Accidental Poisoning among Children's Less than Five Years old in Baqubah City

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Abstract

Background: Poisoning among children less than 5 years remain as major public health Problem worldwide despite improving in health services.

Objective: To find out the causes of poisoning between children less than 5 years old in Baqubah City according to type of poisons, age, address, gender, socioeconomic status and education of parents.

Patient and Method: Cross sectional study describes poisoning among children less than5 years old admitted to the Al- Batool Teaching Hospital for period from the 1st July 2014 to the1st April 2015.

Result: One hundred twenty five children less than 5 years old were admitted to Al- Batool Teaching Hospital due to an accidental poisoning. Hydrocarbons were the most common cause of Poisoning (82), (65.60%), drugs (34), (27.20%), organophosphorous (5), (4, 0%), and corrosive (4), (3.20%) .The majority of children were (1 -3) years of age (72), (57.6%).Male (77), (61.6%) female (48), (38.4%) male : female ratio (1.6:1). Address distribution, rural (76), (60.8%) urban (49), (39.2%). Socioeconomic status, low socioeconomic status (109), (87.2%) intermediate socioeconomic status (16), (12.8%). Father Education: primary education (65), (52.0%), secondary (56), (44.8%) and graduated (4), (3.2%). Education of mother primary (91), (72.8%) and secondary (33), (27.2%).

Conclusion: Majority of the poisonings in children were due to ingestions of poisons among age group (1-3) years, with male gender predilection, Hydrocarbon was the most commonly ingested poisoning agents; Patients parent both had low socioeconomic status and low educational level.

Key Words: Poisoning, Hydrocarbons, Socioeconomic status, and drugs, corrosive, children.

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Introduction

Poisons are materials capable of causing adverse effects in living beings [1]. Poisoning is a major problem in children all over the world however the offending agent and the associated morbidity and mortality vary from place to place and change over a period of time [2].

Accidental ingestion of poisons and household substances is a potential source of morbidity and mortality in children in the developed and developing countries. Whereas this ingestion can be accidental, intentional or iatrogenic in young children, it is usually deliberate among older children, especially in the developed countries [3].

Acute Poisoning in children is still an important public health problem and

represents a frequent cause of admission in emergency units, the incidence of childhood poisoning in various studies ranges (0.33% - 7.6%) [4].

Poisoning is most commonly observed at 1-5 years of age and these children constitute 80% of all poisoning cases. In the first year of life, the main causes of poisoning are medications given by parents. At 2-3 years of age, house cleaning products cause most cases of poisoning, at 3-5 years of age, the medications kept in the cupboard or left open are the main causes of poisoning [5].

Despite various preventive measures, poisoning in children still remains an important public health matter worldwide, resulting in a large number of hospitalizations in emergency units Poisoning accounts for about 7% of all accidents in children below 5 years and is implicated in about 2% of all childhood deaths in the developed world, and over 5% in the developing countries [6].

Substantial differences in socioeconomic and cultural situations in different countries cause various patterns of poisoning with different poisonous agents. These differences vary from country to country and between geographical areas within the same country [7].

Children are curious and explore their world with all their senses, including taste. As a result, the home and its surroundings can be a dangerous place when poisonous substances are in advertently ingested every year millions of calls are made to poison control center's when this happens and thousands of children are admitted to emergency departments. Poisoning patterns change according to age group, type of exposure and the nature and dose of the poison [8]. Poisoning is a significant global public health problem. According to the World Health Organization data, an estimated 350 000 people died from unintentional poisoning in 2002 [9]. This study aims to find out the causes of poisoning between children less than 5 years old in Baqubah City according to type of poisons, age, address, gender, socioeconomic status and education of parents.

Patient and Methods

Cross - sectional study and was done at Department of Pediatrics, Al Batool Teaching Hospital, the region of Baqubah center of Diyala Governorate middle of Iraq, is approximately 1,224,400. The cases involved from 1st July 2014 to 1st April 2015.

The role of selection of cases that patients less than 5 years of age who admitted to the hospital with diagnosis of poisoning based on history and examination. All collected patient with poisonings were involved, except those unfit clinically were excluded from the study.

The collection of information about cases was arranged in special form. These forms involves data about, age and gender of the child, type of poisons, address**,** socioeconomic status and education of both father and mother all these data carried out by parents-at time of admission

Statistical analysis: The data was performed using the Statistical Package for the Social Sciences (SPSS), version 18. All variables were expressed as frequencies and percentages.

Result

A total number 125 cases which included in this study. Table 1 show types of poisons in which hydrocarbons poisoning (82), (65.60 %), drugs (34), (27.2%), Organophosphorus (5), (4.0%) and corrosive (4), (3.2%).

Table (1): Frequency distribution of types of poisons.

		No.	%
Poison Type	**Hydrocarbon**	82	65.6
	Drug	34	27.2
	Organo phosphorus	5	4.0
	Corrosives	4	3.2

Table 2 show age distribution The majority of children (1-3) years of age (72), (57.6%), (>3 – 5) years (33), (26.4%) less than 1year (20), (16.0%) .

Table (2): Age distribution among the study sample

		No.	%
Age	**<1**	20	16.0
	(1-3)	72	57.6
	(>3-5)	33	26.4

Table 3 show gender distribution there were males (77), (61.6%) while females (48), (38.4%). Male: female ratio (1.6:1).

