



## ASSESSMENT OF POISONING CASES IN A TERTIARY CARE HOSPITAL IN KASHMIR VALLEY. A LONGITUDINAL STUDY

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**ABSTRACT** **Background:** Poisoning is a major problem globally and its incidence is rising due to rapid industrialization and urbanization. The exact incidence of acute poisoning is not known in India because of lack of any central poison registry. Same is the case with Kashmir. The toxins involved in acute poisoning cases vary from place to place. In western countries, the commonest toxins are medicinal agents. In contrast, in India, insecticides and pesticides are the most commonly consumed agents in adults while kerosene oil is the most common toxin in children. Knowledge of commonly encountered poisons in a particular area is important for practicing physicians as it may help in early diagnosis and institution of life-saving treatment.

**Methodology:** A longitudinal study was conducted in one of the two tertiary care hospitals in Kashmir valley. All the cases with poisoning coming to the emergency department of the SMHS hospital for the period of one year were included in the study. Data were collected from the history given by the patient, hospital records, police inquest reports and relatives.

**Results:** We studied 101 patients of poisoning in this longitudinal study. We found that 96 percent of cases were suicidal in nature and 4 percent were accidental. In maximum cases reason was family issues and quarrel with family member's. Only four patients expired among this study population due to poisoning. Major complication among these patients was hypernatremia in 12.9%.

**Conclusion:** This study points towards the need of taking strict actions to restrict the easy availability and accessibility of poisonous chemicals within the families and in the community to prevent the high cases of suicidal poisoning especially among students.

**KEYWORDS :****INTRODUCTION**

Poisoning is now a day's becoming a significant global public health problem. In 2012 as reported by World health organisation around 193,460 people died worldwide from unintentional poisoning with 84% of these deaths occurring in low- and middle-income countries. (World Health Organization, 2018) Each year nearly a million people die as a result of suicide, and chemicals account for a significant number of these deaths. It is estimated that deliberate ingestion of pesticides causes 370,000 deaths each year. (Dawson et al., 2010) These deaths can be reduced by limiting the availability of, and access to, highly toxic pesticides. A poison is any substance that is harmful to our body when ingested, inhaled, injected, or absorbed through the skin. (Center For Disease Control, 2005) As per WHO statistics we see that developed countries have a high burden of deaths due to poisoning and mostly suicidal followed by accidental poisoning. In India these cases are very often occurring with the use of agricultural pesticides and other chemicals. Over the last few decades agricultural pesticides have become a common household item in rural areas of the developing world. (Rajendran, 2003) Due to their easy availability, pesticides have also become commonly used for intentional self-poisoning. According to World Health Organization (WHO) estimates published in 1990 (World Health Organization 1990), around 3 million poisoning cases with 220,000 deaths occur annually. (Gunnell, Eddleston, Phillips, & Konradsen, 2007) About 99% of these deaths occur in developing countries. (Gunnell et al., 2007) Pesticide poisoning is a significant problem in India. Among the various pesticide compounds Organophosphorus (OP) compounds cause most self-poisoning deaths in southern and central India. In parts of northern India, aluminium phosphide caused most deaths in an epidemic that started two decades ago.

In Kashmir there is a rise in the cases of poisoning but limited research has been done in this area. We focused our study to understand the pattern of poisoning cases in Kashmir and thus suggest preventive measures.

**Methodology:**

A longitudinal study was conducted in one of the two tertiary care hospitals in Kashmir valley. All the cases with poisoning coming to the emergency department of the SMHS hospital for the period of one year

were included in the study. After obtaining oral consent from the participants were feasible and the consent of parents or guardian in others, the patients were studied from the time of admission in the causality and then the status was followed up till recovery or death. Data were collected from the history given by the patient, hospital records, police inquest reports and relatives. Data was entered in Microsoft Office Excel and analysed in SPSS software. Data on age, sex, occupation, type of poison, route of exposure, associated comorbid conditions and outcome of poisoning were recorded and analyzed by appropriate methods.

