



ORIGINAL RESEARCH PAPER

toxicology

DRUG INTOXICATION AT THE CRITICAL CARE AND TOXICOLOGY UNIT OF THE JOSEPH RAVOAHANGY ANDRIANAVALONA TEACHING HOSPITAL, ANTANANARIVO, MADAGASCAR

KEY WORDS: Drug Intoxications – Clinical signs – Prognosis- Madagascar

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ABSTRACT	Introduction: Drug intoxications are a major public health problem in the world. Our study consists in describing the clinical and evolutionary characteristics of drug intoxications.
	Methods: It was a retrospective, cross-sectional and descriptive study of patients admitted to the critical care and toxicology unit of the Joseph Ravoahangy Andrianavalona teaching hospital, Antananarivo, Madagascar, from January to December 2013 for drug intoxications.
	Results: One hundred and thirty-four patients were retained during the study period. A female predominance was noted (52.23%). The average age of the patients was 26.12 ± 13.28 years old. Psychotropic drugs (27.6%) and analgesics (14.9%) were the most incriminated drugs. Intoxication was voluntary in 90% of cases. Neuromuscular disorders (56.71%), cardiovascular disorders (55.22%) and respiratory disorders (35.07%) were the most observed types of disorders. Patients' evolution was favourable in 99.2% of cases.
	Conclusion: Drug intoxication is a frequent reason for admission to our department with a favourable prognosis. Prevention remains the best way to fight against intoxications.

INTRODUCTION:
Drug intoxications are a real scourge in many countries around the world, thus a frequent cause of admission to the emergencies and the recovery department [1].

In France the incidence of drug intoxications has steadily increased for about 30 years, from 1-1.5 intoxications per 1,000 inhabitants in 1970 to 5-6 intoxications per 1,000 inhabitants in 1990 [2]. In the United States, in the State of Utah, there was a five-time increase in the number of toxic deaths from 79 in 1991 to 391 in 2003 [3]. Mortality due to drug intoxications is quite significant. There are more than 2,000 deaths from drug intoxications every year in France [4]. The objectives of this study were to describe the clinical and evolutionary characteristics of drug intoxications seen at the critical care and toxicology unit of the Joseph Ravoahangy Andrianavalona teaching hospital, Antananarivo, Madagascar.

PATIENTS AND METHODS:
This was a retrospective, cross-sectional and descriptive study carried out in the critical care and toxicology unit of the Joseph Ravoahangy Andrianavalona teaching hospital, Antananarivo, Madagascar, over a 12-month period from January to December 2013. All patients admitted for drug intoxication, regardless of age and gender, were included in the study. All patients whose records were incomplete and/or inoperative were excluded from the study. Results are expressed in number and percentage.

RESULTS:
One hundred and thirty-four patients were retained during the study period. The average age of patients was 26.12±/13.28 years old with a female predominance (52.23%). The majority of patients had no particular history (91.04%). Table I shows the distribution of patients according to the presence of antecedents.

Table I: Patient distribution according to antecedents

Antecedents	Effective (n=134)	Percentage (%)
No antecedent	122	91.04
HBP*	05	3.73
Epilepsy	2	1.49
Diabetes	1	0.74
Asthma	1	0.74
Neurocisticercosis	1	0.74
Heart failer	1	0.74
Psychiatric antecedent	1	0.74
Total	134	100

HBP*: high Blood Pressure
Psychotropic drugs (27.6%) and analgesics (14.9%) were the most incriminated drugs.

An intake of multiple medications was noted in 42.5% of cases. The intoxication was voluntary in 90% of the cases. The Table II shows the distribution of drug intoxications according to the drugs used.

