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CASE REPORT

# SPECTRUM OF ACUTE POISONING IN KASHMIR

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**ABSTRACT**

Poisoning is an important public health problem causing significant morbidity and mortality throughout the world. According to World Health Organization (WHO), globally than three million of acute poisoning cases with 2,20,000 deaths occur annually. Knowledge of general pattern of poisoning in a particular region will help in early diagnosis and treatment of the cases. In present study 341 cases of acute poisoning admitted in the emergency medicine department of Sher-i-Kashmir Institute of Medical Sciences, Srinagar from 1st September 2014 to 31th October 2015, were studied for a detailed epidemiological and medicolegal analysis.

The majority of the victims were young in the age group of 20-29 years. Most of the admitted cases were suicidal and women were the main victim. Majority of the cases belonged to the rural areas. Accidental cases due to occupational exposure or inhalation were also reported. The house wives and students were the predominant groups affected. Pesticide poisoning was the most predominant type of poisoning.



## INTRODUCTION

Poison is a substance that causes damage or injury to the body and endangers one's life due to its exposure by means of ingestion, inhalation or contact.[1] Acute poisoning is defined as acute exposure (less than 24hrs) to the toxic substance.[2] Acute poisoning due to accidental and suicidal exposure causes significant mortality and morbidity throughout the world.[3] According to World Health Organization (WHO), globally more than three million cases of acute poisoning occur annually with 2,20,000 deaths.[3] Pattern of poisoning in a region depends on various factors which include availability and access to the poison, socioeconomic status of individual, cultural and religious influences.[4]

Rapid industrialization, introduction of newer range of drugs for treatment and massive use of pesticides in agriculture has increased the incidence of poisoning. In advanced countries, it has been observed that poisoning deaths are mainly due to cleansing agents, detergents, paracetamol, carbon monoxide and other cosmetic products.[5] In India, as agriculture is the main occupation, insecticides and other agrochemical fertilizers are used to a greater extent and poisoning with such products is more common.[6] According to various studies organophosphorus compounds form the commonest poisoning substance in Asia.[7,8]

Although extensive data is available regarding the pattern of poisoning in India, there is often little information regarding the victim profiles and pattern of poisoning in Kashmir. This study aimed to analyze the pattern of the poisoning cases, sociodemographicvariables of poisoning victims, changing trends of poisoning and associated factors in the valley of Kashmir. Study will act as a useful tool for providing healthcare facilities to reduce the poisoning associated mortality rate.

***Objectives***

1. To analyze causative agents and manner of cases.
2. To describe socio-demographic characteristics of the victims so as to identify the vulnerable groups.
3. To suggest preventive measures, this possibly could reduce incidence of the secases.

## MATERIAL AND METHODS

The study was conducted prospectively over a period of one year from Ist October 2014 to 31st September 2015.The study material consisted of the all the poisoning cases registered in the Emergency Medicine department of SKIMS, Srinagar. The information regarding the cases was collected from the medico-legal register and hospital case files of the patient using a predesigned and pretested proforma. The additional

information was obtained by interviewing the patients or attendants of the patients. The data encompassed demographic details of the patient, nature of the poison consumed, manner of the poisoning and seasonal distribution of the cases.

## RESULTS AND DISCUSSION

A total of 341 poisoning cases were received during the study period.

**Table 1** Gender wise distribution

| Gender | Frequency | Percentage |
|---|---|---|
| Males | 102 | 29.9% |
| Females | 239 | 70.1% |
| Total | 341 | 100.0% |

Table-1 shows percentage of female victims (70.1%) was more than the males (29.9%). The results are similar to the study conducted by Farhana Bashir *et al* [9]. One of the reasons for higher incidence of poisoning in females is that females are emotionally more labile than the males.

