

Hospitalisation due to Acute Poisoning in Children – Tabuk Experience

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مقدمة وطرق البحث : لا يزال التسمم الحاد عند الأطفال من أكبر المشاكل التي يواجهها المجتمع، وبذلك تستغل جزء كبير من موارد القطاع الصحي. ونسجل هنا نتيجة دراسة أجريت في مستشفى القوات المسلحة بالشمال الغربية - تبوك، المملكة العربية السعودية لمدة ثلاث سنوات (١٩٩١م - ١٩٩٤م) عن دخول الأطفال للمستشفى بسبب التسمم.

نتائج البحث : ستة وثمانون طفلاً أقل عمراً من ١٢ سنة أدخلوا للمستشفى، ممثلين ما قدره مائة وخمسة وسبعون يوماً تنويم تقريباً.

الغالبية العظمى منهم عدد ٦٠ طفلاً (٨٨,٢٪) كانوا تحت سن الخامسة.

غالبية المواد المتبلعة كانت من المحتويات المنزلية ١٦,٢٪، الكيروسين ١٠,٢٪ ومضادات الهيستامين ١٩,١٪.

تحتوي الدراسة أيضاً تحليل جوانب عديدة للمشكلة واستعراض لما نشر عنها.

الاستنتاجات : ينبغي تقديم التوعية الصحية عن تخزين الأدوية في المنزل والإسعافات الأولية وذلك لمنع وقوع الحوادث والتقليل من المضاعفات عند حدوثها.

الكلمات المرجعية : التسمم، الجرعة المفرطة واستشفاء الأطفال

Background & Method: Acute poisoning in children is still a major problem in our community, taking up a lot of resources from the health care system. We report here the result of a three year study (1991-1994) carried out in the Northwest Armed Forces Hospital, Tabuk, Saudi Arabia regarding hospitalisation of children as a result of poisoning.

Results: Sixty eight children below twelve years of age were admitted, accounting for a total of approximately 175 inpatient days. The majority of them (n=60, 88.2%) were below the age of five years. House hold products (16.2%), kerosene (10.3%) and antihistamines (19.1%) were the commonest ingested substances. An analysis of various aspects of this problem and the review of relevant literature is included.

Conclusions: Health education about safe storage of medicine at home and a knowledge of first aid is very necessary. This may prevent the occurrence of such accidents and reduce morbidity.

Key Words: Poisoning, overdose, paediatric admissions.

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INTRODUCTION

Poisoning in children is an important cause of morbidity that causes parents to seek medical advice, and in some instances results in the admission to hospital for observation and management. Poisoning in children can be of four types:

- a) Accidental ingestion - of medicinal substances, household products, plant products.
- b) Accidental overdose of prescribed medication - therapeutic mishap.
- c) Children of an older age group can deliberately ingest hazardous substances in an act of panic, with the intention of seeking attention or, occasionally in an attempt to commit suicide.
- d) Deliberate administration so as to cause bodily harm - form of non-accidental injury (child abuse).

Fortunately, due to the good socio-cultural support and existence of close knit family system, the latter two categories are almost non-existent in this part of the world as evidenced by lack of reports in the literature. However, the first two categories of childhood poisoning are well known.^{1,2} Though the majority of episodes of poisoning are no more than just scares, they still utilise the services of a variety of medical, paramedical and social welfare personnel of the health sector.

This paper describes our experiences of poisoning and overdosage in the children of Tabuk during a study period of 3 years.

PATIENTS AND METHODS

The Northwest Armed Forces Hospital, Tabuk provides medical care (including emergency room service) for military personnel and their dependants in this area. The cases of poisoning in children, which are the topic of the study, initially arrive at the emergency room (in exceptional circumstances to primary medical care) and are assessed by casualty medical officers on duty. After providing the first aid or resuscitatory care, they

are discharged home or referred to paediatricians for further management, according to the gravity of the problem. The study included all such patients below the age of 12 years who were admitted to the paediatric ward or the Intensive Care Unit. Sixty eight admissions for poisoning during a period of 36 months (January 1991 - January 1994) were retrospectively studied. Data collection regarding patients, clinical presentation, treatment and progress were made from emergency room (ER) notes and inpatient records.

