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RESEARCH ARTICLE

STUDY OF POISONING CASES IN AL AMEEN MEDICAL COLLEGE, KARNATAKA

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ABSTRACT

Background: Acute poisoning is a commonly encountered medical emergency and is a leading cause of morbidity and mortality. Poisoning was a common mode of suicide and is an important part of medicolegal cases. **Materials and Method:** Prospective study of 100 admitted cases of poisoning from 2015-2018, Admitted at emergency department. The cases were studied regarding epidemiological profile, distribution of poisons, Nature of poison. **Results:** Out of 100 prospective cases, 68 were males and 32 were females, Male female ratio is 2.12:1. Maximum number of cases were observed between 21-30 years (52%) followed by 11-20 years (22%). 72% cases were married and 28% were unmarried. Urban area Reported higher incidence as compared to the Rural area. Suicidal poisoning was reported to be the highest (70%) followed by accidental (28%) and homicidal (2%). In these cases, most of them were agriculturists (32%), followed by students (29%), housewives (22%). Among the expired 7 cases none of them arrived at hospital in or before 3 hours, more than half of the victims arrived at the hospital after 3 hours. Commonest agent involved is organophosphate (48%), followed by organochloride (22%), sedatives (10%). **Conclusion:** Organochemicals were the commonest agents used in poisoning.

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INTRODUCTION

Poison is any substance which if introduced in the living body by any route could cause ill health or death. Poisoning both accidental and intentional is a significant contributor to morbidity and mortality throughout the world (Bibhuti Bhusana Panda, 2015). History of poisoning dates back to before 4500BC. In ancient times in india, poisons were used to destroy enemies and prisoners. Indian surgeon Sushruta defined the various stages of slow poisoning and their treatment with the help of antidotes (Pankaj Verma, 2018). Due to fast development in the field of agriculture and industrial sectors, easy availability of toxic substance in the market without any objection or documentation is becoming global phenomena but also plays a major role in accidental and suicidal poisoning in developing countries like india (Guntheti Bharath, 2011). Acute poisoning forms one of the common causes of emergency hospital admissions. Pattern of poisoning in a region depends on a variety of factors such as availability of the poisons, socioeconomic status of the population, religious and cultural influences and availability of drugs (Bibhuti Bhusana Panda, 2015).

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It was predicted that poisoning deaths by the year 2020 could account for the 10th leading cause of death in the world (Pankaj Verma, 2018). The commonest agents of poisoning in india appear to be pesticides, sedatives, chemicals, alcohol, plant toxins, household poison and snake bite, etc. Of late, aluminium phosphide has begun to emerge as a major player in the toxicological field, particularly in some northern Indian states (Bibhuti Bhusana Panda, 2015). The present study was carried out to study the acute poisoning cases in our area.

MATERIALS AND METHODS

The prospective study was conducted in department of forensic in Al Ameen medical college Biajpur Karnataka from 2015 to 2018. The study included 100 cases of poisoning admitted in our hospital. The data regarding sex, age, time elapsed after intake, circumstances of poisoning, name of poisonous substance, chemical type, duration of hospitalization, severity and outcome were collected in the prestructured proforma. Circumstantial evidences such as empty bottles and tablets were also collected from the patients. Data was collected from general physical examination and systemic examination of the patient. The data collected was entered in the computer database. Analysis was done by using SSPS-15.

RESULTS

Prospective study of 100 admitted cases of poisoning in Al Ameen medical college during period of 2015-2018. Total no. of males were 68 and females 32. The male to female ratio is 2.1:1

Table 1. Sex and marital status

Parameter		Number	Percentage
Sex	Male	68	68%
	Female	32	32%
Marital status	Married	72	72%
	Unmarried	28	28%

Table 2. Age

Age group	Number	Percentage
10- 20	22	22%
21-30	52	52%
31-40	14	14%
41-50	8	8%
>50	4	4%
Total	100	100%

Table 3. Demographic data

Parameters		Number	Percentage
Area	Urban	56	56%
	Rural	44	44%
Mode	Suicide	70	70%
	Homicide	2	2%
	Accident	28	28%
consciousness	Conscious	68	68%
	Partly conscious	22	22%
	unconscious	10	10%
Occupation	Student	29	29%
	Housewife	22	22%
	Agriculturist	32	32%
	Businessman	6	6%
	Job holders	11	11%

Duration of poisoning and mortality

No. of hours	Not expired	expired	Total
<3	12	0	12
3-6	59	3	62
6-12	13	3	16
>12	9	1	10

