Original Research Article

Patterns and outcomes of acute poisoning Cases in tertiary care hospital

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Abstract

A retrospective study of poisoning cases admitted in ICU, Department of Anaesthesiology and Critical Care SSIMS and RC Davangere from 2010 to 2014. Was conducted to evaluate patterns and outcomes of acute poisoning. Total poison Cases were 1286. Organophosphorous poisoning cases were predominant, amounting to 488 cases. Maximum cases (281) were in the age group of 20 to 35 years. Male predominance was seen in the study population. Out of 1286, maximum recovered patients were seen in organophosphorus compound consumed patients (91%), chlorphosphate (90%) and other compounds (87%). and maximum death seen in unknown compound poisoning (31%), fungicide poisoning(30%). Overall mortality rate was 9.67%. Recovered was 87.7% and patients went against medical advice were 2.58%. Out of total cases Endosulfan poisoning (62.96%) and next was Amitraz ((60%) were on ventilator. Out of insecticide poisoning (82.96%) and Unknown compound poisoning (81.14%) patients did not require mechanical ventilation.

Key Word: Organophosphorus Poisoning, Ventilator, recovered, mortality, Discharge against medical advice.

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INTRODUCTION

Everyday around the world, almost 700 people die from poisonings and for every person that dies, several thousands more are affected by poisoning.[1, 2] Poisoning is the fourth most common cause of death in India[3]. It has been estimated that, in India five to six persons per lakh of population die due to acute poisoning every year [4]. Poisoning occur in all regions and countries and affect people in all age and income group. According to WHO (1999) more than three million poisoning cases with 251,881 deaths occur worldwide annually, of which, 99% of fatal poisonings occur in developing countries, particularly among agricultural workers. [2] Pattern of poisoning in any region also depends on availability and access to the poisons, socioeconomic status, religious and cultural influences, occupation prevalent in the region and likewise. Rapid industrialization and massive use of pesticides in agriculture has increased the incidence of poisoning. In India, as agriculture is the back bone of the country, insecticides are used to a greater extent and the poisoning with such products are more common [5]. According to various studies organophosphorus compound forms the commonest poisoning substance in Asia. [6-9]. A study by Thomas *et al* 2000 has shown an increasing trend of self-poisoning among young adults. [10] The commonest cause of poisoning in India and other developing countries is pesticides, the reasons being agriculture based economics, poverty unsafe practices, illiteracy, ignorance and lack of protective clothing and easy availability of highly toxic pesticides. Patients die mostly from respiratory failure and, the variability in the clinical features depends on nature of compounds, amount consumed, severity, time gap between exposure, and presentation to the hospital[11]. Information regarding organophosphorus compound poisoning in a particular region will help in early diagnosis and treatment of cases, thus decreasing the mortality and morbidity rates. Against this background, the present study was undertaken to know the nature, pattern and magnitude of the morbidity

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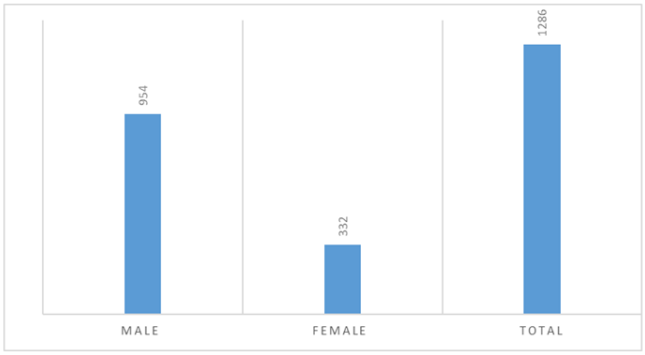
and mortality due to poisonings in the, over the period of four years.

MATERIALS AND METHODS

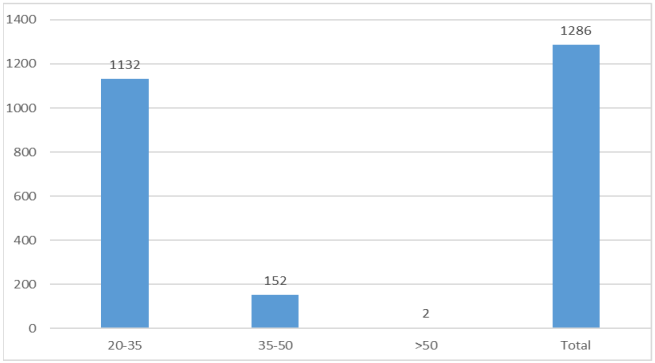
Retrospective studies of 1286 poisoning cases were recorded during the period of 4 years between 2010 and 2014 at the Department of Anaesthesiology and Critical care unit, SSIMSandRC Davangere, Karnataka. Records of all the cases of poisoning admitted in Intensive Care Unit (ICU), SSIMS hospital from 2010 - 2014 were analysed. The poisoning cases were studied for information about age, sex, type of poison responsible, ventilated, non-ventilated and death and discharge against medical advice (DAMA). The exact types of poisons responsible in fatal cases were confirmed by crosschecking with pesticide bottles carried by patient attenders whenever possible. Data was entered in excel sheet and was analysed using epi info version 7.0.Results were expressed in the form of percentages and proportions.

