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# STUDY OF SOCIO-DEMOGRAPHIC PROFILE OF POISONING CASES AT SHRI B M PATIL MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE, BIJAPUR

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## ABSTRACT

A retrospective analysis of all poisoning cases admitted to Shri B M Patil Medical College Hospital & Research Centre Bijapur, Karnataka from Jan 2010 to Dec 2010 was done to study the pattern of poisoning reported. Acute poisoning is a common medical emergency and one of the important causes of morbidity and mortality in developing countries due to easy availability of poisonous substances and its low cost. So it was important to know the pattern of poisoning at to Shri B M Patil Medical College Hospital & Research Centre Bijapur. Objective of the study was to evaluate the pattern of poisoning at a tertiary care hospital in North-Karnataka (Bijapur), and to study the socio-demographic profile of the same. Data collected using a pretested proforma and the values were analyzed and presented.

**Key Words:** Poisoning, organophosphrous compounds, kerosene.

## INTRODUCTION

Massive use of pesticides in agriculture, rapid industrialization and exposure to hazardous chemical products, introduction of newer range of drugs for treatment, , increased alcohol consumption, unhealthy dietary habits has widened the spectrum of toxic products to which people have been exposed as compared with the early days[1,2,3,4,5,6]. Knowingly or unknowingly millions of people are exposed to danger by hazardous occupational practices and unsafe storage[3,6] of toxic chemicals products in their day to day life. Lack of specialized toxicological services in developing countries like India has further contributed to the higher rate morbidity and mortality [1,4,2]. Easy availability and low cost of hazardous chemicals plays a major role in both accidental and suicidal poisoning in developing countries like India, Srilanka, South Africa etc [1,3,4,6,7,8]. Most of the fatality rate is of intentional poisoning by organophosphrous (OP) compound which has been reported from southern and central India[9,10,11.] According to WHO (1999) more than three million poisoning cases has been reported out of which 251,881 deaths occur world wide annually, of which, 99% of fatal poisoning occur in developing countries, predominantly among farmers due to various kinds of poisoning, including poisonous toxins from natural products are handled [11,12]. Therefore, an alarm for early diagnosis, treatment and prevention is crucial in reducing the burden of poisoning related injury in any country.

A comparative data revealed that in developed countries, the mortality rate due to poisoning is only 1% to 2%, but in developing countries like India it varies between 15% to 30% [13] and is the fourth most common cause of mortality especially in rural India [2,14]. It is very difficult to draw a report to say which kind of poisoning is more frequent, has the nature of poisoning varies from one region another depending upon the poison

availability and the knowledge and local population regarding the properties of poisons [2]. So this study has been aimed to determine the various parameters of poisoning such as type of poisoning involved, the most vulnerable age group and their marital status with religions.

## METHODOLOGY

The present retrospective study was conducted by department of Forensic Medicine& Toxicology . Shri B M Patil Medical college, Bijapur, North Karnataka from Jan 2010 to Dec 2010. Data was collected from all the poisoning cases admitted that were admitted & treated at BLDEAs B M Patil Medical College Hospital & Research Centre Bijapur. Information was collected into a proforma on the type of poison consumed, incidence on age and sex, marital status, religions, hospitalization days were noted from records for each case and analyzed.

## RESULTS

In our study there were total of 378 patients brought to BLDEAs B M Patil Medical College Hospital & Research Centre Bijapur, of whom the data were collected during the 12 months study period from Jan 2010 to Dec 2010 due to suspected poisoning. Total number of 32904 IPD cases were registered during the study period and 2197 MLC cases done, in which 378 cases (6.67%) were due to poisoning (Table 1).

Total number of male patients admitted to hospital due to poisoning was 199 (52.64%) and female were 179 (47.35%) with the male: female ratio being 1.2:1 (Table 2). Majority (45.76%) of victims with suspected consumption of poison was in between 21 to 30 age group followed by the age group between 11 to 20 (26.45% )( Table3).

Insecticides were the most common poison used for suicidal purpose by the entire victim aged between 15-65 years irrespective of age (Table 4). We also found that out 199 (52.64%) males came with poisoning, 55 % patients were married and 45% patients were unmarried. Out of the 179 females who admitted for poisoning 65% patients were married and 35% were unmarried (Table 5).

The hospital stay of the admitted patients with poisoning ranged from 01 to 82 days and the mean hospital stay was 6.9 days. During the study period 21 (5.55%) of the patients had mortality due to poisoning (Table 6). 353 cases (93.3 %) with poisoning admitted to the hospital were Hindus followed by Muslims in 25 cases [6.61%] (Table 7).

Most common (51.6%) poison used for poisoning were organophosphrous compounds 197 cases (51.63%), in 118(31.21%) cases the type of poison was not known and were treated symptomatically (Table 4).

In our study 86.5% (327) of cases were from rural domicile and only 13.5 % (51) from urban population (Table 8).In season wise distribution, highest cases were recorded in the month of March & April (16.9% & 9.2%) (Table 9).

## DISCUSSION

Poisoning is a major public health problem in Bijapur district, with thousands of poisonings and hundreds of deaths every year cases coming to tertiary centre represent just tip of the iceberg. Keeping this background in mind, retrospective analysis of all poisoning cases admitted to Shri B M Patil Medical College Hospital & Research Centre Bijapur, Karnataka from Jan 2010 to Dec 2010 was done to study the pattern of poisoning reported. Suicide is one of the oldest and considered the best trends of sacrificing their life by consuming different poisonous substances which are easily accessible to them compared other methods. The morbidity, mortality in any case of acute poisoning depends upon number of factors such as nature of poison dose consumed, level of available medical facilities and time interval between intake of poison and provision of medical help.

