



ORIGINAL RESEARCH PAPER

Medicine

PATTERN OF ACUTE POISONING PRESENTING IN MEDICAL EMERGENCY AT A TERTIARY CARE HOSPITAL : A PROSPECTIVE CROSS SECTIONAL OBSERVATIONAL STUDY.

KEY WORDS: Acute poisoning, pattern and outcome, tertiary care hospital.

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ABSTRACT

INTRODUCTION: Acute poisoning is a medical emergency. It is important to know the nature, severity and outcome of acute poisoning cases in order to take up appropriate planning, prevention and management techniques. This study aimed to assess the pattern and outcome of acute poisoning cases in a tertiary care hospital GMC Jammu. This is a retrospective hospital record based which study included 1826 cases.

MATERIALS AND METHODS: Data on Sociodemographic details, type of poisoning, outcome, circumstances of poisoning (suicidal/accidental) and treatment given were collected in the prestructure proforma.

RESULTS: Poisoning was more common among males (58.1%) compared to females (41.9%). Most cases of acute poisoning presented among 21- to 30-year age group (32.3%). A majority of poisoning cases (25.2%) were due to organophosphorus compound (OPC). Total mortality was found to be 11.11%. Poisoning was more common in young males. The overall mortality was mainly contributed by self-poisoning with insecticides and corrosives. Early care in a tertiary care center may help to reduce mortality in India.

INTRODUCTION

Poison is defined as a substance (solid, liquid or gas) which if introduced in a living body or brought in contact with any part thereof will produced ill health or death by its constitutional or local effects or both[1]. Apart from ingested poison, poisoning due to animal bites especially snake bites (ophitoxemia) and scorpion stings are quite common in India. The key to survival lies in early diagnosis followed by rapid decontamination and definitive therapy. The commonest cause of poisoning in India and other developing countries is by pesticides, the reasons being agriculture based economics, poverty, unsafe practices, illiteracy, ignorance and lack of protective clothing and easy availability of highly toxic pesticides. [2] Owing to the magnitude of the problem, a study on the pattern of poisoning is important and relevant. It will help us to gain a better understanding of the current trend in acute poisoning and the necessary antidotes and emergency medical treatment essentially required at the emergency department of all hospitals.

OBJECTIVES

To investigate the pattern of acute poisoning cases in a tertiary care hospital GMC Jammu.

MATERIALS AND METHODS

This retrospective hospital record-based study was conducted in a tertiary care hospital attached to a medical institution GMC Jammu. The study included 1826 cases of various acute poisoning due to drugs and chemicals in people above the age of 21 years in the year 2018. Cases of snake bite were also included in the study. But cases with food poisoning and allergic reactions to drugs were not included. Mode of data analysis was done with respect to age, sex, name of poisonous substance, outcome, circumstances of poisoning (accidental/suicidal) and treatment given.

RESULTS

A total of 1826 patients of various poisoning cases were studied. Incidence was more common among males (58.1%) compared to females (41.9%). Most cases of acute poisoning presented in the age group between 21 and 30 years (32.3%) followed by 31 to 40 year age group (24.4%). (Table 1)

A majority of the poisoning cases (25.2%) were due to organophosphorus compound (OPC) followed by snake bite (18.4%), drugs (15.6%), corrosives (6.9%), Rodenticide (5.3) and others. Drugs used were phenobarbitone, diazepam, cough syrups and mixture of tablets/ capsules. Total mortality from all causes of poisoning was 11.11% and was highest among patients with organophosphate poisoning (2.6%) followed by a mortality of 1.2% in Drug overdose (Table 2).

It was found that 52.7% (962) of cases were of intentional

poisoning for suicidal attempt and 16.97% (310) of cases had accidental poisoning. Median hospital stay was 4 days. Only 10 patients stayed in the hospital for more than 15 days. Table (3& 4)

DISCUSSION

In the present study, pesticides followed by snake bite were the two most common types of poisoning. A study conducted in Pondicherry revealed a rapidly increasing trend in the incidence of OPC poisoning over a 3-year period.[3,4] Other studies also showed that OPCs are the most commonly used poisoning substances.[5,6] A study conducted at the All India Institute for Medical Sciences, New Delhi, showed that drugs (18%) and insecticides (12.8%) are the most common agents out of a total of 726 poisoning cases studied. Out of this insecticide group, carbamates formed the largest group followed by OPCs and organochlorine compounds.[7] This difference in the type of poisoning seen within the country may be due to the difference in the pattern of use and availability of pesticides. In this study, majority of the poisoning cases presented in the 21 to 30 year age group (62, 51.7%). This age group are most active, physically, mentally and socially and hence more prone to stress. Similar findings were observed in other studies. [7] Males dominated the present study. This high proportion of poisoning among males might be due to change in lifestyle and cultural patterns in this area and other studies.[8,9] Majority of the patients (52.7%) consumed the poison with suicidal intent as compared with 16.97% of the patients exposed accidentally. [10]

