

**CLINICAL PROFILE OF CHILDHOOD POISONING IN A TERTIARY CARE CENTRE**Poornima Shankar<sup>1</sup>, Srividya G. S<sup>2</sup><sup>1</sup>Associate Professor, Department of Paediatrics, KIMS, Bangalore.<sup>2</sup>Post Graduate, Department of Paediatrics, KIMS, Bangalore.**ABSTRACT****BACKGROUND**

Accidents including poisoning are one of the leading causes of morbidity and mortality among children in the west. Poisoning, while never accounting for a large number of accidental deaths, have acquired prominence now because they have not decreased at the same rate as the infectious diseases.

**METHODS**

An observational study was done in Department of Paediatrics KIMS Bangalore to know the incidence and pattern of childhood poisoning, to know the morbidity and mortality resulting from childhood poisoning. 86 children aged between 0-18 years were admitted to the paediatric intensive care unit with history of poisoning during the 2-year period of the study (Nov 13-Nov 15) were included. Diagnosis of poisoning was made on the basis of history and examination findings, Relevant investigations were done and Profile of patients with poisoning, their symptoms, type of poisoning and outcome were analysed.

**RESULTS**

The average duration of stay in the hospital was 2.7 days. Poisoning was accidental in 80 (93%) patients whereas suicidal intent was present in only 6 (7%) patients. Total 5 (5.8%) patients died of which 4 were due to insecticide and pesticide poisoning and one was due to kerosene poisoning.

**CONCLUSION**

In the present study the probable reason for higher incidence of poisoning by insecticides & pesticides could be the involvement of higher age group and more involvement of adolescent children.

**KEYWORDS**

Picu, Childhood poisoning, Profile.

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**INTRODUCTION:** In children poisoning is an important Paediatric emergency and it has become an important cause of morbidity and mortality in children following the reduction in childhood mortality from infectious diseases, due to advent of immunizing agents and antimicrobials. Accidents including poisoning are one of the leading causes of morbidity and mortality among children in the west. Poisoning, while never accounting for a large number of accidental deaths, have acquired prominence now because they have not decreased at the same rate as the infectious diseases.<sup>(1-3)</sup> The cause and types of poisoning vary in different parts of world depending upon the factors such as demography, socioeconomic status, education, local beliefs and customs, also by availability and quality of medical facilities. Acute poisoning is common in children and in many cases it is preventable. With the increasing urbanization and rapid socioeconomic development in India during last decade, change in Paediatric poisoning profile can be expected. According to WHO, mortality in children due to

poisoning up to 4 years of age varies between 0.3 to 7 per 100,000 populations in different countries of world.<sup>4</sup> There is paucity of such data from India.

**AIMS AND OBJECTIVES:** Determine the clinical profile and outcome of acute Paediatric poisoning in an urban tertiary care hospital.

**METHODS & MATERIALS:**

**Inclusion Criteria:** All children and adolescents admitted to the Paediatric intensive care unit of tertiary care teaching institute (Kempgowda Institute of Medical Sciences) in Bangalore during the period of November 2013 to November 2015 with diagnosis of poisoning were included in the study.

**Exclusion Criteria:** NA.

Diagnosis of poisoning was made on the basis of history and examination findings. Clinical history was taken in detail with reference to the age, sex, socioeconomic status as per modified Prasad's classification,<sup>5</sup> demography, nature of poisoning, the time elapsed between consumption and reporting to the hospital, intent, symptomatology, duration of stay in the hospital and outcome. The examination findings were recorded as per proforma from patient's case record. Relevant investigations findings like chest x-ray to

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diagnose pneumonitis in kerosene poisoning, blood tests (complete hemogram, renal function tests, liver function tests) and urine examination to rule out complications of various poisonings like insecticide poisoning or snake envenomation were also recorded from hospital records. No toxicological analysis report was available in any patient. Profile of patients with poisoning, their symptoms, type of poisoning and outcome were analysed.

**RESULT:** One hundred and four (86) children aged between 0-18 years were admitted with poisoning. Total number of admissions during this period were 2880. The incidence of poisoning was 2.98%. In this study commonest age group affected was between 11-18 years. Female: male ratio was 1.68:1. Table 1 depicts age and gender distribution of patients with poisoning. 4(4.6%) belonged to upper socio-economic status, 17(19.7%) to middle socio-economic status and 65(75.5%) belonged to lower socio-economic status. 70(81.3%) patients were from urban population and 16(1.8%) were from rural areas. Only 1(1.1%) patient presented within an hour of exposure to the poison, whereas 12(13.9%) presented within 1-2 hours of poisoning, 22(25.5%) presented in 2-5 hours and 51(59.3%) presented after 5 hours of poisoning. Table 2 depicts the various clinical presentations and table 3 depicts various types of poisons to which these children were exposed. 50(58.1%) patients stayed in hospital for 1-2 days, 33(38.3%) stayed for 3-7 days, 3(3.4%) needed hospital stay for more than 7 days.

The average duration of stay in the hospital was 2.7 days. Poisoning was accidental in 80(93%) patients whereas suicidal intent was present in only 6(7%) patients. Total 5(5.8%) patients died of which 4 were due to insecticide and pesticide poisoning and one was due to kerosene poisoning.

