



INTOXICATIONS WITH PLANTS IN CHILDREN EXPERIENCE OF THE PEDIATRIC MEDICAL EMERGENCY DEPARTMENT OF RABAT

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ABSTRACT

Plants are the cause of many serious poisoning among newborn, they are usually either accidental or secondary to a therapeutic use. This is a retrospective study of poisoning cases, of both plants among children having been admitted to the pediatric medical emergencies (UMP) of the hospital of children of Rabat (HER), between June 2010 and May 2012. the objective of our study is to describe the clinical, the analytical and the therapeutic, socio-demographic characteristics of this type of poisoning. 13 cases of plant poisoning were collected in the service of which 61.5% were male. The age extremes were between 11 months and 14 years with an average age of 6 years and a half. The plants found were: castor beans -*Ricinus communis*- (3cases), Cade oil (2 cases), Ourioura (1 case), Madragore, peganum harmala, guernina, takaout, *Carpobrotus*, mushrooms (1 case each), The plant was not recognized in 1 case. Digestive symptoms type of vomiting and diarrhea were found in 38.4% of cases, followed by neurological and neuropsychic manifestations of essentially delirium, hallucinations, atropinic syndrome in 30% of cases. Followed by neurological and neuropsychic manifestations type of essentially delirium, hallucinations, atropinic syndrome in 30% of cases. 15.4% of the cases required a stay in intensive care; all were intoxicated by castor beans. All poisoned patients were reported to the Rabat Poison Control Center and benefited from 24-hour clinical and biological monitoring. Prognosis was good in 84.6%.

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INTRODUCTION

The use of medicinal plants is growing in most countries of the world, this use is mainly based on the idea that plants are a natural means of treatment devoid of any risk. While a plant can both be useful and toxic.

In Morocco, plants were responsible of 5.1% of intoxications reported in the period between 1980 and 2008. The toxicity of plants often causes morbidity and mortality [1]. Illiteracy, limited incomes of the Moroccan population, adverse drug-related effects and generally socio-cultural factors have increased demand for plant treatment.

MATERIAL AND METHODS

This is a descriptive retrospective study carried out at the Pediatric Medical Emergency Department of the Rabat Children's Hospital Over a period of 2 years from 1 June 2010 to 30 May 2012. Included were children under the age of 16 who consulted UMPs, whose diagnosis of medicinal plant

poisoning had been retained on the basis of parents' testimonies.

RESULTS

Thirteen cases of plant poisoning were collected in the service of which 61.5% were male. The age extremes were between 11 months and 14 years with an average age of 6 years and a half. The plants found were: castor beans -*Ricinus communis*- (3cases), Cade oil (2 cases), Ourioura (1 case), Madragore, peganum harmala, guernina, takaout, *Carpobrotus*, mushrooms (1 case each), The plant was not recognized in 1 case.

All our patients were symptomatic at admission, digestive manifestations were found in 5 cases (38.4%), Followed by neurological and neuropsychological manifestations in essentially delirium, hallucinations, atropinic syndrome in 30% (4 cases).

Ten percent (10%) of the patients presented respiratory manifestations, of which polypnea was the major sign. The cardiovascular signs were found in 6.6% of the cases whose tachycardia constituted 50%

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Castor seeds

Oil of cade

Madragore

Madragore

Peganum harmala

Peganum harmala

Guernina

Takaout

Carpobrotus

Digestive signs	Number of cases	Percentage
vomiting	5	100%
diarrhea	3	60%
Abdominal pain	4	80%
Neurological and neuropsychological signs	Number of cases	Percentage
Convulsion	1	25%
cephalalgia	1	25%
hypotonia	2	50%
Delusion /hallucinations	2	50%
Atropinic syndrome	1	25%

Fifteen percent (15%) of the cases required a stay in intensive care, all were intoxicated by castor seeds. The use of intubation and artificial ventilation (IVA) was necessary in two of our patients. The administration of inotropic and / or vasoactive drugs (Dobutamine, Adrenaline) was necessary in these two patients.

All the poisoned patients had been declared at the anti-poison center in Rabat and benefited from a clinical and biological monitoring of 24 hours.

All patients received symptomatic treatment with venous pathway and cardiovascular monitoring. Various therapeutic classes were used, dominated by antibiotics, antipyretics, antiemetics and vitamin K.

The prognosis was good in 85%. The overall mortality was 2 deaths poisoned by the castor seeds or 15% of the cases.

DISCUSSION

A plant is considered toxic when it contains one or more substances harmful to humans and when its use causes more or less serious or even fatal disorders. These poisonings of plant origin in children are mainly of parental origin for therapeutic purposes. According to World Health Organization WHO, in some developing countries in Asia,

Africa and Latin America, 80% of the population depends on traditional medicine, especially in rural areas, because of the proximity and accessibility of this type of care at affordable cost and especially because of the lack of access to modern medicine [3-4].

In France, the frequency of poisoning by plants represents 5.1%, the assessment of the Poison Control Center in Lille in 2003 reported 3% of poisoning by plants in children. The plants are responsible for 5% of the poisonings reported to the anti-poison center CAP of Strasbourg [5]. In Belgium this type of poisoning accounts for about 5% of all poisonings, in Italy 6.5% and in Turkey 6% [6-7].

Phytotherapy is frequently practiced by the Moroccan population. A retrospective study covering all cases of plant poisoning reported to the CAPM over a period of 29 years, from 1 January 1980 to 31 December 2008, Collected 4287 cases of poisoning by plants, accounting for 5.1% of all poisoning cases [2].