The sex incidence affected with poisoning was more with male which out numbered the female the ration being 1.7:1 and tallies with the other

studies [4,8,15, 16,17,]. In our study there is a male predominance (52.64%). The high incidence may be because males are more exposed to stress, strain and occupational hazards compared to females [2,11,18,19]. In this study the most common age group involved was between 21-30 years followed by the age group between 11- 20 years. Thus, adolescent and young adults are at more risk compared to other groups. Similar observations were reported by studies in India and abroad [4, 8, 17,20, 21, 22,].

The hospital stay of the admitted patients with poisoning ranged from 01 to 82 days. The mean hospital stay was 6.9 days, similar findings were also observed in other studies as well[20].In the present study 197 cases (51.63%) were due to insecticidal organophosphrous poisons, which were the most commonly responsible agents for toxicity in poisoning cases. Similar types of findings were noted by the authors[11, 23, 24]. We observed that married person more often become victim of poisoning which was found similar with other studies [4,15, 25].The reason of fact could be that the amount of stress carried by the married people on their day to day life is more than the single males or females which makes them more vulnerable.

Patients who were admitted due to poisoning of which, 353 (93.38%) patients were Hindus (76.35%) followed by Muslims in 25 (6.61%). This may be due to religious beliefs and low percent of muslims in the rural population, served by Shri B M Patil Medical College Hospital & Research Centre Bijapur. In our study majorly of cases were from rural domicile similar findings were seen by other Indian studies[2,3,4,5,6]. .In season wise distribution, highest cases were recorded in the month of March & April this may be due to easy availability of insecticides during the harvesting season and announcement of exam results during these months.

## CONCLUSION

We conclude that poising is a major public health problem in Bijapur district, especially organophosphrous poisoning. The reasons may be – agriculture is the main occupation in this part of country with easy availability of insecticide, illiteracy, and low socioeconomic status. young age persons commonly affected indicating role of psychological counseling and by tackling their problems sympathetically. We suggest the government should regulate the import, manufacture, sale, transport, distribution and use of insecticides and pesticides with a view to prevent risk to human beings. Other interventions can be creation of poison information centres, introducing separate toxicological units in the hospitals and upgrading the peripheral health centres to manage cases of poisoning in emergency.

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**Tables**

**Table 1- Total number IPD and MLC cases during study period**

| Total IPD cases | Total MLC | Total Poisoning cases |
|---|---|---|
| 32904 | 2197[17.20 %] | 378 [6.67 %] |

**Table 2- Sex wise distribution of cases**

| Total | Male | Female |
|---|---|---|
| 378 | 199 [ 52.64] | 179 [ 47.35] |

**Table 3- Age wise distribution of cases**

| Age | No of cases | Percentage % |
|---|---|---|
| < 10 | 7 | 1.85 |
| 11 to 20 | 100 | 26.45 |
| 21 to 30 | 173 | 45.76 |
| 31 to 40 | 66 | 17.46 |
| 41 to 50 | 19 | 5.02 |
| 51-to 60 | 9 | 2.38 |
| >60 | 4 | 1.05 |

**Table 4- Distribution of cases according to type of poison consumed**

| Type of poison as per the history | No of cases | % to total cases |
|---|---|---|
| Insecticides | 197 | 51.63 |
| Alcohol | 39 | 10.31 |
| Kerosene | 10 | 2.64 |
| Unknown poison | 118 | 31.21 |
| Rat poison | 3 | 0.78 |
| Phenol | 6 | 1.58 |
| Turpentine | 1 | 0.26 |
| Glass powder | 2 | 0.52 |
| Mousquito repellant | 2 | 0.52 |
| **Total** | **378** | **100** |

**Table 5- marital status**

| Sex | Married | Un -married |
|---|---|---|
| Male | 109 (55%) | 90 (45%) |
| Female | 116 (65 %) | 65 (35%) |

**Table 6- Survival of the victims following consumption**

| | |
|---|---|
| Survived | 357 [94.4 %] |
| Died | 21- {5.55%] |
| **Total** | **378 [100 %]** |

**Table 7- Religion wise distribution of cases**

| Religion | No (%) |
|---|---|
| Hindu | 353 [93.38%] |
| Muslim | 25 [6.61%] |
| Total | 378 [100 %] |

**Table 8- Domicile wise distribution of cases**

| Domicile | No (%) |
|---|---|
| Rural | 327 [86.50%] |
| Urban | 51 [13.49 %] |
| Total | 378 [100 %] |

**Table 9- Distribution of cases according to season**

| Month | No of cases | Percentage (%) |
|---|---|---|
| January | 30 | 7.93 |
| February | 20 | 5.29 |
| March | 35 | 9.25 |
| April | 64 | 16.93 |
| May | 26 | 6.87 |
| June | 30 | 7.93 |
| July | 25 | 6.61 |
| August | 23 | 6.08 |
| September | 26 | 6.87 |
| October | 35 | 9.25 |
| November | 32 | 8.46 |
| December | 32 | 8.46 |
| Total | 378 | 100 |