

A Clinical Study of Pattern of Intentional Drug Overdose in Emergency Medicine Department of Tertiary Care Hospital

Sumayya Uzma Roohi¹, Shabbir Shekhli², Srinivasa Prabhu N.C.³, Fred John⁴

Author's Affiliation:

¹Posgraduate ²Professor and Head
⁴Posgraduate, Dept of Emergency
Medicine, Kempegowda Institute Of
Medical Sciences (KIMS), Bangalore,
Karnataka 560004, India. ³Senior
Resident, Dept. of Emergency
Medicine, SDM College of Medical
Sciences and Hospital, Dharwad,
Karnataka 580009, India.

Corresponding Author:

Shabbir Shekhli, Senior Resident,
Dept. of Emergency Medicine,
SDM College of Medical Sciences
and Hospital, Dharwad, Karnataka
580009, India.

E-mail: drshabbir9880033401@gamil.com

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Abstract

Introduction: Drug overdose continues to be most common causes of acute poisoning all over the world [1]. Acute drug overdosing cases land up in ICU due to quick metabolic derangements and possibility of organ dysfunction [4]. The pattern and nature of drug overdose vary geographically.

Aims: To determine the clinical pattern of drug overdose, duration of hospital stay and outcome in terms of discharge or death.

Methods: A retrospective review was done of the medical records of 40 adult patients admitted with a diagnosis of acute drug overdose, In a tertiary care Centre excluding patients less than 18 year old and those presenting with only alcohol abuse.

Results: Retrospective study was done in 40 patients. Study shows that, 16 (40%) male patients and 24 (60%) female patients admitted with drug overdose. The individual category of drugs contributing most frequently included Benzodiazepine (22.5%); Antiepileptic (15.0%); Antihypertensive (12.5%); NSAIDs (12.5%); Oral hypoglycaemic agents (10.0%) and Unknown (12.5%). Out of forty patients, 17 (42.5%) required less than 24 hour of ICU observation, 14 (35.5%) required less than 48 hour of ICU observation and 9 (22.5%) required more than 48 hour of observation. The total in hospital duration due to drug overdose was 2 days (5%), 2 to 6 days (87.5%) and more than 6 days (7.5%). Out of forty patients, 38 (95%) patients treated and got discharged and 2 (5%) patients died.

Conclusion: In acute drug poisoning, a high index of clinical suspicion and an early and prompt intensive medical therapy could improve the patient outcome. The pattern of illicit poisoning warrants the development of suitable preventive measures. In particular there is an imminent need to create awareness in the society to identify the circumstances leading to illicit drug use among the youth.

Keywords: Drug Over Dose.

Introduction

Drug related problem is defined as an event or circumstance that involves a patients drug treatment that actually, or potentially, interferes with the achievement of an optional outcome [2,3]. The data of over past has been the witness tom the increasing

trend of drug poisoning cases in the emergency department, accounting to significant numbers especially the prescription drug poisoning.

The pattern of drug consumption varies geographically depending on the culture and class of people and access to it in that place. It seems to be a changing pattern of drugs that are consumed

every time with the newer class of drug introduced into the market.

In United States the major drugs have been the heroine and the opioids, in Saudi it has been the prescription drugs where as in Australia benzodiazepines are the major group [4]. In developing countries like India consumption of household agents are the major cases in the poisoning group followed by drug consumption as per the AIIMS national poisons information Centre, New Delhi [5].

A notable financial burden is caused by acute drug poisoning cases, causing significant morbidity and mortality figures.

Aims

To determine the clinical pattern of drug overdose, duration of hospital stay and outcome in terms of discharge or death

Methods and Material

A retrospective review was done of the medical records of 40 adult patients admitted with a diagnosis of acute drug overdose, In a tertiary care Centre.

Inclusion criteria:

- A history of drug use OR other evidence of drug ingestion.
(E.g. suicide note or empty medication bottles)
- Patient age >18 years

Exclusion criteria

- If the admission was solely related to alcohol abuse or where the patient denied drug use.

Data collected included patient demographics, category of drug involved, number of drugs taken and time of consumption, GCS score, Admission GRBS and electrocardiograph changes, duration of intensive care unit stay, duration of total hospital stay, need for ventilator, need for dialysis and the discharge status of the patient.

