

THE SPECTRUM OF INTOXICATION AMONG ADOLESCENTS

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ABSTRACT

Among adolescents, acute intoxications caused by drugs as well as intoxications caused by toxic substances make up an important chapter of emergency pediatric pathology.

We conducted a retrospective study carried out for a period of 1 year, 2021 –2022, which included a number of 37 patients, admitted in the Pediatric Clinic of the County Clinical Hospital "Sfântul Apostol Andrei" Constanța.

Out of the total of admissions during a 12 months period, 0,5% consisted in acute intoxications in adolescents.

There is a higher tendency for substance intoxication in females (65,5% of total cases).

There is a higher tendency for adolescents with suicide ideation to use substances in order to end their life because of multiple risk factors, mental health disorders putting them at a higher risk to attempt suicide. Alcohol is widely used.

Keywords: acute intoxication, alcohol, admissions, adolescents

Introduction

Among adolescents, acute intoxications caused by drugs as well as intoxications caused by toxic substances make up an important chapter of emergency pediatric pathology because of the diagnostic challenges and also of the vital risk that is emerging from these (1).

Adolescents use substances for a variety of reasons such as: sharing a social experience to be a part of a group, relieving stress, seeking out new experiences, as well as because mental health disorders. Also, they are influenced by parental examples set by their own use of substances.

Acute drug intoxication in adolescents

includes the use of antidepressants, hypnotics, neuroleptics, benzodiazepines, barbiturates, analgesics and others as such as Metoclopramide.

Furthermore, intoxications in adolescents are also caused by the abuse of alcohol. The use of alcohol can be seen in adolescents from the age of 13 years old or even earlier, the reasoning behind this being the facts that adolescents find drinking alcohol fun or to forget about their issues (2, 3).

In most of cases the purpose of using substances among adolescents is suicidal. Adolescents who attempt suicide are usually having a psychical crisis caused by a disbalance between self and the surrounding environment

(3). Suicide is one of the leading causes of death in the age group of 15 to 24 years old, being the second cause of death among these individuals. Signs of suicide attempts can be seen from the age of 10 to 12 years old, the frequency increasing with age. Females are more likely to have suicidal ideation than males, most probably because of the hormonal storm that they experience throughout their adolescence (4).

There are multiple risk factors that predispose adolescents to suicide, a very high amount of them having a preexisting mental disorder, as well as cognitive distortions, social, cultural and environmental factors (5).

Materials and methods

Retrospective study carried out for a period of 1 year, 2021 –2022, which included a number of 37 patients, admitted in the Pediatric Clinic of the County Clinical Hospital “Sfântul Apostol Andrei” Constanța.

Results and discussions

The intoxication frequency among adolescents compared to the total number of admissions

During the period of our study there were 6489 total admitted patients of which 37 of them were acute intoxications among adolescents, which represents 0.5% of the total admissions. (Figure 1.)

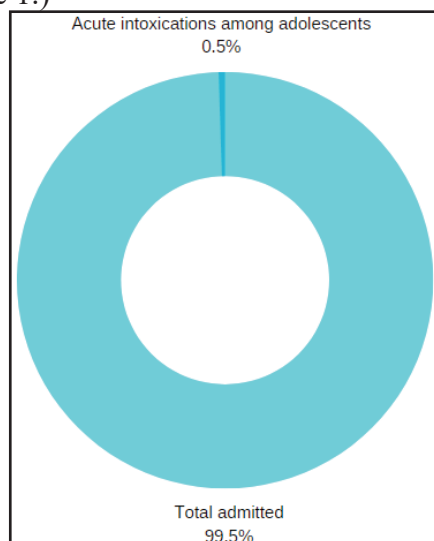


Figure 1: The intoxication frequency among adolescents compared to the total number of admissions.

Looking into the age distributions, we can see that 15 years old patients are the most predisposed to acute intoxications. (10 out of 37 cases, meaning 27%). This age group, combined with the 16 years old age group make up for 18 cases, meaning 50% of total cases. These age groups are the most prone to suicide by substance abuse (Figure 3).

