

Accidental Poisoning in Childhood at the Lagos University Teaching Hospital

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Summary

Onifade EU. Accidental Poisoning in Childhood at the Lagos University Teaching Hospital. *Nigerian Journal of Paediatrics* 1999; 26: 4. A retrospective study of children admitted with accidental poisoning over a five-year period at the Children Emergency Room of the Lagos University Teaching Hospital, was undertaken and the results were compared with those obtained in a similar study from the same institution 20 years earlier. The results showed a decline of 52.4 percent in the overall incidence. There was also a 70.2 percent reduction in the incidence of cow's urine (CUC) poisoning although this difference was insignificant ($p = 0.06$). There was however, a significant increase in the relative incidence of kerosine poisoning, from 19.8 percent to 48.7 percent over the 20-year period. Sixty one (80.3 percent) of the 76 patients who ingested kerosine were under two years of age. The present findings indicate a relative increase in household chemical poisoning as well as in kerosine ingestion by toddlers, whereas there was a marked decrease in the incidence of poisoning due to other agents.

Introduction

ACCIDENTAL poisoning is not uncommon among Nigerian children.¹⁻⁸ In 1975, Ogundipe² studying cases of poisoning treated at the Children Emergency Room (CHER) of the Lagos University Teaching Hospital (LUTH), reported that cow's urine concoction (CUC) was almost as common as kerosine poisoning, a finding that was at variance with results from some other urban Nigerian cities,^{4,5} but similar to Ilesha's,³ a semi-urban setting. In recent years, there appears to have been a marked decline in the number of children presenting at LUTH's CHER with febrile convulsions who had received CUC as home treatment before arrival at the hospital. Furthermore, in the present harsh socioeconomic environment, it would be interesting to determine what effects, if any, the above situations might have had on the pattern of childhood poisonings as seen in our CHER. A retrospective study was therefore, undertaken to determine the pattern of accidental poisoning in children seen in the same hospital 20 years later in an attempt to identify any changes.

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Subjects and Methods

The records of all children who attended the CHER between January, 1989 and December, 1993 (a five-year period) were reviewed. Data extracted from these records included the age, sex, home address, poisoning agents, date of admission, duration of hospital stay and outcome of all cases who had accidentally ingested poisonous agents. Proportions were determined and the results were then subjected to statistical analysis as appropriate, using chi square test to determine the significance between any two sets of results. Significant p value was set at 0.05.

Results

A total of 156 children were seen with accidental poisoning over the period. One hundred and forty-one (90 percent) of them stayed in CHER for a maximum of 24 hours, with the longest duration spent being three days. Ninety two (59.0 percent) of the children were aged two years and below, and all the were aged below 10 years, this being the upper age limit for children admitted to CHER. Eighty-six were males, while 70 were females, a M:F ratio of 1.2 : 1 ($X^2 = 2.39$, $p = 0.3$); among those aged two years and below, the M:F ratio was 1:1. Fewer numbers of children with poisoning were seen with increasing age (Table 1). There were only four deaths, an overall mortality of 2.6 percent; all those who died were males while death in all cases occurred within 24 hours of admission. Three of those who died, all of

whom had ingested CUC, were aged six months, three years and six years, respectively; the fourth mortality was a child aged two years who had ingested kerosine.

The commonest poison was kerosine (Table II) and it accounted for 76 (48.7 percent) of all the cases. It was followed in descending order by CUC 19 (10.9 percent), prescribed medications 13 (8.3 percent), household agents 10 (6.4 percent), caustic soda nine (5.8 percent), alcohol eight (5.1 percent) and raticide/insecticides seven (4.5 percent). In 16 (10.3 percent) patients, the offending agent was unknown. Sixty-one (80.3 percent) of the children who ingested kerosine were below two years of age; this was statistically significant ($p < 0.00001$). With regard to raticides/insecticides, poisoning was more common in children above two years of age ($X^2 = 3.39$, $p = 0.03$). Drugs ingested included phenobarbitone, salicylates, salbutamol, chloroquine, and isoniazid which had been prescribed to other members of the family, while household agents included gentian violet, potassium permanganate, bleach, methylated spirit and houseplants. Among those poisoned with household agents were four children from the same family who had ingested a meal of cassava flour (*gari*); they manifested features of cyanide poisoning and survived.

