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A STUDY ON DRUG UTILIZATION PATTERN AMONG POISONING CASES ADMITTED AT THE MEDICINE DEPARTMENT OF A TERTIARY CARE HOSPITAL IN MANDYA CITY

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ABSTRACT

Drug utilization studies is a potential tool in poisoning to keenly observe the pattern and profile of poisoning and focus on reported poisoning to improve the management and prevent deaths. This facilitates rational use of drugs in affected population. According to WHO, more than three million poisoning cases with 251,881 deaths occur worldwide annually, 99% of fatal cases occur in developing countries particularly among agricultural workers. This study aims to evaluate the drug utilization pattern of poisoning cases reported in medicine department of tertiary care hospital Mandya city. This is a retrospective study of poisoning cases based on the desired study criteria. Among 250 cases, a higher incidence of poisoning was in male patients 86 (65.6%) andin age group of 18-27 (50%). Poisoning episodes were majority for the purpose of suicidal in 18 -27 years (55%) and accidental in 28-37 years (27%). Most of the poisoning cases were due to organophosphorus compound consumption of 114 cases, 45.6%; constituting majority of Dichlorvos (34.2%, 39 cases). Antidotes like Pralidoxime (14.6%), atropine (14%), thiamine (3.98%) and N- acetylcysteine (0.26%) were utilized for the management of poisoning cases under study.

KEYWORDS: Drug utilization, poisoning, organophosphorus, antidotes.

INTRODUCTION

Poison is a substance that causes injury to the body or causes death, when administered by any route. Poisoning is a condition or a process in which an organism becomes chemically harmed (poisoned) by a toxic substance or venom of an animal.[1] The most common cause of acute poisoning in south India is organophosphorus poisoning. The intention for acute poisonings could be suicidal or accidental. Majority of the cases encountered in a tertiary care hospital in South India were due to suicidal intention.[2]

According to WHO 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 (WHO, 1999). India accounts for one third of pesticide poisoning cases in the third world and the worst affected are the farm workers who contribute nearly three quarters of the labour force.[3,4] WHO defines drug utilization as the marketing, distribution, prescription and use of drug in a society with special emphasis on resulting medical, social and economic consequences.[5]

Worldwide various agents such as agrochemicals, drugs or environmental agents are used as poisoning agents.[6] The common pattern of poisoning in our country are suicidal, homicidal/criminal and accidental. Common poisoning are organophosphorus compound and street poisoning with ultra-short acting sedative hypnotics.[7]

Evaluating the drug prescribing behavior and usage patterns in the emergency settings has the potential of determining the rationality of drug therapy being given in the particular region to a boarder extent. The aim of our study is to evaluate the drug utilization pattern among poisoning cases admitted to medicine department in tertiary care hospital of Mandya city.

MATERIALS AND METHODS

This is a retrospective study of poisoning cases admitted to medicine department in a tertiary care hospital of Mandya city. Convenient sampling method was used to carry out the study were 250 cases was collected based on the inclusion criteria. The present study was conducted after obtaining ethical clearance from the ethical committee of Mandya institute of Medical

Sciences (MIMS) Mandya.

RESULTS AND DISCUSSION

Gender wise categorization

Out of 250 poisoning cases, 65.6 % (86) were male whereas females were (164) 34.4%. This indicates that there were higher incidences of poisoning in males as compared to females as shown in Fig.1. Out of 86 female patients 3 died and out of 164 male patient 5 died.

Table 1: Distribution of patients based on Gender.