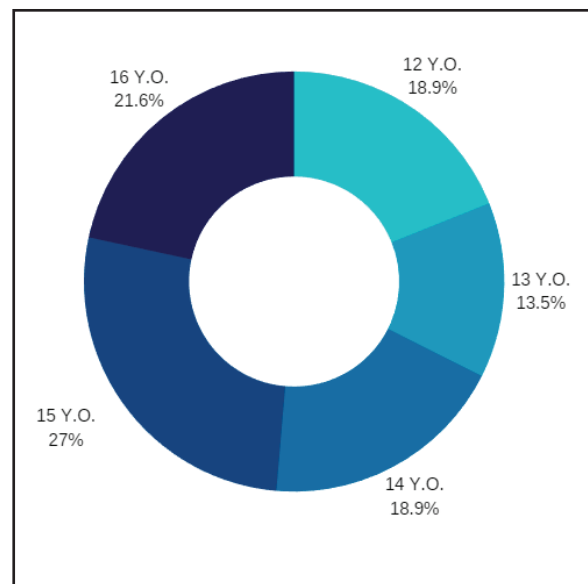


Figure 2: Case distribution by age

Among the patients there were 12 males (32.5%) and 25 females (67.5%). The predominance of the female gender can be explained by the beginning of menstruation and the hormonal storm they are exposed to.

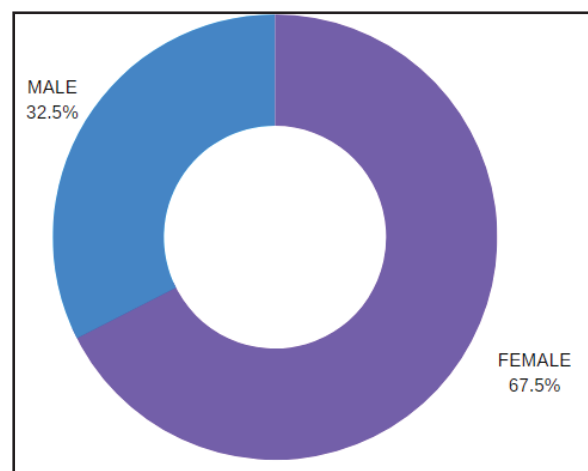


Figure 3: Case distribution by gender

Based on the distribution according to the environment, the most affected are by far adolescents that come from urban environment

(22 cases, 59,5%) rather than rural environment (15 cases, 40.5%). The reasoning behind this matter maybe the fact that medication is more accessible in the urban environment than the rural one

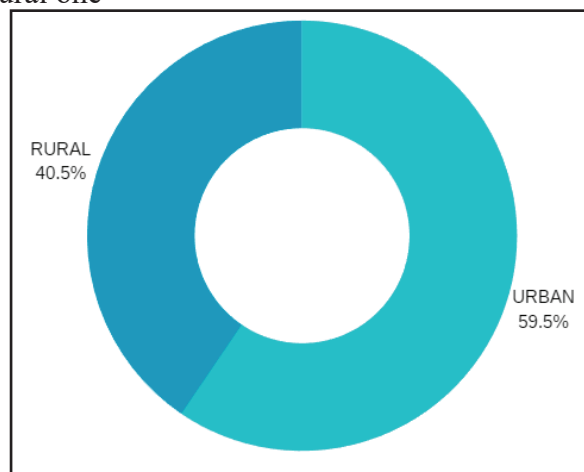


Figure 4: Case distribution by origin

Case distribution by substance

While considering the case distribution by used substance, we can see that the alcohol and drugs combination is the leading cause of intoxications among adolescents summing up 12 cases (32.4%) of the total of 37

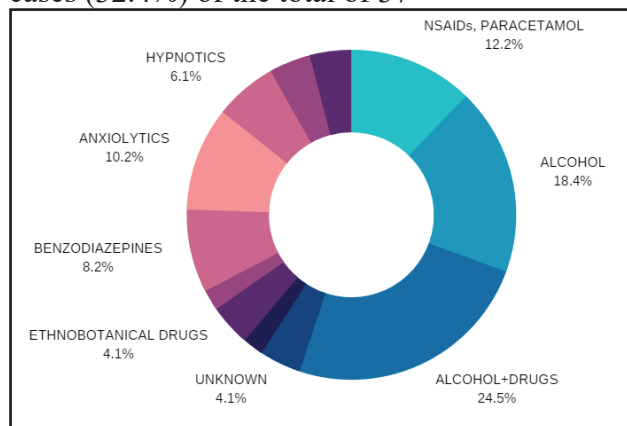


Figure 5: Case distribution by used substance

In the most cases, the use of the alcohol and drugs combination was a suicide attempt, most of the patients being already diagnosed with chronic major depressive disorder.

