

Clinical Profile of Acute Accidental Ingestions in pediatric populations

Aseel Ahmed Husain, M.D, B.Sc,* Duaa Abdulmuneim Alkhudur, MBBS** Raafat Hammad Scroor Jadah, MB, BCH, BAO (NUI), LRCP&SI***

BACKGROUND

Objective: To assess the prevalence of accidental ingestion of material registered in Bahrain Defense Force (BDF) hospital, and to reveal the predominance of the substance being ingested whether it is a drug or non-drug products. This research also aims to identify the most ingested materials.

Method: This is a descriptive retrospective cohort study that evaluates the prevalence of accidental ingestions in children admitted to the BDF hospital. Data was analyzed using Statistical Package for Social Sciences (SPSS).

Results: A sample population of 88 patients was taken. All patients were between the age of 0-14 years. 50% of our patient were males and 50% were females. The most ingested materials were drug products with antihypertensives (20.9%) being the most ingested medication. While the most commonly ingested non-drug product is pesticides (28.6%).

Conclusion: Our data that we collected showed that accidental ingestion of drug products was more common than non-drug products. Our data showed no gender difference. The average age involved was 2 years at the time of the admission. Even though our sample size was small, this study highlights the common ingested materials and average age of ingestion in peditrics population.

INTRODUCTION

Acute accidental poisoning in pediatric patients is considered a major cause for admission to the hospital with a mortality rate reaching 5%¹. The average age at the time of acute accidental poisoning was 2 years as concluded in our study. As per Sabiha Sahinthe majority of acute poisoning in children occurred between 1-5 years of age¹. Most of the materials accidentally ingested, according to Jung Lee Et AL, were drug products².

The aim of our study is to provide descriptive analysis regarding the most frequently ingested product in pediatric patients and the main age involved in acute poisonings in children.

METHODOLOGY

This is a descriptive study. The data was obtained from BDF hospital admission records. The sample size included 88 cases, all of which were presented to BDF hospital during our time frame. The sample was divided into subgroups based on the material ingested. All pediatric cases admitted with accidental ingestions of drugs and non-drugs, between June 2019 and June 2020 were included in our study. The data was analyzed using SPSS (Statistical Package for the Social Sciences) program version 20.0.

RESULTS

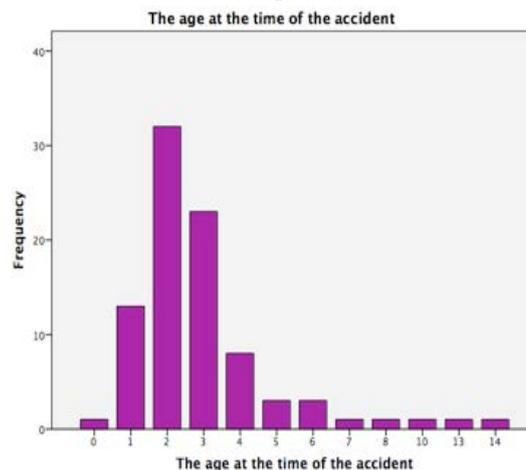
This study was conducted in Bahrain Defense Force hospital. Pediatric patients between the age of 0 days and 14 years were admitted to the pediatric ward between June 2019 to June 2020. The cases were accessed via the hospital medical records. Patients with suicidal intentions and global developmental delay have been excluded from the study. A total of 88 cases were included in our study. The male to

female ratio was equal; 44 cases (50%) were male and 44 cases (50%) were females (Table 1).

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	44	50.0	50.0	50.0
Female	44	50.0	50.0	100.0
Total	88	100.0	100.0	

Table 1: Illustrating male to female ratio

In our research, we included all the children aged between zero and 14 years with accidental ingestions. The median age is 2 years which accounts for 32 cases (36.4%) (Graph 1).



Graph 1: Showing the age of the patient at the time of the accidental ingestions

* Medical intern, E-mail: aseelahmedhussain@gmail.com

** Medical intern

*** Consultant Pediatric neurologist

Bahrain Defense Force Hospital, Kingdom of Bahrain

The most ingested substance in the data that we collected was found to be drug products. The accidental drug ingestions constituted 67 patients (76.1%) of all the cases and 21 patients had non-drug ingestion ingestions which constituted 23.9% (Figure 1). Our study showed that the most accidentally ingested drugs were antihypertensive medications including 14 cases (20.9%). Other accidentally ingested drug materials include paracetamol accounting for 7 patients (10.5%) and 7 patients with antihistamine ingestions (10.5%). 33 cases (49.3%) had other drug ingestions. 6 cases (9%) had multiple drugs ingestions at the same admission (Graph 2).