Age in years	Males (%)	Females (%)	Total (%)
< 1	0	0	0
1-5	20(23.2)	16(18.6)	36(41.8)
6-10	4(4.6)	2(2.3)	6(6.9)
11-18	8(9.3)	36(41.8)	44(51.1)
<b>Total</b>	<b>32(37)</b>	<b>54(62.7)</b>	<b>86(100)</b>

**Table 1: Age and sex distribution of patients with poisoning**

Symptoms	Number of cases (%)
< 1	0
1-5	20(23.2)
Vomiting	51(59)
Altered sensorium and unconsciousness	30(34.8)
Convulsions	7(8.1)
Diarrhoea	6(6.9)
Urinary incontinence	5(5.8)
Drizzling of saliva	5(5.8)
Asymptomatic	3(3.4)
Pain and swelling at bite site	4(4.6)
Odour of poison	3(3.4)

Restlessness/agitation	3(3.4)
Fever	3(3.4)
Haematuria	3(3.4)
Hematemesis	2(2.3)
Respiratory distress	2(2.3)
Red hot skin	2(2.3)
Headache	1(1.1)
Blurring of vision	1(1.1)
Anuria	1(1.1)
Redness of face and eyes	1(1.1)

**Table 2: Common modes of presentation**

Types of poisoning	Number of cases (%)
Insecticide and pesticides	33(38.3)
Plant poisoning	18(20.9)
Snake bite	10(11.6)
Drug and medications	9(10.4)
Hydrocarbon (Including Kerosene)	4(4.6)
Miscellaneous	4(4.6)
Corrosives	3(3.4)
Food poisoning	2(2.3)
Cleaners and detergents	2(2.3)
Unknown	1(1.16)
<b>Total</b>	<b>86</b>

**Table 3: Types of poisoning**

**DISCUSSION:** The profile of childhood poisoning varies with age, sex, socioeconomic status and demography.<sup>6-9</sup> The incidence of poisoning in the present study was 2.98%, which is little more to that reported by of Barat et al (1.1%), Khadgawat et al (1.1%) Agarwal et al (1.8%) and Sitaraman et al (1.9%).<sup>7,10-12</sup> Maximum numbers of cases of poisoning were in 11-18 years' age group in our study. Sharma et al,<sup>13</sup> Singhal et al<sup>14</sup> and Buch et al<sup>15</sup> studied children up to 12 years and Kumar et al<sup>9</sup> up to 14 years, whereas Singh et al<sup>16</sup> studied children up to 15 years. Hence this finding in the present study cannot be compared with the data available, however Singh et al<sup>8</sup> have observed the maximum incidence of childhood poisoning occurred above 5 years of age (40.9%). Our study had a female preponderance, while studies of Khadgawat et al,<sup>7</sup> Niyaj et al<sup>15</sup> and Ganga et al,<sup>17</sup> have reported male preponderance, the ratios being 1.6:1, 1.25:1, and 1.7:1 respectively. The childhood poisoning is more common in girls, because adolescent girls of their increased suicidal tendency.

Majority of cases in our study were seen from low and middle socioeconomic status. Tak et al<sup>18</sup> reported that 100% of cases were from this group. Singh et al<sup>11</sup> reported that 98.6% of cases were from low socioeconomic status group. Barat et al<sup>10</sup> observed that 98% of childhood poisoning cases were from poor socioeconomic status group. Singh et al<sup>8</sup> reported that easy availability of some formulations in unacceptable concentration in the local market and lack of education among parents are the reason for higher incidence of childhood poisoning in this socio-economic strata.

Majority of cases in our study belonged to urban area. While in study made by V Kumar et al<sup>9</sup> majority of cases were from rural set up, this depends on the location of the centre of study. Maximum (59.3%) of cases were brought after five hours of exposure. V Kumar<sup>9</sup> reported the average time interval to be 5.5 hours and Singh et al<sup>16</sup> reported that the time interval of 6.77 hours in their studies. The delay in reporting to the hospital could be due to ignorance, poverty, insufficient knowledge regarding the poisonous agent, hilly topography and lack of easy modes of transportation. The commonest mode of presentation was vomiting in our patients. This could be attributed to the increased incidence of insecticide poisoning. In this study maximum cases were due to poisoning by insecticides and pesticides, followed by plant poisoning whereas kerosene oil poisoning constituted only (4.6%), which was predominant poisoning in almost all other studies.<sup>3,7,12,16</sup> Buch et al<sup>17</sup> reported medicines and chemicals to be the commonest poisoning substance (53%). In the present study the probable reason for higher incidence of poisoning by insecticides & pesticides could be the involvement of higher age group and more involvement of adolescent children.

In the present study majority of cases were due to accidental poisoning, few due to suicidal mode and none due to homicidal poisoning conforming to findings of others.<sup>15,16</sup> Majority of cases stayed in hospital for 1-2 days. Duration of stay is similar to that observed by Tak et al<sup>17</sup> and Gupta et al.<sup>19</sup> Mortality rate in this study was 5.8%. Ganga et al<sup>17</sup> and Singh et al<sup>16</sup> have reported mortality rate of 3.9% and 12.5% respectively in their studies.

**CONCLUSION:** The profile of childhood poisoning varies with age, sex, socioeconomic status and demography. In the present study the probable reason for higher incidence of poisoning by insecticides & pesticides could be the involvement of higher age group and more involvement of adolescent children.

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