STUDY OF POISONING DEATHS IN AND AROUND SHIMLA (H.P.)

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ABSTRACT

A retrospective study conducted regarding poisoning cases that were reported to Forensic Medicine department IGMC Shimla in the period of last five years. Various aspects like relation with age, sex, kind of poison, hospitalization, caste and time between consumption and death were noted in 130 cases of poisoning. Male: Female ratio was found to be 1.65:1. Organophosphorus was found to be most common used poison. 66.15% were the hospitalized patients. Rajputs, being the most common of total cases and 86.92% of all were suicidal deaths.

KEY WORDS: Poisoning, Suicidal, Organophosphorus

INTRODUCTION

Deaths due to poisoning are well known since ages in almost all parts of world. Though it is very difficult to obtain an absolute data on poisoning as many of the cases go unreported. Especially in this part of the state the most common method for committing suicide is pesticide (Organophosphorus) consumption due to its more use in the agricultural sector and orchards. It has been noticed that intentional use by young adults is much more prevalent. Poisoning is a medical emergency and cases if quickly rushed to hospitals have shown to decrease the mortalilty up to a certain extent. An attempt has been made to find out some epidemiological factors of poisoning deaths that were referred to our department for autopsy.

MATERIALS AND METHODS

The present study was done in the Department of Forensic Medicine, in Indira Gandhi Medical College Shimla, which is a premier institute for health services in the state. This study includes 130 cases of poisoning during the period of 1st January 1998 to 31st December 2002. In these most of the cases were referred from rural areas of the state. Autopsies of both hospitalized as well as non-hospitalized cases were conducted and their various epidemiological factors were analyzed.

OBSERVATIONS

In this study, total 958 autopsies were conducted from the year 1998 to 2002. Out of these there were 130 cases of poisoning i.e. (13.56%). The incidence of poisoning deaths has shown a variable steady increase from 9.37% in 1998 to 13.20% in 2002. (Table 1)

Young Adults in the age group of 21-25yrs were the most affected age group. In males 27 out of 81 (i.e. 33.66%) and in females 17 out 49 (i.e.34.69%) were affected. The males 81 (62.30%) were ahead of females 49 (37.49%) in this study. Male is to female ratio was 1.65:1. The youngest to commit suicide by consumption of organophosphorus was 12 years old male and oldest was 65 years old male. (Table 2)

Out of total 130 cases 86 (66.15%) were admitted to the hospital and could get first aid or specialized treatment; however 44 (33.85%) could not get the treatment who either died on way to the hospital or were found already dead. Out of those which were hospitalized 43.84% died with in 24 hours. (Table 3).

Suicide was most common mode of poisoning 86.92% (Table 4).

Of all the castes, Rajputs (32.30%) followed by Schedule castes (28.46%) were commonest affected (Table 5).

The organophosphorus compounds were responsible for 61.53%, followed by Aluminum Phosphide 13%. Carbon monoxide 7.69% was contributing for maximum deaths due to accidental poisoning. (Table 6)

DISCUSSION

Deaths due to poisoning are on increasing trend in this part of the country. In hilly areas where fruit and vegetable growers are in abundance the use and availability of organophosphorus pesticides is very common. Similarly in lower belts of Himachal Pradesh Aluminum Phosphide is responsible for most no. of poisoning. Also there are no stringent measures to control the sale of poison.