Other frequent substances used are anxiolytics, benzodiazepines and hypnotics, substances that were in the patient's or closed one's possession.

Furthermore, we can also see that the patients often used common substances such as NSAIDs, Paracetamol, antihypertensive

medication and, the most of all alcohol.

By comparing our data with American Addiction Centers data (6), adolescents admitted in the Pediatric Clinic of the County Clinical Hospital "Sfântul Apostol Andrei" Constanța did not use substances such as cocaine or marijuana. The reason that said patients did not use these substances is most likely the lack of access to them, adolescents in America having access to a higher variety of drugs than youths targeted by our study.

Table 1: Case distribution by suicide attempt history and by gender

NO. OF SUICIDE ATTEMPTS	FIRST ATTEMPT	MULTIPLE ATTEMPTS
TOTAL	25	12
FEMALE	15	10
MALE	10	2

Clinical manifestations caused by substance intoxication, as seen in Figure 6 are mainly emesis and drowsiness (8 cases, 21.6%) followed up my extrapyramidal syndrome as well as a Glasgow Coma Scale of 12-13 suggesting a light coma.

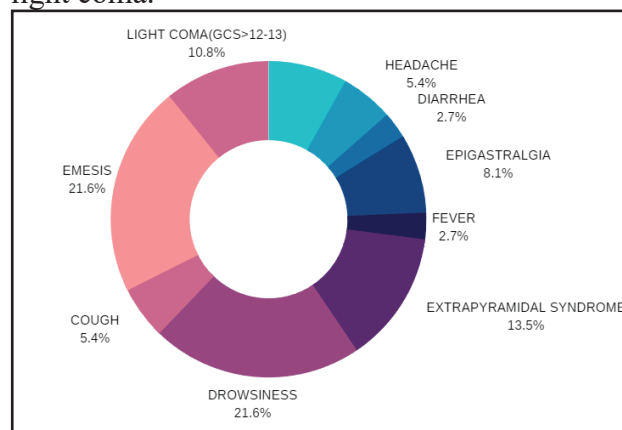


Figure 6: Clinical manifestations caused by substance intoxication

Conclusions

Out of the total of admissions during a 12 months period, 0,5% consisted in acute intoxications in adolescents.

The age of the first admission varied between 12 to 13 years old and 14 to 16 years old.

The 14-16 to years old age group representing suicide attempts.

There is a higher tendency for substance intoxication in females (65,5% of total cases).

By comparing the data from our study to American Addiction Centers data we can see that such as the American adolescents, youths that were admitted in the Pediatric Clinic of the County Clinical Hospital "Sfântul Apostol Andrei" Constanța tend to use multiple substances that caused intoxications, mostly alcohol and a drug.

Alcohol is a highly abused substance by teenagers because of the easy access to it.

On the other hand, by comparing our data with American Addiction Centers data, adolescents admitted in the Pediatric Clinic of the County Clinical Hospital "Sfântul Apostol Andrei" Constanța did not use substances such as cocaine or marijuana. The reason that said patients did not use these substances is most likely the lack of access to them, adolescents in America having access to a higher variety of drugs than youths targeted by our study.

Adolescents from urban environment tend to be at a higher risk of substance abuse, having an easier access to drugs.

Often seen clinical manifestations caused by substance intoxication are emesis and drowsiness (8 cases, 21,6%) followed up by extrapyramidal syndrome as well as a Glasgow Coma Scale of 12-13 suggesting a light coma.

A high number of intoxication cases were suicide attempts. The most frequent reasonings being: familial conflicts, adolescents with divorced parents, school issues, depressive syndromes, mourning and breakups.

There is a higher tendency for adolescents with suicide ideation to use substances in order to end their life because of multiple risk factors, mental health disorders putting them at a higher risk to attempt suicide.

All suicide attempts must be handled by the emergency department.

A multi-disciplinary team including pediatricians, clinical psychologists and psychiatrists is essential for the effective management of substance intoxications among adolescents.

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