**Table2** Age wise Distribution

| Age Group in years | Frequency | Percentage |
|---|---|---|
| 0-9 | 8 | 2.35% |
| 10-19 | 32 | 9.38% |
| 20-29 | 184 | 53.96% |
| 30-39 | 55 | 16.13% |
| 40-49 | 36 | 10.56% |
| 50-59 | 19 | 5.57% |
| ≥ 60 | 7 | 2.05% |
| Total | 341 | 100.0% |

Table-2 shows that victims of age group 20-29 years form the majority of cases (53.96%) followed by 30-39 years and 40-49 years 21.06% and 11.8% respectively. The results are in consistence with the findings of other researchers.[10,11] Majority Of victims were in the age group of 20 to 29 years, the reason being that this age group is the most active age group whether physically, mentally or socially and people in this age group are more prone to stress.

**Table 3** Rural/Urban Wise Distributions

| Domicile | Frequency | Percentage |
|---|---|---|
| Rural | 213 | 62.46% |
| Urban | 128 | 37.54% |
| Total | 341 | 100.0% |

Table-3 shows that majority of the poisoning cases were from rural areas (62.46%).The results are in consistence with the findings of B Maharani *et al*.4 The majority of population in Kashmir resides in rural areas where majority of the fruit orchards and agricultural farms are located. Easy availability of pesticides and other chemical compounds in these areas lead to more instances of poisoning.

**Table 4** Marital Status wise distribution of cases

| Marital status | Frequency | Percentage |
|---|---|---|
| Unmarried | 142 | 41.64% |
| Married | 199 | 58.36% |
| Total | 341 | 100.0% |

Table 4 shows that majority (58.36%) of the victims were unmarried. The findings are in consistent with other studies.[12,13] Married people especially experience more stress due to familial responsibilities and various other social and cultural factors, which prompts them to take the drastic steps.

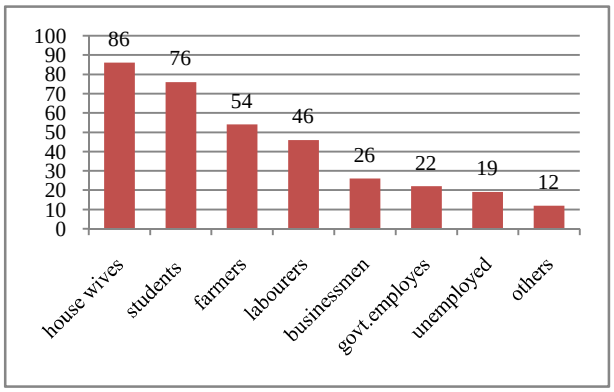


**Figure 1** Occupation wise Distribution

Figure 1 shows that majority of the cases were of housewives (25.22%) followed by students (22.29%) and farmers (15.84%).Factors like dowry, cruelty by in-laws, family quarrels, and maladjustment in married life lead to higher incidences of poisoning in females. Failure in exams or inability to cope up the high expectations from parents and teachers has increased the incidence of poisoning in students. Poverty, inadequate income to run the family, crop failure and loans leads to higher incidences of poisoning in farmers and labourers.

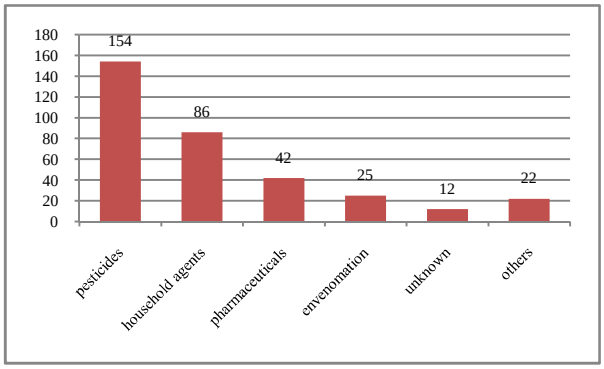


**Figure 2** Distribution of Poisoning Cases by Types of Offending Agents

Figure 2 shows that the majority of the poisoning were due to pesticides (45.16%) followed by the house hold agents (25.2%) and pharmaceuticals (12.32%).The findings are in consistence with the findings of other researchers.[7,14,15] Pesticides (45.16%) account for the majority of the cases as they are extensively used in orchards and fields. Pesticides are cheap and easily available over the counter hence account for majority of the incidences.