RESULTS

During the study period (January 1991 - January 1994) 68 were children admitted to the hospital with acute poisoning (Table 1). They constituted 1% of our total admissions to our paediatric wards. Their ages varied from 3 months to 12 years. A majority of them were within the age range of 1 year to 5 years, n=49 comprising

TABLE 1
Admissions due to poisoning (n=68)

Sex	Female	31 (45.6%)
	Male	37 (54.4%)
Age group in years	< 1	11 (11.8%)
	1 - 5	49 (72.0%)
	> 5	8 (11.8%)
First Aid	Yes	5 (7.4%)
	No	63 (92.6%)
Time Interval: Ingestion and Hospital visit	< 1 Hour	17 (25.0%)
	1 - 3 Hours	30 (44.1%)
	3 - 12 Hours	16 (23.5%)
	> 12 Hours	5 (7.4%)

72.0% of total. There was little difference between the total number of males (n=37; 54.4%) and females (n=31; 45.6%). More than half the number (69.1%) reached hospital within three hours of the suspected ingestion. 92.6% of the cases had not received any form of first aid prior to arrival at the hospital. The length of stay ranged from 24 hours to 23 days, but 92.6% (n=63) of the cases were discharged by day four. Fifty-eight (77.9%) out of the total were discharged within 48 hours of admission.

The substances ingested were of a wide variety (Table II). Most were medicinal products, 46 cases (61.2%); household products in 11 instances only (16.2%). In only one case (1.5%) was there no clue as to the substance consumed. In five of the children (7.4%) more than one substance was involved. The outcome was favourable in 63 cases (92.6%), warranting less than 4 days of inpatient stay. Four (5.9%) others had to stay in hospital longer, with more than minor morbidity, and the outcome was fatal in one case only. In 5 instances (7.4%) more than one sibling of the same family was involved.

TABLE 2
Substances ingested

Name	Number (%)
Antibiotics	2 (2.9)
Anticonvulsants	4 (5.9)
Antidepressants	2 (2.9)
Antihistamine	13 (19.1)
Atropine	1 (1.5)
Bromocriptine	1 (1.5)
Carbon monoxide	6 (8.8)
* Corrosive (Bleach, chlorox)	3 (4.4)
Insulin	1 (1.5)
Iron	3 (4.4)
* Kerosene	7 (10.3)
Motilium	2 (2.9)
Non-steroidal anti-inflammatory	3 (4.4)
* Organophosphorous (Insecticides)	1 (1.5)
Paracetamol	2 (2.9)
Salbutamol	2 (2.9)
Theophylline	1 (1.5)
More than one substance	5 (7.4)
Others	8 (11.8)
Unknown	1 (1.5)

* Household products

DISCUSSION

The data presented in this paper only include cases of childhood poisoning which resulted in inpatient admissions. For every such case, several may be discharged from ER, and even more may receive home treatment or first aid in peripheral clinics or private dispensaries. The influence of parental threshold for seeking advice and clinical threshold of physician for admissions have to be considered, similar to previous reports.³ There was no much difference between boys and girls, there was a marginal preponderance of males. The

majority were between the ages of 1 and 3 years, differing from the Newcastle series⁴ which showed a decline in the number of younger children and an increase in the number of older children admitted. Our results revealed poisoning from household products to be 16.2%, which may appear low as compared to previously published series which reported 36% and 46%^{5,15} respectively. However, similar figures (12.5%) were expressed in a recent study.⁶ In our series, kerosene poisoning formed more than 10% as it did in previous studies.¹ Among the medicinal products ingested, antihistamines top the list in our results. This is different from several other reports^{7,8} which have paracetamol and aspirin as the most common substances ingested. Popularity and easy availability over the counter, resulting in their being stocked at home ready for use, make such medicines easily accessible to children. It has been recommended that child-resistant closure containers⁹ (CRC) should be used for all medicines, and preferably even for household products. Owing to the geography of the area, it is not surprising that we do not have any admissions due to poisoning from garden products.

The onset of the cold leads to use of coal fires for heating may explain the incidence of carbon monoxide poisoning. In contrast to the reports from other parts of the world,¹¹ self-poisoning and self injury are rare among children in the middle-east.¹² In our series there was no circumstances leading us to suspect criminal act in any of the cases.

Young children ingest medicinal and household products as a result of their exploratory instinct which is a part of their development. Availability and accessibility have a direct relation to the incidence. It is fortunate that there was only one instance (1.5%) where the name of the ingested drug was unknown. This is in contrast to findings from similar studies from the region which quote a figure of 12.3%.^{2,16} However, the fact that the majority did not receive any first aid is alarming.

Health education regarding safe practices of storing medication at home and instructions on

first aid should be a priority. The existing environment of well baby clinics could be made use of for giving such sessions to parents. CRCs should be widely used by pharmacies. Families in which accidents have happened should be visited by community health workers to look into the stress levels existing, to study the family dynamics, and assess the prevailing level of supervision and control of the children.¹³ Long term follow-up is ideal in selected cases, as poisoned children were found to be hyperactive and more anxious than controls.¹⁴

Accidental childhood poisoning still remains a major problem. Prevention, first aid and health education should be the primary strategies in tackling it. Prompt treatment, active up-to-date poison information centres, proper follow-up and support should be considered the second level of intervention.¹⁷

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