Gender	No. Of patients	Percentage	No. Of death
FEMALE	86	34.4%	03
MALE	164	65.6%	05
TOTAL	250		08

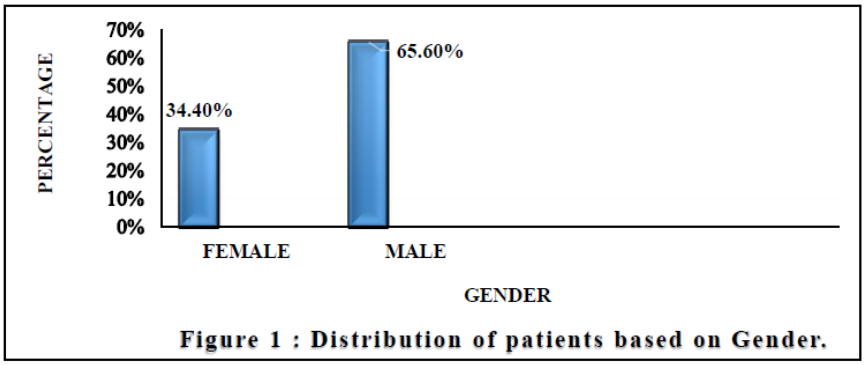

Figure 1 : Distribution of patients based on Gender.

Age wise categorization

In this study the maximum number of poisoning cases were among the age group of 18-27 (50%) and 30% were between the age group of 28-37 years. Among the age group of 38-47 years (2%), 48-57 years (4.4%) and 58-67 years (3.6%) of poisoning cases were found as shown in Fig.2.

Table 2: Distribution of patients based on Age.

Age (Years)	No. Of patients	Percentage
18-27 years	125	50%
28-37 years	75	30%
38-47 years	30	12%
48-57 years	11	4.4%
58-67 years	09	3. 6%

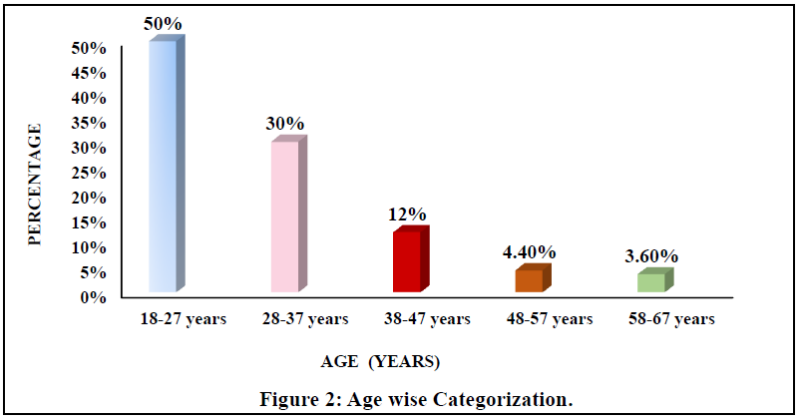

Figure 2: Age wise Categorization.

Incidences of suicidal and accidental poisoning

Based on the incidence of poisoning, the poisoning episodes were majority for the purpose of suicidal in 18-27 years (55%) and accidental in 28-37 years (27%). The poisoning episodes were least for suicidal among the age group of 48-57 years and 58-67 years (3.5%) and accidental purpose among the age group of 58-67 years (02%) as shown in Fig.3.

Table 3: Distribution based on incidence of suicidal and accidental poisoning.

AGE (YEARS)	SUICIDAL (%)	ACCIDENTAL (%)
18-27 years	110 (55 %)	15 (30 %)
28-37 years	55 (27 %)	20 (40 %)
38-47 years	23 (11 %)	09 (18 %)
48-57 years	07 (3.5 %)	04 (8 %)
58-67 years	07 (3.5 %)	02 (4 %)

