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Profile of Acute Poisoning in a Tertiary Care Hospital: A Retrospective Study

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ABSTRACT

Background: Acute poisoning is a medical emergency. The trend of self-poisoning among young people, which is one of the most productive groups of the society, is a cause of great concern. AIM: Retrospectively analyzing the profile of patients presenting as acute poisoning at Sher-i-kashmir institute of medical sciences and hospital Bemina Srinagar. **Methods:** The present retrospective study was conducted at Sher-i-Kashmir institute of Medical sciences Bemina Srinagar. The study included 207 cases of poisoning that reported to hospital from January 2019 to October 2019. Type of poison consumed, age, sex, whether rural or urban, nature of poisoning whether suicidal, accidental and homicidal and case fatality rates were recorded. **Results:** Organophosphorus poisoning was the most common form of poisoning (83.09%) followed by rat poison (10.62%), carbon monoxide poisoning (3.86%), toilet cleaning agent (1.44%), kerosene poisoning (0.96%). Mean age of the patients was 22 years, males outnumbered females in the ratio of 2.28:1. Nature of poisoning was suicidal in 93.23 % of the cases followed by accidental (3.86%) and homicidal (2.89%). Majority of the population belonged to rural areas (83.09%). **Conclusion:** Acute poisoning is more common in the productive age group of 20 to 30 years that results in huge socioeconomic burden on our society, hence it is very important to formulate preventive strategies to decrease morbidity and mortality associated with acute poisoning.

Keywords: Acute poisoning, Organophosphorous, suicidal.

INTRODUCTION

Acute poisoning is a medical emergency. According to World Health Organization (WHO), globally three million poisoning cases with 2, 20,000 deaths occur annually.[1,2] In India alone 50,000 people die every year from toxic exposure.[3] what makes the problem worse is the age group of 21 to 30 years that it predominantly involves. This trend of self poisoning among young adults, which is one of the most productive groups in our society, is a cause for great concern. Information regarding poisoning cases in our region has been rather limited. Knowledge of general pattern of poisoning in patients presenting to our medical emergency will help in early diagnosis and treatment of the cases which will decrease the rate of mortality and morbidity. Moreover by understanding the pattern of poisoning in our society we can formulate various preventive schemes so that burden of poisoning can be decreased. To our knowledge no such study has been done in our institute, so we decided to study the profile of patients presenting as cases of acute poisoning in our hospital.

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MATERIALS AND METHODS

The present retospective study was conducted at Sher-e-Kashmir institute of Medical sciences Bemina Srinagar which is a tertiary care institute. Source of information was hospital case records of the cases of poisoning obtained only for research purposes. The study included 207 cases of poisoning that reported to hospital between January 2019 to October 2019 .Cases of food poisoning, insect bites, snake bites and allergic reactions were not included in the study. During our study we followed ethical guidelines as per Helsinki declaration. The data was entered and analyzed in Microsoft Excel 2011 and another statistical software Minitab version 17.0. P value <0.05 was considered statistically significant.

RESULTS

After retrospectively reviewing our hospital records from January 2019 to October 2019 we found that a

total of 207 case of acute poisoning had come to our hospital for treatment. [Table 1] below shows the different types of poisons consumed or inhaled.

Table 1: Type of Poison.

Type of Poison	No. of Cases	Percentage (%)
Organophosphorus	172	83.09
Rat poison (Almunium phosphate, Zinc phosphate)	22	10.62
Carbon Monoxide (CO)	8	3.86
Toilet cleaning agents (Harpic)	3	1.44
Kerosene Poisoning	2	0.96
Total	207	

In our study we found that the mean age to be 22 years. The age of the patients varied between 18 to 80 years. Age distribution is shown in [Table 2].

Table 2: Age In Years.

Age In Years	Number Of Cases	Percentage (%)
1-9	0	0
10-19	9	4.34
20-30	132	63.76
31-40	49	23.67
41-50	17	8.21
>50	1	8.21

Males (144) outnumbered females (63) in the ratio of 2.28: 1 as depicted in [Table 3] (P value <0.05)

Table 3: Sex.

Sex	No. of Cases	Percentage (%)
Males	144	69.56
Females	63	30.44

Nature of poisoning was suicidal in majority of the cases [Table 4]

Table 4: Nature Of Poisoning.

Nature Of Poisoning	No. Of Cases	Percentage (%)
Suicidal	193	93.23
Accidental	8	3.86
Homicidal	6	2.89

Majority of the cases were from rural areas [Table 5]. (P value < 0.05)

Table 5: Domicile.

Domicile	No. Of Cases	Percentage (%)
Rural	172	83.09
Urban	35	16.90

Only one patient died whereas five needed intensive care unit support. Among the suicidal cases nine girls had consumed poison after failing in their matriculation exams.

DISCUSSION

There are a few things that stand out strikingly when we analyze the profile of poisoning cases in our study. Firstly the age group of 20 to 30 years accounted for largest number of cases (63.76%) followed by 30 to 40 year age group (23.67%). This is a cause for concern as this is the most productive group of any society. These findings are in agreement with other studies.[4-8] This could be attributed to the stress one faces during this time of life, the responsibility of running families, mental and social stress, pressure of passing exams, undiagnosed psychiatric predisposition, rejection in love, marital discord, crop failure and poverty. Higher suicidal rates were found in males as compared to females which are in agreement with studies done by other authors.[9,10] This could be attributed to their involvement in economic activities, high unemployment rates and responsibility of running the families. Factors like cruelty by in-laws, dowry demands, gender bias, emotional instability, family quarrels and dependence on husbands were the main reason for suicides in females this is in agreement with study done by Virendar et al 2004.[11]

The other important finding of our study was that organophosphorus compounds were the main poisonous substance (83.09%) consumed by people. This is in agreement with other studies done in different parts of country.[12-16] Ours is an agriculture based economy. Organophosphorous poisoning is one of the most common cause of acute poisoning in india.[17] Easy availability of pesticides insecticides and fungicides particularly in rural areas of the country is one of the main reasons of high incidence of organophosphorous poisoning. In our study we found most cases (83.09%) belonged to rural areas where availability of these insecticides is in abundance. This is in agreement with study done by Patel et al 2011.[18]

Case fatality rate in our study was only 0.48% as only one patient died , this rate is quite less then case fatality rates reported by other studies where it is 3.4%,[19] 8.3%,[12] 10%,[20] 15.4%,[13] 18.6%.[21] However it is similar to studies which show a case fatality rate of 0 and less than 1%.[22,23] This could be attributed to better efficiency of our hospital in managing cases of acute poisoning.

CONCLUSION

The most important observation that we made in our study was that acute poisoning is more common in the productive age group of 20 to 30 years that results in huge socioeconomic burden on our society, hence it is very important to formulate preventive strategies to decrease morbidity and mortality associated with acute poisoning. We also noted that easy availability of pesticides particularly in rural areas makes them a household poison, hence stricter legislation concerning sale and use of pesticides should be done by the government. People with psychiatric problems should be identified and

counseling provided at the earliest. Educating people and students at village levels about poisoning and its first aid treatment should be made a priority. Last but not the least a ready availability of antidotes of the common poisons used in our area should be a priority of the hospital administration, so that precious lives can be saved.

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