

ACUTE POISONING IN CHILDREN

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ABSTRACT

Objectives: To find out the common causes of poisoning in infants and children.

Methodology: In a retrospective cross-sectional study we evaluated all infants & children who were hospitalized due to acute poisoning between 2001 to 2004 in two Ahwaz university hospitals.

Results: One hundred forty three cases were evaluated, 71% of poisonings occurred in the age range of 1-5 years. Causes were accidental ingestion (77.8%), given by others (16%) and suicide attempts (6.2%). The most common ingested substances were petroleum products (16%). Alkaline cleaners (12.6%), Opiates (11.9%), Tricyclic Antidepressants (8.4%) and Benzodiazepines (7.7%). About 2.8% of cases were multi-drug poisoning. Opiates were the most common agents which accounted for poisoning in below 6 months old. Decreased level of consciousness (67.6%) and vomiting (50%) were the most common signs and symptoms. There was no mortality in this study.

Conclusion: Petroleum products are still common source of poisoning but their frequency is decreasing. Parents should be educated about the harms of some herbal agents containing opiates and on safe storage of medicines and household products.

KEYWORDS: Poisoning, Children.

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INTRODUCTION

Acute Poisoning in children is still a major public health problem and a frequent cause of admission in emergency department and it accounts for 1% of hospital admissions annually.¹ Accidental ingestion is one of the most important causes of poisoning in children and is most prevalent between 1-5 year olds.² In this age boys are more involved.³⁻⁸ Suicide attempts are the other cause of poisoning in children that occur in adolescents and is seen more in females.²⁻⁴

Common agents which cause poisoning in children are medicines, household products such as detergents and bleaches, petroleum products and industrial substances, pesticides, opium and herbal compounds.^{5,7} There are many studies about poisoning in different

places in the world but their findings are variable related to the place of study and age range of patients. In many studies drugs are the most common cause of poisoning in children.⁵⁻¹² But other similar studies have reported household products such as detergents and bleaches and petroleum products as the most common causes.^{4,7,13,14} Among medicines, benzodiazepines and Analgesics were the most common causes in some studies.^{3,4,9,11,15}

Since the recognition of epidemiology of poisoning in each area is important for prevention programs the objective of this study was evaluation of epidemiologic specification of acute poisoning in children that resulted in their hospitalization in Ahwaz during 2001 to 2004.

METHODOLOGY

It is a retrospective cross-sectional study in which we evaluated medical records of all infants and children up to 12 years hospitalized because of poisoning from March 2001 to December 2003 in two Ahwaz university hospitals (Abuzar and Golestan). These are the two main university centers which provide hospital care and emergency facilities for children in Ahwaz. The patients that were discharged within less than six hours of admission or their diagnosis were not definite were excluded from the study. Collected data were analyzed by SPSS (version 11.5) software.

RESULTS

One hundred forty three patients (59 female and 84 male) between 40 days and twelve years of age with mean age of 46.8 months were evaluated. Almost seventy one percent of poisoning was reported in the age range of 1-5 years whereas 20% of children were less than five years and 9% were less than one year of age.

In all cases poisonings were due to ingestion. About 77.8% of patients accidentally ingested poison while 16% were given by others and 6.2% was due to suicide attempts. (Fig-1) All suicide attempts were seen in children over 9 years of age. In ages over 10 years 30% of

poisonings were due to suicide attempts. Medicines accounted for 44.9% of poisoned cases. In 7% of cases, poisonous material could not be identified.

The most common ingested substances were petroleum products (16%). Alkaline cleaners (12.6%), Opiates (11.9%), Tricyclic Antidepressants (8.4%) and Benzodiazepines (7.7%). About 2.8% of cases were multi-drug poisoning. Among petroleum products kerosene was the most common agent and petrol and gas-oil were the other causes. Between alkaline cleaners, bleaches (Whitex) and Chanteh (traditional name of a potent alkaline agent which is used for pipe cleaning) were the most common.

In less than six month old patients opium was the most common cause of poisoning (66/7%) and the major opium compound was Navam (home made herbal compound that contain opium which is traditionally used for infantile colic and sedation in our area). Decreased level of consciousness (67.6%) and vomiting (5%) were the most common signs of poisoning. In petroleum products poisonings the most common signs were respiratory distress (83.3%) and vomiting (70.8%). In opium poisonings, myosis was seen in 93.3% of cases. Almost 36% of cases were referred to hospital in the first two hours after ingestion, 18% within two to four hours and 31% after four to twelve hours of ingestion. Mean referral time was 8.3 hours after ingestion. (SD=13.8)

Average hospital stay in our study was 2.6 days and (SD=1.67) and the longest periods were in petroleum products poisonings with mean of 3.7 days. There was no mortality in this study.

