

# Socio-demographic characteristics of poisoning cases in a tertiary care hospital

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## Abstract

A retrospective study of poisoning cases admitted in ICU [Department of Anaesthesiology and Critical Care SSIMS&RC Davangere] from 2010 to 2014 was conducted to evaluate the socio- demographic variables and type of poison consumed in these cases. Total poison cases were 1286. Organophosphorous poisoning cases were predominant, amounting to 488 cases. Maximum cases (281) were in the age group of 20 to 35 years and in the year of 2012. Male predominance was seen in the study population. Most of the cases admitted in ICU were from Chitradurga district (937) as compared to Davangere (129), Bellary (111), Haveri (51) and Shimoga (11) of Karnataka.

**Keywords:** Organophosphorus Poisoning, Socio Demographic Variables

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## INTRODUCTION

Poisons are unassuming and quiet weapons that can be effortlessly used without hindrance and often without poignant suspicion of poisoning. With the extensive use of organophosphate as a pesticide there has been increase in incidence of ill-health among pesticide users. Organophosphate Poisoning (OPP) are the most collective suicidal poison in developing countries and mortality continues to be high. Most of these poisons are usually ingested with a suicidal intent.<sup>2</sup> Because the Organophosphorus compounds are readily available, relatively cheap and have a rapidly lethal action even in smaller doses, they are widely used as suicidal poisons.<sup>3</sup> The various factors that can lead to self-poisoning are emotional disturbances, chronic diseases, loss in the business or failure in examination, loss or damage to

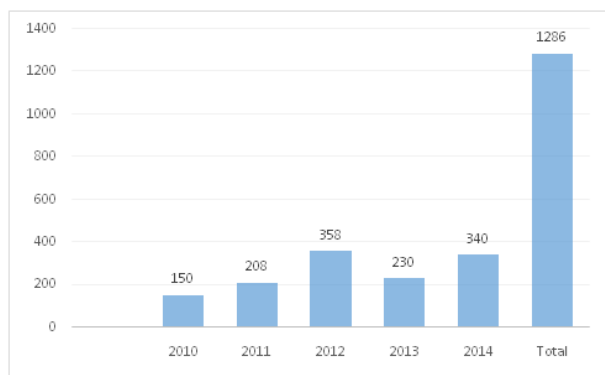
agricultural crops. While as accidental poisoning occurs mostly in children<sup>4, 5</sup> due to ignorance of parents and mislabelling of containers. Since there was increase in suicidal rates most of them through poisoning in India and also in Karnataka, we intended to analyse the socio demographic variables of poisoning cases and also compare the region-wide distribution.

## MATERIALS AND METHODS

The study was conducted in the Department of Anaesthesiology and Critical care unit, SSIMS&RC Davangere. Records of all the cases of poisoning admitted in ICU SSIMS hospital from 2010 - 2014 were analysed. All the information was recorded on a specially prepared proforma, which included age, sex, residence and nature of poison consumed. Data was entered in excel sheet and was analysed using epi info version 7.0. Results were expressed in the form of percentages and proportions.

## RESULTS

In the study, a total of 1286 cases were analysed in five years from 2010 to 2014. It was observed that, out of 1286 cases, 488 cases (37.9%) were due to organophosphorus poisoning and 798 cases (62.1%) non-organophosphorus poisoning making it the predominant poison consumed and more number of cases noted in year of 2012.