SPSS v20.0 was used for static analysis to calculate frequencies and percentage.

Results

Study shows that, 16 (40%) male patients and 24 (60%) female patients admitted with drug overdose. The individual category of drugs contributing most frequently included Benzodiazepine (22.5%); Antiepileptic (15.0%); Antihypertensive (12.5%); NSAIDS (12.5%); Oral hypoglycaemic agents (10.0%) and Unknown (12.5%) [Table 1][Figure 1].

Out of forty patients, 17 (42.5%) required less than 24 hour of ICU observation, 14 (35.5%) required less than 48 hour of ICU observation and 9 (22.5%) required more than 48 hour of observation [Table 2]. The total in hospital duration due to drug overdose was 2 days (5%), 2 to 6 days (87.5%) and more than 6 days (7.5%).

Out of forty patients, 38 (95%) patients treated and got discharged and 2(5%) patients died. [Table 3][Figure 2].

Table 1: Category of drug (Multiple response table)

Number of drugs	Frequency	Percentage
Benzodiazepine	9	22.5%
Antiepileptic	6	15.0%
NSAIDS	5	12.5%
Antihypertensive	5	12.5%
Unknown	5	12.5%
Oral hypoglycaemic agent	4	10.0%
Tricyclic antidepressant	3	7.5%
H2 blocker/PPI	1	2.5%
Anticholinergic	1	2.5%
Oral iron	1	2.5%
Antihistamine	1	2.5%
Thyroid drugs	1	2.5%
Antipsychotic	1	2.5%

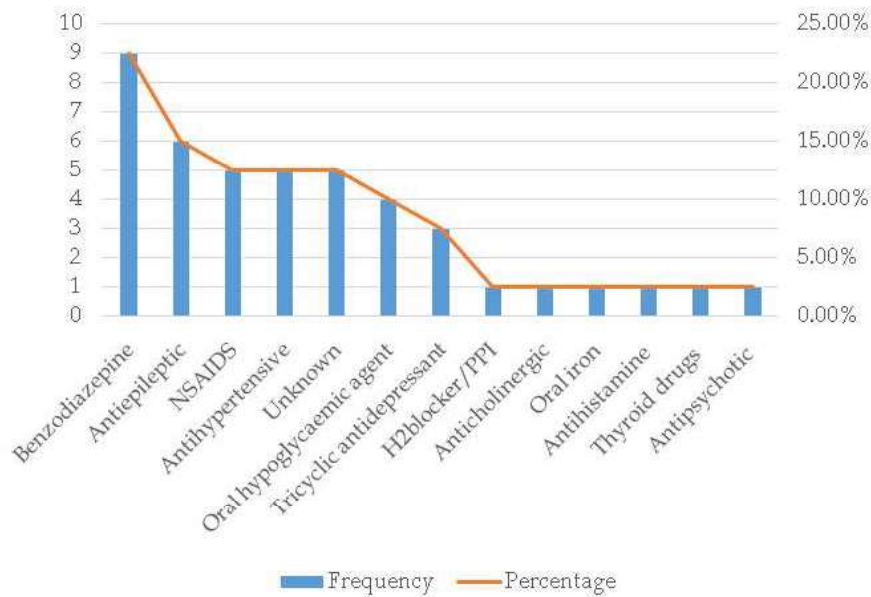


Fig. 1: Category of drug (Multiple response table)

Table 2: ICU Stay

ICU stay	Frequency	Percentage
Less than 24 hours	17	42.5%
24 to 48 hours	14	35.0%
More than 24 hours	9	22.5%
Total	40	100.0%

