Acute Intoxication in Children Data of General Pediatrics for Years 2015

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Citation

Abstract
Acute intoxication in children is still an important public health problem and present a frequent cause of hospitalization in General Pediatrics. In this study we have presented the frequencies, etiology of acute intoxication in children and to determine the extent and characteristics of problem, according to which related preventive measures can be taken. This is a study retrospective, that are analyzed the epidemiology of accidental and attempted suicidal intoxication in children hospitalization in General Pediatrics during the year 2015. We have found that during the year 2015, in General Pediatrics are hospitalization 150 children due to acute intoxication. 70 children or 46.6% were boys, 80 children were girls or 53.3%. Rate boy girls were 1:1.24. The majority of cases 70 or 46.6% were 2-5 years old, 5-8 years have 9 cases or 6%, under 2 years were 46 cases or 30.6%, over 8 years were 25 cases or 16.6%. The majority of cases were accidentally, 125 children or 83.3%, 25 cases or 16.6% were with suicidal attempt, older than 8 years old. Drugs were the most common agent causing the acute intoxication, 86 cases or 57.3%, followed by organophosphates 24 cases or 16%, house cleaning products 15 cases or 10%, pesticides 9 cases or 6%, carburant 8 cases or 5.33%, alcohol 7 cases or 4.66%. The highest peak of intoxication has been noticed in summer with 42 cases or 28%. Winter was lower incidence with 27 cases or 28%. In conclusion, drugs and organophosphates are the most frequent agent causing acute intoxication in children. Drugs intoxication was potentially more risky. All preventive measures should be taken by design preventive strategies of education especially in maintenance and storage of drugs and care of communication’s way between parents and children before adolescence and during adolescence.

1. Introduction

Acute Intoxication in children is still an important public health problem and presents a large number of cases in emergency units. The incidence of childhood poisoning in various studies ranges from 0.33% to 7.6% [1] [2]. The majority of intoxication are accidental, especially in the under 5 age group, [3] [10], although intentional overdoses, and substances abuse are seen in older children.

The pattern of incidence and the risk factors for Acute Intoxication change with time and differ from country to country [4] [5] [6]. The most important difference between pediatric and adult poisonings is types of agents. In adults, higher percentages of poisoning cases are due to psychopharmacologic drugs (sedatives, tranquilizers and antidepressants), whereas in children, there is a much higher frequency of exposure to household items and personal care products and plants [7]. The majority of poisoning exposures in children under six years old can be managed without direct medical
interventions, either because the involved product is not toxic or the quantity of the involved material is not sufficient to produce clinically relevant toxic effects. However, a number of substances are potentially highly toxic to toddlers even in small doses [8].

The mortality rate due to intoxication is 3-5%. [1] [2] [9]. The purpose of this study was to describe the frequencies, etiology of Acute Intoxication in children who were admitted to General Pediatric, at the University Hospital Center “Mother Teresa”, Tirana, Albania, and to determine the extend and characteristics of problem, according to which related preventive measures can be taken.

2. Subjects and Methods

This is a study retrospective. Study describes the epidemiology of a pediatric population with accidental and suicidal attempt Acute Intoxication admitted to the General Pediatrics during the year 2015, at University Hospital Center “Mother Teresa”, Tirana, Albania.

All the pediatric patients were under the 14 years old.

The age and sex of the patients, duration between ingestion of poison and admission to hospital, manner of intoxication, poison agents, type of substance ingested, duration of hospitalization are evaluated.

2.1. Findings

During the year 2015, in General Pediatric are hospitalization 150 children due to Acute Intoxication.

2.2. Age and Sex

The patients consistent of 70 boys (46.6%), 80 girls (53.3). The mean age was 4.5. Rate boys: girls were 1:1.24. The majority of cases were accidentally, 125 children or 83.3%, 25 cases or 16.6% were with suicidal attempt, older than 8 years old.

Figure 1. Distribution of the sample based on the age of children at the time of intoxication.

3. Route of Intoxication and Monthly Distribution

The most common route of intoxication was the ingestion of poison in 144 children (90.3%) and 6 cases or (9.7%) was intoxicated by respiratory route.

The highest peak of intoxication has been noticed in summer with 42 cases or 28%.

Winter was lower incidence with 27 cases or 28%.
3.1. Time of Appearance at the Hospital Emergency

All of cases referred to emergency unit 64.3% arrived within the first two hours, and 35.7% arrived after the six hours following poisoning. Parents of only 115 children were aware that their children were intoxicated because they had been presented of event, while 35 children (23.4%) parents did not be presented.

Gastrointestinal symptoms (vomiting, nausea or abdominal pain) were the most complain of cases at presentation to hospital. 86 cases or 57.3%, followed by unconsciousness 16 cases or 10.6%.

The initial priority in treating intoxicated children is standard ABC (airway, breathing and circulation) resuscitation approach.

A: Assess airway potency by looking, listening and felling for air movement. Certain ingested agents may predispose to airway oedema and obstruction, including caustic agents, angiotensin-converting enzyme and plants containing calcium oxalate crystals.

