

**Original article:**

**Clinical Assessment of Poisoning Occurring in Paediatric Patients at a Tertiary Care Teaching Hospital**

**Sujata Talan<sup>1\*</sup>, Anupam Sharma<sup>2</sup>**

<sup>1</sup>Assistant Professor, Department of Paediatrics, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India.

<sup>2</sup>Assistant Professor, Department of Medicine, Shri Ram MurtiSmarak Institute of Medical Sciences, Bareilly, Uttar Pradesh, India.

\*Corresponding Author: Dr. SujataTalan

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**Abstract**

**Background:** Accidental acute poisoning is one of the common health problems affecting the paediatric population. Risk factors and occurrence of pattern of the accidental poisoning cases among paediatric patients various with age and demographic details. Hence, we planned this study to assess the pattern and symptomology associated with acute poisoning cases among paediatric patients.

**Materials & Methods:** The present study included assessment of all the paediatric patients that were admitted with the chief complaint of poisoning. A total of 42 patients of less than 14 years of age with suspected history of poisoning were enrolled in the present study. Patients with suspected history of any insect or snake bite were excluded from the present study. All the data was obtained from the medical record file of the patients and recorded and analyzed.

**Results:** Most of the cases (35.7) of poisoning were due to kerosene. Bleaching agents caused poisoning in 7.1 percent of the cases. Caustic soda caused poisoning in 4.8 percent of the cases. Vomiting was the most common symptom encountered in paediatric patients occurring in 66.7 percent of the patients. Breathlessness and cough occurred in 16.7 and 19 percent of the paediatric patients respectively. Irritability and conclusions occurred in 4.8 and 2.4 percent of the patients respectively.

**Conclusion:** In paediatric patients with poisoning, special attention should be given to the management of airway and circulation.

**Key words:** Paediatric, Poisoning, Demographic

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**INTRODUCTION**

One of the common health problems affecting the paediatric population is the acute poisoning. It represents a major health burden on the society.<sup>1</sup> It also forms a significant proportion of the admissions among all the emergency admissions in the medical units.<sup>2</sup> Various studies from the past quote the incidence of paediatric poisoning in upto approximately 8 percent of the paediatric cases. In paediatric patients of less than 5 years age, poisoning is most commonly observed and constitutes almost four –fifth cases of paediatric pathologies.<sup>3</sup>

Accidental medicinal poisoning is the most common cause of poisoning in paediatric patients of less than 1 year of age.<sup>4</sup> Among children of 2 to 3 years of age, most common cause of accidental poisoning are the houses cleaning products. Medications kept at the cupboard form the most common cause of poisoning among children of 3 to 5 years of age.<sup>5</sup> Due to poisoning, the mortality rate of 3 to 5 percent is observed in the past literature. Risk factors and occurrence of pattern of the accidental poisoning cases among paediatric patients various with age and demographic details.<sup>6</sup> Hence, we planned this study to assess the pattern

and symptomology associated with acute poisoning cases among paediatric patients.

**MATERIALS & METHODS**

The present study was conducted in the department of paediatrics, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh (India) and included assessment of all the paediatric patients that were admitted with the chief complaint of poisoning. Ethical clearance was taken from the ethical committee of the institute and written consent was obtained after explaining in detail the entire research protocol. Inclusion criteria for the present study included:

- Patients with less than 14 years of age
- Patients without any other systemic illness
- Patients without any known drug allergy
- Patients suspected of history of poisoning

A total of 42 patients of less than 14 years of age with suspected history of poisoning were enrolled in the present study. Patients with suspected history of any insect or snake bite were excluded from the present study. All the data was obtained from the medical record file of the patients and recorded. These data which was extracted included the socio-demographic details of the patients, the nature and

type of poisoning, the clinical manifestations and symptomatology in patients, the time duration and time elapsed while assessing the details of the patients. All the results were analysed by SPSS software. Unpaired student t test and univariate regression curve was used for the assessment of level of significance.

**RESULTS**

**Table 1** show various types of poisoning occurring in paediatric patients. Most of the cases (35.7) of poisoning were due to kerosene. Bleaching agents caused poisoning in 7.1 percent of the cases. Caustic soda caused poisoning in 4.8 percent of the cases. Insecticides and iron supplements caused poisoning in 4.8 percent of the cases. Turpentine hydrocarbons caused poisoning in 4.8 percent of the cases. Vomiting was the most common symptom encountered in paediatric patients occurring in 66.7 percent of the patients. Breathlessness and cough occurred in 16.7 and 19 percent of the paediatric patients respectively. Irritability and convulsions occurred in 4.8 and 2.4 percent of the patients respectively. Vomiting with cough and vomiting with irritability occurred in 14.2 and 11.8 percent of the paediatric patients respectively.

