

DRUG UTILIZATION IN PATIENTS WITH ACUTE POISONING: AN OBSERVATIONAL STUDY

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ABSTRACT

Objective: Acute poisoning is one of the major public health problems in the developing world and one of the key causes of emergency cases and deaths. Having a rational use of drugs is important in enhancing results. The objective of this study isto assess the use trends of medicines in acute poisoning individuals.

Methods: It is a prospective observational study carried out in nine months (September 2024-May 2025) at a tertiary care teaching hospital in Jaipur, Rajasthan. The use of drugs was evaluated through the World Health Organization prescribing indicators.

Results: 248 patients were involved. In 82.25% of the encounters, antibiotics were prescribed, and injectable drugs were prescribed in all the patients. mean of the number of drugs per encounter was 12.3. A total of 78.22 % of patients have been reported to have been cured, and the mortality rate was 5.24%.

Conclusion: The paper shows that there is a high consumption of antibiotics and injectable medicines in cases of acute poisoning. The use of antimicrobial stewardship programs and regular prescription audits is needed to enhance rational drug use.

Keywords: Acute poisoning, Drug utilization, Antibiotics, Rational prescribing, Tertiary care hospital

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INTRODUCTION

Acute poisoning refers to the adverse effects resulting from exposure to a toxic substance for a short duration, typically less than 24 h [1]. Acute poisoning is a common emergency situation in health care and a significant health issue of national concern, especially in developing nations. It may occur as a result of unintentional exposure or deliberate intake of toxic compounds, which may be a drug, pesticides, chemicals, or natural poisons. Hospitalization and death worldwide are major contributors to the burden of poisoning [2-4].

Poisoning is a significant cause of unnatural deaths in India, and most of the cases involve pesticides, household chemicals, and other toxic agents. The pattern of poisoning differs according to geographic location, availability of toxic substances, and socioeconomic status. Understanding the epidemiological pattern and treatment practices is essential for improving patient outcomes and planning preventive strategies [5-7].

Thus, the present study was designed to assess the trend in acute poisoning, treatment procedures, and clinical prognosis among patients in a tertiary care hospital.

MATERIALS AND METHODS

Study Design: Prospective observational study. Study Setting: RUHS College of Medical Sciences, Jaipur, Rajasthan. Study Duration: September 2024 to May 2025. Study Population: Patients admitted with suspected or confirmed acute poisoning. Sample Size: 248 patients. Inclusion Criteria: Patients of all ages and both sexes with acute poisoning who provided informed consent. Exclusion Criteria: Patients unwilling to participate. Ethical Approval: The study was approved by the Institutional Ethics Committee. Statistical Analysis: Descriptive statistics were analyzed using SPSS version 25.0.

RESULTS

The present study analysed 248 cases of acute poisoning. Table 1 displays the distribution of the cases depending on the age group and sex. The greatest cases of poisoning were in the 21-30 y age group (87 cases), then the 11-20 y age group (50 cases). All in all, males (151; 60.88%) were affected more than females (97; 39.11%).

The pattern of poisoning agents is presented in table 2. The most common poisoning agent was unknown compounds (60 cases), followed by corrosive substances (54 cases) and snake venom (35 cases). Other agents, such as organophosphates, pyrethroids, and herbicides, contributed smaller proportions of cases.

Table 1: Number of poisonings by age group and sex

Age group (Years)	Male	Female	Total
0-1	1	2	3
1-10	7	5	12
11-20	30	20	50
21-30	57	30	87
31-40	26	16	42
41-50	20	15	35
51-60	6	4	10
>60	5	4	9
Total	151	97	248

Table 2: Poisoning agents of acute poisoning cases

Poison type	Number of cases
Unknown compounds	60
Corrosive	54
Snake venom	35
Organophosphate	24
Pyrethroid	14
Unknown venom	13
Neurotoxin	8
Herbicide	8
Hydrocarbon	7
Psychotropic drugs	6
Anticoagulant	5
Others	14
Total	248

The treatment profile of acute poisoning cases is summarized in table 3. Supportive medications were most frequently prescribed. Inj. Pantoprazole (121 cases), IV fluids such as DNS (118 cases), and Inj. Ondansetron (118 cases) were the most commonly used drugs. Among specific antidotes, atropine (79 cases) and anti-snake venom (27 cases) were frequently administered.

Table 3: Medicines prescribed for acute poisoning cases

Medicine	Number of patients
Inj. Pantoprazole	121
Inj. DNS	118
Inj. Ondansetron	118
Inj. NS	103
Inj. Ceftriaxone	92
Inj. RL	88
Inj. Atropine	79
Inj. Anti-snake venom	27
Inj. Neostigmine	6
Others	Remaining cases

The outcome of acute poisoning cases is shown in table 4. Most patients recovered completely (194; 78.22%). Mortality was observed in 13 cases (5.24%). Some patients absconded or left against medical advice (22 cases), while a few were transferred to other departments or hospitals (7 cases).

Table 4: Acute poisoning cases with outcome

Outcome	Male	Female	Total
Complete recovery/Discharge	121	73	194
Death	8	5	13
Permanent disability	0	0	0
Abscond/LAMA	14	8	22
Transfer out	3	4	7
Total	151	97	248

DISCUSSION

Acute poisoning is a major health concern in India, both in terms of health burden and population affected. Young adults are among the most commonly affected groups, which may be attributed to occupational exposures, psychosocial stress, and easy access to toxic substances. Similar finding has been reported in earlier hospital-based studies [6, 8].

It is generally observed that malespredominant among poisoning cases, which may be associated with greater outdoors activity, occupational risk and social stress. The nature of poisoning varies according to geographic area and is influenced by local availability and cultural practices. In developing countries, household agents and pesticides are commonly used toxic substances [3, 9].

Treatment of poisoning primarily involves supporting care and use of antidotes depending on the type of poison used. Timely diagnosis and treatment are a significant factor in enhancing survival. Delayed treatment, unknowns of the poisoning agent and extremely poisonous exposures are generally linked to poor outcomes [10].

The prevention steps are public education, safe storage of toxic materials and reinforcement of emergency medical centres to help decrease the morbidity and mortality associated with poisoning [4].

CONCLUSION

The acute poisoning remains a major burden in the tertiary care hospitals. The researchers note that polypharmacy is high, there is wide usage of antibiotics, and universal usage of injectable drugs. Rational drug use policies, antimicrobial stewardship, and ongoing medical education can be used to enhance prescribing opportunities and patient outcomes.

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AUTHORS CONTRIBUTIONS

All authors have contributed equally

CONFLICT OF INTERESTS

Declared none

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