International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

A Retrospective Study of Deaths due to Poisoning in Tertiary Care Hospital, Solapur

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Abstract: ***Background with Objectives: This study aims at determining socio-demographic profile, pattern of poisoning during the study period. Objective of this study is to identify common poison causing deaths and different parameters. Materials and methods: 1) History of the cases, relevant police documents 2) Hospital treatment papers of the deceased. 3) Post-mortem reports. 4) Toxicology report from state forensic science laboratory. Results: This study is conducted from 01 December 2020 to 30 November 2021, Out of total 2598 cases, deaths due to organophosphorus compounds poisoning observed were 22 i.e. (22.91%). Out of 96 cases of poisoning 60 were males i.e. (62.5%) out of which 64 including male and female i.e 66.7% were married. Most of them were from rural area i.e. (74%) and 27 deceased were students i.e. (28.2%). Discussion: In the present study, incidence of poisoning found to be 3.96%. Male victim (62.50%) outnumbered female (37.50%) as males lead a more stressful life than female due to family responsibilities. Maximum numbers of cases (33.33%) were in the age group 20-29 years due to the fact that at this period they are by nature more emotional, aggressive, intolerant and irrational. Majority of victims belong to the student community (28.12%), as this group is less exposed to life with worries of study, future unemployment and love affairs. The present study findings are similar with most of the studies done in this field like study of Dr. Khairul Hussain, Assam in 2019, GMCH Chandigarh study, G.G. Hospital Jamnagar etc. [4, 6] The study is in difference with the PGIMS, Rohtak study where the most common poison found to be used is the organochlorine insecticides where as in the present study the organophosphates are the most common poison used. [4] Conclusion: Measures to improve the socioeconomic conditions through reforms in the field of education, health, employment and more economic as well as scientific support to cultivators are expected to decrease the incidence of poisoning. Proper education of common people, cultivators about storage, handling, uses of pesticide and insecticide is expected to reduce incidence of poisoning.***

Keywords: Poisoning, Insecticide, Postmortem

1. Introduction

Poison is a substance (solid, liquid or gaseous), which if introduced to the living body or brought into contact with any part thereof, will produce ill health or death, by its constitutional or local effect or both. [1] Of different mode of suicide, poisoning is common and it has been known since antiquity. [2] The choice of poisoning agents depends on availability, cost, harmful effects of poison and regional consideration. [3]

2. Background and Objectives

This study aims at determining socio-demographic profile, pattern of poisoning during the study period. Objective of this study is to identify common poison causing deaths and different parameters. A total 2598 autopsies were performed during the study period, of which 96 cases were death due to suspected poisoning from 01 December 2020 to 30 November 2021 i.e. 1 year.

3. Materials and Methods

This postmortem study was conducted in the mortuary of Shri. C.S.M.G. Hospital & Department of forensic medicine & Toxicology of Dr. V.M. G.M.C. Solapur from the period of 1 year i.e. 01 December 2020 to 30 November 2021 by using following documents.

1) History of the cases, relevant police documents
2) Hospital treatment papers of the deceased.
3) Post-mortem reports.
4) Toxicology report from state forensic science laboratory.

All data computerised, tabulated and analysed

Inclusion Criteria:

1) All cases of deaths due to poisoning
2) All cases having history of poisoning or Suspected death due to poisoning,

Exclusion Criteria:

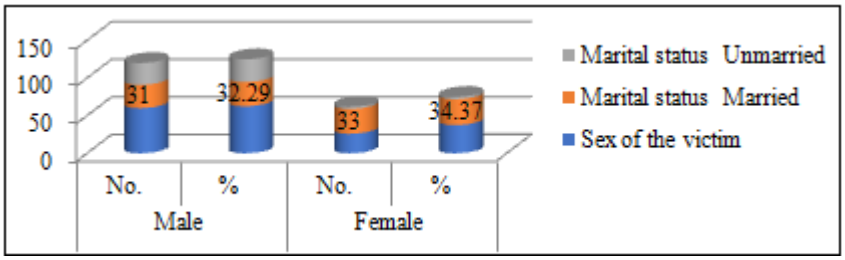
1) Natural causes.
2) Unidentified bodies with no police history of poisoning
3) Decomposed bodies with no police history of poisoning.

4. Observations and Results

Sex & Marital Wise Distribution of Poisoning Cases:
A total 2598 autopsies were performed during from 01 December 2020 to 30 November 2021, (1 year Duration) of which 96 cases were death due to suspected poisoning. Male victim outnumbered the female victim, the number being 60 (62.50%) in male and 36 (37.50%) in female. The male-female ratio is 1.66:1 in our study. (Table 1)

Figure & Graph No.1: Sex & Marital Wise Distribution of Poisoning Cases

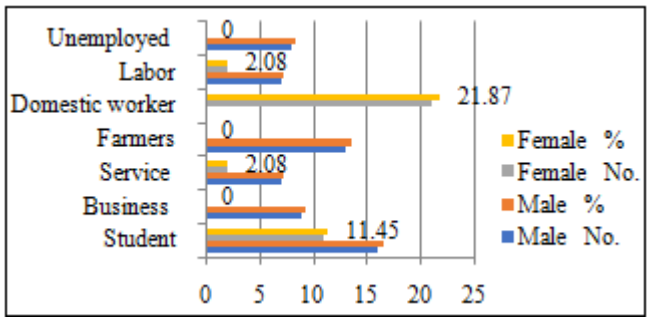
Parameters		Male		Female	
Sex of the victim		No.	%	No.	%
		60	62.5	36	37.5
Marital status	Married	31	32.3	33	34.4
	Unmarried	29	30.2	3	3.12



Occupation Wise Distribution of Poisoning Cases
Regarding the occupation, maximum number of victim were students with 27(28.12%) cases followed by domestic worker and house wife from female community with 21(21.87%) cases. (Table 2).