Table I

Age and Sex Distribution and Poisoning Agents in 156 Children

Agents	Age (years) and Sex						No of Cases	P value
	<2		2-4		>4			
	M	F	M	F	M	F		
Kerosine	32	29	9	3	2	1	76 (48.7)	0.00001
CUC	2	5	2	3	4	1	17 (10.9)	0.11
Prescribed drugs	3	2	0	2	4	2	13 (8.3)	0.11
Household agents	2	1	1	2	2	2	10 (6.4)	0.11
Caustic soda	3	5	0	0	1	0	9 (5.8)	0.12
Alcohol	1	1	1	1	2	2	8 (4.1)	0.10
Raticide/ Insecticide	0	1	4	1	0	1	7 (4.5)	0.03
Unknown	3	2	5	1	3	2	16 (10.3)	0.017
Total	46	46	22	13	18	11	156 (100.0)	

Figures in parenthesis represent percentages

A comparison of the incidence of poisons reported in 1975 and the present series (Table II) revealed an overall reduction of 52.4 percent. There was however, a significant increase in the proportion of poisoning due to kerosine ($X^2 = 42.77$, $p < 0.00001$) as well as household agents ($X^2 = 5.70$, $p = 0.0116$), while there was a significant reduction in the proportion caused by prescribed drugs, ($X^2 = 5.86$, $p = 0.015$).

Discussion

In 1972, Ransome-Kuti⁹ reported that an average of 10,135 children were seen in CHER over a one-year period. This number seems to have remained fairly constant as shown in a subsequent report by Lesi, Temiye, Epelle¹⁰ in 1990. During the five-year period of the present study, the total number of children who attended CHER was 62,042, an average of 12,408 children per annum. There has however, been a change in the numbers of children presenting with accidental poisoning. Ransom-Kuti⁹ in 1972, reported only 41 cases in one year, while Ogundipe² in 1975, reported 328 cases over a five-year period giving an average of 65.6 cases per annum. Contrary to the 1975 findings, the present study has revealed an average of 31.2 cases per annum, a 52 percent reduction in 20 years. This observed reduction in the incidence of poisoning over the period could be a function of increased health awareness.

The epidemiological characteristics such as the age and sex incidences of poisoning have revealed no change. Thus, the majority of affected children in the present series were aged below two years, a finding that is similar to that reported in the previous study from the same institution;² this finding is also similar to those from Ilesha,³ Zaria⁴ and Ilorin.⁶ Males were also slightly more commonly affected than females.

Kerosine, CUC, and prescribed drugs in that order, remained the three most common poisons seen at LUTH. Kerosine accounted for 48.7 percent in this series, a finding that would suggest its increasing use in households. The cost of cooking gas has increased to such an extent in recent years that several families are compelled to use kerosine instead. There is also a perennial shortage of kerosine in the country thus necessitating its storage in receptacles such as empty beer and soft drinks bottles which unfortunately, are attractive to thirsty children. These factors may explain the highly significant increase in the proportion of cases of kerosine poisoning as shown in the present series when compared with the 1975 series. In contrast, although CUC maintained the second position, fewer cases occurred in our se-

ries compared with the series reported 20 years previously. In comparison with other poisons, morbidity and mortality patterns with CUC poisoning were most severe;^{2,3,11} thus, a noticeable decline in the use of this agent is most welcome. The reduction in the incidence of CUC poisoning documented in this study may be related to health education and therefore, appropriately directed health education may have a similar effect on kerosene poisoning. Household agents, most of which like kerosene are stored in bottles, were the fourth most common poisons being 6.4 percent in our series and like kerosene, showed a significant proportional rise.

The observed decline of 52.4 percent in the over-

all incidence of accidental childhood poisoning seen at CHER, 20 years after a preliminary survey is welcome. However, there is a need for continued health education directed at reducing further, the incidence of accidental poisoning in general and that due to kerosene poisoning in particular, as this contributes appreciably to childhood morbidity in developing countries.¹²⁻¹⁴

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Table II

Comparison of the Relative Incidence of Poisoning Agents with a previous Study

Agent	1975 Study ²	Present Study	X ²	P value
Kerosene	65 (19.8)	76 (48.7)	42.77	<0.0001
CUC	57 (17.4)	17 (10.9)	3.43	<0.06
Prescribed drugs	54 (16.5)	13 (8.3)	5.86	<0.015
Household agents	7 (2.1)	10 (6.4)	5.70	0.016
Caustic soda	31 (9.5)	9 (5.8)	1.89	0.169
Alcohol	19 (5.8)	8 (5.1)	0.09	0.76
Raticide/Insecticide	11 (3.3)	7 (4.5)	0.38	0.53
Unknown	84 (25.6)	16 (10.3)	9.30	0.002
Total	328	156		

Figures in parenthesis represent percent of total

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