Table 1: Year wise Break up of Cases

Year	*Total no. of Autopsies*	*No. of Poisoning cases*	*% of Poisoning cases*	*Year wise % age*
1998	192	18	13.84	9.37
1999	179	20	15.38	11.17
2000	199	36	27.69	18.09
2001	178	28	21.53	15.73
2002	212	28	21.53	13.20
Total	958	130	100	Mean13.56

Table 2: Age and Sex-wise distribution of cases

Age group in years	Total Poisoning	Total %age of Poisoning	Males No.of cases	Males %age	Females No.	Females %age

	cases					
Below15	4	03.07	2	02.49	2	04.08
15-20	23	17.70	14	17.45	9	18.36
21-25	44	33.85	27	33.66	17	34.69
26-30	24	18.46	14	17.45	10	20.40
31-40	17	13.07	10	12.46	7	14.28
41-50	10	07.70	8	09.97	2	04.08
51-60	6	04.62	4	04.98	2	04.08
Above 60	2	01.53	2	02.49	0	00.00
Total	130	100	81	100	49	100

Table 3: Status of Hospitalized and non-Hospitalized and time between consumption of poison and death.

Time b/w consumption and death	Hospitalized	Non-Hospitalized
Not known	2	37
Below 2 hours	3	4
2-6 hours	7	1
6-12 hours	20	2
12-24 hours	27	0
1-2 days	12	0
3-5 days	6	0
Above 5 days	9	0
Total	86	44

Table 4: Mode of Poisoning

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	Suicides	Accidents	Total
Number	113	17	130
Percentage	86.92	13.07	100

Table 5: Incidence of Fatal Poisoning in various castes

Year	Rajput	Schedule caste	Brahmin	Khatri	Sikhs	Unknown	Total
1998	9	2	6	0	1	0	18
1999	5	10	3	0	1	1	20
2000	13	8	7	4	0	4	36
2001	8	9	6	1	0	4	28
2002	7	8	5	2	2	4	28
Total	42	37	27	7	4	13	130

Table 6: Commonly Abused Poisons during 1998-2002

Poison	*No.*	*%age*
Organophosphorus	80	61.53
Aluminium Phosphide	18	13.84
Carbon Monoxide	10	07.69
Dextropropoxyphene	3	02.30
Zinc Phosphide	1	00.76
Diazepam	1	00.76

Poisonous Wild Mushrooms	1	00.76
Phenothiazine	1	00.76
Not known / detected	15	11.73
Total	130	100

Due to easy availability, comparatively painless death than other violent methods, also other reasons like failure in exams or love affairs, disturbed family life, torture by in-laws, increased sensitivity in young adults for scolding by peers or parents, suicidal deaths are more common in the age group between 15-30 years.

The colder hilly areas of the state has another factor for purely accidental poisoning that is Carbon-monoxide, which is prevalent in those families where coal is used as fuel for both cooking as well as heating rooms.

It is pertinent to mention here about occasional Dextropropoxyphene deaths due to over dosage in young drug addicts.

86.92% were suicidal deaths, which is very similar to the earlier studies (Sharma, Bajaj, Singh, Tandon and Harish).

Above all any kind of sudden death is detrimental to the family of the deceased, society and nation as well.

Suggestions:

1. Punitive and stringent legislation should be made for offenders of free sellers of Scheduled E: poisons and Schedule H drugs.

2. At house hold level the drugs and poisons should be kept safely and away from reach of children and adolescents.

3. At root level of health services medical and paramedical staff should be educated and made aware of various poisonings with house hold remedial measures keeping in view hilly terrain of Himachal Pradesh, which can reduce the mortality that is enhanced in the shifting of patients to higher level of health institutions.

4. At primary health center level it has been observed that unjustified referrals are made to secondary level health centers before making the patient fully stabilized which can result in avoidable or preventable death of the patient on way.

5. At higher institutions or tertiary level centers casualty/emergency medical officers must be trained thoroughly to deal with all kind of poisoning cases swiftly and accurately. Ready charts of different symptoms and signs should be present in emergency wards with specific antidotes. The specific antidotes and other life saving drugs should be readily available at all levels of health institutions.

6. It is always advisable to consult a toxicologist at the earliest while treating non-specific poisoning emergencies.

7. Small toxicological units should be established at tertiary care centers to expedite the diagnosis as well as treatment of various poisonings.

8. Forensic Science Laboratories should be equipped with chemical analyzers, which can report both quantitatively as well as qualitatively.

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