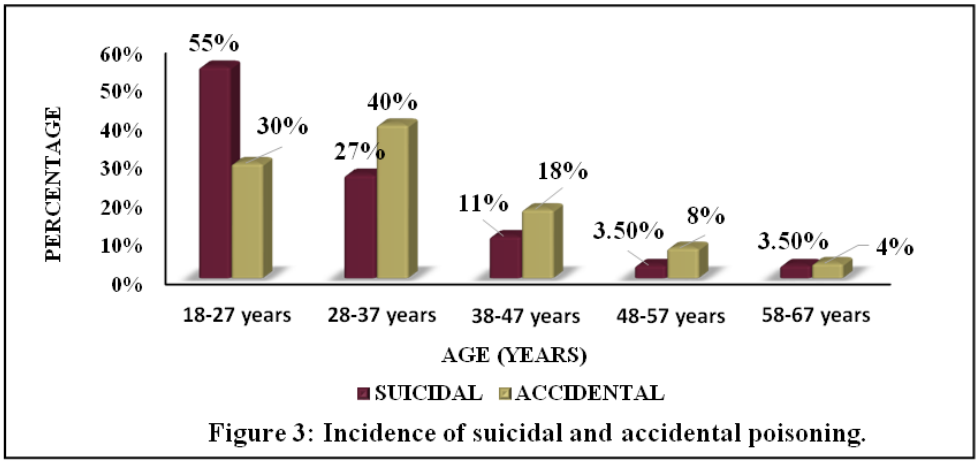

Figure 3: Incidence of suicidal and accidental poisoning.

Categorization based on types of poisoning

A majority of poisoning cases were due to organophosphorus compounds (45.6%) followed by multiple tablets (15.2%) and pyrethroids (14.8%) consumption. The other poisoning cases reported were due to hydrocarbons (0.4%), barbiturates (0.4), fertilizers (1.2%), acids (2%), unknown compounds (2.4%), herbicides (8%) and pesticides (10%) consumption as shown in Fig.4.

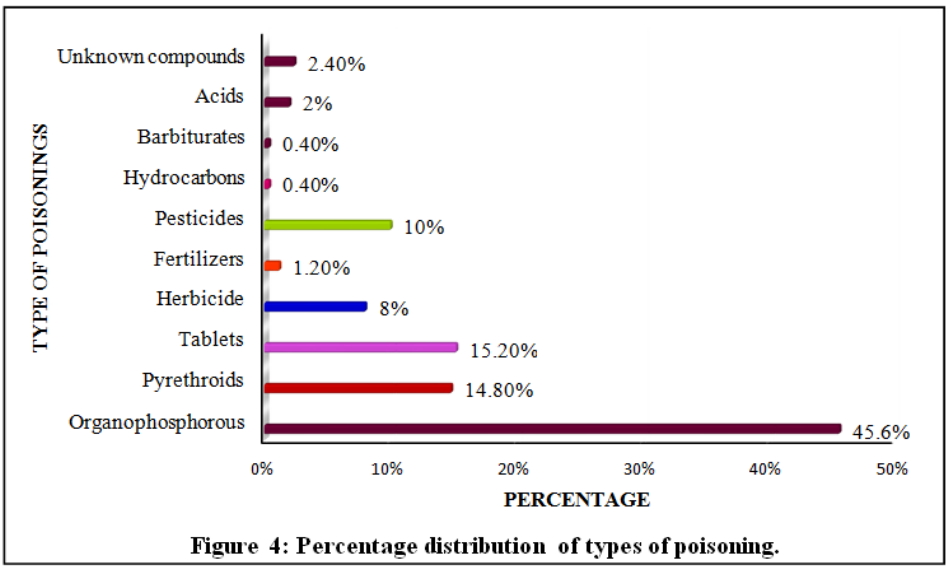

Figure 4: Percentage distribution of types of poisoning.

Categorization based on OP compound poisoning

Among the 114 cases of organophosphorus poisonings , Dichlorvos 34.2% (39 cases) and chlorpyrifos 28% (32 cases) was found to be the most used OP compound This was followed by phorates, dimethoate (9.7%), glyphosate (8.8%), monochrotophos, ethephon (3.5%), triazophos (1.8%) and quinalphos (0.8%) poisonings as shown in Fig.5.

