Original Article

Trends of poisoning in Vidarbh region of Maharashtra

Shankar Dakhankar[1*], Bipin Tirpude[2]

[1]Associate Professor, Department of Forensic Medicine, Bharati Vidyapeeth Deemed University Medical College and Hospital, Sangli, Maharashtra, INDIA.
[2]Professor, Department of Forensic Medicine, MGIMS, Sevagram Wardha, Maharashtra, INDIA.
Email: shankardakhankar@gmail.com

Abstract

Poisoning is mysterious, dangerous, and reliable method of dying. it is most common method of suicide and homicide since ancient time. Trends of poisoning are different in different parts of India. Present study was conducted at Kasturba Hospital of MGIMS Sevagram, Wardha. This hospital drains patients from the whole Vidarbh area. This study was conducted during period January 1997-December 1998. Durinng this period 364 cases of poisoning were reported at MGIMS Sevagram. Out of them 268 cases of poisoning were admitted for treatment and 49 died during treatment. 78 cases of poisoning directly brought for postmortem. Study showed male predominance in age group of 21-30 years. Organophasphorus poisoning was most common.

Keywords: Poisoning, trends, organophorus, suicidal.

[*]**Address for Correspondence:**
Dr Shankar Dakhankar, Associate Professor, Department of Forensic Medicine, Bharati Vidyapeeth Deemed University Medical College and Hospital, Sangli, Maharashtra, INDIA.
Email: shankardakhankar@gmail.com
Received Date: 22/09/2016 Revised Date: 14/10/2016 Accepted Date: 04/11/2016

Access this article online

Quick Response Code:

Website: www.statperson.com

DOI: 18 November 2016

INTRODUCTION

"All substances are poisons. There is no such thing as non poison". Parqcelsus. Poisoning is one of most reliable method of suicide and homicide since ancient time. Great personalities like Meera, cleopatra, Socratese, and Krishna were killed by poison According to WHO report about 3 million people undergo poisoning every year. Out of them. 25 million die every year. Most of poisoning cases occur in developing countries. Trends of poisoning in western countries are different. Commonly used poison in western countries are antidepressant, barbiturates, carbon monoxide and drugs of addiction. In India the trend of poisoning is different. As India is aggricultural country people work in field and pesticides are easily available. Hence pesticide poisoning and snake bites is common.

MATERIAL AND METHODS

Trends of poisoning was studied in 364 cases of poisoning admitted in MGIMS Sevagram during January 1997- December 1998. Total 196 cases were admitted in MGIMS Sevagram with history of some kind of poisoning. Out of them 45 expired during treatment. 72 cases of poisonus snake bite where admitted and 4 died during treatment. Detail analysis of police inquest, history, symptom and signs was done. Chemical anysis of gastric content, blood and urine was done in Toxicology Laboratory of Forensic Medicine Department was done by Thin layer Chromatography method.

How to site this article: Birajdar Annasaheb Gulabrao, More N V, Suwarna Dahitankar. A clinico-demographic study of reproductive tract infections at tertiary health care center. *International Journal of Recent Trends in Science and Technology* November 2016; 21(1): 69-72 http://www.statperson.com (accessed 22 November 2016).

RESULTS

Table 1: Trends of poisoning according to type of poison

Poison	Admitted cases	Expired cases during treatment	Brought dead for postmortem	Total cases
Organophosphorus	68(22.5%)	19 (38.77%)	32(41.62%)	100(28.0%)
Organochlorus	51(19.02%)	11 (22.44%)	22 (28.20%)	73 (21.1%)
Zinc phosphide	12 (4.48%)	4 (8.16%)	7(8.97%)	19 (5.49%)
Alcohol	21(7.83%)	6(12.245)	6(7.69%)	27 (7.81%)
Food poisoning	10(3.37%)	-	-	10(2.89%)
Kerosene	7(2.61%)	-	-	7(2.02%)
Phenol	2 (.74%)	-	-	2(.58%)
Diazepam	1(.37%)	-	-	1(.29%)
Phenobarbitone	1(.37%)	-	-	1(.29%)
Allethrin	1(.37%)	-	-	1(.29%)
Ferrus sulphate.	1(.37%)	-	-	1(.29%)
Unkown poison	21(7.83%)	5 (10.29%)	9(11.53%)	30(8.66%)
Snake bite	72(26.86%)	4(8.16%)	2(2.56%)	74(21.39%)
Total	**268 (100%)**	**49 (100%)**	**78(100%)**	**364(100%)**

