

# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## A Study of Poisoning Cases at F.H. Medical College, Etmadpur, Agra, Uttar Pradesh, India.

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### ABSTRACT

This research paper presents a comprehensive analysis of the clinic profile, epidemiological spectrum, and medico-legal aspects of 100 cases of poisoning reported at a tertiary care hospital. The study aims to provide a detailed understanding of the characteristics, patterns, and outcomes of poisoning cases, with a focus on clinical presentation, epidemiological factors, and legal implications. Data were collected from medical records, toxicology reports, and legal documentation, and analyzed using appropriate statistical methods. The findings highlight the diverse range of toxic agents, demographics, and clinical presentations observed in these cases. Additionally, the study explores the medico-legal aspects, including documentation, forensic investigations, and legal proceedings associated with poisoning incidents. The results of this research contribute to the existing knowledge on poisoning incidents, providing valuable insights for healthcare professionals, policymakers, and legal authorities involved in the management and prevention of poisoning cases. Key words implications, epidemiological factors

**Keywords:** Poisoning, epidemiological spectrum, medicolegal.

<https://doi.org/10.33887/rjpbcs/2023.14.6.67>

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## INTRODUCTION

Poisoning cases present a significant challenge to healthcare systems worldwide, requiring prompt and effective management to minimize morbidity and mortality. Understanding the clinic profile, epidemiological spectrum, and medico-legal aspects of poisoning incidents is crucial for developing appropriate prevention strategies, improving clinical decision-making, and ensuring legal compliance. This research paper aims to provide a comprehensive analysis of 100 cases of poisoning reported at a tertiary care hospital, focusing on the clinic profile, epidemiology, and medico-legal considerations associated with these cases [1-3].

The clinic profile of poisoning cases encompasses various factors, including the types of toxic agents involved, clinical presentations, management approaches, and outcomes. By examining these aspects, healthcare professionals can gain insights into the specific characteristics and patterns of poisoning incidents, enabling them to develop targeted interventions and treatment protocols. Additionally, understanding the clinic profile can aid in identifying high-risk populations, common toxic agents, and associated complications, leading to improved patient care and outcomes.

The epidemiological spectrum of poisoning cases explores the demographic factors, such as age, gender, and geographical distribution, which play a role in the occurrence and severity of poisoning incidents. By analyzing the epidemiological data, healthcare professionals can identify vulnerable populations, assess regional variations, and tailor prevention strategies accordingly. Furthermore, understanding the epidemiological spectrum can help in identifying potential risk factors and implementing targeted public health interventions to reduce the incidence of poisoning cases.

The medico-legal aspect of poisoning incidents involves the documentation, forensic investigations, and legal implications associated with these cases. Accurate and comprehensive documentation is essential for proper medical management, as well as for legal purposes. Forensic investigations play a crucial role in determining the cause and circumstances of poisoning, aiding in the identification of potential criminal activities or negligence. Understanding the medico-legal aspects of poisoning incidents is vital for ensuring compliance with legal requirements, facilitating appropriate legal proceedings, and providing justice to the affected individuals.

By conducting a detailed analysis of the clinic profile, epidemiological spectrum, and medico-legal aspects of 100 cases of poisoning reported at a tertiary care hospital, this research aims to contribute to the existing knowledge on poisoning incidents. The findings of this study will provide valuable insights for healthcare professionals, policymakers, and legal authorities involved in the prevention, management, and legal proceedings associated with poisoning cases. Ultimately, this research aims to improve patient care, enhance public health interventions, and ensure legal compliance in cases of poisoning.

## MATERIALS AND METHODS

### Study Design

This research paper utilizes a retrospective study design to analyze 100 cases of poisoning reported at a tertiary care hospital. The study adheres to ethical guidelines and maintains patient confidentiality throughout the data collection and analysis process.

### Data Collection

Data for this study were collected from medical records, toxicology reports, and legal documentation associated with the 100 poisoning cases. The data collection period spans a specified timeframe, ensuring a representative sample of cases.

### Inclusion and Exclusion Criteria

The inclusion criteria for this study include all cases of poisoning reported at the tertiary care hospital during the specified period. Exclusion criteria involve cases with incomplete or missing medical records, cases with insufficient information for analysis.

## Variables

The variables of interest include demographic information (age, gender), types of toxic agents involved, clinical presentations, management approaches, outcomes, and medico-legal aspects. These variables are extracted from the medical records and toxicology reports.

## Data Analysis

Descriptive statistics are used to summarize the demographic characteristics, types of toxic agents, clinical presentations, management approaches, and outcomes of the poisoning cases. Frequencies, percentages, means, and standard deviations are calculated as appropriate. The epidemiological spectrum is analyzed by examining the distribution of cases across different age groups, genders, and geographical locations.

The medico-legal aspects of the poisoning cases are analyzed by reviewing the legal documentation associated with each case. This includes documentation of forensic investigations, legal proceedings, and any relevant medico-legal implications. The findings are presented in a descriptive manner, highlighting any notable medico-legal considerations.

## Ethical Considerations

This study adheres to ethical guidelines, ensuring patient confidentiality and privacy. All personal identifiers are removed from the data during analysis to maintain anonymity. The study protocol is reviewed and approved by the appropriate institutional review board or ethics committee.

## Limitations

Potential limitations of this study include the retrospective design, which relies on existing medical records and documentation. There may be missing or incomplete information in some cases, which could affect the analysis. Additionally, the study is conducted at a single tertiary care hospital, limiting the generalizability of the findings to other settings.

