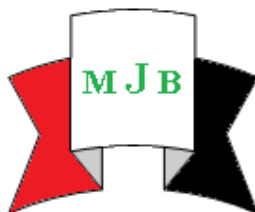


Pattern of Acute Poisoning in Children

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Abstract

This is a retrospective study of cases of childhood poisoning attending the paediatric emergency unit in Basrah province from January 2010 to January 2011 . One hundred and fifty one cases of children aged 12 years and below, cases due to acute poisoning were analysed, the majority of cases were aged between 1 – 5 years 71.5% , the male to female ratio was 1.3 :1, the most common toxicities occurred by ingestion of kerosene 47.01%, medications 35.09%, organophosphorus 9.95% ,House items 5.97%, Co poisoning 1.98%. There were seasonal variations of poisoning events with a high frequency in spring 30.46%, and in summer 29.80%. on admission 85% of patients were complaining from mild to moderate symptoms , and 15% had severe symptoms . no fatalities occur during the study period.

Key words : Acute poisoning, children, pattern

نمط التسمم الحاد لدى الأطفال

الخلاصة :

هذه دراسة رجوعية للأطفال المصابين بالتسمم والذين راجعوا وحدة الطوارئ للاطفال في محافظة البصرة للفترة من كانون الثاني ٢٠١٠ ولغاية كانون الثاني ٢٠١١ , تم تحليل ١٥١ حالة تسمم حاد للأطفال ممن نقل اعمارهم عن ١٢ سنة. في معظم الحالات كانت اعمار المرضى تتراوح من ١ – ٥ سنة ٧١.٥% , وكانت نسبة الذكور الى الاناث ١.٣ : ١ , العدد الاكبر لحالات التسمم كان نتيجة تناول النفط الابيض ٤٧.٠١% , ويأتي بعده الادوية ٣٥.٠٩% , ومركبات الفسفور العضوية ٩.٩٥% , المواد المنزلية ٥.٩٧% , والتسمم بغاز اول اكسيد الكربون ١.٩٨% . هنالك تغيرات فصلية حيث وجد ان اعلى الحالات كانت في فصل الربيع ٣٠.٤٦% وفي فصل الصيف ٢٩.٨٠% . وتبعاً للحالات السريرية من حيث الخطورة كان ٨٥% من الحالات بين خفيفة الى متوسطة و ١٥% يشكون من اعراض شديدة ولم تسجل اي حالة وفاة اثناء فترة الدراسة .

Introduction

Accidental injuries remain a major global health problem, poisoning continues to be one cause of injury related to morbidity and mortality in young children[1,2]Poison is a substance capable of producing damage or dysfunction in the body by its chemical activity.[3] poisoning may occur due to the exposure to natural or synthetic substances such as drugs, house hold items, cosmetic,agricultural products, industrial chemicals,food,plants and animal venoms.

poisoning is more prevalent in children compared to adults, Curiosity, inability to read warning labels, desire to imitate adults, inadequate supervision are themost common causes that lead to childhood poisoning,other study suggested that there was more stress in families or the personality and behavioural characteristics of children are important factor in accidental poisoning.[4,5]

The incidence of childhood poisoning in various studies ranges from 0.33% to7.6%,the mortality rate due to

poisoning is 3 _ 5 % and according to the American toxic exposure surveillance system, more than 2.2 million poisoning exposures were reported in 1998, of which 1.5 million were children. In general, it was found that poisoning is the fifth leading cause of death in USA and it ranked first among children [5, 6]

In a study conducted in a major hospital in Baghdad, about 4% of all admission to the medical unit over a period of one year were attributed to acute poisoning. [7] During 1990 – 1995 mortality rate due to poisoning showed a 25% rise. Fifty-nine percent of poisoning occurred under 14 years old. Death from unintentional poisoning (giving or taking a drug without meaning to cause harm) are on the rise in the USA. Death rates associated with such poisoning jumped by 63% from 1999 to 2004. [1, 8]. Several studies have indicated drug poisoning as a very important cause of childhood poisoning. [9, 10] We have observed a considerable number of suicidal cases in the last few years related to drug poisoning in Irbid (North city of Jordan) [11]. In most cases, a child is exposed to poison without knowing that it may be harmful. Young children do not know the difference between what is safe and what is dangerous. Parents and care givers should take responsibility for making the home safe for children.