Graph 1: Year wise distribution of poisoning cases

Table 1: Demographic profile of type of poison consumed

| Type of poisoning | Female     | Male       | Total       |
|-------------------|------------|------------|-------------|
| OP                | 148        | 341        | 488         |
| UNKNOWN           | 83         | 161        | 244         |
| INSECTICIDE       | 72         | 157        | 229         |
| ACID              | 1          | 4          | 5           |
| ALCOHOL           | 0          | 7          | 7           |
| ALPO4             | 16         | 38         | 54          |
| ALPRAZOLAM        | 1          | 7          | 8           |
| AMITRAZ           | 3          | 2          | 5           |
| CHLORPHOSPHATE    | 8          | 25         | 33          |
| CYPERMETHRINE     | 4          | 13         | 17          |
| ENDOSULFAN        | 8          | 19         | 27          |
| FUNGICIDE         | 2          | 11         | 13          |
| OTHERS            | 68         | 87         | 155         |
| <b>TOTAL</b>      | <b>421</b> | <b>872</b> | <b>1286</b> |

But if we see individual compound organophosphorus compound poisoning is more common that is 488 cases (37.9%) than other compounds. Overall males (957) were more in number as compared to females (332). The male female ratio was 2.88:1. Age group ranging from 20 years to 35 years showed the maximum cases (88%). Maximum cases belong to age group of 20 to 35 years and minimum cases belong to age group above 50 years.

Table 2: Distribution of cases according to year and District

| Year  | District |             |           |         |         | Total |
|-------|----------|-------------|-----------|---------|---------|-------|
|       | Haveri   | Chitradurga | Davangere | Bellary | Shimoga |       |
| 2010  | 25       | 48          | 39        | 35      | 0       | 147   |
| 2011  | 4        | 141         | 58        | 3       | 2       | 208   |
| 2012  | 8        | 249         | 87        | 11      | 3       | 358   |
| 2013  | 4        | 199         | 18        | 7       | 2       | 230   |
| 2014  | 10       | 300         | 14        | 15      | 4       | 343   |
| Total | 51       | 937         | 216       | 71      | 11      | 1286  |

Maximum number of cases was reported from Chitradurga (937) and other districts Davangere (216), Bellary (71), Haveri (51) and Shimoga (11). Maximum cases were from Chitradurga as compared to other districts.

## DISCUSSION

Organophosphates are widely used in the household and in the agriculture as ours is an agriculturally based society. Intoxication with OPP is a worldwide problem and may cause severe morbidity and mortality.<sup>7</sup> Overall case fatality rate ranges from 10-20 %.<sup>8,9</sup> According to national crime records bureau India, every five minutes a person commits suicide and seven attempt to kill themselves, resulting in about 1,00,000 deaths per year.<sup>10</sup> Suicide rate was highest in the state of Kerala<sup>11</sup> and organophosphorus poison was the most common agent used for suicide purpose.<sup>12</sup> A study conducted on 276 cases of OPP in Kashmir valley from 2000--2002 showed high incidence of suicidal poisoning in females (36.9%) and age group involved was 14--29 years (60%). 63.7% were unmarried cases. OPP was most common and pattern of poisoning was suicidal in majority of the cases.<sup>13</sup> Our present study of poisoning cases admitted in ICU SSIMS hospital over a vast period of four years and analysing these cases have helped us to draw some important conclusions:

- (1) Most of the cases of poisoning reported from Chitradurga district as compared to other districts.
- (2) OPP was most common type of poisoning as compared to other poisons.
- (3) Males showed a highest incidence of poisoning as compared to females.
- (4) 20 to 35 years age group was highly affected.

### The reasons for above conclusions are as follows

- (1) The contribution in the field of agriculture from Chitradurga and easy accessibility of our hospital that can be the reason why poisoning cases were reported to be on higher side from this district.
- (2) As already discussed above, organophosphorus agents are widely used in the households and in the agriculture as compared to other pesticides that is why organophosphorus poisoning was the most common type of poisoning found.
- (3) One of the reasons for higher incidence of poisoning in males is that most of farmers are males and responsible persons in family than the females.<sup>14, 15</sup>
- (4) Majority of victims were in the age group of 20 to 35 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. To conclude the socioeconomic status of the people living in and around Chitradurga and easy availability of OP compound, seems to be an instigating factor in the increased number of suicides in that particular area. It becomes imperative that Government takes serious note of these statistics and take necessary action to prevent the suicide which are happening.

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