ACCIDENTAL POISONING IN CHILDREN IN MALTA

— A TEN YEAR REVIEW —

P. VASSALLO AGIUS
M.D., D.C.H., M.R.C.P.
Lecturer in Medicine,
Royal University of Malta.
Hon. Senior Registrar,
St. Luke's Hospital.

H. M. LENICKER
M.D., D.C.H.

Accidental poisoning in children is a worldwide problem. The incidence is rising in some countries (Sweetnam, 1968; McKendrick, 1960) and the mortality is not negligible. Cauchi-Inglott (1956) analysed accidents in general in Malta involving children in the home, and Cachia and Fenech (1964) reviewed the problem of kerosene poisoning and its treatment. The purpose of this paper is to analyse the problem of poisoning in Maltese children over a ten year period and present suggestions for its prevention.

Material

The case histories of children with poisoning brought to St. Luke's Hospital, which is the main civil hospital on the Island, were reviewed over a ten year period ,from January, 1959, to December, 1968, inclusive. Throughout this period 1088 cases were dealt with. The number of cases varied from 97 to 121 per year and has accounted for 7.2 to 11.1% of all admissions to the Children's Wards, which mainly deal with non-surgical cases.

The cases were classified into Medicinal Preparations, whether in tablet, liquid or other form, and Household Agents, predominantly kerosene, disinfectants and detergents.

The cases were analysed for age and sex, monthly incidence, time-lag between ingestion and arrival in hospital, the presence of any concomitant illness, the number of siblings, admission with siblings, complications and length of stay in hospital. An attempt was made to relate the distribution of cases to socio-economic status as reflected in the father's occupation.

Findings

Type of Poison

The distribution according to the classification adopted above is shown in *Table I.* The main offenders were kerosene (50% of cases), disinfectants (14%) and Aspirin/Junior Aspirin (9.5%). From 1965 to 1968 there was only one case of Aspirin poisoning while there were 65 cases of ingestion of Junior Aspirin tab-

TABLE 1

Type of Poison: Percentage of all cases

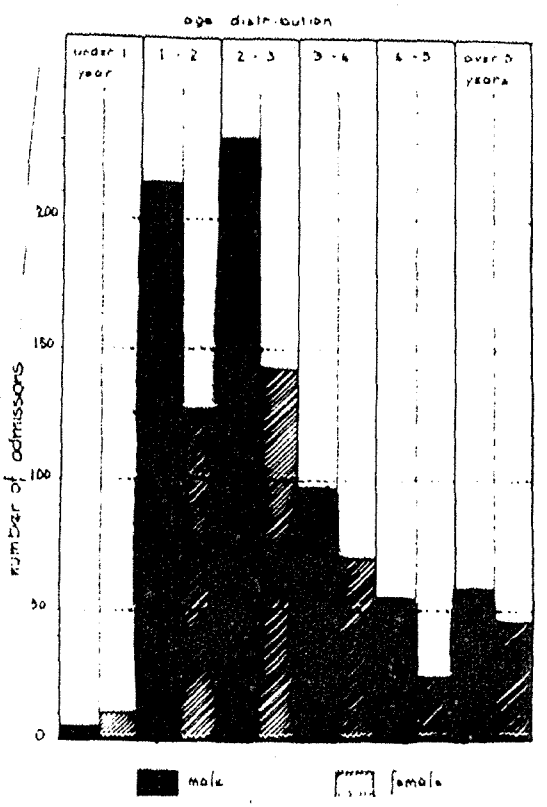
	Percentage
Medicinal	
Aspirin/Junior Aspirin	9.5
Barbiturates	2.2
Other tablets	5.5
Liquid Preparations	2.9
Other	0.1
Household	
Kerosene	49.7
Disinfectants	14.1
Insecticides	5.1
Detergents	1.9
Other	6.9
Others	
Others	2.1
All Cases	100%

lets. This rise in incidence of ingestion of flavoured Junior Aspirin has also been noted by Sweetnam (1968). Barbiturates accounted for only 2.2% of cases.

Age and Sex (Fig. 1)

Children up to 12 years of age are admitted to the Children's Wards. The youngest patient was a three-month old baby whose brother had put Surf powder into her mouth, and the oldest was an eleven-year old boy who accidentally ingested methylated spirit.

Two-thirds of the cases were in the age group 1-3 years, and males were more frequently affected than females throughout all age groups except in that under one year. This is partly accounted for by the preponderance of males under 15 years of age in the general population in Malta but it also illustrates the well-known phenomenon of the greater vulnerability of the male.



Month of Admission (Table 2)

There is an increase in the number of cases during the hot months June to September, mainly due to a greater number of cases of kerosene ingestion.

