Poisoning Admission in Children Hospital in Benghazi-Libya, Three Years Review of Medical Record

Mudafara S Bengleil

Abstract—Estimation of the magnitude and causes of poisoning was the objective of the current study. A retrospective study of medical records of all poisoning children admitted to Benghazi Children Hospital in Libya from January 2008 up to December 2010. Number of children admitted was 244; the age ranged from less than one to 13 years old. Most of cases were admitted with mild symptom and the majority of them were boys. Only few cases admitted to intensive care unit and there was no mortality recorded through the period of study. Age group 1 to 3 years (50.8%) had the highest frequency of admission and the peak of admission was during summer. The most common cause of admission was due to ingestion of medication (53.69%), House hold product exposure (26.64%) was the second causes of admission while, 19.67% of admissions were due to Food poisoning. Almost all admitted cases were accidental and medicines were the most consumed substances in addition, improper storage of toxic agents were the first risk factor of poisoning. Present results indicated that, children poisoning seems to be a common pediatric care problem which need to control and prevent.

Keywords— Children, hospital, poisoning.

I. INTRODUCTION

Poisoning is a term characterize the potential of a substance which cause damage or dysfunction in the body as a result of it is chemical activity. Young children are usually involved in accidental poisoning without intention to cause harm to their body. Although there is some success in methods of prevention of poisoning in the pediatric population, the ingestion of toxic substances continues to be a common occurrence as pediatric emergency.

Unintentional poisoning can be considered as one of the most important reasons of death in children over the world and can result in lifelong disability and is responsible for about 7% of all mortalities.

Toxicant ingestion ranged from 500,000 to 2,000,000 per year in children under 5 years of age in the world. The occurrence of poisoning, the type and the agent vary in different parts of the world depending on the education status, local beliefs, customs, current availability of the medicine and chemical. The home or the adjacent ground was found the most common place for poisoning in children [1]-[3].

Poisoning of children considered one of the major causes of morbidity in both the developing and the developed world. "It is of false belief that accidents and poisoning are specific problems of developed countries. Investigations show that they are just as common in different countries and lack of effective strategies for their prevention and management makes it a serious problem" [4].

There were about 1.5 million potentially poisoning exposures in children under 19 years of age reported in the United States in 1999, the majority of children being under age of six [5].

Although death due to accidental poisoning in children is rare it is still major cause of ill health in young children [6].

II. METHODS

A. Procedure

A retrospective study of medical record of poisoning admission during three years period from January 2008 up to December 2010 was conducted at Benghazi Children Hospital in Libya. Variables such as age, gender, cause of toxicity, season of admission and severity of cases were studied.

B. Statistical Analysis

Statistical data program of Microsoft Excel was used.

III. RESULT AND DISCUSSION

During the period from January 2008 to December 2010 there were 244 admissions accounted as accidental poisoning admission in children aged less than one year to 13 year old. The data collected were divided according to the clinical status into three groups as shown in Table I.

Out of 244 patients 20.90% of admission has been admitted with no signs or symptoms, meanwhile 60.65% had mild symptoms, which include fever, vomiting, diarrhea, abdominal pain and lethargy, these cases were linked to the food poisoning.

Furthermore, admission with severe symptoms (18.44%) were either due to house hold products exposure with convulsion, hallucination, dyspnea, cyanoses, rolling of the eyes or because of medicine ingestion with ataxia, drowsness, trauma, and loss of consciousness.
Only few cases were admitted to intensive care unit and there was no mortality recorded through the period of study. Most of cases were discharged within two days.

As illustrated in Fig. 1 the 55.74% of cases were boys, male to female ratio was 1.27:1. This result was almost similar to that obtained from a study conducted in the same hospital under same condition in 2006 in which the ratio between male to female was 1.3:1[6].

As illustrated in Fig. 1 the relative percentage of male to female

In another study carried out in Australia (2006), the percentage of male to female was equal [7].

The total number of admitted children was divided according to age groups into four subgroups. The ratio of male and female admitted in each subgroup was demonstrated in Table II.

As shown in Fig. 2 the highest frequency of admission was in age group 1-3 years and the present finding is similar to that observed in Kuwait on 2006 (2) and to that mentioned on the report of New York City [8].