Table 2: Trends of poisoning according to age and sex

Age in years	Male	Female	Poisoning cases	Male: female ratio
1-10 years	8 (3.75 %)	6 (4.51%)	14(4.05%)	1.33:1
11-20 years	26 (12.20%)	10 (7.51%)	36 (10.4%)	2.66:1
21-30 years	66 (30.98%)	36(27.06%)	102(29.5%)	1.88:1
31-40 years	55(25.82%)	38 (28.57%	93 (26.9%)	1.44:1
41-50 years	36 (60.90%)	25 (18.80%)	61(17.63%)	1.44:1
51-60 years	18 (8.45%)	15 (11.28%)	33 (9.5%)	1.2:1
61-70 years	4 (1.87)	3 (2.25%)	7 (2.02%)	1.3:!
Total	**213 (61.56%)**	**133 (38.46%)**	**346 (100%)**	**1.6;1**

Table 3: Trends of poisoning according to manner of poisoning

Poison	Suicidal	Accidental	homicidal	Undetermined
Orgnophosphorus	89 (49.17%)	11(7.64%)	-	-
Organochlorus	60_33.15%)	13 (9. 02%)	-	-
Zinc phosphide	18 (9.94%)	-	1(.28%)	-
Alcohol	-	27(18.75%)	-	-
Food poisoning	-	10 (6.9%)	-	-
Kerosene	-	7 (4.91%)	-	-
Phenol	2(1.1%)	-	-	-
Diazepam	1(. 55%)	-	-	-
Phenobarbitone	-	1(.69%)	-	-
Allethrin	1(.55%)	-	-	-
Ferrus sulphate	-	1(.69%)	-	-
Snake bite.	-	74(51.39%)	-	-
Unknown.	10(5.5%)	-	-	20(5.78%)
Total (364)	**181(52.31%)**	**144(41.64%)**	**1(. 28%)**	**20(5.78%)**

Table 4: Trends of poisoning acoording to area

Area	Male	Female	Total cases
Rural	167(78.40%)	101 (75. 94%)	268(77.45%)
Urban	46 (21.60%)	32 (24.06%)	
Total	**213(61.56%)**	**133 (38.44%)**	**346(100%)**

During the period of January 1997- December 1998 total 364 cases of poisoning were reported. Incidence of poisoning was high in males (61.56%) than in females (38.44%). Incidence of poisoning was maximum in most productive age group of 21-30 years (29.51%) followed by 31-40 years (26.92%), incidence of poisoning was least in extreems of age. At 0-10 year incidence of poisoning was (4.05%) and 61-70 years (2.02%). No case of poisoning was reported after 80 years. Organophosphorus poisoning was most common and

reported in (28.90%) cases. Organochlorus poisoning was next most common and reported in (21.39%) cases. Snake bite was reported among farmers in rural area in (21.39%) cases. Alcohol poisoning was reported in (7.81%) cases. As Wardha district is Alcohol prohibitted area, people consume adulterated country liquor. Ethyl and Methyl alcohol was detected in all cases. Zinc Phosphoid poisoning was reported in 5.49% cases. Food poisoning was reported in 2.89% cases. Diazepam was reported in. 58% cases. Phenobarbitone was reported in. 29% cases. Allethrin was reported in. 20% cases. Ferrus Sulphate was reported in. 29% cases. Some unknown poison was reported in 8.66% cases. These cases were directly brought for postmortem with suspicion of some kind of poisoning. But no recognizable poison was detected in postmortem examination and chemical analysis of viscera.