Aim of the study is to investigate the pattern of accidental poisoning in children in Basrah.

Method

This is a retrospective study in which we evaluate the medical records of 151 children up to 12 years hospitalized because of poisoning from January 2010 to

January 2011 in four hospitals in Basrah. These are the four main centres admission which provide hospital care and emergency facilities for children in Basrah. A standard form was administered in each case to obtain data, which included age, gender, type of poison, place and time of ingestion, symptoms, duration of hospital admission and the outcome in those children known to be suffering from accidental poisoning. The age factor was divided into three subgroups (a) Children 1 – 5 years, (b) 6 – 10 years, and (c) more than 10 years. The causative agent implicated was categorized into Kerosene & gasoline, medications, Organophosphorous, house items, and Co poisoning. The diagnosis of poisoning was made on historical information and physical findings. No laboratory identification of the offending agent was used. The poisoning outcome; a. mild to moderate symptoms (vomiting, cough, abdominal pain, and tachypnea). b. severe effect symptoms (convulsion, coma, pulmonary oedema and severe dyspnoea). Although the few doubtful and a symptomatic or incomplete data cases discharging from emergency unit were not included in the study. In statistical evaluation, SPSS version 19.0 and Chi square method were used for Data analysis.

Results

Records of 151 children patients with poisoning who have been admitted to Emergency Department of Basrah during the year of the study. There were 87 (57.6%) males and 64 (42.4%) females. The majority of poisoning was found in the age group of 1 – 5 years (71.5%) followed by 6 -10 years (20.5%) and only (8%) of > 10 year as shown in Table 1.

Table (1): The frequency and percentage distribution of poisoning cases according to gender and sex .

Group		NO	%
Gender*	Male	87	57.6
	Female	64	42.4
Age year **	1 -- 5	108	71.5
	6 -- 10	31	20.5
	>10	12	8.0
Total		151	100

* $\chi^2 = 2.560$, df = 1 , p > 0.05

** $\chi^2 = 67.980$, df=2 , P < 0.001

Table 2 illustrates the type of poisons identified in the 151 accidental child poisoning cases. Hydrocarbon(Kerosene&Gasoline) ingestion accounted highest proportion of poisonings(71 cases

,47.01%),followed by medications in(53 cases35.09%),then organophosphorus, House items , Co poisoning in a percentage of 9.95% , 5.97%, and 1.98% respectively

Table (2): Type of substances leading to poisoning

Type of poisoning	NO	%
Kerosene & Gasoline	71	47.01
Medications	53	35.09
Organophosphorous	15	9.95
House items	9	5.97
CO poisoning	3	1.98
Total	151	100

$\chi^2 = 78.700$, df = 4 , p < 0.001

Among poisonings caused by drugs (30,18 n=16) of cases were due to multidrugs&unknown drugs, analgesia &nonsteroidal anti-inflammatory drugs was the most common known drugs

(13.2% n=7) causing poisoning. Benzodiazepines (9.43% n= 5) and contraceptives (7.54% n=4), others as shown in table 3.

Table(3): Type of Medical drugs leading to poisoning

Type of Medicine	NO	%
Multi Drug &unknown drugs	16	30.18%
NSAD & Analgesia	7	13.20%
Benzodiazepines	5	9.43%
Contraceptives	4	7.54%
Antihistamine	3	5.66%
T .C .A	3	5.66%

Antihypertensive	3	5.66%
Cardiac drugs	3	5.66%
Corticosteroids	2	3.77%
Tonics	2	3.77%
Cough syrup	1	1.88%
Hypoglycaemic	1	1.88%
Anticholinergic	1	1.88%
Lomotile	1	1.88%
Antiemetic's	1	1.88%
Total	53	100%

Table 4 At the time of presentation 85 % n= 128 cases had mild to moderate symptoms, 15% n= 23 cases had severe symptoms including convulsion, coma, pulmonary oedema and sever dyspnoea and the is no death.

