Original Research Article
Drugs and Substances reported in Emergency Department Presentations with Acute Recreational Drug / Substance Toxicity

ABSTRACT (ARIAL, BOLD, 11 FONT, LEFT ALIGNED, CAPS)

Aims: To evaluate the self-reported drugs/substances in the emergency department presentations with acute recreational drug toxicity in a tertiary hospital.
Study design: Cross sectional study.
Place and Duration of Study: Clinical Toxicology Department, Tanta University. Between January 2019 and December 2020.
Methodology: The data regarding the self-reported drug(s) / substance(s) in patients presenting to an Emergency Department in a tertiary hospital were collected and analysed. The prevalence of each recreational drug/substance reported by the patients was calculated.
Results: There were 373 recreational drugs/substances reported by 248 cases. The most frequently self-reported drug(s)/substance(s) were ethanol (reported by 122 cases), followed by cocaine (94 cases), opiates (36 cases), cannabis (30 cases), and amphetamine-like stimulants (29 cases). Other drugs/substances as spice (synthetic cannabinoids), benzodiazepines, pregabalin, methadone, and others were reported by the patients as well. In the remaining 16 of the total 264 cases (6.1%), the recreational drug(s) that had been used were unknown to or not reported by the patients.
Conclusion: In conclusion, this study revealed that in this tertiary hospital ED, the main recreational drugs leading to the ED presentation with acute recreational drug/substance toxicity as reported by the patients were ethanol followed by cocaine, opiates, cannabis and amphetamine-like stimulants. Other drugs/substances as spice (synthetic cannabinoids), benzodiazepines, pregabalin, methadone, and others were reported by the patients as well. In some cases, the used recreational drug many not be known by patients reporting as the patient may be in coma or may does not know the type of drug/substance that he has been using.

Keywords: [Recreational, toxicity, overdose, and emergency].

1. INTRODUCTION

Drug abuse predominantly represents a major problem worldwide that is included in clinical as well as legal aspects [1, 2]. According to the World Drug Report in 2018, about 275 million people worldwide (roughly 5.6% of the global population aged 15–64 years) used illicit drugs at least once in 2016 [3]. In Egypt, the National Survey report in 2013 stated that 9.6% of Egyptians used drugs at least once during their lives [4]. A recent study in 2016 reported that of the Egyptian population above 15 years, 19.3% used drugs at least once during their lives, and 6.7% are regular substance abusers [5].
Acute overdose of illicit drugs is now one of the causes of morbidity and mortality worldwide [6]. According to WHO, about 167,750 deaths in 2015 were directly related to drug use disorders, mainly acute toxicity with overdoses [6]. In addition to classical illicit drugs, many

new classes of drugs and new psychoactive substances (NPS), with widely variable compositions, have recently been added to the list of recreational drugs [7].
In many centres, the management of the management of cases of acute recreational drug toxicity presenting to the Emergency department is based on personal allegation of drug intake and on clinical presentation without the use of toxicological tests to confirm the actual drug(s) involved in the presentation [8]. However, in other centres analytical screening methods are used to confirm the diagnosis. The use of patient self-report may be impacted by clinical factors (e.g., because the patient is intoxicated, confused or unconscious), or because the actual substance(s) used may not be known by the patient [9, 10].
The aim of this study was to analyse the drug(s) or substance(s) that were self-reported in patients presenting to an emergency department with acute recreational drug toxicity.

2. MATERIAL AND METHODS / EXPERIMENTAL DETAILS / METHODOLOGY

2.1 Study design and study population

This study was conducted in a tertiary hospital in Tanta University on patients with acute recreational drug toxicity who came to the Emergency Room [ER]. Those ≥18 years old were included in the study. The data of those patients was collected in a database from which we extracted basic demographics (age, sex) and the recreational drug(s) reported by the patients at the time of presentation. This is a cross sectional study.

2.2 Statistics

The patients' data were recorded in Microsoft Excel®, then statistical analyses were done using IBM® SPSS® Statistics Version 26. Descriptive statistics were used to describe the sociodemographic data (age and sex) and the frequencies of self-reports for each recreational drug were calculated.

2.3 Research ethics

This study was approved after the review by the Research Ethics Committee.

3. RESULTS

In 264 ED presentations with acute recreational drug toxicity, the mean (± SD) age was 32.8 (± 8.6) years old, and 225 (85.2%) of the cases were male. In 16 of the total 264 cases (6.1%), the patients were not able to provide information about what recreational drug(s) they had used. There were 373 recreational drugs/substances reported by the remaining 248 cases involved in the study. The most frequently self-reported drug(s)/substance(s) were ethanol followed by cocaine, opiates, cannabis and amphetamine-like stimulants **(Table 1).**

Table 1. The self-reported drugs/*substances* in the *total* 264 cases.

Drug / substance	Frequency
Ethanol	122
Cocaine	94
Opiates	36
Cannabis / mariguana	30
amphetamines	29
Spice	28
Benzodiazepines	17

Pregabalin	6
Methadone	4
GHB*	2
ketamine	2
mephedrone	1
LSD**	1
Buprenorphine	1
Total	373

** gamma (γ)-hydroxybutyrate,*

*** lysergic acid diethylamide*

The opiates that were reported by the patients in this study were heroin and codeine. The amphetamine type stimulant drugs reported by the cases were crystal methamphetamine and MDMD. The benzodiazepines that were mentioned by the patients were mainly diazepam and alprazolam. The details of opiates, amphetamines and benzodiazepines that were self-reported by the patients in the current study are mentioned in **Table 2**.

