



TRENDS OF POISONING CASES IN RURAL HOSPITAL OF CENTRAL INDIA

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ABSTRACT

Present study was done during the period from August 2012 to October 2014. Total 1038 cases of poisoning were reported. Out of which 588 were admitted in our Hospital with the history of intake of some kind of poison out of which 135 died. Total 216 cases of poisonous snake bite were admitted out of which 12 died. Total 234 cases of poisoning including 6 snake bites were directly brought for post-mortem examination. Poisoning was observed more in males than females. Male female ratio was 1.6:1. Thus male predominance was observed. Maximum cases were reported from younger age group of 21-30 years. Religion wise poisoning was more in Hindus, followed by Buddha's and Muslims. Poisoning was more in rural area than urban area. Common poisons in rural area were Insecticides, Alcohol and Snake bite. Common poisons in urban area were rodenticides, alcohol, and various drugs like ferrous sulphate, phenobarbitone, diazepam etc. Snake bites were rare in urban area. Poisoning was more common in people having low socio-economic status, poisoning was rare in people having higher socio-economic status. Poisoning was common in uneducated and poor people. Poisoning was rare among educated people. Period of survival was 0-6 hours in most of the cases.

KEYWORDS : Poisons,Rural Hospital,Trends

INTRODUCTION

Poisoning is mysterious, dangerous and reliable method of dying. It is one of the most reliable tools for suicide and homicide since ancient time. The word 'poison' is derived from the Latin word 'pouts' which means, a substance which when introduced in any form by any route in to the body will produce, by its local or/ and constitutional effect or both any harmful effect on the body leading to diseases or death. In the year 1994 total 51290 deaths due to poisoning were reported in India. Out of which in west Bengal 8222, Maharashtra 7161, Tamil Nadu 6360, Madhya Pradesh 5271, Karnataka 5112, Andhra Pradesh 3989, Kerala 2228, Uttar Pradesh 2053, Gujarat 3441, Orissa 1853, Rajasthan 1380, and in Delhi 274 deaths due to poisoning were reported.⁴ In present years, due to advancement of synthetic chemistry and the fast changing scenario have placed an ever increasing number of highly poisonous substances within the reach of modern man. Thousands of man-made chemicals are currently in common use throughout the World, and one to two thousand new chemicals appear in the market each year. The global incidence of poisoning is not known, it may be speculated that up to half an million people die every year in the World as a result of various kinds of poisoning. WHO conservatively estimate that the incidences of pesticide poisoning which is high in developing countries have doubled during the past 10 years. However, the number of cases occurs each year throughout the World, and the severity of cases that are reported, are unknown. It was estimated in 1982 that, while developing countries accounted for 15% of the world wide use of pesticides, over 50% of cases of pesticide poisoning occurred in these countries which are mainly due to the misuse of the chemicals.⁵ The poison commonly encountered in India and other developing countries is pesticide. Among all pesticides, organophosphate is the largest bulk of poisoning in India. Since 1985 the problem of aluminium phosphide poisoning, a grain fumigant is reported as the commonest cause in Northern parts of India viz. Haryana, Punjab and Rajasthan. When the patient is brought to hospital for treatment of poisoning relatives are not ready to tell the reason behind the consumption of poison. Doctor has to diagnose and treat patient by his own knowledge symptomatically. Number of patients is not brought to hospital due to fear of police interrogation. They are treated in house by household remedies, and unfortunately they die. Poisoning is a social problem.

MATERIAL AND METHOD

Present study entitled for the "Trends of poisoning cases in rural hospital of Central India" with following aims and objectives:

1. To study poisoning cases admitted in our Hospital and poisoning cases brought for post-mortem in mortuary of our Hospital in Department of Forensic Medicine and Toxicology, situated in rural part of Central India during the period from August 2012 to October, 2014.
2. To study the type of poisons consumed and mode of poisoning.
3. To study incidence of poisoning in different age groups.
4. To study incidence of poisoning according to sex.
5. To study incidence of poisoning in rural and urban areas.
6. To study incidence of poisoning in different socioeconomic group of people.
7. To study incidence of poisoning in people having different educational status.
8. To study incidence of poisoning in people of different religions.
9. To study medico legal aspects of poisoning and to find out whether poison was suicidal, accidental or homicidal.
10. To study the period of survival in different type of poisoning
11. To study the case fatality rate of poisoning cases.
12. To study the RFSL report and comparing them with the reports given by Departmental Toxicology Laboratory.

Present study was done during the period from August 2012 to October 2014. Total 1038 cases of poisoning were reported. Out of which 588 were admitted in our Hospital with the history of intake of some kind of poison out of which 135 died. Total 216 cases of poisonous snake bite were admitted out of which 12 died. Total 234 cases of poisoning including 6 snake bites were directly brought for post-mortem examination. This institute is located in rural part of Central India and is serving mainly to the adjoining rural population. Percentage of admitted cases were calculated out of 804. According to history and post-mortem findings and as per the result of analysis done in the clinical Toxicology Laboratory in department of Forensic Medicine, insecticide poisoning was most commonly reported.

