation at worksite. The proportion of males among the cases of poisoning was 58.62% as against 41.3% females. Similar observations were reported in a study conducted by Maharani et al. They reported that poisoning was observed in 61.3% males and 38.6% females.^[3]

The present study revealed that self-poisoning contributed to 86% of poisoning cases, while 13.7% were accidental in nature. The proportion of suicidal poisoning was more than that of accidental poisoning. Similar observation of higher suicidal poisoning was reported by Maharani et al., where 98.66% of poisoning cases were suicidal in nature and the remaining were accidental in nature.^[3]

In our study Organophosphorus poisoning contributed to 25.5% of cases of poisoning. However, much higher proportion of Organophosphorus poisoning was reported in other studies conducted in India. For example, in the study conducted by Maharani et al., Organophosphorus poisoning contributed to 58% of the total poisoning cases.^[3] In another study conducted by Ramnath et al., the proportion of cases due to Organophosphorus poisoning was 57%.^[1] The Organophosphorus poisoning burden observed in the study is relatively lower than that reported in the above mentioned studies. This difference in findings could be due to variations in socio-demographic profiles and geographic location.

In this study, 65% (n=37) males consumed organophosphorus poison, whereas 35% (n=37) females consumed Organophosphorus Poison. Similarly, Padmanabha et al., reported organophosphorous poisoning to be higher among males (76.42%) as compared to females (23.57%).^[4]

The average age of males who suffered from poisoning (suicidal and accidental) was 30.7 years. The average age of females who suffered from poisoning was 28.6 years.

Proportion of Males (58.6%) as compared to females (41.3%) was higher in the patients presenting with features of poisoning. These results are in accordance with study conducted by AK Batra et al.⁽⁵⁾ This could be partially due to demographic factors such as higher male to female ratio in India.

Most of the patients reported with vomiting (34.1%), while 38.3% were asymptomatic. These being major manifestations, the others were burning sensation in throat, nausea, generalized weakness, drowsiness, and sweating, intermediate syndrome in case of organophosphorus poisoning, fasciculations, breathlessness, cellulitis, seizures, localized pain, and unconsciousness.

Gastric lavage was performed in most cases of orally ingested poisoning (84.8%), except for acid and kerosene poisoning. Organophosphorus Poisoning was treated with both Atropine and Pralidoxime (PAM) in accordance with conventional guidelines.

Mean duration of hospital stay across all cases of poisoning was 3.7 days, minimum being 0 days (discharged on the day of hospital visit) and maximum being 38 days. 2% of cases required minimum duration of hospital stay. Only one case (0.6%) required 38 days stay in the hospital. This was a case of Organophosphorus poisoning that required ventilator support. The patient recovered completely without any residual impairment by the time of discharge from the hospital.

ORIGINAL ARTICLE

118(81.4%) patients recovered completely, 23 patients (15.9%) left against medical advice, 1(0.6%) patient was referred on request and 3 patients (1.8%) were reported absconding. No deaths were observed. The details of patient outcomes are shown in figure 1.

5.5% of total cases of poisoning needed ventilator support. Of these 5 were males, 3 were females. The most prevalent poisoning that required ventilator support was OP Poisoning. Details of need for ventilator support according to the type of poison are shown in figure 2.

CONCLUSION: OP poisoning contributed to the highest burden of poisoning among all the cases of poisoning observed in this study. Several other poisons, though independently small in numbers, cumulatively contributed significantly to the burden of poisonings. There were no casualties observed in this study. Appropriate and timely evidence based medical care is apparently crucial to reduce morbidity and mortality due to poisoning.

ACKNOWLEDGEMENTS: We thank the Principal and the management of MediCiti Institute of Medical Sciences for the encouragement and support for this research work. We also extend our gratitude to the staff of medical records department, MediCiti Institute of Medical Sciences for their help.

REFERENCES:

1. Ramanath K. V, Naveen Kumar H. D. Study the assessment of poisoning cases in a rural tertiary care teaching hospital by a clinical pharmacist. Asian Journal of Pharmaceutical and Clinical Research Vol 5, Issue 2, 2012.
2. Mortality and burden of disease estimates for WHO member states in 2008. Report accessed at ww.who.int/healthinfo/global_burden_disease/en/.
3. Profile of poisoning cases in a Tertiary care Hospital, Tamil Nadu. India. Maharani and Vijayakumari /Journal of Applied Pharmaceutical Science 3 (01); 2013: 091-094.
4. Dr Padmanabha T S, Dr Kashinath Gumma and Dr Gajanan P Kulkarni Study of profile of Organophosphorus poisoning cases in A tertiary care hospital, North Karnataka, Bidar, India. . Int j pharm bio sci 2014 jan; 5 (1): (p) 332 – 339.
5. AK Batra, AN Keoliya, GU Jadhav Poisoning: An Unnatural Cause of Morbidity and Mortality in Rural India. . JAPI VOL. 51 OCTOBER 2003.

ORIGINAL ARTICLE

AUTHORS:

1. D. T. V. Naresh
2. Shailendra D.
3. Subbaratnam Y.
4. Prasuna G.
5. K. Rajashekar
6. Mary Rohini

PARTICULARS OF CONTRIBUTORS:

1. Post Graduate, Department of Pharmacology, Medicity Institute of Medical Sciences, Hyderabad.
2. Associate Professor, Department of Pharmacology, Medicity Institute of Medical Sciences, Hyderabad.
3. Professor, Department of Pharmacology, Medicity Institute of Medical Sciences, Hyderabad.
4. Professor & HOD, Department of Pharmacology, Medicity Institute of Medical Sciences, Hyderabad.

5. Post Graduate, Department of Pharmacology, Medicity Institute of Medical Sciences, Hyderabad.
6. Post Graduate, Department of Pharmacology, Medicity Institute of Medical Sciences, Hyderabad.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

D. T. V. Naresh,
Flat No. #202,
Navnidhinilayam,
Street No. #7, lane beside RK Electronics,
Chikkadpally-500020,
Hyderabad, Telangana.
E-mail: mimsstud59@yahoo.co.in

Date of Submission: 08/05/2015.
Date of Peer Review: 09/05/2015.
Date of Acceptance: 12/05/2015.
Date of Publishing: 18/05/2015.