Original Research Article

Trends of poisoning: A one-year prospective study

Bhushan Vashishtha[1*], Vatsla Vats[2], Abhishek Rathi[3], Hitesh Chawla[4], Rajeev Kumar[5]

[1]Demonstrator, [4]Associate Professor,[5]Professor, Department of Forensic Medicine SHKM Nalhar, Haryana, INDIA.
[2]Resident, Department of Obstetrics and Gynecology, Pt BD Sharma PGIMS Rohtak, Haryana, INDIA.
[3] Resident, Department of Forensic Medicine, Armed Forces Medical College, Pune, Maharashtra, INDIA.
Email:vashista.bhushan@gmail.com

Abstract

Background: Acute poisoning is considered a common cause of hospital admission and socio-economic burden upon the country. Globally also, the poisoning contributes a major health problem. **Objective:** To evaluate prospectively the pattern of acute poisoning in a tertiary centre of Haryana state of India. **Materials and Methods:** This was an observational prospective study. The study population includes all patients who were referred to apex institute of state from all the districts and died due to that. Study was conducted from 01-January-2016 to 31-December-2016. All data were analyzed using SPSS 20. **Result:** Out of total 1483 post-mortems done in the mortuary of Department of Forensic Medicine of Post Graduate Institute of Medical Sciences Rohtak in year 2016, the poisoning cases constituted 22.8% of all cases. Out of all cases of poisoning 71.6% belonged to rural background, majority (46.2%) were illiterate and occupationally it was equal in farmers and unemployed cases. **Conclusions:** The data observed in this hospital based shows acute poisoning remains a major public health problem in an agricultural bases economy like India

Key Words: Poisoning, rural, illiterate, farmers.

[*]**Address for Correspondence:**
Dr. Bhushan Vashishtha, Senior Resident, Department of Forensic Medicine, SHKM Government Medical College, Nalhar, Nuh 122107 Haryana.
Email:vashista.bhushan@gmail.com
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INTRODUCTION

Poisoning from the intentional use of the substance as well as from unintentional exposure to it remains a significant health concern for hospital emergency departments. The substances responsible for accidental poisoning and the methods used for self-poisoning have changed considerably over time. WHO estimated that approximately 3 million pesticide poisoning occurs worldwide and cause more than 2,20,0000 deaths per year.[1] The pattern of poisoning varies from country to country, place to place and changes over a period of time due to various reasons. Poison consumption accounts for substantial numbers of deaths throughout the world, in the form of suicide, accident or homicide. Variety of factors, like availability and access of poison, socio-economic status of the individual, cultural and religious influences etc influence the pattern of poisoning.[2]

MATERIAL AND METHOD

All the autopsy cases (338) with cause of death as poisoning conducted in mortuary of Department of Forensic Medicine of Post Graduate Institute of Medical Sciences Rohtak, a tertiary care institute of the state, over a period of one year (01-January 2016 to 31-December 2016)were analyzed for various factors like residential status of the person whether urban or rural, educational status whether uneducated, illiterate or primary standard educated or middle standard educated or matric standard education or higher education or graduate or post graduate standard educated, occupation of the cases whether unemployed or farmers, students, females working as housewife and person on job. The data was obtained from the police inquest papers and information obtained from the nearest of the kin.

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OBSERVATION AND RESULTS

The educational status of all the cases was studied and following results were obtained:

Table 1: educational status wise distribution of cases

	Male		Female		Total	
Educational status	**Number**	**%**	**Number**	**%**	**Number**	**%**
Illiterate	102	42.9%	54	54%	156	46.2
Primary educated	11	4.6%	3	3%.	14	4.2
Middle standard educated	14	5.7%	4	4%	18	5.4
Matric standard educated	40	16.9%	24	24%	64	18.9
Higher Education	41	17.3%	8	8%	49	14.4
Graduation	30	12.6%	7	7%	37	10.9
Post Graduation	0	0	0	0	0	0
Total	**238**	**100%**	**100**	**100%**	**338**	**100%**

(Chi square- 11.029; p-value:0.05)

Table 1 shows that maximum cases were illiterate i.e. 156 (46.2%) and predominated by males i.e. 65.4% and females contributed 34.6%. It was followed by matric educated cases i.e. 64 (18.9%). The higher standard educated cases were 49 (14.4%). The middle standard educated cases were 18 (5.4%). The graduates were 37 (10.9%) and no postgraduate was noted. In every type of educational status, males predominated the females. The results obtained are statistically significant). The educational status of cases were analyzed and following results were obtained:

Table 2: Occupational status wise distribution of cases

	Male		Female		Total	
Occupational status	**Number**	**%**	**Number**	**%**	**Number**	**%**
Unemployed	72	30.4%	15	15%	87	25.7
Farmer	78	32.9%	9	9%	87	25.7
Student	18	7.6%	15	15%	33	9.7
Job	50	21 %	5	5%	55	16.3
Businessmen	9	3.6%	0	0%	9	2.7
Laborer	8	3.3%	1	1%	9	2.7
Housewife	0	0%	55	55%	55	16.3
Driver	3	1.2%	0	0%	3	0.9
Total	**238**	**100%**	**100**	**100%**	**338**	**100%**

(Chi square- 166.751; p-value: 0.00)

As depicted in the table 2 the most of cases were unemployed and farmers i.e. 87 each, 25.7% each. It was followed by housewives and cases with occupation as job which came out to be 55 each i.e. 16.3%. The load shared by students was student was 33 i.e. 9.7%. Businessmen and laborers also shared the load but it was less. 3 drivers also shared 0.9% of total load. The results are statistically significant. This study also analyzed the residential status of the cases. The same are described below:-

Table 3: Residential status wise distribution of the cases

	Male		Female		Total	
Residential Status	**Number**	**%**	**Number**	**%**	**Number**	**%**
Rural	185	77.8%	63	63%	242	71.6%
Urban	53	22.2%	37	37%	96	28.4%
Total	**238**	**100%**	**100**	**100%**	**338**	**100%**

(Chi square- 0.432; p-value- 0.32)

As evident from the described table 3 the most of the cases belong to rural background i.e. 242(71.6%) while only 28.4% cases i.e. 96 had urban background. In both rural and urban backgrounds, males predominated their female counterparts i.e. 69% in rural and 74% in urban while female counterparts contributed 31% to the rural and 26% to the urban. Out of all females 75% had rural background while only 25% had urban background. The results of our study are statistically non significant because p-value was more than 0.05.

DISCUSSION

The maximum cases belong to rural background [246 (71.6%)] than urban [96(28.4%)] and it is in consistence with the study done by Pawar *et al*[3] and Dash *et al*[4] which showed poisoning cases occur more in rural areas than urban. It is contrary to the findings of Satinder *et al*5 and Patil *et al*[6] which showed higher incidence in urban areas than rural. Most of the cases are uneducated/illiterate [156(46.2%)] followed by matric standard educated [64(18.9%)], higher education [49(14.3%)], graduate [37(10.9%)], middle standard [18(5.3%)] and primary educated [14(4.1%)] respectively. No post graduate case noted. The uneducated people and farmers contributed maximum to the incidence of poisoning and are same in number (87 each) and percentage [25.7% each]. It is followed by females working as housewives [56(16.6%)], cases doing jobs [55(16.3%)] and students [33(9.8%)] respectively. Out of 338 cases, 9(2.7%) were businessmen and labourer each. 2(0.6%) were drivers. The study is in accordance with the study of Pawar *et al*[3] and contrary to Maharani *et al*[7] which showed labourer being the most common cases followed by farmers, housewives and students respectively.

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