As represented in Fig. 2 the number of children admitted decreased as their age increased which probably indicated that as children grown up their awareness get better. It is reported that hospitalization due to poisoning was declined in children after the age of three years and remained low after age of 6 years until it began to rise at the age of 12 year [2].

In 1995; Japan poison Information Center received 31,510 inquiries about poisoning in children less than 6 years old [9].

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### Table I

<table>
<thead>
<tr>
<th>Clinical state</th>
<th>No. of admission (%)</th>
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<tr>
<td>Without symptom</td>
<td>51 (20.90%)</td>
</tr>
<tr>
<td>Mild symptom</td>
<td>148 (60.65%)</td>
</tr>
<tr>
<td>Sever symptom</td>
<td>45 (18.44%)</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
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</table>

### Table II

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Male: Female</th>
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<tbody>
<tr>
<td>Less than one year</td>
<td>5:3</td>
</tr>
<tr>
<td>1-3 years</td>
<td>60:64</td>
</tr>
<tr>
<td>3-6 years</td>
<td>41:29</td>
</tr>
<tr>
<td>6-13 years</td>
<td>30:12</td>
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### Table III

<table>
<thead>
<tr>
<th>Duration of hospitalization</th>
<th>Number of cases (%)</th>
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<tr>
<td>24 hours</td>
<td>182 (74.60%)</td>
</tr>
<tr>
<td>48 hours</td>
<td>22 (9.01%)</td>
</tr>
<tr>
<td>3-10 days</td>
<td>40 (16.39%)</td>
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No mortality among all groups was recorded throughout the study period.

Although acute exposure to medicine, household products, and food in children are common clinical problems of important concern to general pediatrician, medicine is a leading causative agent for acute poisoning in children similar to the report of NYC department on 2009 [8].
The data obtained was categorized, according to the cause of poisoning, as three main reasons: poisoning due to medicine ingestion, exposure to household product or food poisoning is presented in Table IV.

It is clear that the most common cause of hospitalization (53.69%) was due to ingestion of medicine, this result was similar to the study performed in Australia on 2006 [7] and to that carried out in Victoria which concluded that the most poisoning admitted cases were due to pharmaceutical ingestion [10]. It is reported that, unintentional ingestion of medicines by children has significant impact on the utilization of health system resources. In addition there are several studies have indicated poisoning with medicine is a very important cause of childhood poisoning in Iran [11].

Household product exposure (26.64%) was the second common cause of admission while, 19.67% of admissions were due to food poisoning.

Medications taken by children were oral contraceptive pill, antihypertensive, and tricyclic antidepressant drug.

Although it is reported that vaginal bleeding could occur in girls of all ages during the first few days following accidental ingestion of oral contraceptive pills [12], this effect did not occur in our study. Tricyclic compounds are prescribed as antidepressants for adult patients, while in Children it may be prescribed for nocturnal enuresis, chronic pain disorders, or attention deficit disorder. Patients received tricyclic drug in the current study did not show serious overdose symptoms.

### TABLE IV

<table>
<thead>
<tr>
<th>Causative agents</th>
<th>Number of patients (%)</th>
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<tbody>
<tr>
<td>Medication</td>
<td>131 (53.69%)</td>
</tr>
<tr>
<td>House hold exposure</td>
<td>65 (26.64%)</td>
</tr>
<tr>
<td>Food poisoning cause</td>
<td>48 (19.67%)</td>
</tr>
</tbody>
</table>

Children are more frequently exposed to household products rather than adults as a result of exploratory behavior, such as bleaches are often brightly packaged and readily attract attention [13].

In the present study detergent was the leading cause of poisoning, in the group received household product. In terms of food poisoning, fast food was responsible for most cases which were among age group 6-13 years.

Out of total hospitalized patient, 82.79% of admissions were from the main city of Benghazi whereas; only 17.21% of patients were from the rural area in the environment of the city (Table V). This finding, low percentage of patients admitted, can be explained by decreased awareness of family, low level of education, poor socioeconomic status and their adoption to use their specific traditional way to treat emergency without transfer patient to hospital.

### IV. CONCLUSION

Almost all admitted cases were accidental, and medicines were the most consumed substances also, improper storage of toxic agents were the first risk factor of poisoning. Present results indicate that, children poisoning seems to be a common paediatric care problem which need to be controlled and prevented. In addition health education of parent for adoption of simple home safety measures should be promoted.

### REFERENCES


Fig. 4 The severity of poisoning