Table 4. Nature of poison

Nature of poison	number	Percentage
Organophosphate	48	48%
Organochlorine	22	22%
Pyrethroids	1	1%
Corrosives	8	8%
Sedatives	10	10%
Rat poison	0	0%
Aluminium phosphide	0	0%
Paraquat	0	0%
Others	10	10%
Unknown	1	1%
Total	100	100%

DISCUSSION

Out of total 100 cases of poisoning 68 were males and 32 were females. Male to female ratio is 2.12:1

Gargi et al observed that male to female ratio was nearly 3:1. (Gargi, 2006). Dhanya et al observed male to female ratio is 1.27:1. (Dhanya, 2009). Higher incidence of poisoning in males than in females collaborating with other studies (Singh, 1984; Singh, 1997; Sharma, 2002). Male preponderance appears to be due to more exposure to occupational hazards and stress or strain as compared to females (Mahabalshetti, 2013). Saxena et al showed male to female ratio is 1.27:1. (Saxena, 2014). Maximum no. of cases were between 21-30 years(52%), followed by 11-20 years(22%) and 31-40(14%), 41-50(8%) and more than 50(4%), which is inconsistent with Mrinal et al. (2013). Maximum number of cases (33.33%) were in age group 20-24 years due to the fact that at this period they are by nature more emotional, aggressive, intolerant and irrational. Mahabalshetti et al showed the majority of incidences in males and females were from age group 20-29 years. (Mahabalshetti, 2013). This age range is a period in which a person is most active in all respects be it family life, professional life or social life which increases the stress and often leads to devastating outcomes (Saxena, 2014). Out of the 100 poisoning cases 72% were married and 28% are unmarried. V. saxena et al shows vulnerability of poisoning among married females more than married males. However unmarried females are also more vulnerable than unmarried male subjects. Urban area reported higher incidences of poisoning 56% and rural 44%. Smith reported that poisoning is more in urban areas i.e., 88.06%. the incidence in their study revealed that poisoning is mainly urban issue. But Gargi et al showed that though poisoning is more common in cities even villages are also not less affected by this menace. Probably rural population is more exposed to insecticides and pesticides in their day to day life.

Suicidal poisoning was reported highest (70%) followed by accidental (28%) and homicidal(2%). Suicide was most common manner than accidental and then homicidal pattern in this study and this data is supported by authors (Ramesha, 2009; Unnikrishnan, 2003). Majority of cases admitted due to poisoning were conscious (68%), partially conscious (22%) and unconscious (10%). Rajneesh et al in their study of 150 cases reported that at the time of admission, 70% were conscious, 23.33% were partially conscious and remaining 6.66% were unconscious. Findings were almost similar to this present study (Gargi, 2003). By occupation 32% of the cases were agriculturists followed by students 29%, housewifes 22%, job holders 11% and businessman 6%. Mrinal et al study shows majority of victims belong to student community (28.12%) this group is less exposed to life with worries of study, future employment and love affairs (Mrinal Haloi, 2013). Among the expired 7 cases none of the patients arrived at hospital in or before 3 hours. More than half of the victims arrived at hospital after 3 hours. While among the living patients more than 71% arrived at the hospital on or before 6 hours. In our study 7% mortality is observed. Study conducted Kumar S.V et al showed 8.3% mortality while study conducted by Ramesha K.N showed 15.4% mortality. Study conducted by Mahabalshetti et al showed its 10% while Bibhuti Panda showed its 34%. In our study most of the cases it (93%) has been cured and it is supported by (Kavalci, 2012; Patil, 2014; Khan, 2013). Early presentation to hospital resulted in better treatment, outcome was concluded from this study and the result is supported by many authors (Ramesha, 2009; Patil, 2014; Mittal, 2013; Kumar, 2010). Commonest agent involved in poisoning was organochemicals.

Maximum poisoning was by organophosphate (48%) followed by organochlorine (22%) then sedatives (10%), then others (10%), corrosives (8%), pyrethroids (1%) and unknown (1%).

Dhanya et al observed that OP poisoning constitute maximum number of cases (37.25%) followed by unspecified drugs in Calicut (Dhanya, 2009). Gupta et al confirmed through chemical analysis report that insecticide was the commonest poison(72.44%) followed by aluminium phosphide(14.28%) and acid (0.63%) (Gupta, 2005). Gargi et al reported that aluminium phosphide is leading cause of poisoning(36.8%) followed by insecticides(31.6%) in south west, Punjab. She also reported that aluminium phosphide (38.23%) followed by OP compounds (17.64%) were commonest poison in Amritsar during 1997-98 (Gargi, 2006).

Conclusion

The present study helps to analyze the pattern of acute poisoning and is a commonest method of committing suicide, in our area. Organ chemicals were the commonest agents used in poisoning. With younger generation, males and married people being the majority of victims.

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