DISCUSSION

In this study poisoning was most common in the age range of one to five years old and it was mostly due to accidental ingestion. These findings are compatible with other studies reported from different countries.^{1-7,9-14,16,17}

Since children are normally curious in these ages and tend to put anything in their mouth and can not recognize harmful substances,

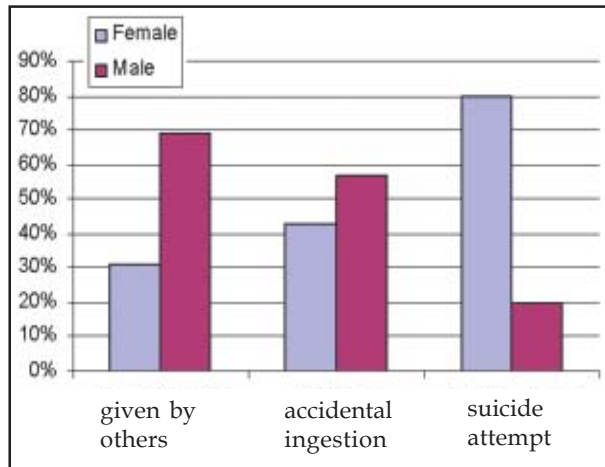


Fig-1: Frequency distribution of causes of poisoning by sex

caretakers education about poisoning prevention seems necessary. In this study like other studies, male gender were more involved but in suicide attempt group 80% of cases were females and all cases were over 9 years old and this was compatible with Ankara study.¹¹ It may be due to earlier puberty in females. Adolescents are more sensitive to environmental stresses and have higher emotional reactions probably due to hormonal changes. Suicide attempts caused 6.2% of poisoning. It was compatible with studies from Shiraz¹² and Tabriz.¹⁶ In Trinidad study this ratio was 11.2%.¹⁷ It is mentioned that if a study involves higher ages of adolescence, this ratio will be higher because it will involve puberty period in male gender too. Infants under the age of one year were 7% of cases in this study which is similar to earlier studies from Iran such as Kermanshah (5.7%) and Shiraz study (10%).^{5,12} A study from Emirates reported that, poisoning below the age of one year was rare.

In infants under 6 months old "Navam" (that contains opium substances) was the most common cause of poisoning. It has been used traditionally since long times for calming down infants and treating infantile colic and as a general concept that herbal agents are safe it is still being used. These misconceptions should be removed through public education programs.

Compatible to many earlier studies petroleum products specially kerosene are the most common source of poisoning in our study.^{5,14,17,18} but there is a downward trend in prevalence of these substance due to changing life styles and decrease in use of kerosene in houses.^{14,15} As in Tehran study between 1986 to1991 the most common cause of poisoning in children was kerosene but in 1997 in the same area it was replaced by medicines.¹⁴

Among medicines, prevalence of poisoning by anti depressants and benzodiazepines are compatible with the Kermanshah study.⁵ In Tehran study Benzodiazepines and then anti depressants were the most common causes of drug poisoning.¹⁵

In some studies pain killers were the most common cause of poisoning. Unlike the findings of studies in Saudi Arabia, Ankara and Emirates, analgesics and anti inflammatory drugs were not the common causes of poisoning in our study.^{6,8,11} The most common signs of poisoning were decreased level of consciousness and vomiting which are compatible with earlier studies.^{5,16} In children presenting with decreased level of consciousness and vomiting without any history of fever and primary signs of an illness, especially between one to five year old poisoning should be considered. As reported in Saudi Arabia, Emirate and Tabriz studies we didn't have mortality in our study either.^{6,8,16} Because of the bad tastes of majority of poisonous substances, children don't ingest large amount of them and on-time and effective management can prevent mortality. Children under 5 years old have only 1% of mortality rates because of poisoning.¹⁹ Higher mortality is seen in adolescents. In this study only 36% of cases were referred to hospital in the first two hours after ingestion. Training families about importance of early referral and immediate consultation with physicians can reduce mortality. Poisonous substances and medicines should be kept in unreachable places for children, and putting poisons in places and containers which are used for keeping foods should be avoided. Usage of resistant packages

is important in prevention of poisoning specially for one to five year old children.

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