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Research Article

An epidemiological study of acute poisoning in children in a tertiary care hospital of western Rajasthan, India

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ABSTRACT

Background: Poisoning is one of the important reasons for children's admission to hospital. Knowledge of epidemiology of poisoning in each region plays an important role in planning prevention, care and treatment of patients. This study was conducted to determine the characteristics of acute poisoning epidemiology in children attending pediatric hospital in Bikaner, Rajasthan, India in a one year period (October 2013 to September 2014).
Methods: This prospective study was conducted on 177 children admitted for poisoning. After admission of the patients we took detailed history including demographic profile, clinical sign and symptoms and general physical examination. All these parameters were recorded in pre designed performa and analyzed using SPSS 22 software.
Results: Males were more involved than females. The maximum no. of cases are belong to rural than urban.75.7% cases are belong to 1-3 years age group and maximum cases are belong in summer season and minimum in winter season and prevalence of poisoning was 1.12%.
Conclusions: High prevalence of poisoning with groups of drugs mentioned could indicate community-wide excessive use of these drugs, as well as negligence of families in keeping them out of children's reach. Therefore, raising knowledge and awareness about variety of poisoning and how to prevent them, through holding workshops, national media, schools, and health centres can be a valuable step toward upkeep of children's health.

Keywords: Children, Epidemiology, Poisoning

INTRODUCTION

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 from 0.33% to 7.6%.[1,2] Poisoning is most commonly observed at 1-5 years of age and these children constitute 80% of all poisoning cases.[3,4] 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, and at school age and during adolescence, medications used for committing suicide are the main cause of poisoning.[4] The mortality rate due to poisoning is 3-5%.[1,2] The pattern and main risks of acute poisoning change with time according to age, and they differ from country to country. Thus epidemiological surveillance specific for each country is necessary to determine the extent and characteristics of the problem, according to which related preventive measures can be taken.

METHODS

This prospective cross sectional hospital based study was conducted in department of pediatrics at S. P. M. college and associated group of hospital Bikaner, Rajasthan, India.

Study was done for 1 year from October 2013 to September 2014. 0-17 years of age group were selected for the study.

All patient with history of ingestion poison and patients with doubtful history of consumption of poison but with definite sign and symptoms of acute poisoning were included in the study.

Food poisoning and idiosyncraptic reaction to drugs were exclusion criteria for the study.

After admission of the patients, detailed history including demographic profile, clinical sign and symptoms and general physical examination were taken. All these parameters were recorded in pre-designed performa and analyzed using SPSS 22 software.

This prospective study was conducted on all children admitted for acute poisoning to the pediatric hospital of Sardar Patel medical college Bikaner, Rajasthan, India during from October 2013 to September 2014. In this study, all children (age group 0-17 years) with acute poisoning diagnosis were investigated and those with non-definitive diagnosis were excluded. For all patient, different parameters on sociodemographic basis including age, gender, socioeconomic status, level of education, types of poison were documented and analysed using SPSS 22 software.

RESULTS

Table 1: Patients' characteristics.

Gender	No. of cases	Percentage
Male	121	68.36
Female	56	31.64
Area		
Rural	116	65.54
Urban	61	34.46
Age (years)		
<1	5	2.82
1-3	134	75.70
4-6	20	11.30
7-9	5	2.82
10-12	6	3.40
13-17	7	3.95
Season		
Summer (March- June)	86	48.60
Rainy (July- October)	57	32.20
Winter (November-February)	34	19.20

Table 1 showed that males were more involved than females. The maximum no. of cases are belong to rural than urban.75.7% cases are belong to 1-3 years age group and maximum cases are belong in summer season and minimum in winter season.

Table 2: Prevalence of poisoning cases.

No. of total admission	No. of poisoning cases	Prevalence
15736	177	1.12%

Total 177 poisoning cases were admitted during 1 year period from October 2013 to September 2014. During this period total admissions were 15736. Thus prevalence was 1.12%.

DISCUSSION

The maximum cases of present study were male (68.36%), and this study is in line with studies by Kohli et al and Honnungar et al in both maximum cases were males.[5,6] In our study more common age group were 1-3 years age group. our study is in line with Kohli et al in which all types of poisoning was common in 1-3 years age group except corrosive poisoning which was most common in 4 year age.[5] In present study maximum cases (65.54%) belong to rural area. Present study comparable to Honnungar et al in this study also maximum cases belong to rural area.[6] But present study differ with Kohli et al (AIIMS, Delhi) in this maximum cases belong to urban area.[5]

In present study maximum cases are belong in summer season and minimum in winter season. The study is in line with studies by Honnungar et al, in which maximum and minimum cases were in summer and winter respectively.[6]

The reported prevalence of accidental poisoning in children varies from 0.3% to 7.6%. The prevalence in present study was 1.1%, which is similar to those reported by various authors (Table 2).[7-13]

CONCLUSION

High prevalence of poisoning with groups of drugs mentioned could indicate community-wide excessive use of these drugs, as well as negligence of families in keeping them out of children's reach. Therefore, raising knowledge and awareness about variety of poisoning and how to prevent them, through holding workshops, national media, schools, and health centres can be a valuable step toward upkeep of children's health

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