Table (4): The frequency distribution and relative frequency of poisoning outcome.

Evaluation of poisoning effects	No	%
Mild to moderate	128	85
Sever effects	23	15
Death	0	0
Total	151	100

There were some variations in the seasonal distribution of cases of acute poisoning over one year period, more admissions were made during the Spring and Summer ,(n=46 30.46%) (n= 45 29.80%) respectively. Than in Autumn(n=35 23.17%) and Winter(n=25 16.55%) as in table 5.

Table(5): Distribution of cases according to seasons

Season	No	%
Winter	25	16.55
Spring	46	30.46
Summer	45	29.80
Autumn	35	23.17
Total	151	100

$$\chi^2 = 5.308 , df = 4 , P > 0.05$$

Discussion

The present retrospective study showed males to be more vulnerable than females. The overall male to female ratio was found to be 1.3 : 1 with predominant male 87 (57.6%) and female 64 (42.4%). Most previous investigators found a significant increase of acute accidental poisoning in males than females M :F ratio ranging from (1.3 _ 1.7 : 1) the reason for this male preponderance is attributed to various factors ,boys by nature are more adventurous and resourceful in play and explore the environment more than girls. The highest incidence of accidental poisoning was observed in children less than five years old 108 (71.5%), many previous studies have shown that children under five years of age are particularly at risk from accidental poisoning [2,4,6,11,12,13]. According to the USA poison control centre data , more than 2 million human poison exposure cases reported in 1995. Children less than 6 year of age accounted for 53 % of poison cases[14]. The occurrence of highest percentage of poisoning in this age group may reveal that inherent curiosity and inability to recognize harmful substances, in addition to that the parent or caregivers do not provide the necessary attention to their children. Our study showed that 71 (47.01%) were due to kerosene poisoning alone, kerosene is a common multipurpose house hold product available in low socioeconomic status families, it was found to be improperly stored and kept at reachable levels, in addition children usually drinks by mistakes since children may not distinguish between kerosene and water, in fact that kerosene or other petroleum products stored in drinking bottles, these findings are in agreement with the findings of study conducted in Jeddah , Bagdad , Ahwaze [13, 15,16]. contrast with data from other studies from USA, UK . in which drugs were reported as the principle offenders, this may be essentially

due to the excellent infrastructure and housing facilities, which make the use of kerosene heaters and burners unnecessary [12]. Among medicine prevalence of poisoning by analgesics and anti-inflammatory drugs are compatible with the finding of studies in Saudi Arabia , UAE [16]

A previous study in Basrah by Alsadoon showed that sedatives and hypnotic drugs were coming first regarding type of drug poisoning [17] this change reflects wide availability of anti-inflammatory and pain killer drugs. Organophosphorus poisoning was found to be the third most common agent, this finding in our study was similar to Karachi study [18]. Our study indicates that mild to moderate symptoms noted with ingestion of poisoning substances this may be related to the small amount or dose ingested this result is similar to a study conducted in Jeddah Saudi Arabia this is probably because the ingested amount is well below the lethal dose and the intrinsic toxicity is often not high. These observations are in contrast with the results in Qatar where the percentage of severe symptoms is higher , In this study there was no mortality this contrast with other studies where mortality was reported in Tabouk and south Africa. [19 ,20]

Conclusion

Acute poisoning carries a significant impact on morbidity , kerosene and medicines were the predominant agents of poisoning. There is a need for further studies to identify risk factors of acute poisoning in children , To prevent such accidents, it is recommended that wide spread community education should be implemented to increase public awareness about these substances and to advise parents to keep chemicals and medicines out of reach of children.

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