In our study, the overall mortality was found to be 11.11%. Similar data were also obtained by a study which reported an overall mortality rate of 17.3%. [11] Mortality in the present study is probably higher because of a higher number of pesticide and corrosives poisoning cases. Patients diagnosed as poisoning cases were initially brought to emergency department of our hospital. Treatment was started immediately at the emergency department. Gastric lavage with distilled water and normal saline was administered to patients in whom it was indicated. Oxygen was started in most of the patients. The patients were shifted to ICU for further management. Atropine 1-2 mg bolus intravenously was administered to cases of organophosphorus poisoning followed by pralidoxime 1gm IV infusion bolus. Glycopyrolate 1gm IV infusion bolus was given to patients in severe conditions. This was followed by adjuvant therapy. In cases of drug poisoning first aid - gastric lavage was given and antidote like atropine, glycopyrolate and acetylcysteine were commonly used for paracetamol poisoning, followed by antibiotics, anti-ulcer agents and antiemetics. Adjuvant therapy was administered based on the history of exposure. During the management of snakebite, patients received anti snake venom and adjuvant therapy with

antibiotics, adrenergic agents, antiulceratives and antiemetics for relief of symptoms. In the management of rat poisoning (zinc phosphide) gastric lavage was carried out in all the patients. All patients who consumed poison with suicidal intentions underwent psychiatric workup and were given psychiatric counseling and drug therapy. The retrospective record-based nature and relatively small sample size are the limitations of our study. Some of the information such as miscellaneous poisoning and types of snakes were not documented in the records for analysis. The study confirms the fact that the prevention and treatment of poisoning should merit a high priority in the healthcare of the local population.

CONCLUSION

Poisoning remains an important method of deliberated selfharm and carries a significant impact on morbidity and mortality. The pattern and magnitude of poisoning are thus multidimensional and demand multisectoral approach for facing this problem. Awareness and education about the potential toxicity of commonly used pesticides and drugs may help in reducing the burden of poisoning. This study highlighted the need for a poison information center for the better management and prevention of poisoning cases. The outcome of the study calls for effective measures on the distribution, storage, sale, and safe disposal of unused agricultural pesticides and advanced laboratory testing. Public education is also of utmost importance in this regard.

TABLE NO: 1- NUMBER OF POISONING PATIENTS BY AGE GROUP AND SEX

| AGE GROUP (in yrs) | MALE N (%) | FEMALE N (%) | TOTAL N (%) |
|--------------------|------------|--------------|-------------|
| 21-30 | 360(19.7) | 230(12.6) | 590(32.3) |
| 31-40 | 240(13.1) | 206(11.3) | 446(24.4) |
| 41-50 | 216(11.8) | 160(8.8) | 376(20.6) |
| 51-60 | 106(5.8) | 67(3.7) | 173(9.5) |
| 61-70 | 80(4.4) | 62(3.4) | 142(7.8) |
| >70 | 59(3.23) | 40(2.2) | 99(5.4) |
| TOTAL | 1061(58.1) | 765(41.9) | 1826(100) |

TABLE NO: 2- TYPE OF POISONING AND ITS RELATED MORTALITY

| TYPE OF POISONING | NUMBER OF PATIENTS N (%) | TOTAL NUMBER OF DEATHS N (%) |
|----------------------|--------------------------|------------------------------|
| ORGANOPHOSPHATE | 460(25.2) | 47(2.6) |
| DRUG OVERDOSE | 286(15.6) | 22(1.2) |
| SNAKE BITE | 338(18.4) | 40(2.2) |
| SCORPION BITE | 30(1.5) | 1(0.05) |
| HAIR DYE | 26(1.4) | 1(0.05) |
| CORROSIVE SUBSTANCE | 122(6.9) | 16(0.88) |
| RODENTICIDE | 96(5.3) | 32(1.75) |
| KEROSENE INGESTION | 86(4.7) | 6(0.33) |
| ALCOHOL INTOXICATION | 146(8) | 3(0.16) |
| NAPHTHALENE | 16(0.9) | 2((0.1) |
| MERCURY | 14((0.8) | 2(0.1) |
| UNKNOWN BITES | 80(4.4) | 5(0.27) |
| UNKNOWN SUBSTANCE | 126(6.9) | 26(1.42) |
| TOTAL | 1826(100) | 203(11.11) |

TABLE NO: 3- MODE OF POISONING

| MODE | NUMBER N (%) |
|------------|--------------|
| SUICIDAL | 962(52.7) |
| HOMICIDAL | 408(22.3) |
| ACCIDENTAL | 310(16.97) |
| ABUSE | 106(5.80) |
| OTHERS | 40(2.2) |
| TOTAL | 1826(100) |

TABLE NO: 4- INTERVALS BETWEEN INTAKE OF POISON AND ARRIVAL AT HOSPITAL

| DURATION (TIME IN HRS) | NON EXPIRED PATIENTS N (%) | EXPIRED PATIENTS N (%) |
|------------------------|----------------------------|------------------------|
| <3 | 286(17.6) | 3(1.5) |
| 3-6 | 826(50.9) | 84(41.4) |
| 6-12 | 266(16.4) | 62(30.5) |
| UNDETERMINED | 245(15.1) | 54(26.6) |
| TOTAL | 1623 | 203 |

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