Table II: Distribution of drug poisoning according to the drug used

Types of drugs	Effective(n=134)	Percentage (%)
Psychotropic	37	27.6
Antalgesic	20	14.9
Cardiotoxic	11	8.2
Antibiotic	5	3.7
Antihypertensive	3	2.2
Antimalarial	2	1.5
Anti-inflammatory	1	0.7
Progestin	1	0.7
Anticholinergic	1	0.7
Bronchodilator	1	0.7
Anti-giddiness	1	0.7
Multiple drug	51	38.1
Total	134	100

Neuromuscular disorders (56.71%), cardiovascular disorders (55.22%) and respiratory disorders (35.07%) were the most observed types of disorders. The Table III shows the distribution of patients according to the types of disorders presented by the patients. All patients were given gastric lavage regardless of the time they arrived at the hospital. Patients' evolution was favourable in 99.2% of cases. One patient, i.e. 0.74%, died as a result of bronchial congestion.

Table III: Distribution of patients according to the types of disorders presented by the patients

Types of disorders	Effective (n=134)	Percentage(%)
Neuromuscular disorders	76	56.71
Cardiovascular disorders	74	55.22
Respiratory disorders	47	35.07
Hemodynamic disorders	46	34.32
Digestive disorders	29	21.64

One patient can have 2 types of disorders

DISCUSSION:

In our context, young people are the most affected by drug intoxications. This result confirms the African data concerning acute drug intoxications. Guindo T *et al* [5] reported in a retrospective study at Point "G" hospital that in 71.2% of cases the age was between 21 and 40 years old. At the psychiatric hospital in Tunis, the average age of suicide attempts by drug intoxications was 25 years old [6]. In Europe, however, the elderly, victims of social exclusion are more exposed to the risk of suicidal intoxications [7].

In terms of gender, a slight female predominance was observed in our series. In Morocco, according to Badrane Narjis *et al* [8], female young adults and adolescents are the most affected by voluntary intoxications, most often suicidal. The factors of toxic suicide risk are the socio-economic and psychic factors. The use of the drug in suicide is common because the drug is easy to obtain and consume [9]. Contrarily, Baud FJ and his teams [10] counted 73 male cases out of 130 cases of drug intoxications.

Psychotropic drugs (27.6%) and analgesics (14.9%) were the most incriminated drugs in our study. The type of medicines varies from one country to another one. Numerous studies conducted in France have shown a predominance of psychotropic drugs in voluntary drug intoxications [7, 11-13]. According to Staikowsky *et al* [13] in 2001 and 2002, 55% of voluntary intoxications in France were caused by benzodiazepines. Paracetamol would be the drug the most frequently found in acute intoxications in Great Britain [14]. In Mali, the study by Maiga *et al* [15] found a predominance of antimalarial drugs, particularly chloroquine (50.9%).

In terms of clinical signs, neuromuscular disorders (56.71%), cardiovascular disorders (55.22%) and respiratory disorders (35.07%) were the most observed types of disorders in our

series. Symptoms vary depending on the type and amount of medicines consumed. The most frequent neurological manifestations gather all levels of impairment of consciousness up to coma. In France, neuroleptic intoxications seem to remain stable, however the percentage varies between 4.7% and 8.4% [16]. Respiratory complications due to the alteration of consciousness ((central respiratory depression, mechanical upper airway obstruction, inhalation pneumopathy) are frequent during drug intoxications and may alter the prognosis of a priori benign intoxications or extend the stay in intensive care [17-18].

In our study, the evolution of drug intoxications was favourable in 99.2 % of cases. Guindo T *et al* [5] counted two deaths out of 104 cases of intoxications, i.e. 1.9%. According to Maiga [15], the mortality of drug intoxication would be linked to several factors which are the nature and the quantity ingested the reason for intoxication, the prior state of health of the intoxicated, the particular sensitivity of each person, the combination of several toxins and the time taken to take care.

CONCLUSION:

Drug intoxication is a frequent reason for admission to the critical care and toxicology unit of the Joseph Ravoahangy Andrianavalona teaching hospital, Antananarivo, Madagascar. Young, female subjects are the most affected. Psychotropic drugs and analgesics are the most incriminated drugs. The evolution is favourable in the majority of the cases. Prevention remains the best way to fight against drug intoxication.

Conflicts of interest

The authors declare no conflict of interest

Funding statements

This study was not funded

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