Table 3: Outcomes

Outcome	Frequency	Percentage
Discharge	38	95.0%
Death	2	5.0%
Total	40	100.0%

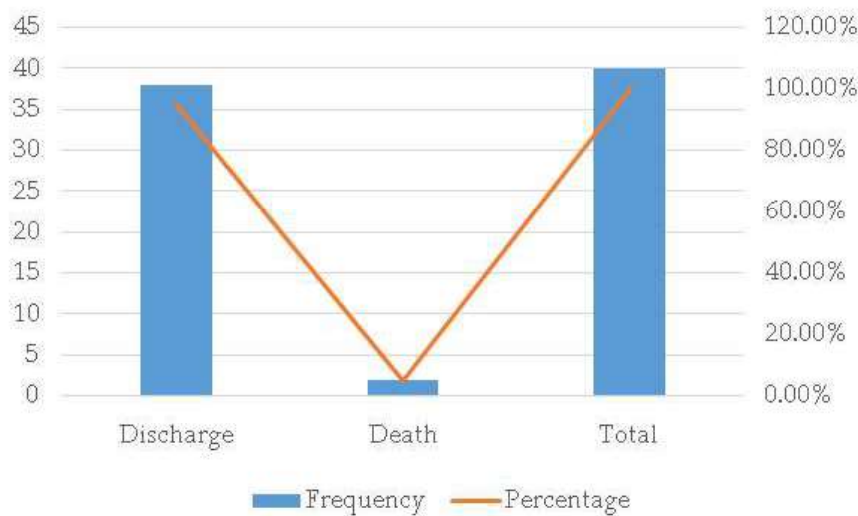


Fig. 2: outcome

Discussion

Suicidal motive is behind the acute drug poisoning except in pediatric cases where accidental consumption is reported due to attractive appearance of many tablets. In our study we found that females were 60%, in study by Leena et al. 47.5% were women and rest 52.5% were men and in study by Hamdan et al. [6] 80% were females whereas study by B. Jaykrishnan [4] showed dominance of male gender with 89.9%. Comparatively women are more emotionally labile than are men and account to majority of cases worldwide.

The age group susceptible in our study was 20 to 40 years comprising 80% of subjects. In a study by Cretikos et al. [7] mean age group 33 years, in a study by B. Jaykrishnan et al. [4] it was 29.38±7.9 years, in a study by Hamdan et al. [6] 15 to 40 years was the major group of study and in study by Emily et al. [12] highest rates among people aged 35–54 year. In almost all studies the patients belonged to 2nd or 3rd decade of life. 66.50% of cases had consumed multiple drugs. In study by Hamdan al Jahdali et al. [6] 80% presented with single drug consumption.

The maximum number of cases in our study were of Benzodiazepines consumption which accounted to 22.5% of total cases. In study by B. Jaykrishnan et al. [4] only benzodiazepines was 6.9% of case whereas in study by M. A. Cretikos [7] et al. showed 39.8% of cases to be benzodiazepines, highest among their study.

Second in the list was antiepileptic accounting to 15.0% followed by NSAIDs (12.5%).

NSAIDs consumption in study by M. Sonal et al. [8] was 12.3%, 6% in study by Hamdan et al. [6] and 1.9% in Bower et al. study.

Other major drugs were antihypertensive medications (12.5%) and OHAs (10%).

Among the 40 cases studied 42.5% of patients stayed in ICU for less than 24 hours whereas 57.5% needed more than 24 hours whereas in study by Hamdan et al. [6] the ICU stay ranged from 1 to 4 days on an average (mean 1.5 days, SD 0.5) while Patients stayed in the ICU for 1 to 20 days (median: 2 days) in a study by B. Jaykrishnan et al. [4].

Morbidity was 5% in our study and 2.4% in a study by Leena Anthony et al. [9], 2% in study by Cretikos et al. [7] and Henderson et al. [10], 1.8% in study by Ramesh et al. [14] whereas there was no mortality in study by Hamdan et al. [6] and B. Jaykrishnan et al. [4].

Conclusion

Acute drug poisoning is an emerging health problem which requires public awareness as it is preventable, may be by orientation programs for public and adequate counselling of patients and relatives during admission. Recognizing the patient, prescriber, drug and problems related to overdose can help modify the therapeutic ranges and safe drug use. The study of one's individual geographical area statistics helps us be alert and provide good acute care to the cases by proper triaging.

Mortality was seen in 5%, In contrast to the overdoses taken by survivors, patients taking fatal overdose are more likely to have taken a large dose of a single drug.

Key message

A high index of clinical suspicion and an early and prompt intensive medical therapy could improve the patient outcome

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