

Prospective Study of Clinical Profile and Outcome of Patients Suffering from Poisoning in Tertiary Care Hospital

Jai Parkash¹, Mozahidul Islam², Dr. Tanpreet Kaur³, Dr. Amit Sharma⁴, Prince Kumar Bhalla⁵

Department of Pharmacy Practice, ISF College of Pharmacy Moga, Punjab, India

Email: [jaiparkashoni36\[at\]gmail.com](mailto:jaiparkashoni36[at]gmail.com)

Abstract: ***Objective:** 1) To document the cases admitted due to poisoning and to study demographic profile of the patients. 2) To list out the poisons consumed and observe the symptoms of poisoning. 3) To list out the factors associated with severity of poisoning along with treatment option. 4) To list out type of antidote used and any drug interactions and ADRs occurs due to antidotes, if any. 5) To find out the duration of hospital stay. **Method:** A visit to emergency ward was given each day to check for any new cases. Details of each poisoning case were recorded in the data collection form. Statistical analysis was done by using Statistical Package for Social Sciences (SPSS). **Results:** A total of 128 cases poison cases were identified. Out of which 77 (60.2%) of patients were male and 51 (39.8%) of patients were female. Out of the 128 studied patients, 95 (74.2%) of patients were from rural region and 33 (25.8%) of patients were urban region. Out of the 128 studied patients, 71 (55.5%) of patients were married and 57 (44.5%) of patients were unmarried. Most of the patients 45 (35.2%) were employed significantly lower in than unemployed 83 (64.8%) patients. Out of 128 patients, 44 (34.4%) of patients were alcoholic and rest 84 (65.6%) patients were not addicted. Test of proportion showed 55 (43%) patients were suicidal whereas 12 (9.4%) patients were intentional, most of patients 61 (47.7%) had on accidental intentions. Most of the patients cases 53 (41.4%) were due to consumption of Organophosphate Poisoning. **Conclusion:** Through this study, it was found that Organophosphate poisoning was most common type of poisoning and common antidote is Atropine (25%).*

Keywords: Poisoning, Atropine, Organophosphate, Drug abuse

1. Introduction

The term poison was derived from Latin word polio "potionem" a drink; i.e. a drink, eat, breathe, inject or touch enough of a chemical to cause illness or death or poison is derived from Greek word "toxicon" which means 'poison'. A poison may be defined as a "substance which when introduced into the system, or applied externally, injures health or destroys life"

Poisoning, either accidental or intentional is a common cause of admission at accident and emergency departments. It is an important health problem in every country of the world. Occupational exposure to industrial chemicals and pesticides, accidental or intentional exposure to household to pharmaceutical products and poisoning due to venomous animals, toxic plants and food contamination, all contribute to morbidity and mortality (Lall et al., 2003). The danger poisoning range from short - term illness to brain damage, coma and death. Some poisons in very small amounts can cause illness or injury. Some poisons cause immediate injury, such as battery acid or household cleaners. Other poisons may take years of exposure to create a health problem, such as heavy metals (lead, arsenic, mercury). The Centers for Disease Control and Prevention (CDC) defines a poisoning that occurs by accident as "unintentional poisoning" and a poisoning that results from a conscious, will full decision (such as suicide or homicide) as "intentional poisoning" Unintentional poisoning includes the use of drugs or chemicals for recreational purposes in excessive amounts, such as an overdose. Unintentional poisoning also includes the excessive use of drugs or chemicals for non - recreational purposes, such as by an infant or child. Intentional poisonings include suicide, such as medication

over dosage. Young children are particularly vulnerable to accidental poisoning in the home, as are elderly people, often from confusion.

2. Material and Methods

Study population:

All the patients of poisoning reported in Guru Gobind Singh Medical College and Hospital, Faridkot, Punjab in a given time period.

Study duration:

The study was conducted for a period of 6 months.

Source of data:

Data was collected from history taking, case sheets, lab reports and prescriptions of poisoned patients admitted in Guru Gobind Singh Medical College and Hospital, Faridkot, Punjab.

Study selection:

Inclusion criteria:

All In - patients admitted due to poisoning in GGSMCH and who were willing to participate in the study.

Exclusion criteria:

All out - patients.
Patients who were not willing to participate in the study.
Poisoning due to long - term ingestion of drug.

Method:

The present study was carried out in the in - patient medicine department of GGSMCH after obtaining the

ethical committee clearance from the Institutional Ethical Review Board of the hospital. Informed consent was obtained from the conscious patients or from their relatives if the patients were unconscious. The data was collected in the ward rounds and identified the poisoning cases and collected the data. A visit to emergency ward was given each day to check for any new cases. Details of each poisoning case were recorded in the data collection form.

3. Results

a) Date of admission

The mean date of admission (mean \pm S. D) of the patients was 4 - oct - 21 \pm 323.06 days. The value of normality test is.073 (Kolmogorov – Smirnova) and.963 (Shapiro - wilk).

b) Date of discharge

The mean date of discharge (mean \pm S. D) of the patients was 5 - Nov - 21 \pm 51.499 days. The value of normality test is.073 (Kolmogorov – Smirnova) and.963 (Shapiro - wilk).

c) Length of stay

The mean length of stay (mean \pm S. D) of the patients was 4.21 \pm 1.106. The value of normality test is.177 (Kolmogorov – Smirnova) and.917 (Shapiro - wilk).

d) Age

The mean age (mean \pm S. D) of the patients was 33.42 \pm 12.99. The value of normality test is.075 (Kolmogorov – Smirnova) and.973 (Shapiro - wilk)

e) Age distribution of patients

The mean age (meant \pm S. D) of the patients was 33.42 \pm 12.990 years with range 10 - 70 years and the median age was 33.50 years. Test of proportion showed most of the patients 39 (30.5%) were significantly higher in the age group 31 - 40 years.