Table 2. Details of the self-reported opiates, amphetamine-type stimulants, and benzodiazepines.

Drug	Frequency
Opiates:	36
heroin	33
codeine	3
Amphetamine-type stimulants:	29
Crystal methamphetamine	18
MDMA*	11
Benzodiazepines:	17
diazepam	14
alprazolam	2
clonazepam	1

** 3,4-methylenedioxymetamfetamine*

Figure 1 shows the frequencies of self-reported recreational drugs / substances in the patients included in the current study.

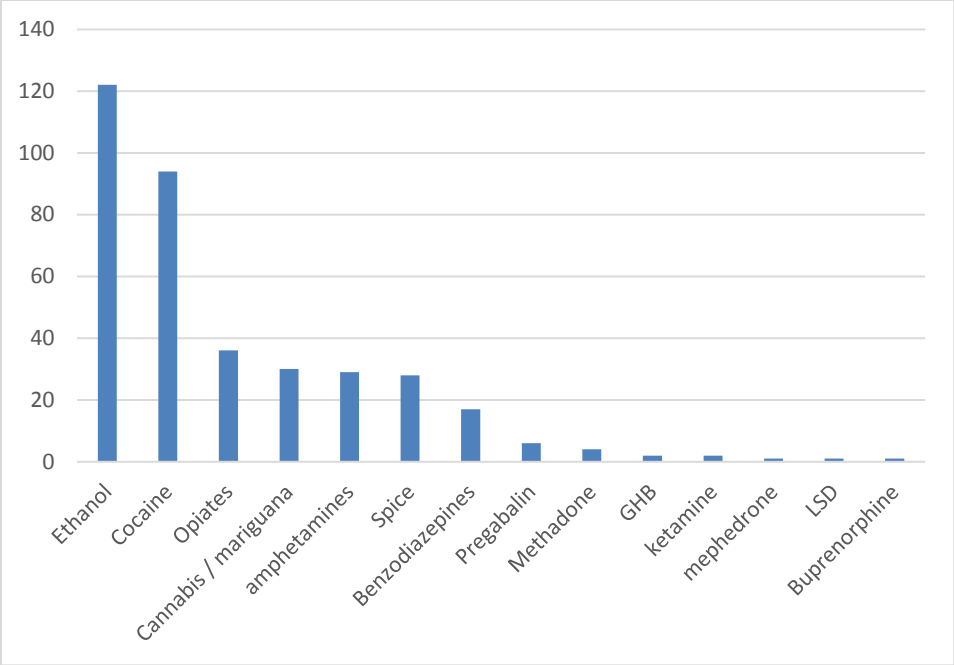

Fig. 1. Frequencies of self-reported drugs.

4. DISCUSSION

Acute toxicity related to recreational drug overdoses is a common cause of ED presentations [11, 12]. The practice is not uniform around the world in the diagnosis and management of patients presenting to the ED with acute recreational drug toxicity. While in some countries analytical methods are undertaken to confirm the diagnosis [13, 14], in others toxicological screening is not routinely performed [8] and the diagnosis is mainly based on the patients' self-reported data.

The aim of our study was to assess the diagnoses of those patients based on the recreational drugs or substances self-reported by the patients.

The population assessed in the current study were adults (≥18 years old) who presented to the ED in a tertiary hospital with acute recreational drug / NPS toxicity. The data about the diagnosis of those patients based on their self-reports about the recreational drugs they have taken were documented and referred to as "self-reported data".

In the current study, 373 recreational drugs/substances were reported by 248 cases, with the most frequently self-reported drug(s)/substance(s) being ethanol followed by cocaine, opiates, cannabis and amphetamine-like stimulants. This comes in some close figures to the findings in previous study by Liakoni et al. in 2018 [8], who investigated a nearly similar population of patients presenting to a tertiary hospital's ED with acute recreational drug/substance toxicity. They investigated self-reports of recreational drug use in 831 patients in whom the most frequently reported drugs of abuse were cocaine or crack followed by cannabis, amphetamine type stimulants and opiates / opioids.

In our study, no self reported data could be obtained in 16 of the total 264 cases (6.1%), the patients, who were not able to provide information about what recreational drug(s) they had used either as the patients were in coma or the substance/drug was unknown to the patient. These figures as well are close to the findings reported by Liakoni et al. where in 63 out of 831 cases (7.6%) no or unknown recreational drugs or substances were reported by the patients [8].

The main limitation of the current study is the relatively small sample size. Larger studies are needed to calculate the prevalence of recreational drug poisoning presenting to the ED. Another limitation is that the diagnoses were based on the patient's self reports in the absence of analytical tests (e.g. Immunoassays, GC-MS or LC-MSMS).

5. CONCLUSION

In conclusion, this study revealed that in this tertiary hospital ED, the main recreational drugs leading to the ED presentation with acute recreational drug/substance toxicity as reported by the patients were ethanol followed by cocaine, opiates, cannabis and amphetamine-like stimulants. Other drugs/substances as spice (synthetic cannabinoids), benzodiazepines, pregabalin, methadone, and others were reported by the patients as well. In some cases, the used recreational drug many not be known by patients reporting as the patient may be in coma or may does not know the type of drug/substance that he has been using.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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