Pattern of Poisoning Cases at Tertiary Care Center at Geetanjali Medical College & Hospital, Udaipur

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Abstract

Introduction: Poisoning is a global public health problem causing significant morbidity and mortality. It is important to know the pattern and outcome of acute poisoning cases for proper planning, prevention and management of these cases.

Aims and Objective: To find out the pattern of poisoning reported in Geetanjali Medical College, Udaipur.

Material and Methodology: The present prospective study had been conducted in the Department of Forensic Medicine, Geetanjali Medical College & Hospital, Udaipur, Rajasthan during the period of Two year from 1st Jan 2017 to 31th Dec 2018.

Result and Observation: In our study majority of poisoning case [101 cases (35.69%)] were observed in the age group of 21-30 years followed by the age group of 11-20 years. Male person [153 cases (54.06%)] most commonly affected by poison and majority of patients [184 cases (65.02%)] belongs to Rural area. In our study majority numbers of cases [128 cases (43.82%)] found in rainy season. In our studyhigher number of poisoning cases were due to Aluminium phosphide poisoning [106 cases (37.47%)] followed by snakebite poisoning [62 cases (21.91 %)]. Among insecticides, maximum 40 cases (14.13 %) were due to Organophosphorus compounds. **Conclusion:**Awareness and education about the potential toxicity of commonly used pesticides and drugs may help in reducing the burden of poisoning

Keyword: *Prospective study, Poison, Aluminium Phosphide, Snake bite, Organophosphorus, Udaipur.*

Introduction

Poisoning is a global public health problem causing significant morbidity and mortality. It is important to know the pattern and outcome of acute poisoning cases for proper planning, prevention and management of these cases.

Mortality and morbidity of poisoning cases varies from country to country depending on the nature of poison and availability of facilities and treatment by qualified doctors[1].

Poisoning is a medical emergency and a patient is always invariably rushed to the hospital at the earliest possible moment, irrespective of the amount and nature of poison ingested[2].

Poisoning is one of the major causes of hospitalization through emergency and is a major public health problem[3]. Pattern of poisoning in a region depends on variety of factors, such as availability of the poisons, socio-economic status of the population, religious and cultural influences and availability of drugs.

Considering the cost and outcomes of the poison cases reported to the hospitals, it is found necessary

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to establish a Poison Information Centre (PIC) which should be networked with other poison information centres in India and with other countries, by which identifying the poisons and managing the cases will become more efficient[4].

Aims and Objective:

To find out the pattern of poisoning reported to the hospital.

To determine the age and sex wise distribution of poisoning cases.

To find out the duration of hospital stay.

To find out nature and type of Poison

Material and Methodology

The present prospective study had been conducted in the Department of Forensic Medicine & Toxicology at Geetanjali Medical College & Hospital, Udaipur, Rajasthan during the period from 1st Jan 2017 to 31th Dec 2018.

The diagnosis of poisoning was based on history given by clinical examination, police officer, patient relatives and medical case papers.. Necessary laboratory tests were also performed to confirm the diagnosis of poisoning (if available). All cases of poisoning admitted to the hospital were included in this study. The data including demographic profile of patients, duration of hospital stay, nature and class of poison, outcome and circumstances of poisoning were obtained from medical records and were documented on a pre-structured proforma.

Result and Observation

In our study majority of case [101 cases (35.69%)] were observed in the age group of 21-30 years followed by the age group of 11-20 years [65 cases (22.26%)] followed by 31-40 years[46 cases (16.25%)]. While only 5 case (01.77%) was observed in between 61-70 years age group. **[Table 1].**

Majority [153 cases (54.06%)] of cases of Poison were Male person while [130 cases (45.94%)] were female. **[Table 2]**

In our study majority of cases[184 cases (65.02%)] belongs to Rural area, while 99 cases (34.98%) belongs to Urban area. **[Table 3]**

In our study majoritynumbers cases [128 cases (43.82%)] of Poison found inrainy season **[Table 4].**

The hospitalization time for the poisoning cases in our study, varied between 1-37 days with a mean duration of hospitalization of 4 -7days. **[Table 5].**

In our studyOut of total 283 poison cases, Aluminium phosphide poisoning were found in 106 cases (37.47%) followed by snakebite poisoning was there in 62 cases (21.91 %) and acid poisoning - 3 cases (1.06 %).Among insecticides, maximum - 40 cases (14.13 %) were due to the organophosphorus compounds. **[Table 6].**

Discussion

In the present study, majority of Poisoning cases (21.30%) were observed in the age group of 21-30 years. which was also similar with various studies, like Gupta P et al[5], Bari M S Vet al[6]. This shows that young adults are more vulnerable to this health problem which might be due to emotional and social disharmony, occupational problems and risk taking behaviors at these ages.