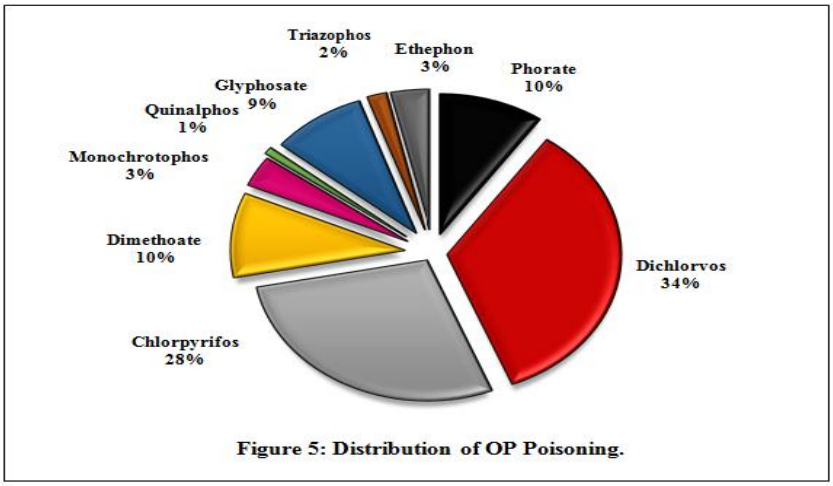

Figure 5: Distribution of OP Poisoning.

Distribution based on general measures for poisoning

Among 250 poisoning cases under study, general measures performed in maximum were gastric lavage 217 cases (63%), and Ryle's tube aspiration 120 cases (35%) respectively. Other general measures performed include mechanical intubation (0.28%) and bladder catheterisation (2.31%) as shown in Fig.6.

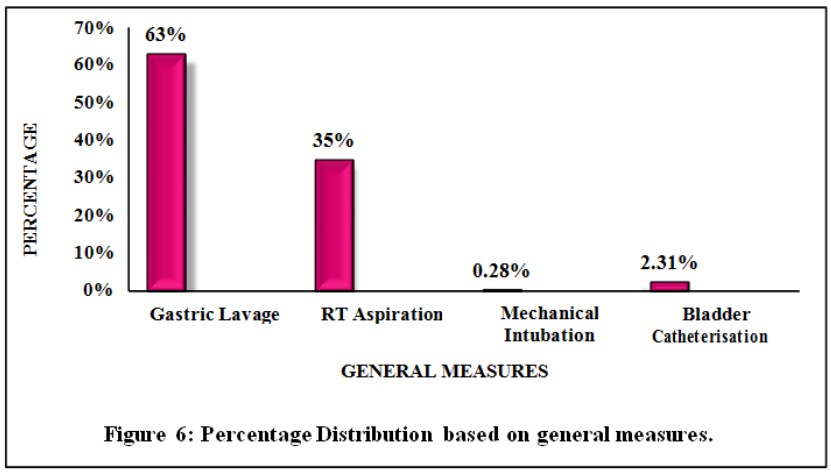

Figure 6: Percentage Distribution based on general measures.

Drugs prescribed for poisoning cases

Of the 250 poisoning cases, the most utilized drug is Rantac 180 (23.9%) followed by intravenous fluid as a supportive measure. The most number of antidote used was Pralidoxime 110 (14.6%), then comes atropine 106 (14.07%) and thiamine 30 (3.98%) as shown in Fig.7.