RESULTS

Among insecticides organophosphorus poisoning was most commonly reported. Total 300 (28.90%) cases of organophosphorus poisoning were reported. Total 96 (32%) cases of organophosphorus were directly brought for post-mortem examination from spot. Total 204 (68%) cases of organophosphorus poisoning were admitted, out of them 57 (27.94%) expired during treatment. It means the Case fatality rate was 27.94%. Organochlorus insecticide was another common poison reported. Total 219 (21.1%) cases of organochlorus poisoning were reported. Total 66 (30.13%) cases were directly

brought for post-mortem from scene of crime. Total 153 (69.86%) cases of organochlorus poisoning were admitted in hospital for treatment, out of them 33 (21.56%) died during treatment. Case fatality rate in organochlorus poisoning was 21.56%. If we observed in term of zinc phosphide poisoning the cases reported are 57 (5.49%). Out of them 21 (36.84%) were directly brought for post-mortem examination. Total 36 (63.15%) cases were admitted in hospital for treatment, out of which 12 (33.33%) died during treatment. Cases fatality rate in zinc phosphide poisoning was 33.33%, which is tremendously high. Alcohol poisoning was reported in 81 (7.81%) cases. Total 18 (22.22%) cases were directly brought for post-mortem examination. Total 63 (77.77%) cases were admitted in hospital for treatment but 18 (28.57%) cases died during treatment. Mostly Ethyl alcohol and rarely methyl alcohol was detected. Case fatality rate in alcohol poisoning was 28.57%. Food poisoning was reported in 30 (2.89%) cases. All patients were admitted for treatment. No death was reported. Kerosene poisoning was reported in 21 (2.02%) cases. Phenol (Carbolic acid) poisoning was reported in 6 (0.58%) cases. Diazepam was reported in 3 (0.29%) cases. Phenobarbitone was reported in 3 (0.29%) cases. Allethrin was reported in 3 (0.29%) cases. Ferrous sulphate was reported in 3 (0.29%) cases. In above mention poisoning no death was reported. Some unknown poisons were reported in total 90 (8.66%) cases. Total 27 (30%) cases were brought directly for post-mortem examination with suspicion of poisoning. But no recognisable poison was reported from Regional Forensic Science Laboratory. Total 63 (7.83%) cases of unknown poisoning were admitted in hospital, out of them 15 (10.20%) expired during treatment. Case fatality rate was 23.8%. Snake bites were reported in 222 (21.38%) cases. Total 216 (97.29%) patients were admitted with suspicion of poisonous snake bite. Out of them 12 (5.55%) died during treatment. Only 6 (2.70%) cases of snake bites were brought dead directly for post-mortem examination. This report is based on history and presence of fang marks at the site of bite. Case fatality rate of snake bite was 5.55%. Total 1038 cases of poisoning were studied according to age. Total 42 (4.05%) cases of poisoning were reported from age group of 0-10 years. Males were 24 (3.75%) and females 18 (4.51%), male female ratio was 1.33:1. Total 108 (10.40%) cases of poisoning were reported from age group of 11-20 year. Out of these males were 78 (12.20%) and females were 30 (7.5%), male female ratio was 2.66:1. Total 306 (29.47%) cases of poisoning were reported in 21-30 year age group. Out of them 198 (30.98%) cases were males and 36 (27.06%) were females, male female ratio was 1.88:1. Total 279 (26.87%) cases of poisoning were reported in 31-40 year age group. Out of which 165 (25.25%) cases were males and 114 (28.57%) cases were females, male female ratio was 1.44:1. Total 183 (17.63%) cases of poisoning were reported in 41-50 year age group. Out of which 108 (16.90%) cases were males and 75 (18.80%) cases were females, male female ratio was 1.44:1. Total 99 (9.53%) cases of poisoning were reported in 51-60 year age group. Out of which 54 (8.45%) were males and 45 (11.28%) cases were females, male female ratio was 1.2:1. Only 21 (2.02%) cases were reported in age group of 61-70 years, out of which males were 12 (1.87%) and females were 9 (2.25%) male female ratio was 1.3:1. Thus it was found that poisoning was most common in age group of 21-30 years. Poisoning was less in both extremes of ages. In all age groups preponderance of males are observed with compare to female. Total 1038 cases of poisoning were studied according to sex. Total 639 (61.56%) cases of poisoning were reported in males. Total 399 (38.44%) cases of poisoning were reported in females, male and female ratio was 1.6:1 thus male predominance was found. Percentage of suicidal cases were calculated out of 543, accidental out of 432, homicidal out of 3, undetermined out of 60 and total cases out of 1038. Total 1038 cases of poisoning were studied according to manner of poisoning. It was suicidal in 543 (52.31%) cases, accidental in 432 (41.64%) cases, homicidal in 3 (0.28%) cases and undetermined in 60 (5.78%) cases. Poisoning was most commonly reported in Hindus. Total 534 (51.4%) cases of poisoning were reported in Hindus. Total 399 (38.4%) cases of poisoning were reported in Buddha's. And only 105 (10.2%) cases were reported in Muslims. No other community were found in the present study. Poisoning was found more common in rural areas than in urban