Poisoning was suicidal in 52.31% cases, accidental in 41.64% cases, homicidal in. 29% and undetermined in 5.78% cases. Accidental poisoning occurred while spraying Organophosphorus insecticide in 7.64% cases, Organochlorus insecticide in 9.2% cases. Accidental snake bite occurred while working in field in 51.39% cases. Accidental alcohol poisoning was more and occurred due to concussion of adulterated liquor in 18.75% cases. Poisoning was reported in 77.45% cases from rural area and in 22.55% cases from urban area. In rural area poisoning was mainly due to insecticide and snake bite and in urban area mainly due adulterated liquor. Poisoning was reported in 64.45% cases from low socioeconomic status, in 32.37% from middle socioeconomic status and in 3.18% from higher socioeconomic status.

DISCUSSION

Trends of poisoning was studied in 364 cases of in Kasturba Hospital, MGIMS Sevagram during period January 1997-December 1998. In present study Organophosphorus insecticide was most common poison and reported in 28.90% cases followed by Organochlorus poison in 21.1% cases and poisonus Snake bite in 21.9% cases. Other poisons were Zinc Phosphide in 5.49% cases, alcohol in 7.8%. Similar findings were reported by Naik *et al* from Sevegram were Organochlorus in 47.75%, Organophosphorus in 15.25% and alcohol in 9.95% cases. Slightly different findings were at Zine *et al* from Nagpur reporting Organophosphorus in 21.28%, Organochlorus in 15.44%, Copper Sulphate 3.92%, and Phenol in 10.98% cases. According to N. K. Agrawal *et al* from Delhi most common poison was Aluminium Phosphide in 38% and Organophosphorus in 11% cases. According to Dalal *et al* from Delhi Organophosphorus in 33.37%, and Aluminium Phosphide in 25.25% cases. Tondon *et al* reported Aluminium Phosphid in 33.3% cases. Thus after compairision of different studies it is found that Aluminium Phosphide poisoning is more common in north India and inscticide like \Organophosphorus and Organochlorus poisoning is more common in central India. As Wardha district of Maharashtra alcohol prohibited area, people consume country liquor which is adulterated with Methyl alcohol, Wood polish and Datura, hence alcohol poisoning is more common in Wardha. In present study poisoning was more common in age group of 21-30 year. Similar trends were observed in all studies like Dalal *et al*, Agrawal *et al*, Tondon *et al* and Naik *et al*. Younger people are suffering all types of stress ie domicile, economic, unemployment, education, marital conflicts, dowry etc. Also younger age group is enganged in agricultural work and insectides are easily available for them. Hence poisoning is more common in younger age group. Poisoning was reported more in males ie 61.56% cases than female 38.44%. Similar trends were found in Dalal *et al*, Naik *et al*, Tondon et and Agrawal *et al* studies. Males are earners of family. When they found unable to fulfil responsibility of family, gradualy suicidal tendency develop in males. Any small reason act as suicidal impulse in them. Main cause of suicide in male is unemployment, depression, family dispute, and marital conflicts. As they work in field aggricultural poison are easily available for them. Also as they work in field accidental snake bites are common among males. Poisoning is found less common in females. Females are more emotionaly expressive than males. Hence mental stress and depression is less common in females. Main factors for suicide in females are marital conflicts, dowry, family disputes, love failure, and extra marital affairs. Poisoning was reported more common from rural area in (77.45%) case than urban area (22.55%). Similar findings were observe in Dalal *et al*, Naik *et al*, Singh *et al* and Sivach *et al* studies. Tondon *et al* oberved different findings, poisoning was more common in urban area 65.25% cases and in rural area 36.65% cases. Mortality rate was high in rural area due to poor medical facilities and low in urban area due to better medical facilities. In present study poisoning was suicidal in 52.31% cases, accidental in 46.62%, suicidal in.. 28%, undetemined in 5.78% cases. The cause of accidental poisoning was inhalation of insecticide while spraying in field and snake bite while working in field which could be avoided by wearing mask while spraying and gum boot while working in field.

CONCLUSION

Study of 364 cases of poisoning show that insecticide poisoning is most common followed by poisonus snake bite. Poisoning was most common in younger age group

21-30 years with male predominance. Incidence of poisoning was more common in rural area. Mortality rate was more in rural area due to lack of better health facilities. Manner of poisoning was suicidal followed by accidental. The cause of accidental poisoning was inhalation of insecticide while spraying in field and snake bite while working in field which could be avoided by wearing mask while spraying and gum boots while working in field.

