

# Study of acute poisoning cases at tertiary care teaching hospital

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## Abstract

**Background:** Acute poisoning is one of the main concern of emergency medicine practice. Following recent advancements in toxicology, technical changes and evolving habits have uncovered new causes, and instances of poisoning remain a concern. **Objective :** To study acute poisoning cases due to different poisons in order to avoid to do awareness to avoid being poisoned accidentally or unintentionally **Duration :** 1 Year from January 2018 to February 2019 **Methods:** All Case histories, records and reports pertaining to poisoning patients were collected and analyzed to see different types of poisoning and morbidity due to poisoning and data was compiled based on the findings with SPSS 20 software. **Results:** Majority of the poisoned patients were females with 56.63% and males were 43.37%. Maximum number of poisoned patients belonged to the age group of 21 to 30 years with 37.01%. Majority of the poisoning had been due to organophosphorus with 48% followed by house hold cleaning agents like phenyl, acid with 16.69%. Majority of the patients had recovered with 69.82% and 30.17% of the poisoned patients died despite best treatment provided which was mostly due to delay in bringing the patients to the hospital and police clearance. **Conclusion:** Some of the key causes for the increased prevalence of poisoning in urban and semi-rural general populations, particularly in young adults, may be the easy availability of pesticides and the over the counter prescription medications.

**Key Words:** Acute poisoning, Organophosphorus, Corrosive substance, Pharmaceutical drugs

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Received Date: 15/10/2019 Revised Date: 12/12/2019 Accepted Date: 07/01/2020

DOI: <https://doi.org/10.26611/10181323>

## Access this article online

Quick Response Code:	Website: <a href="http://www.medpulse.in">www.medpulse.in</a>
	Accessed Date: 19 February 2020

## INTRODUCTION

Acute poisoning is one of the most critical medical conditions with severe morbidity and mortality. The primary cause for the poisoning is intentional self-harm and secondary is unintentional or accidental poisoning observed mostly in Farmers and children endured unintended and workplace pesticides or Chemical reactions that contribute to severe or persistent poisoning. Acute poisoning is a

serious medical problem in every nation with a broad variety of chemical compounds and medications available over the counters. Acute poisoning is an increasingly growing concern in developed countries during the last few years. The occurrence of acute poisoning in the religious, economic, and geographical contexts differs, and is diverse due to continuous development and the various elements accessible. Use of freely accessible prescription drugs is the most frequent source of acute poisoning in developing countries and also Insecticides are the most commonly used in developing nations An approximate half a million people die per year from pesticide poisoning such as India.<sup>1,2</sup> The World Health Organization (WHO) estimates about one million deaths worldwide are induced annually by suicides and toxic agents and pesticides.<sup>3,4</sup> Throughout Asian countries, agricultural pesticides like organophosphorus, organochloride, zinc and aluminum phosphide are widely used deliberately or inadvertently because of their easily accessible availability, while in developed and

**How to cite this article:** Mohammed Liyaqat Shareef, Mohammed Taquiuddin Khan. Study of acute poisoning cases at tertiary care teaching hospital. *MedPulse International Journal of Forensic Medicine*. February 2020; 13(2): 18-21.

<https://www.medpulse.in/Forensic%20Medicine/>

industrialized countries addiction is generally seen for medications like paracetamol, morphine, benzodiazepines and tranquilizers. The Data records of National Crime Records bureau of India, last updated for 2016 records has shown that 34,869 patients died due to poisoning out of which majority were male compared to female with a ratio of 2 : 1. <sup>5</sup> Effective detection and rapid care in the Emergency Department and ICU is crucial to reduce-medical morbidity and mortality of the poisoned patient.

**MATERIALS AND METHODS**

**Place Of Study:** Department of Forensic and Emergency department.

**Type Of Study:** Retro prospective observational cross sectional study

**Sample Collection:** Sample size : 1402

**Sampling Methods:** Consecutive Sampling

**Inclusion Criteria:** All patients admitted to the emergency department for poisoning related at the Osmania general hospital were included for the study.

**Exclusion Criteria:** The background of recurrent clinical diseases (e.g. diabetes mellitus and renal failure), diagnosis and/or inadequate case reports with concomitant severe alcohol pathologies.

**Statistical Methods:** Data were presented in the form of statistical Tables and charts. SPSS software version 20 was used for statistical analysis.

All Case histories, records and reports pertaining to poisoning patients were collected and analyzed to see different types of poisoning and morbidity due to poisoning and data was compiled based on the findings with SPSS 20 software.

The duty doctors tested and treated poisoned patients in the emergency department. Patients were discharged after treatment in the emergency room based on the severity of the symptoms. The patients who died were sent to post mortem to study the severity and extent of damage caused by each poison ingested which will be discussed in a further new study later in order to save precious life's.

**OBSERVATIONS AND RESULTS**

The study was based on 1402 poisoned patients attending the Osmania General Hospital Emergency ward.

