

Research Article

A study on morbidity and mortality pattern of poisoning in tertiary care hospital

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ABSTRACT

Background: The poisoning due to various reasons commonly occurs among population. Normally tertiary care hospitals receive large numbers of referral. During treatment many die due to poisoning. Objectives of the study were to find out the magnitude of admissions due to poisoning and to find out various type of poisoning and related mortality.

Methods: The secondary data was collected from records available in Intensive care unit of toxicology department of tertiary care hospital. The admissions made due to various type of poisoning from Jan 2015 to Dec 2015 were included in this study. The data of nearly 947 patients were analyzed regarding to type of poisoning and mortality due to the poisoning. Statistical analysis like percentage, Chi-square test and mean variance significant were calculated.

Results: Out of 947, 70% were male and 30% were female. Among patients admitted 44% were consumed organophosphorus compounds, 22% had snake bite and 13% were consumed rat killer paste. The other common but least were drugs, rat killer powder and kerosene poisoning. Among admitted with various type of poisoning overall mortality was 36% and 58% due to organophosphorus compounds, 16% with rat killer paste and 14% with snake bite. The snake bite mostly occurred in rainy season and it is statistically significant.

Conclusions: Most of the poisoning due to organophosphorus shows that it is available very easily and also cheap. The death among the poisoning is due to delay in starting of the treatment and awareness should be made to avail medical care immediately after poisoning without delay.

Keywords: Poison, Snake bite, Mortality

INTRODUCTION

There are many health problems due to communicable and non-communicable diseases cause burden to the person, family and nation because of malnutrition, exposure and life style. Poisoning also add further burden. 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 Poisoning may be intentional or unintentional. Most of the intentional poisoning may be due to social or psychological reasons.

The unintentional may be due to snake bite, scorpion sting and exposure noxious substances. The mode of intentional poisoning depends on the availability as farmers consume organophosphorus compounds, weeds and urban people may consume drugs. The unintentional also depends on occupational exposure. This act may end in full recovery after proper health care or end in death. The mortality is varied according to the type of poisoning, mode of intake, dose of the substances and also what extend the health provision is given to the victims.

In United States across all ages, there were 671 poison exposures reported per 100,000 populations.² It has been estimated that, in India five to six persons per lakh of population die due to acute poisoning every year.³ Poisoning is the fourth common cause of mortality in India.⁴ In industrialized nations, suicide rates are two to three times higher in men than women, and its incidence tends to increase with age, although in some countries recent rises in young male suicides have distorted this pattern.⁵

There are many factors influence the mortality like route of poisoning, type of poisoning, dose of poisoning and the onset of treatment. The objectives of the present study were to find out the magnitude of poisoning admission in tertiary care hospital, the type of poisoning and proportion of mortality which may help to understand the natural history of poisoning and can be used for better treatment.

METHODS

Study design: Descriptive study

Study area: Toxicology intensive care unit of Thanjavur Medical College.

Study period: January 2015 to December 2015.

Type of data: Secondary data

This study was conducted with secondary data from the records available in Toxicology intensive care unit of Thanjavur Medical College. The data like sex of the patients, age, type of poison consumed and mortality due to poison were collected. The data were collected from 947 patient's records who were admitted from January 2015 to Dec 2015.

Statistical analysis

The statistical analysis like percentage, mean variance significant and chi-square test were applied.

RESULTS

Out of 947 patients admitted with poisoning 70% were male and 30% were female. Among the patients most of them belong to the age group between 20 and 40 years of age. The patients admitted with poisoning the type of poisoning were 44% with Organophosphorus compounds, 22% with snake bite, 13% with Rat killer paste and remaining 21% were other poison like scorpion sting, drugs and different type of weeds as shown in Table 1. Out of total admission with all kind of poisoning overall mortality was 36%. Among different type of poisoning the mortality was very high in organophosphorus compounds with 58% compare to others. Next to OPC, rat killer paste was 16% and 14% mortality in snake bite as shown in Table 2. The mortality was higher in OPC

compare to rat killer paste but it was not statistically significant but it was statistically significant with snake bite that is mortality higher in OPC compare to snake bite as shown in Table 3. There was no seasonal variation in total episode of poisoning but there was high episode of snake bite in rainy season compare to other season and it was statistically significant with mean variation of the episode. The mortality was high in rat killer paste (yellow phosphorus) than rat killer powder.

Table 1: Distribution of type of poison.

Type of poison	Frequency	Percentage
Organophosphorus	413	44
Snake bite	213	22
Rate killer paste	122	13
Unknown poison	75	08
Different types of drugs	35	04
Unknown bite	25	03
Others	64	06
Total	947	100

Table 2: Distribution mortality among different type of poisoning.

Type of Poisoning	Frequency	Percentage
Organophosphorus	197	58
Rate killer paste	50	15
Snake bite	49	14
Unknown poison	06	03
Different types of drugs	02	0.5
Unknown bite	04	01
Others	30	08
Total	338	100

Table 3: Death between organophosphorus and snake bite.

Type of poison	Death	Recovery	Total
Organophosphorus	197	216	413
Snake bite	49	164	213
	246	370	626

Chi-square value 34.89 p value 0.0001.

DISCUSSION

The present study has found out among the poisoning nearly 70% were male compare to female which shows higher incidence of poisoning occurred in male which is very close to 61% a study conducted by Maharani and Vijayakumari.⁶ Present study found out the majority were in the age group of 21 to 40 years and this finding correlates with 20 to 30 years a study conducted by Maharani and Vijayakumari.⁵ This study found out OPC poisoning was 44%, followed by 22% with snake bite and 13% by rat killer paste and similar finding was observed by Maharani as 58% with OPC and 11% with Rat killer poison and Ramesha et al also found out in their study as

OPC 36% and snake bite as 16%.⁷ The overall mortality was in this study was 36% which is little higher than 15% a study conducted by Ramesha et al the difference may be due to difference in sample size. Highest mortality 58% occurred in OPC in this study which closely related to 35% among all death due to OPC reported in the study of Thalappillil Mathew Celine, et al⁸. Out of all death the proportion of death due to OPC with compare to all other death due to poisoning is not statistically significant but there is statistical significant higher death in OPC compare to snake bite. This study also found out that there is statistical significant occurrence of snake bite in rainy season than non-rainy season. This study also found out that rat killer paste caused more death than rate killer powder. 95% of death occurred in OPC poisoning due to respiratory failure. Most of the death in rat killer paste was due to liver cell failure. 25% of the death in poisoning because in delay in admission as they were given home based management.

CONCLUSION

Most of the poisoning due to organophosphorus shows that it is available very easily and also cheap. The death among the poisoning is due to delay in starting of the treatment and awareness should be made to avail medical care immediately after poisoning without delay. Counseling is very essential in suicidal poisoning to avoid extra burden to health care delivery.

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