

Original Research Article

Incidence, clinical profile and outcome of poisoning patients in a tertiary care hospital, Chennai

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Abstract

Poisoning is one of the commonest health problems in patients who present to Emergency Department, causing significant morbidity and mortality in them. The present study is aimed at assessing the incidence, clinical profile and outcome of poisoning patients admitted during a 2- month period of December 2016 - January 2017 in Government Royapettah Hospital, Chennai. 132 cases of acute poisoning in adults due to drugs and chemicals were included. Data on age, sex, type of poison, route of exposure, associated co-morbid conditions and outcome of poisoning were recorded and analysed by descriptive method. Among 132 cases, 90 cases were of intentional poisoning and 42 cases were of accidental poisoning. In all the cases the route of exposure was oral. The percentage of poisoning patients was equal in both males & females. Peak occurrence was in the age group 21-30 years. Rat killer was the commonest toxic agent. Associated comorbidities were found in 11 patients. The incidence of acute poisoning, morbidity and mortality can be substantially reduced by implementing effective strategies that prevent the easy availability of pesticides & over-the-counter medications.

Key words

Rat killer, Corrosive poisoning, Organ phosphorus compounds, Alcohol intoxication.

Introduction

Poison is a substance that causes damage or injury to the body and endangers one's life due to its exposure by means of ingestion, inhalation or contact [1]. Acute poisoning has emerged as a significant public health problem worldwide, with thousands of deaths occurring every year, both in the developing and developed world. According to World Health Organization (WHO), globally more than three million of acute poisoning cases with 2, 20,000 deaths occur annually [2]. It has been estimated that, in India five to six persons per lakh of population die due to acute poisoning every year [3]. Rapid industrialization, availability of newer drugs for treatment and massive use of pesticides in agriculture has increased the incidence of poisoning. In India, as agriculture is the main occupation, insecticides and other agrochemical fertilizers are used to a greater extent and the poisoning with such products are more common [4]. It is important to be aware of the general pattern of poisoning in a locality, which would help in early diagnosis from the symptoms and prompt treatment, which will result in reduced morbidity and mortality due to poisoning.

Materials and methods

The study was a retrospective study conducted during December 2016 - January 2017 in a tertiary care hospital, Chennai, Tamil Nadu the study included 132 cases of adults, with acute poisoning due to drugs and chemicals. Cases of snake envenomation, insect bite, food poisoning and allergic reaction to drugs were not included in the study. Data regarding age, sex, marital status, occupation, locality, type of poison, and outcome of poisoning and associated co-morbid conditions were collected from the hospital records and documented in the pre- structured proforma and statistical analysis was done.

Results

In this study, 132 cases of poisoning were reviewed retrospectively. Among them, cases 90 were of intentional poisoning and 42 were of accidental poisoning. In all the cases, the route

of exposure was oral. Majority of the cases were in the age group of 21-30 years. Co-morbid conditions like Systemic hypertension, Diabetes, Psychiatric illness, malignancy etc., were found in 11 cases (8.3%) as per **Table – 1**. Type of poisoning and mortality rate with each type of poisoning was as per **Table – 2**. Percentage of substance abuse among poisoning patients was as per **Table – 3**.

Discussion

In this study, the commonest agent of poisoning was Rat killer (24.24%) [5] followed by Drugs (21.21%) [6]. And the incidence of poisoning was equal in both males and females, in contrast to most studies which showed higher incidence in males [7, 8]. This can be explained due to the increase in working women population and that equal amount of stress that both males and females are subjected to, in the present days of rapid industrialisation. Most of the cases belonged to the age group 21-30 year (40.15%), which can be explained by the fact that the persons of this age group suffer from stress of the modern lifestyles, work stress, failure in personal life, family problems, etc. [7]. Incidence of poisoning was higher in males who belonged to the age group 41-50 years (66.66%) whereas, in females of age group less than 20 years (68.58%). The tablets that were used for suicidal purposes were mostly Antiepileptic's, Antidepressant, Oral hypoglycaemic, and a substantial amount of cases managed to get these drugs over-the-counter, without any prescription [8]. The time of consumption of poison in majority of cases (63.64%) was during the day time, and at residence (90.1%) when the cases were alone. The rate of successful treatment during this study was 97.7%. A total of 5 patients required Mechanical ventilator support. However 3 patients (OPC, alcohol intoxication, corrosive ingestion) died during this study. The reasons for the mortality in the 3 poisoned individuals were the delay in presentation to the ER and lack of information regarding the dose of the toxin. The immediate cause of death in all three was Respiratory failure.

Conclusion

To reduce the poison induced morbidity and mortality following steps such as having a centralised poison information centre, availability of standard treatment protocols for managing various poisons, and educational programs for emergency care personnel may be more appropriate in treating the patients at the time of transportation to the hospital. Incidence of intentional poisoning keep increasing due to

emotional and professional stress. Most commonly used agents for poisoning are pesticides or over-the-counter medicines by the people. The findings of the study conclude that poisoning was more in early adulthood. Psychiatric counselling to high risk groups can as well help in bringing down the prevalence of substance abuse & the incidence of poisoning in the productive population.

Table – 1: Age-wise and sex distribution of patients studied.

Age (in years)	Male [no. (%)]	Female [no. (%)]	Total [no. (%)]
<20	11 (31.42%)	24 (68.58%)	35 (26.51%)
21-30	29 (54.71 %)	24 (45.29%)	53 (40.15%)
31-40	14 (50%)	14 (50%)	28 (21.21%)
41-50	8 (66.66%)	4 (33.34%)	12 (9.09%)
51-60	1 (100%)	0	1 (0.75%)
61-70	3 (100%)	0	3 (2.27%)

Table – 2: Type of poisoning and mortality rate with each type of poisoning.

Type of poison	No. of cases (%)	No. of cases requiring Mechanical ventilation	No. of deaths	Mortality Rate (%)
Rat killer	32 (24.24 %)	0	0	0
Corrosive poisoning (Acid, Alkali, Detergent)	21 (15.90 %)	1	1	4.7%
Organ phosphorus compounds	7 (5.30 %)	2	1	14%
Hair dye (paraphenylene diamine)	1 (0.75%)	0	0	0
Drugs (Anti-psychotics, NSAIDS, anti-epileptics, OHAs)	28 (21.21 %)	0	0	0
Plant poisons (oleander)	9 (6.81%)	0	0	0
Pesticides (Mosquito repellants, bug killer, Termite killer ,cow dung)	22 (16.6%)	0	0	0
Alcohol intoxication	7 (5.30%)	2	1	14%
Unknown content	4 (3.03%)	0	0	0

Table - 3: Percentage of substance abuse among poisoning patients.

Substance abuse	Smoking	Alcohol consumption
Total no. of cases	22 (16%)	32 (24%)

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