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Research Article

A STUDY ON POISON CASES AND THEIR MANAGEMENT ALONG WITH POISON AWARENESS EDUCATIONAL STRATEGIES

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ABSTRACT

Objective: To determine the incidence and severity of poisoning cases in Meenakshi Medical College and Research Institute.
Design: Retrospective and prospective observational study.
Materials and Methods: All the poisoning cases due to various agents who attended Emergency from 1st January 2007 to 30th March 2010 were evaluated retrospectively and prospectively.
Results: A total of 232 poisoning cases were attended emergency Meenakshi Medical College and Research Institute over a period of 39 months. The overall male to female Ratio was 1.5:1. The majority of the poisoning cases were found in the age groups of 16-30 years (42.2%). Organophosphorus was the most commonly used for self poisoning 31%. Farmers 32.35%, service holders 22.4% and students 20.3% were commonly involved in self poisoning. Intentional poisoning comprised 46.5% of all poisoning.
Conclusion: Majority causes of intentional/accidental have been identified and factors contributing occupation related agro chemical poisoning are discussed.

Key words: Organophosphorus, Poisoning, Farmers

INTRODUCTION

Poisoning due to accidental or deliberate ingestion, inhalation of medical drugs and other chemicals is a common medical emergency. But unfortunately no specific antidotes for all poisoning are available or proper treatment protocol. Only few studies have been undertaken with this topic. Although the incidence of poisoning is high, fortunately morbidity and mortality due to poisoning is low. This study was undertaken to determine the extent of poison related emergencies and to asses the effect of variables such as age, sex, and agent of poisoning frequency.

MATERIALS AND METHODS

A retrospective(Jan 2007 to Sep 2009) and prospective (Oct 2009 to Mar 2010) analysis of all poisoning who attended emergency Meenakshi Medical College and Research Institute over a period of 39 months was done. A total of 232 poisoning cases are included in this study. Data regarding age, sex, occupation, types of poisoning, agents for poisoning, types of disposal were collected from the hospital records and analysed. All types of poisoning were included in this study.

RESULTS

A total of 232 poisoning cases were attended emergency over a period of 39 months. The overall male to female Ratio was 1.5:1. The majority of the poisoning cases were found in the age groups of 16-30 years (42.2%). Second common age groups were found in 31-45 years i.e. 30.6%. Farmers were found most commonly involved in poisoning 75(32.35) where as service holders occupied the second place occupied the 52(22.4%) of all poisoning. In this study organophosphorus was the most commonly used for self poisoning 72 (31%) cases and drug over dose was the second common poisoning after organophosphorus. Intentional poisoning comprised 46.5% where as accidental poisoning comprised 38%. 39.6% of poisoning cases had to be admitted of their seriousness but 27.5% of the poison cases were discharge from emergency after emergency management.

The following tables show the results of the study.

Table 1: Different phases of the study.

Phases	Total no. of cases	%	Male	%	Female	%
Retrospective study	205	88.4	137	66.8	68	33.2
Prospective study	27	11.6	19	70.4	8	29.6
Total	232	100	156	-	76	-

Table 2: Distribution of poison cases by gender

Gender	No. Of cases	Percentage (%)
Male	138	59.5
Female	94	40.5
Total	232	100

Table 3: Distribution of poison cases by age

Age	No. Of cases	Percentage (%)	Male	Percentage (%)	Female	Percentage (%)
<15	21	9	15	71.4	6	28.5
16-30	98	42.2	66	67.3	32	32.6
31-45	71	30.6	51	71.8	20	28.1
>45	42	18.2	24	57.1	18	42.8
Total	232	100	156	-	76	-

Table 4: Types of poison consumed

Poison	No. Of cases	Percentage (%)
Organophosphorus	72	31
Drug over dose	54	23.3
Insecticide	38	16.2
Colour Dyes	30	13
Kerosene	18	7.8
Miscellaneous	14	6
Unknown poisoning	6	2.6
Sub Total	232	100

Table 5: Occupation of the patients

Occupation	No. Of cases	Percentage (%)
Farmer	75	32.3
Service holder	52	22.4
Students	47	20.3
House wife	35	15
Others	23	10
Total	232	100

Table 6: Reason for taking poison

Reason	No. Of cases	Percentage (%)	Male	%	Female	%
Accidental	88	38	53	60.2	35	39.8
Intentional	108	46.5	68	67	40	37
Unintentional	36	15.5	17	47.2	19	52.8
Total	232	100	138	-	94	-

Table 7: Types of disposal of the patients

Disposal	No. Of cases	Percentage (%)
Discharge from ER	64	27.5
Admitted	92	39.6
Referred to other centers	38	16.5
AMA	33	14.2
Deaths	5	2.2
Total	232	100

DISCUSSION

Phases

A total of 232 cases were collected during the study period; 205 cases during the retrospective study and 27 cases during the prospective study.