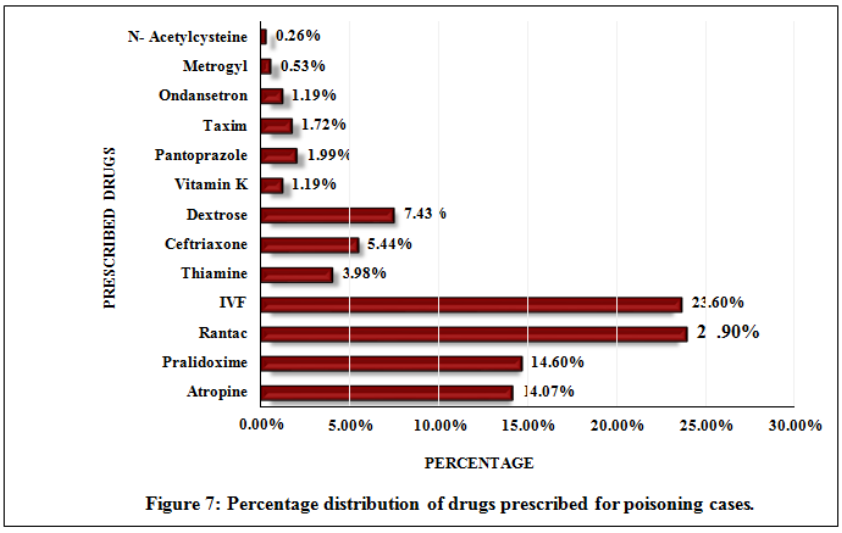

Figure 7: Percentage distribution of drugs prescribed for poisoning cases.

DISCUSSION

A retrospective study was conducted to study drug utilization pattern among poisoning cases admitted to medicine department of MIMS, Mandya. A total of 250 poisoning cases based on study criteria were includedin the study. The required patient details were recorded in a suitable designed patient profile form.

Among 250 cases, a higher incidence of poisoning was in male patients 86 (65.6%) and in age group of 18-27 (50%). Poisoning episodes were majority for the purpose of suicidal in 18 -27 years (55%) and accidental in 28-37 years (27%). Most of the poisoning cases were due to OP compound consumption of 114 cases, 45.6%; constituting Dichlorvos (34.2%, 39 cases) in majority among OP compounds.

General measures performed in maximum were gastric lavage (63%) and Ryle's tube aspiration (35%). As a supportive measure ranitidine (23.9%) and intravenous fluids (23.6%) were administered in maximum. Antidotes like Pralidoxime (14.6%), atropine (14%), thiamine (3.98%) and N- acetyl cysteine (0.26%) were utilized for the management of poisoning cases under study.

CONCLUSION

From our present study it is concluded that the majority of the poisoning cases occurred with a single poisonous agent for suicidal purpose in young age group and mostly are men. The four most common groups of agents implicated in poisoning were organophosphorus compounds, multiple tablets, pyrethroids and pesticides. Majority of suicidal poisoning were associated with abuse of organophosphorus compounds whereas the accidental poisoning where mostly due to household agents. The huge availability and accessibility of chemical substances and their enormous use have expanded the threat of poisoning.

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CONFLICT OF INTEREST: The authors declared no conflict of interest.

REFERENCE

1. Bhola Kumar Singh. Assessment of poisoning cases in North Indian population. Int J Med HealthResearch, 2017; 3(6): 121-123.
2. Nishanthi Anandabaskar, et al. A retrospective analysis of acute poisoning cases admitted to a tertiarycare hospital in South India. Int J Basic and Clinical Pharmacology, 2019; 8(10): 2271-2277.
3. Sheetu M.K. Jailkhani, Naik J.D., Thakur M.S., Langare S.D., Pandey V.O. Retrospective analysis of poisoning cases admitted in a tertiary care hospital. Int J Recent Trends Sci Tech., 2014; 10(2): 365-368.
4. Muhammad Raifuddin et al. A prospective study on different type of poisoning cases and their outcome at tertiary care hospital. Int J Adv Pharm Med Bioallied Sci., 2017; 126: 1-8.
5. Sreya Todi. Study of drug utilization on acute poisoning cases treated at tertiary care hospital. Int J Innovative Research Med Sci., 2018; 3(10): 2253-2256.
6. Jesslin J., Adepu R.R and Churi S. Assessment of Prevalence and Mortality incidences due to poisoning in south Indian tertiary care teaching hospital. Indian J of Pharm Sci., 2010; 72(5): 587-591.
7. Howlader Mar et al. Clinico-Epidemiology pattern of poisoning in a tertiary level hospital. J Dhaka MedColl., 2008; 17(2): 111-115.