areas. Total 804 (77.45%) cases of poisoning were reported from rural area, out of which 501 (78.40%) were males and 303 (74.94%) were females. Only 234 (22.55%) cases of poisoning were reported from urban areas. Out of which 138 (21.60%) were males and 96 (24.06%) were females most of patients from rural area, and urban area. From the above figures it is clear that incidence of poisoning is inversely proportional to education status of people. Maximum cases about 384 (36.98%) were reported from less educated people having qualification up to 4th std. total 276 (26.58%) cases of poisoning were reported from absolutely illiterate people. Total 207 (19.94%) cases of poisoning were reported from people having qualification up to 10th std. total 90 (8.7%) cases of poisoning were reported from people having qualification up to 12th std. minimum only 81 (7.8%) cases of poisoning were reported from people having qualification up to or above graduation. Incidence of poisoning was high in poor people. Total 669 (64.45%) cases of poisoning were reported from people having low socioeconomic status, out of them males were 387 (60.56%) and females 282 (70.68%) incidence of poisoning was less in middle class, out of them males were 228 (35.68%) and females 108 (27.07%) incidence of poisoning was low in higher socio-economic group of people. Only 33 (3.17%) cases of poisoning were reported from this group, out of them males were 24 (3.76%) and females 9 (2.25%). Total 147 deaths among patients of poisoning admitted in hospital were reported. Total 63 male cases of alcohol poisoning were admitted, out of them 18 died during treatment. Cases fatality rate was 28.57%. Total 123 male cases of snake bite were admitted, out of them 9 died during treatment. Cases fatality rate was 7.31%. Total 42 male cases of unknown poisoning were admitted, out of them 9 died during treatment. Cases fatality rate was 21.42%. Total 21 female cases of unknown poisoning were admitted, out of them 6 died during treatment. Cases fatality rate was 28.57%. Total 63 cases of unknown poisoning were admitted, out of them 15 died during treatment. Cases fatality rate was 23.8%. Out of 1038 cases, the occupation of the 541 (52.11%) cases was farmer, followed by housewife in 250 (24.08%) cases. occupation of 33 (3.17%) case was labourer. Students were 49 (4.72%). 165 (15.89%) cases included the victims who are from various or miscellaneous occupation. In the present study, out of total 1038 cases, 567 (54.67%) cases were married, 471 (45.37%) cases were unmarried. Total male including children are 639 and total female including children are 399.

DISCUSSION

Death has been discussed comprehensively by very few philosophers. Those who have dealt with it offer their views mostly on the awareness of death. Indeed, the only knowledge we have regarding death itself is that it is an inevitable universal event. We all know that we will die, and sooner or later most of us confront the reality of our own mortality. The poisoning is also a very important cause which leads to death. Many studies already overcome which included many criteria, so this chapter discusses the findings observed and recorded in the present study and an attempt is made to compare the present findings with other observations. In our study, total 1038 cases of poisoning were reported in hospital, situated in the rural part of Central India during the period from August 2012 to October 2014. In the present study, most common poison was Organophosphorus insecticide which was reported in 300 (28.90%) cases. Other common poisons reported were Organochlorus insecticide in 219 (21.09%), Zinc phosphide in 57 (5.49%), Alcohol in 81 (7.8%), Food poisoning in 30 (2.89%), kerosene in 21 (2.02%), Phenol in 6 (0.57%), Diazepam in 3 (0.28%), Phenobarbitone 3 (0.28%), Allethrin (kachhuwa chap Agarbatti) in 3 (0.28%), Ferrous sulphate 3 (0.28%), Snake bite in 222 (21.38%) and Unknown poisons in 90 (8.67%) cases respectively. Almost similar findings were observed by previous studies done by **Anand Mugadlimath, M.A. Bagali et al, Vishwajeet Pawar, Murkey Pankaj et al, and Yuganti Prabhakar Vaidya, et al.**

CONCLUSION

Present study was done during the period from August 2012 to October 2014. Total 1038 cases of poisoning were reported. Out of which 588 were admitted in our Hospital with the history of intake of

some kind of poison out of which 135 died. Total 216 cases of poisonous snake bite were admitted out of which 12 died. Total 234 cases of poisoning including 6 snake bites were directly brought for post-mortem examination. Poisoning was observed more in males than females. Male female ratio was 1.6:1. Thus male predominance was observed. Maximum cases were reported from younger age group of 21-30 years. Religion wise poisoning was more in Hindus, followed by Buddha's and Muslims. Poisoning was more in rural area than urban area. Common poisons in rural area were Insecticides, Alcohol and Snake bite. Common poisons in urban area were rodenticides, alcohol, and various drugs like ferrous sulphate, phenobarbitone, diazepam etc. Snake bites were rare in urban area. Poisoning was more common in people having low socio-economic status, poisoning was rare in people having higher socio-economic status. Poisoning was common in uneducated and poor people. Poisoning was rare among educated people. Period of survival was 0-6 hours in most of the cases. Snake bites were rare in urban area. Case fatality rate in organophosphorus poisoning was 27.9%, in organochlorus 21.58%, in zinc phosphide 33%, in alcohol 28.57% and in snake bite 5.55%.

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