**Table 1:** Distribution of poisoning patients according to age and gender

Age group (In Years)	Gender				Total	
	Male	Percentage	Female	Percentage	Total	Percentage
1 – 10	5	0.35%	5	0.35%	10	0.71%
11 - 20	23	1.64%	53	3.78%	76	5.42%
21 - 30	222	15.83%	297	21.18%	519	37.01%
31 - 40	185	13.19%	218	15.54%	403	28.74%
41 - 50	101	7.20%	138	9.84%	239	17.04%
51 - 60	52	3.70%	73	5.20%	125	8.91%
61 - 70	19	1.35%	10	0.71%	29	2.06%
71 - 80	1	0.07	0	0%	1	0.07%
<b>Total</b>	<b>608</b>	<b>43.37%</b>	<b>794</b>	<b>56.63%</b>	<b>1402</b>	<b>100%</b>

Majority of the poisoned patients were females with 56.63% and males were 43.37%. Maximum number of poisoned patients belonged to the age group of 21 to 30 years with 37.01% and the least age group was 71 to 80 years group with only 0.07%.

**Table 2:** Type of poisoning

Type of poisoning	Number of patients	Percentage
Snake bite	39	2.78%
Organophosphorus / Fertilizers	673	48%
Scorpion bites	2	0.14%
Unknown pills	24	1.71%
Hair dye	56	3.99%
Corrosive Substance	109	7.77%
Kerosene Ingestion	28	1.99%
Alcohol Intoxication	50	3.56%
Rodenticide	86	6.13%
House hold cleaning agents	234	16.69%
Overdose	101	7.20%

Majority of the poisoning had been due to organophosphorus with 48% followed by house hold cleaning agents like phenyl, acid with 16.69% and the least type of poisoning was scorpion bites with 0.14%.

**Table 3: Reason for Poisoning**

Reason	Number of patients	Percentage
Intentional / Suicidal	989	70.84%
Accidental	245	17.47%
Overdose	124	8.84%
Criminal	44	3.13%

Major reason for poisoning was Intentional or suicidal with 70.84%, followed by accidental with 17.47%, overdose was the reason in 8.84% and the least reason was criminal with 3.13%.

**Table 4: Condition of patients**

Condition	Number of patients	Percentage
Recovery	979	69.82%
Dead	423	30.17%

Majority of the patients had recovered with 69.82% and 30.17% of the poisoned patients died despite best treatment provided which was mostly due to delay in bringing the patients to the hospital and police clearance.

## DISCUSSION

Poisoning is a big medical concern worldwide. The cause of poisoning was mostly suicidal due to depression, business losses, unable to repay loans, failure in studies, peer pressure, unable to secure jobs or unable to handle pressure as majority of the patients were teenagers and dowry or in-laws harassment was another factor since majority of the poisoned patients were females. The organophosphorus was the most common cause of poisoning since fertilizers are easily available since India is an agricultural country. Many studies with various authors also reported similar findings as fertilizers being major cause of poisoning.<sup>6,7,8,9,10</sup> Few cases were due to improper protection use while spraying fertilizers which were blown with wind ingested through nasal airways and mouth causing chemical exposure poisoning and household cleaning agents also was the leading cause of poisoning in urban city like Hyderabad where it is being accessible easily to the people over the general store counters. Overdose of drugs is also major cause of poisoning found in our study as pharmaceutical drugs are commercially available without prescriptions and medical store owners despite clear instructions not to sell any drugs without doctor's prescription, they indulge in such malpractice as many people in order to avoid fees at doctor's office still take advice of medical stores for drugs for pain, fever, cough, cold etc. which they take at their whims and fancies leading to poisoning and also homeopathy, ayurvedic drugs made from home remedies and sold commonly without any research or trials as people in India tend to believe in such magical cures is also seen as a potential poisoning source with few people turned up for lead and arsenic poisoning due to these drugs, as Cases of arsenic and lead poisoning of improperly formulated

treatments marketed in India have been recorded. Substandard Alcohol was also a common cause of poisoning as poor people buy from distilleries brewing from unhygienic backyards making it unsafe and contaminated. The reason for poisoning found in our study was mostly intentional or suicidal with 70.84% of the cases. Our results of the study are nearly similar to a study by Bhupendra Singh *et al.* which records 69% of the cases as suicides.<sup>11</sup> Accidental poisoning was also commonly found in 17.47% of the cases. Our results are nearly similar to a study by M Shoaib Zaheer *et al.* which has recorded 15.4% of the cases as accidental poisoning.<sup>12</sup> The majority of the patients recovered with proper care and treatment. The patients who died of poisoning even despite best efforts were mostly due to delay in bringing patient to the hospital after consuming poison reducing chances of survival.

## CONCLUSIONS

Knowledge of the sources of poisoning would be useful for treatment and avoidance. Enhanced public and health providers awareness of regional triggers of poisoning and preventive approaches can significantly minimize acute poisoning morbidity and mortality

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Source of Support: None Declared  
Conflict of Interest: None Declared