## RESULTS

Total 100 cases were taken and studied

**Table 1: Sex Distribution**

Sex	Cases (%)
Female	34
Male	66

**Table 2: Age wise distribution of male and female**

Age (years)	Male (%) n=66	Female (%) n=34
18-30	36(54.54)	16(47.05)
31-40	12(18.18)	7(20.58)
41-50	9(13.63)	4(11.76)
51-60	5(7.57)	6(17.64)
>60	4(6.06)	1(2.94)

**Table 3: Table showing relation of sex with the manner of poisoning**

Type of poison	Cases n=100(%)	Male (%)	Female (%)
Insecticide (OP Poisoning)	41(41)	25(60.9)	16(39.1)
Rodenticide	5(5)	1(20)	4(80)
House cleaning agent	5(5)	1(20)	4(80)
Mosquito repellent	4(4)	2(50)	2(50)
Corrosives and Irritants	3(3)	3(100)	00(00)
Kerosene	1(1)	1(100)	00(00)
Drug Intoxication	24(24)	21(87.5)	3 (12.5)
Alcohol Intoxication	7(7)	7(100)	00(00)
Unknown	10(10)	5(50)	05(50)

**Table 4: Table showing time of incidents**

Time of incidents	Frequency n=100(%)
12-6 am	10(10)
6am- 12 noon	14(14)
12 noon - 6 pm	68(68)
6pm -12 am	8(8)

**Table 5: Time interval b/w poisoning, hospitalization and outcome (LAMA/Death)**

Time interval b/w poisoning and hospitalization	Cases (%)	Discharge	Death
<2 hrs	79(79)	72(91.14)	7(8.86)
2-6 hrs	11(11)	8(72.72)	3(27.27)
6-24 hrs	8(8)	6(75)	2(25)
>24 hrs	2(2)	1(50)	1(50)

**Table 6: Table showing relation of sex with the “manner of poisoning”**

Sex	Accidental	Homicidal	Suicidal
<b>Male (n=66)</b>	2	Nil	64
<b>Female (n=34)</b>	1	Nil	33

100 poisoning cases were admitted, 66% were male and 34% were female (Table 1).

The most affected age group is 18-30 years, incidents decrease as the age increases (Table 2). Most of the cases occurred during the day time from 12 to 6 pm as depicted in Table 3.

It was found that recovery rate was 91.14 % in the patients who were admitted early within 2hours of poisoningestion (Table 4).

As the time of admission increases, chances of fatality also increase. So, it is advisable to admit the patient as early as possible.

The use of insecticide as a poisonous agent is more common followed by drug intoxication (Table 5).Table 6 shows that most of the cases were suicidal in both the sexes.

**DISCUSSION**

Epidemiological factors and clinical aspect of poisoning can help in deciding the appropriate treatment modalities and designing the effective strategies to prevent morbidities, mortalities and can reduce economic burden related to poisoning. Our study’s 66% male and 34% percent female case counts indicate a male predominance. This is comparable to research conducted at a Brazilian university hospital, which found that out of 5,744 cases of poisoning in children and adolescents, 53.5% were male

and 46.5% were female. (Bucaretschi & Associates, 2012) [4]

According to case studies conducted by Jalilian et al [5] Similar to a study by Mehrpour et al., 2012 [6] that demonstrates the involvement of the age group of 15– 24 years, followed by 25-34 years, which indicates the most commonly involved age group is 15–35 years, the most common age group is 18–30 years, followed by 31–40years.

The outcome indicates that in order to prevent poisoning consequences and lower mortality, prompt first aid is required.

Compared to cases that were reported later, those that were managed and treated successfully within the first two hours of intoxication.

A study conducted by Shrestha et al [7] on 120 cases of poisoning revealed a similar pattern: those who receive first aid within the first two hours of the poisoning had significantly lower mortality rates than those who received it after two hours.

The study also showed that the chances of survival decrease with increasing duration.0 years in both male and female counterparts.

Research from throughout the globe revealed regional patterns. Insecticides account for 41% of the commonly utilized agents for poisoning in our analysis, which is consistent with research by Tarvadi PV et al [8] and Bhat NK et al [9]. Indian research frequently reported unintentional poisoning from medications, home goods (such as kerosene oil), and agricultural chemicals [10]. Family arguments were the most common reason of poisoning cases.

The majority of patients (79) in this study received their first treatment within two hours, which was in line with data from a study conducted by Banerjee et al [11].

However, in a study conducted in Maharashtra by Vedpathak et al [12] the majority of the patients were admitted within <3 hours of ingestion.

The majority of cases, in both males and females, had suicidal intents, which is consistent with the pattern of poisoning shown in the study by Debbarma et al [13].

Insecticides are frequently used in agriculture in rural areas. These are kept in unguarded homes where kids can get them and inadvertently consume them.

With agriculture being the primary industry.

## CONCLUSIONS

The purpose of this study was to assess the clinic epidemiological spectrum of local poisoning cases that were referred to our teaching hospital for tertiary care, as well as potential preventative measures. The majority of poisoning cases involved suicidal intent, however, inadvertent/accidental intake was frequent in children. It is imperative that parents must receive education regarding the proper storage of toxic materials in closed cabinets and refrain from storing hazardous liquids in empty soft drink or water bottles. Such products ought to have a label that details the first steps to take in the event of an unintentional poisoning. Parents should be aware of when and how to induce vomiting right away, possibly with locally sourced materials that are readily available at home. Awareness of other safety and preventive measures must be there to reduce chances of intoxication.

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