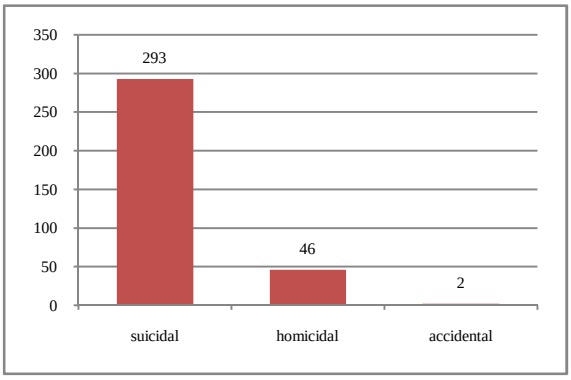


**Figure 3** Manner of Poisoning

Figure 3 shows that the majority of the cases (85.92%) were suicidal. The findings are consistent with the findings of Farhana Bashir *et al* [9] and Malik GM *et al*[16].Stress of modern lifestyle, family problems, high rate of unemployment and low moral values has resulted in low threshold for suicide especially among youth. Poisoning has become method of choice for suicide.

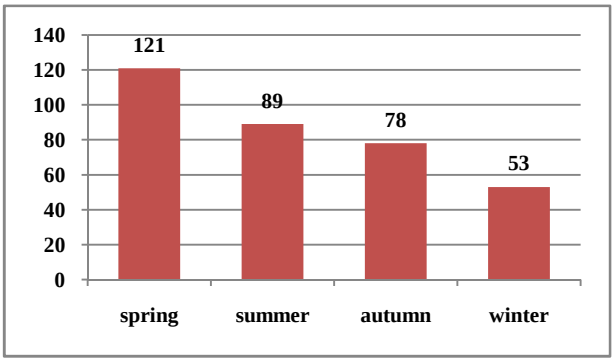


**Fig 4** Season Wise Distribution

Figure 4 shows that the majority of poisoning cases (35.48%) presented during the summer season while as least (15.54%) cases were reported during winter season. The findings are in contrast to the studies of B Maharani *et al*[4] and Pokhrey *et al*[17].Spring season infuses life into the fruit orchards of the Kashmir Valley and pesticide spraying of the trees is done during this season. As a result pesticides become easily available in homes and fields leading to increased incidences during spring.

***Summary and Recommendations***

Poisoning in Kashmir valley is affecting younger productive age group of the population. Self poisoning with the pesticides is becoming a major public health concern. As Kashmiris one of the majorfruit growing states in India, rural population of this region is mostly dependent on orchards especially apple orchards. The Pesticide which are used extensively in the agricultural industry in Kashmir are readily available as over the counter drugs in village shops and are easily accessible In the village households. Hence they act as common agents for suicidal purposes following trivial day to day stresses. Present Study highlights the problem of pesticide poisoning in this region.

Poison prevention Strategies can be implemented at various levels as follows:

1. Strict implementation of pesticide act, so that import, manufacture, sale, transport, distribution and use of pesticides can be under the supervision of the government.
2. Controlling access to dangerous pesticides and follow secure storage practice.
3. Poison information centre must be created in each district. It will aid in timely diagnosis and treatment.
4. Hospitals to have separate toxicological units exclusively dealing with clinical poisoning cases.
5. Health education to adolescents, NGO's, village heads and others about poisoning and its first aid treatment
6. Strict implementation of anti dowry law, marriage counseling and women empowerment.
7. Introduction of safer pesticides with minimal harm to the humans.
8. Anti snake venom (ASV) to be made available at all major hospitals.

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