**Table 1: Various types poisoning in paediatric patients**

Types of poisoning		Number of cases	Percentage
Corrosives	Bleaching agents	3	7.1
	Caustic soda	2	4.8
	Phenyl	2	4.8
	Insecticides	4	9.5
Hydrocarbons	Kerosene	15	35.7
	Turpentine	2	4.8
Drugs	Cardio-vascular	2	4.8
	Iron supplement	4	9.5
	Oils	3	7.1
	Others	5	11.9
Total		42	100

**Table 2: Various symptoms associated with poisoning cases in paediatric patients**

Clinical symptoms	Total number of cases	Percentage
Vomiting	28	66.7
Cough	8	19.0
Breathlessness	7	16.7
Irritability	2	4.8
Convulsions	1	2.4
Burning sensation and difficulty in swallowing	5	11.9
Vomiting with cough	6	14.2
Vomiting with irritability	5	11.8

**DISCUSSION**

One of the common medical emergencies occurring in the paediatric wing of the medical institutes is the poisoning. Accidental poisoning is the most common cause of poisoning cases occurring in paediatric patients.<sup>7</sup> In India, approximately 5 percent of the total bed occupancy cases in the paediatric department of various hospitals are due poisoning. As per World Health Organization (WHO), due to the curious nature of the children to explore various unknown things, these poisoning cases are more common in children. Unnatural death is most commonly caused in children due to poisoning reasons.<sup>8</sup> Among all the paediatric patients admitted to the hospitals, it forms the second most common cause.<sup>9</sup> Hence we planned this study to assess the pattern and symptomology associated with acute poisoning cases among paediatric patients.

In the present study, we observed that incidence of occurrence of paediatric poisoning in the present study was less than 2 percent which was in correlation with the results obtained by previous authors.<sup>10</sup> We also observed that kerosene was the most common cause of poisoning in the present study. Our results were in correlation with the results obtained by Kohli et al who also reported similar findings.<sup>11</sup> Andiran et al assessed the clinical

details of the paediatric patients admitted to the paediatric wing of the hospital from 1995 to 2000. They analyzed all the paediatric cases of less than 17 years of age. They retrospectively assessed all the details of the patients including the demographic and clinical data. A total of 489 patients were assessed by them. They observed that the mean age of the patients in their study was 5.9 years. More than 60 percent of the cases of their study were less than 5 years of age. Male patients outnumbered female patients in their study with boys forming more than 52 percent of the total study population. Accidental poisoning was the main complaint in approximately 80 percent of the cases. When observed in patients with less than 5 years of age, accidental poisoning formed more than 97 percent of the cases. Positioning due to therapeutical error was the most common cause in patients less than 1 year of age. In more than 57 percent of the cases, the offending agent was the drugs. From the results, they concluded that early awareness is necessary among parents of paediatric population regarding the increasing cases and frequency of occurrence of poisoning incidents.<sup>12</sup> Lamireau et al assessed the data of approximately 3000 paediatric patients that were admitted to the paediatric emergency care unit (PECU) from 1989 to 1995. They observed that more than 80 percent

of the total paediatric patients were less than 5 years of age. Treatment was not carried in 40 percent of the individuals while more than three-fourth of the cases were discharged with one day of admission of the patient. Suicide attemptation was seen in less than 2 percent of the cases. An overall mortality rate of 0.33 among 1000 subjects was observed. Accidental poisoning was the common cause of poisoning detected in children. From the results, the authors concluded that among paediatric population, accidental poisoning is a frequent problem encountered.<sup>13</sup> Mintegi et al assessed the characteristic of paediatric poisoning cases in the emergency departments of the hospitals in Spain. They analyzed 2157 paediatric patients in 17 emergency units from 2001 to 2002 and observed that 0.28 percent of all the emergency visits of the patients constituted the paediatric

poisoning. 2 years was the mean age of admission of the paediatric patients. In more than 54 percent of the cases, the cause of poisoning was due to drug ingestion. Within one hour of the ingestion of the noxious agent, more than 61 percent of the paediatric patients were admitted to the hospitals. In more than 51 percent of the cases, gastrointestinal decontamination was used. From the results, the authors concluded that most cases of intoxication was due to the accidental ingestion of the drugs in paediatric patients.<sup>14</sup>

#### CONCLUSION

From the above results, the authors conclude that in paediatric patients with poisoning, special attention should be given to the management of airway and circulation. However, future studies are recommended.

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