B: Assess the adequacy of breathing by observing ventilatory frequency, use of accessory muscles, breath sounds, and oxygen saturations. It is important to remember that succinylcholine may cause prolonged block in children who have a reduced cholinesterase concentration due to exposure to cocaine or organophosphate compounds: prolonged apnoeas of up to 7 hours have been described [4]

C: Asses the circulation in terms of cardiovascular status (heart rate, arterial pressure and capillary refill) and the effect of circulatory inadequacy on other organs (mental state, urine output, skin temperature and colour).

D: Asses neurological function in terms of:
   a. level of consciousness using the Alert-Voice-Pain-Unconscious score or the Glasgow coma scale;
   b. pupillary size and reaction;
   c. posture and the presence of any seizure activity;
   d. bedside blood glucose concentration;
   E: Record the child's core temperature

A fever suggests poisoning with cocaine, sympathomimetics, salicylates, anticholinergics, and dissociative drugs such as ketamine. The appropriate antidote must be administered expediently. Children with hyperthermia must be treated aggressively to avoid serious complications; they should be cooled to a core temperature of < 39°C with continuous temperature monitoring. There is no role for antipyretic medication, but external and internal cooling measures should be considered. Excessive heat production due to agitation or muscle rigidity can be controlled with benzodiazepines or dantrolene, or paralysis and mechanical ventilation. Toxin-induced hyperthermia is usually mild unless environmental exposure has also occurred. It is associated with poisonings by hypoglycaemic agents, opioids, ethanol, and phenothiazines.

3.2. Agents Involved

Drugs were the most common agent causing intoxication, 86 case or 57.3% followed by organophosphates 24 cases or 16%, house cleaning products 15 cases or 10%, pesticides 9 cases or 6%, carburant 8 cases or 5.33%, alcohol 7 cases or 4.66%.

3.3. Treatment and Duration of Hospital Stay

In most of cases, treatment was no specific, including general decontamination and supportive/symptomatic therapy. Gastric lavage is usually reserved for children who present within one hour of ingesting a potentially life-threatening poison. Gastric lavage is usually reserved for children who present within 1 h of ingesting a potentially life-threatening poison. It is often difficult to remove the toxic agent from the gastro-intestinal tract because of the small size of lavage tube needed in paediatric patients, and the child will often need to be intubated to facilitate this technique. It is contraindicated in poisonings by most hydrocarbons, acids, and alkalis. The administration of ipecac syrup to induce vomiting has no role in the gastro-intestinal decontamination of acutely poisoned patients. Antidotes were administered to 20 children 13.3% of patients (N-acetylcysteine).125 children or 83.3% were discharged from hospital within 48 hours. Only 25 children or 17.3% stayed in hospital more than 72 hours. Fortunately none of our patients died as a result of intoxication.

4. Discussion

Acute intoxication is one of the important cause of emergency unit admission. There are many studies in the literature concerning acute intoxication and they are all interest because they come from different countries with different cultures, manners, socio-economic status and information programs for accident prevention [5][11]. The results of this study reflected the epidemiology of childhood poisonings and temporal variations over time. These findings suggested that intoxications are still an important problem in Albania. In this study the male: female ratio was 1:1.24. Female predominance was present after 8 years old. In our studies, most of Acute Intoxications were due to accidental exposure to toxic factors, mainly via oral intake in the home.
The ingestions substances were mainly drugs and domestic chemical products, which are often found in the home in places that are easily accessible to children [11] [12]. Medications are the most common agent in children [1] [2] [3] [9] [13].

In this study 86 cases or 57.3% of all acute intoxication were due to drugs.

This study retrospectively searched The General Pediatric admissions during a year and found the most admission were in summer. Most (64.3%) of cases are presented to hospital within six hours following intoxication.

Acute intoxication in children might be accidental or as suicide attempts. Suicide is not a problem in developing countries but more in developed countries. In the USA, suicide is the third most common cause of death in adolescents. [12]

The present study showed that 83.3% of all acute intoxication were accidental and only 16.6% occurred as suicide attempt.

Supportive-symptomatic therapy was applied to most of patients. Gastric lavage should mot be employed routinely [15]. It should be considered only within the first 60 minutes of ingested. The mortality rate due to acute intoxication ranges from 7.6% to 0.4% in literature [1] [2] [9].

In this study have not any children died. This relativity good prognosis might be attributed to the fact that the most of our cases visited emergency unit within 2 to 6 hours following intoxication. Those children who had suicidal attempt were subject to a systematic psychological follow-up along with their families with the aim of avoiding a subsequent attempt.

5. Conclusion

Drugs and organophosphates are the most frequent agent causing acute intoxication in children. Drugs intoxication was potentially more risky. All preventive measures should be taken by design. Preventive strategies of education especially in keeping toxic substances out of their reach and targeting parents and their families with continuous education preventive programs and care of communications way between parent and children before adolescence and during adolescence. These are some of the preventive measures:

a. removing the intoxicated agent from the environment,
b. replacing the poisoning agent with one of lower toxicity,
c. legislation of child-resistant packaging of necessary poisonous agents (e.g. medicines, household chemicals and other toxins),
d. reducing toxicity of poisoning agents by packaging in non-lethal concentrations or doses.

References