Age Distribution	Frequency	Percentage
10 - 20	22	17.2
21 - 30	31	34.2
31 - 40	39	30.5
41 - 50	21	16.4
51 - 60	10	7.8
61 - 70	5	3.9
Total	128	100.0

f) Gender Distribution of Patients

Out of the 128 studied patients, 77 (60.2%) of patients were male and 51 (39.8%) of patients were female.

Gender	Frequency	Percentage
Male	77	60.2
Female	51	39.8
Total	128	100.0

g) Region distribution of patients

Out of the 128 studied patients, 95 (74.2%) of patients were from rural region and 33 (25.8%) of patients were urban region.

Region	Frequency	Percentage
Rural	95	74.2
Urban	33	25.8
Total	128	100.0

h) Type of Poisoning

Type of Poisoning	Frequency	Percentage
Celphous Poisoning	11	8.6
Drug Poisoning (overdose PCM)	5	3.9
Ants Bites	2	1.6
PCM Poisoning	1	0.8
Steroid toxicity withdrawal (cetirizine)	1	0.8
Drug Poisoning (benzodiazepine)	1	0.8
Morphine Poisoning Drug Abuse and endocarditis	2	1.6
Snake Bite	12	9.4
Alleged Poisoning (Naphthalene)	6	4.7
OP poisoning with convulsions	2	1.6
Organophosphorus poisoning with ulcers	2	1.6
Organophosphate Poisoning	53	41.4
Pyretherine Poisoning	3	2.3
Organochlorine Poisoning	2	1.5
Alleged Poisoning (Harpic Liquid)	7	5.5
Drug Abuse (Opiates Poisoning)	3	2.3
Chronic Opioids Addicts	3	2.3
Alleged Poisoning (food with meat)	2	1.6
Alleged Poisoning (Rat Killer)	10	7.8
Total	128	100.0

i) Antidote Used

Antidotes that was used in most of the cases was Atropine 32 (25%) followed by Pralidoxime iodine (PAM) in 26 (20.3%) patients.

Antidote Used	Frequency	Percentage
N - acetylceatine	2	1.6
Anti - snake venom (ASV)	18	14.1
Sodium Bicarbonate	8	6.3
Noradrenaline	6	4.7
Diazepam	6	4.7
Flumazenil	4	3.1
Naloxone	2	1.6
Atropine	32	25.0
Diphenhydramine	4	3.1
Pralidoxime iodine (PAM)	26	20.3
Mg. Sulphate	12	9.4
Dopamine	8	6.3
Total	128	100.0

4. Discussion

Socio demographic variables

As per the study criteria data collected from 128 poisoning patients showed very higher incidences [39 (30.5%)] in the age group of 31 - 40 years. Earlier of study Kumar et al (2010) also revealed a higher incidence of poisoning in males than in females in all age groups, corroborating other studies. There are findings of some other countries where the female has preponderance Majority of incidences in males was from the age group of 31 - 40 years old, which was similar to our study.

During the study, the ratio of the patients in terms of male: female was 1.5: 1. Out of the 128 studied patients, 77 (60.2%) of patients were male and 51 (39.8%) of patients were female. Similar pattern of high suicidal incidence in male patient was reported in previous study by Maharani et al (2013) in that study, higher suicidal rate was found among males (92 cases, 61.33%) than females (58 cases, 38.66%)

The mean ratio of the patients in terms of rural: urban was 2.8: 1. Out of the 128 studied patients, 95 (74.2%) of patients were from rural region and 33 (25.8%) of patients were from urban region. The marital status of patients considered under study in terms of married: unmarried was 1.2: 1. Out of the 128 patients, 71 (55.5%) patients were married and 57 (44.5%) patients were unmarried. Test of proportion showed that the married persons try to commit suicidal attempts slightly more than unmarried persons.

In this study, it was revealed that most of the patients [53 (41.4%)] consumed OP whereas 12 (9.4%) consumed snake bite.

This study also revealed that the general antidote, which was used most commonly in the intensive care settings for the treatment OP poisoning, was Atropine in 32 (25.0%).

5. Conclusion

Acute poisoning is a common and urgent medical problem in our country. The mortality and morbidity due to poison can be reduced by the conducting educational programs, various videos like; how to prevent the poisoning in rural areas and providing counseling services and poison information service to the people. Tertiary care hospitals should have to establish a poison information center (PIC), which should be networked with other poison information center in India and with developed countries. This can help in identifying the poison and managing the cases and also should be provide information to the public regarding poison prevention. Majority of the patients were seen male in the young age. Most of patients were unmarried. Maximum incidence of poisoning was seen in patients from urban region. Majority of the patients were unemployed. Most of the cases were due to intentional poisoning by oral route. OP compounds and snake bite are the most common cause of poisoning. Atropine was the antidote used in most of the cases followed by PAM. OP compounds are the most common cause of poisoning and longest duration of stay in hospital. Although all of the patients were recovered. Through this study, it was found that Organophosphate poisoning was most common type of poisoning and common antidote is Atropine (25%).