**RESULTS:**

Among the 101 patients majority were females with only 30.7% males. More than half (60%) of patients were students. Around 67% of the patients belonged to nuclear families. Majority of the participants belonged to the middle class according to Kuppuswami socio economic classification. Majority of the participants were literate with 14.9% being graduate and 28.7% being educated up to higher secondary. Poisoning was suicidal in 96% of cases and accidental in only 4% of cases. The mode of intake was oral in all the cases. 10.9 cases were stuporous on presentation. In 33.7% cases the reason was quarrel with family and in 48% the reason was unknown. Only 4% of the patients expired among the cases. About 32.6% cases landed up into complications with around 40% of them having hypernatremia as complication. Among the cases there were 2 pregnant patients and 3 patients with psychiatric disorders.

**Table 1: Socio demographic profile of the patients**

sex	N	Percentage
Females	70	69.3
Males	31	30.7
Total	101	100.0
<b>Occupation</b>		
Business	2	1.9
Dependent	1	.99
Farmer	6	5.9
Housewife	19	18.8
student	61	60.4

Unemployed	12	11.8
<b>Type of family</b>		
Joint	33	32.7
Nuclear	68	67.3
<b>Socio economic classification</b>		
Upper middle class	17	16.8
Lower middle class	73	72.3
Lower class	11	10.9
<b>Education</b>		
	<b>N</b>	<b>Percentage</b>
Primary	19	18.8
Middle to secondary	36	35.6
Higher secondary	29	28.7
Graduate	15	14.9

**Table 2: characteristics of the poisoning cases**

<b>Type of poisoning</b>	<b>N</b>	<b>Percentage</b>
Suicide	97	96.0
Accidental	4	4.0
Total	101	100.0
Oral	101	100.0
<b>Presentation</b>		
Conscious	90	89.1
Stuporous	11	10.9
<b>Reason in suicide</b>		
Family Issues	34	33.7
Personal	1	1.0
Quarrel With Family	12	12.9
Unknown	49	48.5
<b>Outcome</b>		
	<b>N</b>	<b>Percentage</b>
Expired	4	4.0
Survived	97	96.0
Hypertremia	13	12.9
Metabolic acidosis	5	5
aspiration pneumonia	4	4
Others	5	5
Multiple complication	6	6
No complication	68	67.3

#### DISCUSSION:

Suicidal deaths are increasing each day and one of the modes of such deaths is suicidal poisoning. As many poisonous chemical are easily assessable now a day, it becomes important to ensure preventive measures to stop such incidences. We did this study to explore the various aspects behind the incidences of poisoning reported to the hospital. Our findings points towards some of the important aspects of poisoning cases which needs to be looked at. Poisoning was suicidal in 96%of cases and accidental in only 4% of cases. Majority of the cases were females pointing towards the more vulnerability of females to indulge in suicidal poisoning as a result of many social issues, these results are comparable to the data from other parts of the country as well as across various countries.(Gunnell et al., 2007) with More than half (60%) of patients being students in our study shows the lack of social support that students need to cope up with different situation of life as these are the years when individuality is not sufficient to deal with issues. Similar results have been shown in many other studies. (Center For Disease Control, 2015)(Farzaneh et al., 2010) Majority of the patients in our study belonged to the middle class according to kuppusswami socio economic classification again pointing the need for improving the coping mechanism for the working class.(Singh & Kishore, 2017) Majority of the participants were literate with 14.9% being graduate in our study and these results are similar to other studies. (Pires, Silva, Passos, Sougey, & Bastos Filho, 2014) This shows that education system needs to look after the preventive strategies to educate and motivate the students form abstaining from such actions especially starting in the beginning of adolescent years of life. In 33.7% cases the reason was quarrel with family thus focus at the family level can be very important in preventing such incidences. Around 40 % of cases with complication had hypertremia as complication because the treatment given causes this electrolyte imbalance which needs to be looked after in such cases.

#### CONCLUSION:

The study concludes that among the poisoning cases that are reported there is a very high prevalence of suicidal poisoning especially among the students. This warrants towards taking strict actions to restrict the easy availability and accessibility of such poisonous chemicals within the families and in the community.

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