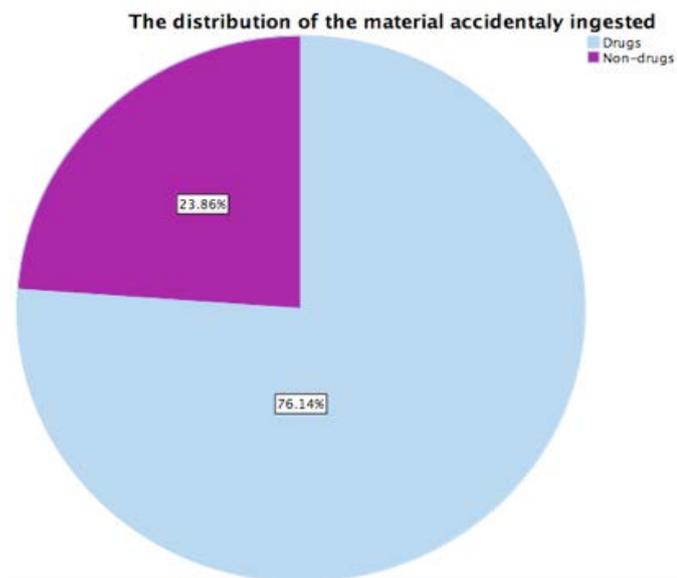
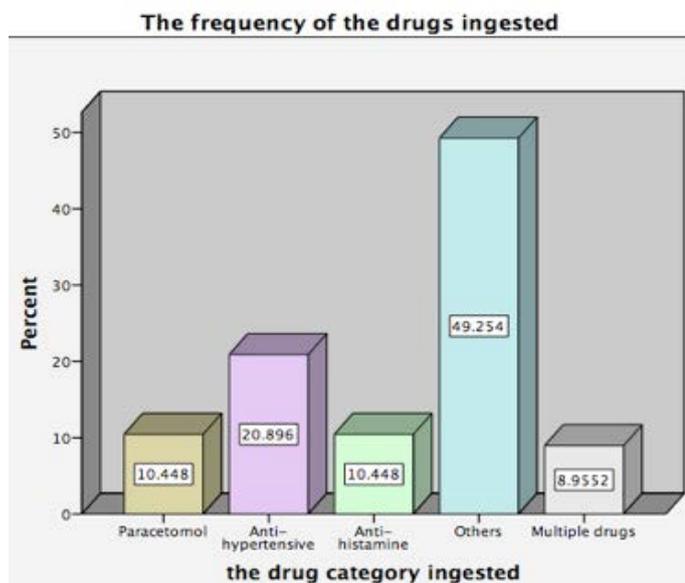


Figure 1: Showing the distribution of the materials ingested



Graph 2: The most commonly ingested drug material

21 cases (23.9%) had accidental ingestion of non-drug material which include 6 cases of pesticide ingestions (28.6%), 5 cases of fuel ingestions (23.8%), and 4 cases of chlorex ingestions (19.1%). The remaining 6 patients (28.6%) had other non-drug ingestions (Figure 2).

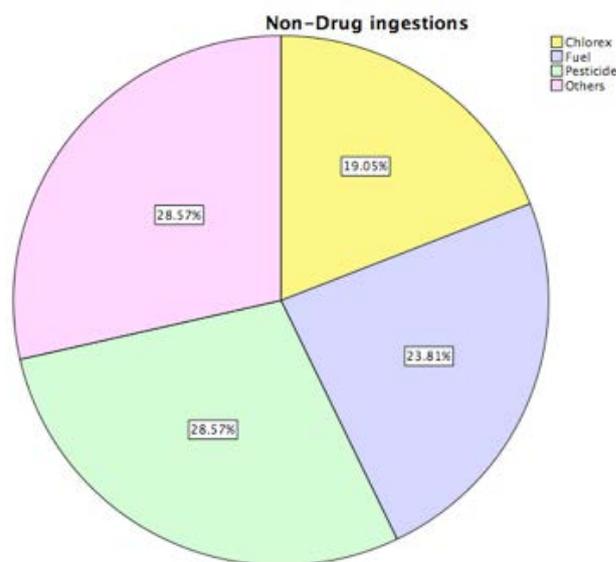


Figure 2: Illustrating accidental ingestion of non-drug products

DISCUSSION

Accidental ingestions in pediatrics age group is a common concern in many countries including well developed countries³.

Our study showed that there is no gender predominance with equal male to female ratio while a study conducted in Southern Iran by Mahmood Haghigat et al, indicated that they had female predominance which accounts for 66.3% of all patients⁴.

The average age shown in our study was 2 years which similar to the results illustrated by the research done by E. S. Stremeski⁵.

Our study indicated that 76.1% of the patients had accidental ingestion of drug products with antihypertensive drug products (20.9%) being the most commonly ingested agent. A study conducted in Qatar revealed that the most commonly ingested product was medicinal products and their most commonly ingested drug products were analgesics and antipyretics (36.9%) followed by antihypertensives as the 2nd most commonly ingested drug product (10.5%)⁶.

The most common non-drug product found to be ingested in our study was found to be pesticides. A study conducted in northeast Romania indicated that most of their cases admitted with accidental poisonings involved non-drug intoxications (67%) with household products being the most common agent³.

A study targeting the preventative methods of decreasing acute accidental ingestion in children indicated that there are 3 important measures in limiting such incidents. Those 3 factors are increasing awareness and education about such incidents, modification of drug containers and implementing actions including limiting the sale of drug products in order to limit such accidents. These measures showed a reduction of more than 1000 deaths and numerous non-fatal events⁷.

The variations found when comparing other resources to our study have multiple detrimental factors that lead to such differences. Such factors include the sample size, the time duration of the research, the inclusion age for pediatric patients and the differences in the inclusion and exclusion criteria for each study.

LIMITATIONS

This research has some limits, firstly it is a retrospective study. Although it comprises a significant number of patients for such a short duration, the sample collected is still small. Another limitation is that the data collected was during a pandemic era, so there might have been accidents that have occurred, but the families might have been reluctant to bring their children to the hospital.

CONCLUSION

Acute accidental ingestions in pediatrics population is considered a major problem in so many countries worldwide. The most common ingested materials were of drugs products. Anti-hypertensive medications were found to be the most common drug products ingested. The most effective way in preventing acute accidental ingestion in pediatric age groups was found to be child resistant closure for prescription bottles.

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Competing Interest: None.

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