Table (3): Gender distribution among the study sample.

		No.	%
Gender	**Male**	77	61.6
	Female	48	38.4

Table 4: show address distribution the majority of cases where from rural area (76), (60.8%) while urban area (49), (39.2%).

Table (4): Address distribution among the study sample.

		No.	%
Address	**Rural**	76	60.8
	Urban	49	39.2

Table 5: show socioeconomic status distribution the majority of cases were at low socioeconomic status LSES (109), (87.2%), Intermediate Socioeconomic status ISEC (16), (12.8%) while there were any cases of high socioeconomic status HSES.

Table (5): Socioeconomic status among the study sample

		No.	%
Socioeconomic status	**LSES**	109	87.2
	ISEC	16	12.8
	HSES	0	0.0

Table 6: show Father Education distribution found Primary education (65), (52.0%), Secondary education (56), (44.8%), Graduated (4), (3.2%) and while there were any cases of Post graduated.

Table (6): Fathers Education for the children included in this study.

		No.	%
Father Education	**Primary**	65	52.0
	Secondary	56	44.8
	Graduated	4	3.2
	Post Graduate	0	0.0

Table 7: show education of mother distribution including Primary education (91), (72.8%), Secondary education (34), (27.2%) and there were any cases of both Graduated and Post graduated.

Table (7): Mother s Education for the children included in this study.

		No.	%
Mother Education	**Primary**	91	72.8
	Secondary	34	27.2

Discussion

Acute childhood Accidental poisoning is a common medical emergency. This study was about poisoning less than 5 years age, which accounted 125 cases.

Poisonous agents show geographical variations which affected by socioeconomic status. In developed countries, poisoning caused by drugs mainly while for developing countries, like my country common causes of poisoning are hydrocarbons, drugs, Organo phosphorus and corrosive as show in this study. In this study hydrocarbons poisoning was the most common type of poisoning which accounted two third of total poisoning (82), (65.60%) followed by drugs poisoning (34), (27.20%). Organophosphorus (5), (4.0%) and corrosive (4), (3.20%).

We found hydrocarbons poisoning was the most common type of poisoning affected all age groups.

This agrees with study of Haidar and Najim (2007) who found (79.9%) hydrocarbons poisoning in Karbala city [10]. And in India *et al.*,(2013) who found (31%) [2]. While this study disagree with studies done in the surrounding countries where drugs represent the most common causative agent of poisoning, such as Sabiha *et al.*, (2011) who showed poisoning was (48.4%) in Iran. And in other study also done in Iran by Farzad *et al.*, (2013) (58.1%).

This seems to be due to the change in the people life style of most of the surrounding countries except Iraq, and mostly due to faulty packing and storage of hydrocarbons materials. Awareness should be build up regarding hydrocarbons storage and policy may be taken to sell it out of reach of children in the labeled container and thereby prevent most of the poisoning in children.

According to age distribution, the most common age group was (1-3) years which accounted (72),(57.6%), this agree with Farzad *et al.*, (2013) done in Iran (44.6%), and with Faisal (2002) in Jordon (90%), and

Anwar *et al.*, (2014) in Bangladesh (93%) [13]. This age group of children mostly affected due to concomitant initiating of walking, sense of curiosity, and due to their natural reflexes to put objects into mouth.

This study show male to female ratio 1.6 : 1 were males (77), (61.6%) and females (48), (38.4%), this agree with study of Hussein and Ahmed (2007) done in Karbala who found males (64%) and females (36%) [3], and with Anwar *et al.*, (2014) in Bangladesh who showed males (51.6%) and females (48.4%) [13]. this can be due males being more active and more curious than females. Disagree with study Sabiha *et al.*, (2011) who demonstrated that males (48.4%) and females (51.6%) in Iran .

This study show most of the children came from rural area (76), (60.8%) than urban area (49), (39.2%), Agree with studies done in different area such as in Bangladesh rural area by Anwar *et al.*, (2014) who found (64%) and Study done by Hussein and Ahmed (2007) in Karbala. There were no clear differences in the hydrocarbons poisoning between rural and urban areas. This is because of the increased need for hydrocarbons in all parts of Iraq, and due to negligence and unawareness of parents or caregivers regarding hydrocarbon storage in appropriate container and place.

Also in this study lower socioeconomic status (109), (87.2%) that was similar with study done by Anwar *et al.*, (2014) who found (91%).

Also in this study we found that education of the parent most of them being low education. Fathers education Primary (65), (52.0%), Secondary (56), (44.8%). Mother s education Primary (91), (72.8%), Secondary (34), (27.2%) so this increase incidence of poisoning among these families. There was no correlation to parent education with other mentioned studies.

In conclusion, majority of the poisonings in children were due to ingestions of poisons in age group (1-3) years, with male gender predilection, Hydrocarbon was the most commonly ingested poisoning agents; Patients parent had both low socioeconomic status and low educational level.

Family health education and poisoning prevention program should be an integral part of the health planning in Iraq. Indicating that training of family in early stage of poisoning and right managements would be highly reducing the incidence of acute poisoning and mortality rate.

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