Gender

In this study male poisoning cases were 138(59.9%) where as female patients were 94 (40.5%). The male to female ratio was 1.5:1. It was found that the male patients outnumbered the poisoning admission over the female patients. Most of the cases were due to deliberate poisoning. This trend was seen in both male (59.5%) and female (40.5%) population. Different results were found in other studies carried out in other centers[1, 2,3,4,5].

Age

According to age groups, the majority of the poisoning cases were found in the age groups of 16-30 years (42.2%). Second common age groups were found in 31-45 years i.e. 30.6%. Under than 15 years of age only 9% of cases were found. More than 45 years, 18.2% of cases were found. This result is consistent with the results of studies carried out in other centers[2,4,5,6].

Types of poisoning

The various types of poisoning included in this study are organophosphorus, drug over dose, insecticides, colour dyes and kerosene poisoning. In this study organophosphorus was the most commonly used for self poisoning 72 (31%) cases. Drug over dose was the second common poisoning after OP. It was found that only 54 (22.35 %) case suffering drug over dose. The unrestricted availability of even potent agro chemical and the consumer's knowledge of their possible poisoning effect might have lead to their high level of consumption. Most of the people are from rural background where these agrochemicals are commonly used. The easy availability of these agrochemicals in the locality and at home might also have contributed to this high level of consumption. The insecticide poisoning cases were found to be 38(16.2%) where as the colour dye poisoning were 30(13%) cases. Kerosene intake cases were found to be 18(7.8%) cases. In a study carried out in Kanti Children Hospital, kerosene was found to be the most common poisoning[2]. Unknown and miscellaneous poisoning cases were found to be 14(6%) and 6(2.6%) respectively.

Occupation of the patients

Classifying the poisoning cases by occupation of the patients farmers were found most commonly involved in poisoning 75(32.35). The second place occupied the service holders 52(22.4%). Students comprised 47(20.3%) of cases and house wife's 35(15%) of cases. Others including children's were found to be less in number 23(10%). It is similar to the other studies carried out in other hospitals[1].

Reason for taking poison

Intentional poisoning comprised 46.5% and accidental poisoning comprised 38%. Cause of intentional poisoning were family conflict, job problems, associated psychiatric illness, poverty, etc.. In case of the children's most of the poisoning are due to either accidental ingestion of household chemicals and medicines, which is rare in over 4 years and is common poisoning in children less than 4 years. This result is consistent with the results of other hospitals studies[1,2,4,6,9]. Accidental poisoning was seen in patients in all age groups when compared with the other studies.

Type of disposal of the patients

27.5% of the poison cases were discharge from emergency after emergency management. One third of the patients were admitted because of the seriousness. The number of patients admitted to

ICU/medical wards was 92 in number i.e 39.6%. 38 patients were referred to other centers. 5 patients (2.2%) died in emergency while undergoing treatment. This trend is less common in other studies carried out in other hospitals[1,].

CONCLUSION

The study was carried out at the multi specialty hospital in Kanchipuram. Since for the whole town, the emergency unit is available in multi specialty hospital in Kanchipuram, there is a rising trend in the number of poison cases coming to the hospital. Every year a significant number of poisonous cases were admitted in this hospital. The reason may be the easy availability of agro chemicals in this area which is an important agricultural zone. Majority of the poisonous cases were illiterates and economically backward. These people should be made aware of the poisonous effects of agrochemicals.

It is important that there should be strict rules regarding selling of pesticides and psychotropic drugs. Such substances should not be sold without prescription of registered physician or chemist. All household harmful chemicals and medicines should be placed in a place that is not accessible to the children.

Poison Information Centers should be established in various parts of our country for helping the poisoning cases. There should be a proper treatment protocol regarding poisoning in every hospital. All poisoning cases with features of toxicity, toxic dose, IM or IV use, multiple agents used and associated with other medical illness should be admitted in wards after emergency treatment. All poisoning cases should be informed to the police and assessed by psychiatrist before being discharged from the hospital.

The involvement of clinical pharmacist has helped the physicians in accessing comprehensive information on various treatment options available for the treatment of poisonous cases.

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