RESULTS



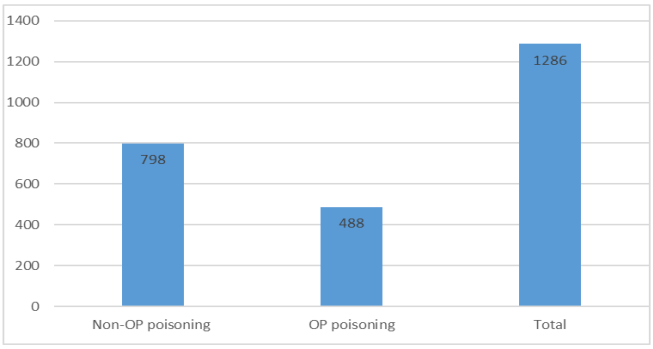
Graph 1: Distribution of male and female patients

Out of total 1286 cases of poisoning study, Overall males (954) were more in number as compared to females (332). The male female ratio was 2.88:1.



Graph 2: Age -wise distribution of patients

Age group ranging from 20 years to 35 years showed the maximum cases (88%). Maximum cases belong to age group of 20 to 35 years and minimum cases belong to age group above 50 years.



Graph 3: Demographic profile of type of poison consumed

It was observed that, out of 1286 cases, 488 cases (37.9%) were due to organophosphorus poisoning and 798 cases (62.1%) non-organophosphorus poisoning making it the predominant poison consumed

Table 1: Demographic profile of type of poison consumed

Type of poisoning	Female	Male	Total
OP	148	340	488
UNKNOWN	83	161	244
INSECTICIDE	72	157	229
ACID	1	4	5
ALCOHOL	0	7	7
ALPO4	16	39	55
ALPRAZOLAM	1	7	8
AMITRAZ	3	2	5
CHLORPHOSPHATE	8	25	33
CYPERMETHRINE	4	13	17
ENDOSULFAN	8	19	27
FUNGICIDE	2	11	13
OTHERS	68	87	155
TOTAL	**414**	**872**	**1286**

But if we see individual compound organophosphorus compound poisoning is more common that is 488 cases (37.9%) than other compounds

Table 2: pattern of outcome in poisoning

Type of poisoning	Recovered	Death	DAMA	Total
OP	447	28	13	488
UNKNOWN	164	76	4	244
INSECTICIDE	180	46	3	229
ACID	3	2	0	5
ALCOHOL	5	2	0	7
ALPO4	41	12	2	55
ALPRAZOLAM	6	2	0	8
AMITRAZ	3	2	0	5
CHLORPHOSPHATE	30	3	0	33
CYPERMETHRINE	12	5	0	17
ENDOSULFAN	19	8	0	27
FUNGICIDE	9	4	0	13
OTHERS	136	15	4	155
TOTAL	**1055**	**205**	**26**	**1286**

Out of 1286, maximum recovered patients were seen in organophosphorus compound consumed patients (91%),

chlorphosphate (90%) and other compounds (87%).and maximum death seen in unknown compound poisoning (31%),fungicide poisoning(30%). Overall mortality rate was 9.67%. Recovered was 87.7% and patients went against medical advice were 2.58%.

Table 6: Types of poisoning and Mechanical ventilation

Type of poisoning	ventilated	non ventilated	Total
OP	115	373	488
UNKNOWN	46	198	244
INSECTICIDE	39	190	229
ACID	2	3	5
ALCOHOL	2	5	7
ALPO4	17	39	55
ALPRAZOLAM	3	5	8
AMITRAZ	3	2	5
CHLORPHOSPHATE	16	17	33
CYPERMETHRINE	10	7	17
ENDOSULFAN	17	10	27
FUNGICIDE	7	6	13
OTHERS	36	119	155
TOTAL	**312**	**974**	**1286**

Out of total Endosulfan poisoning (62.96%) and next was Amitraz ((60%) were on ventilator. Out of insecticide poisoning (82.96%) and Unknown compound poisoning (81.14%) patients did not required mechanical ventilation.

DISCUSSION

The study involved 1286 patients. Our study showed that highest number of patients 1132(88%) belonged to age group 20-35 years. Various studies had reported very high female preponderance. In a study reported by Bajracharya *et al*, almost three fourth of the cases were females. [12] Ghimere *et al*, in their comparison of data of poisoning also noticed significant increase in percentage of male poisoning cases from 31.4% to 42.7%. [13] In our study, 77 (14.34%) poisoning cases registered in the age group of <20. The overall mortality was found to be 9.67% in our study. Similar lower incidence of mortality was observed in other studies. In present study, the most commonly ingested poison was Pesticide poisoning observed in 37.97% followed by Unknown compound poisoning in 18.97%. Easy availability and low cost of hazardous pesticide plays a major role in suicidal poisoning in developing Asian countries like India, Srilanka, South Africa etc. Poisoning due to pesticide compounds has been increasing in the state of Karnataka where majority of them are agriculture farmers. It appears that easy availability of organophosphorus compound in India probably makes it a favorite substance for suicidal purpose.

In a study by Thomas *et al*., showed low mortality rate of 3.3% (52 deaths out of 1584 cases) and other study done in Malaysia showed mortality rate of 3.5% (779 deaths out of 21714 cases). [14] Nevertheless, the exact rate of mortality could not be established due to 2% of cases were taken home against medical advice due either to anticipated poor outcome or due to logistic reasons. Various other factors like financial, academic, love breakup and social factors contributed to consumption of poison.

CONCLUSION

Our study showed that male poisoning cases are increasing. Younger age group is more vulnerable for poisoning. Pesticide consumption remains the commonest agent used for poisoning. Community based awareness programs will help to prevent the instances of poisoning. Personnel guidance or counselling to students, un employers, agricultural farmers, house wives from public/private medical professionals may decrease the incidence. Peoples should be more informed of the dangers posed by poison. Stringent rules against sale of pesticide which are easily accessible and affordable must be implemented. Training of physicians in the accurate diagnosis and prompt management of poisoned victims would improve the rate of survival. A widespread campaign to inform people of the possible dangers of poison would be useful.

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