The pattern of poisoning with respect to gender in our study indicates that there were more cases of poisoning among the male patients(54.06%) compared to female patients(45.94%).This type of similar finding are observed by Gupta Pet al[5], Bari M S V et al[6] . High proportion of poisoning among males might be due to change in the lifestyle and cultural patterns, reactive depression and high degree of stress in academic, financial and social sectors.

In the present study, majority of victims (65.02%) were belongs to rural area, while 34.98 % victims were belongs to urban area. Nearly similar finding are seen in the study done by Sharma BR et al[7].This maybe because widespread use of pesticide in agriculture sector in rural area. Poverty, failure of crops, family problems and easy availability of the poison in their household made people of rural area more prone for poisoning. However, study done by Abubakar S etal[8] from state of Karnataka, the incidence was more in those who were from urban background.

A season-wise variation was seen in the poisoning incidence in the present study. Maximum numbers of poisoning cases [128 cases (43.82%)] were seen in the rainy season . This may be due to increased work and labour pressure, financial crisis and increased use and availability of pesticides, Insecticide during that season. Also snake bite cases more seen in this season.

The hospitalization time for the poisoning cases in our study, varied between 1-37 days with 30.74% showing a mean duration of hospitalization of 4-7 days. A similar result was found in the study conductedby Abubakar S et al[8] in southern India, which indicated that the average number of days of hospitalization was 4-7 days (33.3%).

The Southern parts of Rajasthan, mostly comprising of agricultural land, the geographic distribution of the Victims chiefly being from rural areas and comprising of 184 cases. In our study most of cases of poisoning were due to Aluminium phosphide, Snake bite and Organophosphate poison.Because of abundant use of pesticides, Insecticides inagricultural fields of rural areas and inhabitation of poisonous reptiles (snakebite) in unhealthy and hillyrural areas.Organophosphate and aluminium phosphide are common agents used for poisoning because of low cost and easy availability and since majority of patients in our study were from rural background and were farmers, they used these pesticides instead of other poisons. Snake bite is also common in our study because of predominance of people of rural area.

Table 1: Age Wise Distribution of Poisoning Cases

Age group	No. of Patient	Percentage (%)
0-10	25	8.83
11-20	63	22.26
21-30	101	35.69
31-40	46	16.25
41-50	21	7.42
51-60	22	7.77
61-70	5	1.77
71-80	0	0.00
Total	**283**	**100**

Table 2: Sex Wise Distribution of Poisoning Cases.

Gender	No. of Patient	Percentage (%)
Male	153	54.06
Female	130	45.94
Total	283	100

Table 3: Locality Wise Distribution of Poisoning Cases

Locality	No. of Patient	Percentage (%)
Urban	99	34.98
Rural	184	65.02
Total	**283**	**100**

Table 4: Season Wise Distribution of Poisoning Cases.

Season	No. of Patient	Percentage (%)
Winter	68	24.02
Summer	91	32.16
Rainy	124	43.82
Total	283	100

Table 5: Duration of Hospital Stay Wise Distribution of Poisoning Cases.

No. of days of hospitalization	No. of Patient	Percentage (%)
Up to 1 day	76	26.86
1-3 day	83	29.33
4-7 day	87	30.74
8-15 day	25	8.83
16-30 day	11	3.89
Above 30 day	1	0.35
Total	**283**	**100**

Table 6: Type and Nature Poison Wise Distribution Of Poisoning Cases.

Type of Poison	No. of Patient	Percentage (%)
Aluminium Phosphide	106	37.46
Snake bite	62	21.91
Scorpion Venom & Other Arthropods	24	8.48
Organo Phosphorus	40	14.13
Insecticide Other than O.P.	12	4.24
Corrosive Poison	3	1.06
Miscellaneous Poison	13	4.59
Psychotropic drug	4	1.41
Alcohol	4	1.41
Unknown	15	5.30
Total	**283**	**100**

Conclusion

Most common type of poisoning cases reported overall was aluminium phosphide followed by snake bite followed by organophosphate. Proportion of mortality and requirement of ventilator was higher in case of aluminium phosphide poisoning. We suggest the government should regulate the import, manufacture, sale, transport, distribution and use of insecticides and pesticides. Upgrading the peripheral health centres to manage cases of poisoning in emergency including training of staff to give first aid treatment of poisoning (including timely intubation and respiratory support on AMBU bag) and availability of antidote and anti-snake venoms and increase in public awareness about the seriousness of problem through health education.

Awareness and education about the potential toxicity of commonly used pesticides and drugs may help in reducing the burden of poisoning.We should have to establish a poison information centre (PIC)which should be networked with other poison information centre in India and with developed countries which can help in identifying the poison and managing the cases.

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