REFERENCES

1. Aggrawal N.K., Aggrawal BBL (1998)- Death due to Aluminium phosphide poisoning, International Journal of Medical Toxicology and Legal Medicine, Volume No-1, July-December 1998, Page41-43.
2. Aggrawal N.K., Aggrawal BBL (1998-Trends poisoning in Delhi, Journal of Indian Academy of Forensic Medicine, Volume-20, page 32-36.
3. Aggrawal Praveen, Handa Rohini, Wali JP (1998)-Common poisoning in India, Journal of Forensic Medicine and Toxicology, Volume No1, January-June 1998, page73-79.
4. Alexander, Lawson AH, Ian Mitchel (1972)-Patients with acute poisoning seen in general medical unit(1960-1971), British Medical journal, Volume-- 4,Page 911-915.
5. Dalal JS, Goria RK, 1998-Poisoning trends-a postmortem study, Journal of Indian Academy of Forensic Medicine, 1998, Volume No-20, No-2, page27-37.
6. Dogra TD, Bhoopendra Singh, 1996-Present status of poisoning in India, Indian Medical Gazette, November 1996, page No-364-368.
7. Hettiara Chchi, J Kodithu Wakku GCS 1991-Pattern of poisoning in rural Srilanka, International Journal of Epidemiology, Volume-18, No-2, page 418-422.
8. Horisberger B, Liao Z A, 1998-A comparison of poisoning deaths in medicolegal autopsies in Lausane city and three towns of China.-Journal of Forensic Medicine and Toxicology, Volume XV, No-1, January-June 1998, Page 33-36.
9. Naik R S, Khajuria BK, Tirpude BH-Hazzards of pesticide, their preventive measures and practical difficulties in adopting them. -Journal of Indian Academy of Forensic Medicine 1918, Volume 20, No 2, Page 42-45.
10. Nandi Apurba 1995-Principles of Forensic Medicine, 1 st Edition, 1995, NCBA, India.
11. Parikh C.K. 1990-Parikh's Text Book of Medical Jurisprudence and Toxicology, 5th Edition 1990.
12. Pillay V V-Influence of fang structure and venum composition on the sympyomatology of snake bite, Journal of Forensic Medicine and Toxicology, Volume XII, No -3, Page-80-22.
13. Pohowala J N, Ghai O P, 1959-Common accidental poisoning in Indore, Indian Journal of Child Health, 1959, Volume -8, Page 524-530.
14. Samaria JK, Singh DP, 1990-Study of different poisoning in eastern UP and northen Bihar, Journal of Association of Physician India, Volume 38, No-1 Page-33
15. Sharma B.R. 1996-Trends of poison and drug abuse in Jammu, Journal of Forensic Medicine and Toxicology, Volume XIII, January-June 1996, No-1and2, Page 7-9.
16. Sharma S.K., 1998-Current scenario of poisoning in rural India, Journal of Forensic Medicine and Toxicology, Volume XV, No-1, January- June 1998, Page 89-93.
17. Siwach, S.B., Gupta A 1995-Profile of acute poisoning in Rohatak, Harayana, 1995. Journal of Association Physician India, 1995, Volume 43 Page 756-759.
18. Sondi Deepak, Sondhi M et al, 1990-A study of deaths due to poisoning in District –Lucknow, Uttar Pradesh, Indian Medical Gazzete, November, 1990, Page 349-352.
19. Tondon SK, Quershi GV 1998-Spectrum of childhood poisoning cases admitted in S.N. Medical college and Hospital Agra, Journal of Forensic Medicine and Toxicology, ISSN O971-1992, Volume XIII, No 1and2, January –June 1996, Page 10-12.
20. Wahal P.K., Lahiri B., Mathur K.S.1996--- Pattern of poisoning in Bombay, Poona and Karnataka, Journal of Association of Physician India, Volume-23 Page -103.
21. Zine K.V., Mohanty A.C., 1998-Pattern of acutepoisoning at Indira Gandhi Medical College and Hospital, Nagpur. Journal of Indian Academy of Forensic Medicine, 1998, Volume-20, No-2, Page 37-39.

Source of Support: None Declared
Conflict of Interest: None Declared