Poisoning by plants and products of the traditional pharmacopoeia accounted for 16.3% of all poisonings in children under 15 years of age at the University hospital CHU in Fes from January 2012 to June 2014 [8].

The first three plant sources of plant poisoning in our country are *Atractylis gummifera* (10.1%), *Cannabis* (*Cannabis sativa*) (4.6%) and *Harmel* (*Peganum harmala*) (3, 6%) [9]. an ethnobotanical survey of medicinal plants carried out in the region of Fez revealed that only 12% of patients report that they have knowledge of toxic plants [10]. In our study, the most frequently incriminated plants are castor seeds and cade oil.

Nationally, the predominance is male according to the study on acute poisoning in children and reported to the center poison and pharmacovigilance in Morocco from 1980 to 2009 with a sex ratio of 1.19 [11]. Another study on acute poisoning in children in the department of pediatric medical

emergencies at the children's hospital in Rabat in 2009 this predominance is also clear with 64% of cases [12]. Which is consistent with our study which found a male predominance at 61, 5%

These poisonings mainly concern the young child (79% of children under 3 years) with an autumn resurgence [13]. In our series, no specific age range was selected, with an autumn-winter recrudescence of cases of poisoning.

In the literature, it is often benign poisoning due to either the small amount ingested or to a minor toxicity of the plant consumed. 15.4% of our patients stayed in resuscitation for neurological toxicity with 2 cases of death. The toxicity of plants is mainly digestive (oral irritation, vomiting, diarrhea), cardiovascular (heart rhythm disorders), neurological (convulsion, consciousness disorder), neuropsychic (hallucinations) [14].

Digestive signs are frequent and allow us to orient ourselves towards cytise, castor and symphorine. Peripheral nervous disorders must remind us of *Aconitum plicatum*. Central nervous disorders (alteration of consciousness or convulsions) associated with nausea or vomiting evokes the *Conium maculatum* (Muscle paralysis with lethargy). The existence of cardiac disorders evokes the *Digitalis*, *Nerium oleander* (bradycardia) as well as *Taxus baccata* (ventricular arrhythmia) [14].

Digestive symptoms may be minor, fleeting or absent. This is generally a good prognosis because the ingested dose may be low, but there are particular cases of atropinic or anticholinergic syndrome, which include dry mouth, mydriasis, tachycardia, hyperthermia, Sometimes accompanied by neurological disorders (atropinic delirium of belladonna). This symptomatology should be directed towards toxic parasympatholytic plants such as belladonna, *Hyoscyamus*, *datura* [14]. The atropinic syndrome was found in only one case.

Skin or mucous manifestations occur through contact with vesicant plants (*Renonculaceae*), Causing erythema, vesicles. Others are irritating (euphorbia latex or calcium oxalate from *Araceae* such as *arum* or *dieffenbachia*). There are also photosensitizing plants (*Heracleum sphondylium*, Parsnip, *Ferula communis*, *Hypericum perforatum*) Which in some cases can cause phlyctenes that are akin to second-degree burns. We do not describe any case of cutaneous manifestations [8-14].

It is advisable to call the center poison and pharmacovigilance of Morocco. The specialist doctor will assess the situation, taking into account the toxicant involved, the symptoms already present or to be feared [8-14].

The difficulty lies in the identification of the plant. Indeed, an approximate telephone description can, without exception, allow an accurate identification of the plant. It is therefore advisable, in case of ingestion of an unknown plant, to have the plant identified by a florist, horticulturist or botanist. The second difficulty is the assessment of the quantity likely to have been ingested. Only a precise questioning of the circumstances makes it possible to make an approximate estimate of the quantity.

Finally, knowledge of the delay between the assumed ingestion and the telephone call or medical consultation is

also an important factor to be taken into account. Indeed, the absence of symptoms 4 hours after a supposed ingestion of toxic berries can cause to doubt the reality of the ingestion. Conversely, the occurrence of digestive disorders in the course of an ingestion of plants signs a potential intoxication and must therefore advocate, according to the toxicity of the plant in question, hospital supervision. All of these elements allow, with the help of a poison control center, to propose a course of action.

Digestive evacuation can be recommended if a large amount of a very toxic plant is swallowed. The administration of activated charcoal may be proposed if a large quantity of a toxic or very toxic plant is swallowed. Indications for gastric lavage and / or administration of activated charcoal should be discussed on a case-by-case basis according to time, plant toxicity and clinical signs. In the majority of cases, simple clinical monitoring is required; Depending on the toxicity of the plant, cardiac monitoring or biological monitoring may be necessary [8-14].

"Treat the patient before treating the poison," Goldfrank said. Symptomatic treatment remains the most determinant for the vast majority of poisonings [15].

Administration of activated charcoal may be proposed. It is intended to reduce intestinal absorption and accelerate the elimination of toxic carbo-absorbables. In Morocco, during 2008, The CAPM has supplied activated charcoal to major public and private health institutions [8-14].

In our series, only symptomatic treatment was appropriate and no patient benefited from activated charcoal, this could be explained by the delay in taking care of the delay between poisoning and admission or by Ignorance of its availability.

CONCLUSION

Plants are implicated in 5.1% of reported poisonings at anti poison center in Morocco, They are often the cause of significant morbidity and mortality, so it is important to stimulate vigilance and awareness among the public and health professionals about poisoning of plants. This requires being able to identify and recognize the main toxic plants, to manage and evaluate the level of risk and to ensure the rapid and adequate management of this health problem.

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