Table & Graph 2: Occupation Wise Distribution of Poisoning Cases:

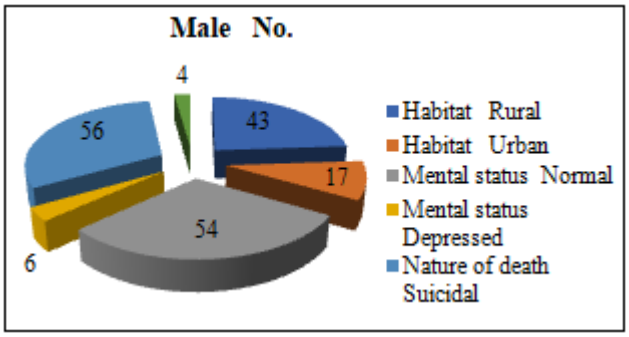
		Male		Female	
		No.	%	No.	%
Occupational Status	Student	16	16.7	11	11.5
	Business	9	9.37	0	0
	Service	7	7.29	2	2.08
	Farmers	13	13.5	0	0
	Domestic worker	0	0	21	21.9
	Labor	7	7.29	2	2.08
	Unemployed	8	8.33	0	0



Habitat, Mental Status and Manner of Death of the Victims:
Most of the victim's mental statuses were normal numbering 88(91.66%). Depression was found in 8.33% cases in this study. Rural habitats were found in 71(73.95%) cases. (Table 4) Most ill-fated place was residence as it was recorded highest number of cases i.e. 78(81.25%) cases. 89(92.70%) cases of death due to poisoning were suicidal in manner and 7(7.29%) cases were accidental in nature. (Table 4)

Table & Graph 3: Habitat, Mental Status and Manner of Death of the Victims

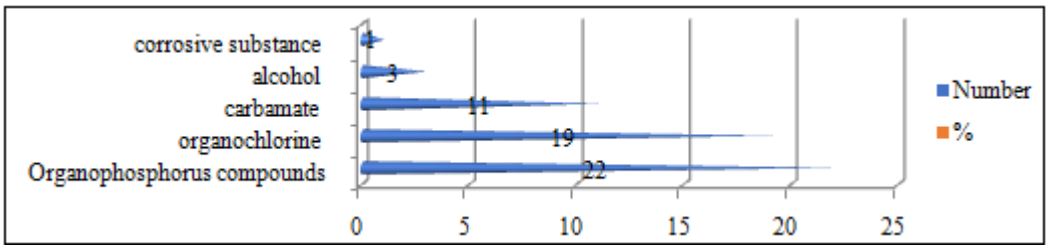
		Male		Female	
		No.	%	No.	%
Habitat	Rural	43	44.8	28	29.2
	Urban	17	17.7	8	8.33
Mental status	Normal	54	56.3	34	35.4
	Depressed	6	6.25	2	2.08
Nature of death	Suicidal	56	58.3	33	34.4
	Accidental	4	4.16	3	3.12



Type of poison:
On chemical analysis Organophosphorus compounds were the most common agents with 22(22.91%) cases, followed by organochlorine 19(19.79%) cases, carbamate 11(11.45%) cases, alcohol 3(3.12%) cases and corrosive substance were detected only in c case. (Graph 3)

Table & Graph no 4: Type of poison

Type of poison	Number	%
Organophosphorus compounds	22	22.91%
organochlorine	19	19.79%
carbamate	11	11.45%
alcohol	3	3.12%
corrosive substance	1	1.04%



5. Discussion

In the present study, incidence of poisoning found to be 3.96%. Male victim (62.50%) outnumbered female (37.50%) as males lead a more stressful life than female due to family responsibilities. Maximum numbers of cases (33.33%) were in the age group 20-29 years due to the fact that at this period they are by nature more emotional, aggressive, intolerant and irrational. Majority of victims belong to the student community (28.12%), as this group is less exposed to life with worries of study, future unemployment and love affairs. The present study findings are similar with most of the studies done in this field like study of Dr. Khairul Hussain, Assam in 2019, GMCH Chandigarh study, G.G. Hospital Jamnagar etc. [4, 6] The study is in difference with the PGIMS, Rohtak study where the most common poison found to be used is the organochlorine insecticides where as in the present study the organophosphates are the most common poison used. [4]

6. Conclusion

Measures to improve the socioeconomic conditions through reforms in the field of education, health, employment and more economic as well as scientific support to cultivators are expected to decrease the incidence of poisoning. Proper education of common people, cultivators about storage, handling, uses of pesticide and insecticide is expected to reduce incidence of poisoning.

Conflict of interest- None

Source of finding- None

Ethical clearance- Taken from respective department HOD

References

[1] Reddy KSN. The essential of forensic medicine and toxicology. 30th ed. Hyderabad: K Suguna Devi; 2011.p.444-576.
[2] Kishan R Siddapur. Trends of poisoning and gross stomach mucosal appearance in fatal poisoning cases an autopsy study. JIAFM 2011 Apr-Jun; 33(2): 106-11.
[3] Dasari Harish. Recent advances in the management of poisoning cases. JIAFM 2011 Jan-Mar; 33(1):74-8.
[4] Anitha MR, Raju GM, Vijayamahantesh SN, Vijayanath V. Forensic view on aluminum phosphide poisoning. JIAFM 2011 OctDec; 33.
[5] Dalal SJ, Khurana Puneet, Multani SA, Tejpal RH. The study of aluminium phosphide poisoning in a tertiary care hospital Amritsar. JIAFM 2011 Oct-Dec; 33(4): 330-4.
[6] Hussain Khairul. A study of poisoning cases in medico-legal autopsies,2001.p.104-121