Table 2
Monthly Incidence. All Cases

J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.
59	58	55	77	81	126	162	156	109	73	78	54

Estimated time from Ingestion (Table 3)

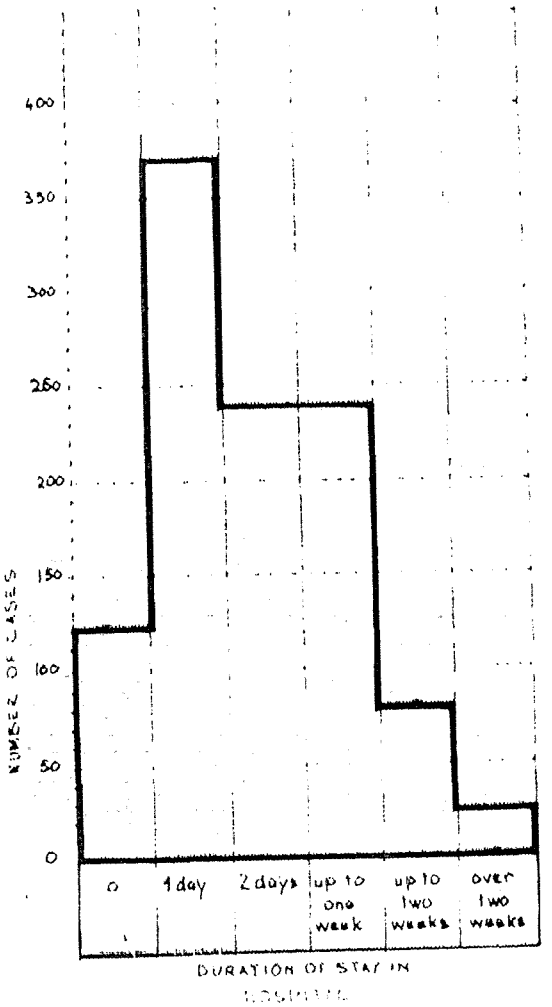
This information was available in 872 cases (83% of all cases). Just under one-half reached hospital within 30 minutes from ingestion of the poison, and a further quarter within the hour. However, even in a small island such as Malta, with good communications and an abundance of private cars, more than a quarter of the cases arrived in hospital over one hour after the accidental poisoning had taken place. This is partly due to the fact that the child is often first seen by the family doctor, who may not have been readily available, prior to referral to hospital.

Table 3
Estimated Time from Ingestion to Hospital Admission
— 872 Cases —

Under 30 mins.	30 - 60 mins.	1 - 3 hours	Over 3 hours
408	219	156	89

Duration of stay in Hospital (Fig. 2)

124 cases were admitted but were taken home at request soon after admission. 64% of the remainder were discharged within 48 hours. The longest stay



in hospital (35 days) was that of a child who was admitted in coma following ingestion of kerosene and developed severe lower respiratory tract infection; no gastric washout had been performed.

Complications (138 cases)

These were mainly lower respiratory tract infection (81%) and coma (10%). 97 cases of lower respiratory infection followed kerosene ingestion; it is the rule not to carry out gastric washout in cases of kerosene ingestion. There were only three cases of coma due to barbiturate poisoning. Other complications included convulsions, vomiting, diarrhoea, mouth ulceration (hydrochloric acid), superficial burns, conjunctivitis, haemolytic anaemia (cresol) and hypersensitivity reaction (Aspirin). There was only one death attributed to poisoning throughout the period under review. A nine month old baby had watery stools and her grandmother gave her a bottle containing what she thought was orange blossom water ("ilma żahar"), a popular remedy for colic, but it contained an insecticide. The baby developed convulsions and died two hours after admission to Hospital.

Associated Illness (22 cases)

In general there was no association between the presence of a concomitant illness and the type of poison ingested, except for bronchial asthma (ephedrine mixture, 1 case), giant urticaria (antihistamine, 1 case) and whooping cough (paracodeine, 1 case). There were only seven cases of mental deficiency recorded in the whole series.

Admission with Siblings

In 13 instances more than one child from the same household was admitted with poisoning. On one occasion, four siblings who swallowed travel sickness tablets were admitted for treatment. Three siblings were admitted for carbon monoxide poisoning, and two other siblings were overcome by petrol fumes while playing in a flooded cellar after they had upset a can of petrol.

Social Factors

Father's Occupation

This information was available in 86% of cases. In Malta in the last 10 years there has been a great socio-economic upheaval, with a marked rise in income of manual workers and improvement in living conditions. Therefore, it was not thought likely we could draw any meaningful conclusions as to socio-economic status by reference to the father's occupation. Nonetheless, manual workers

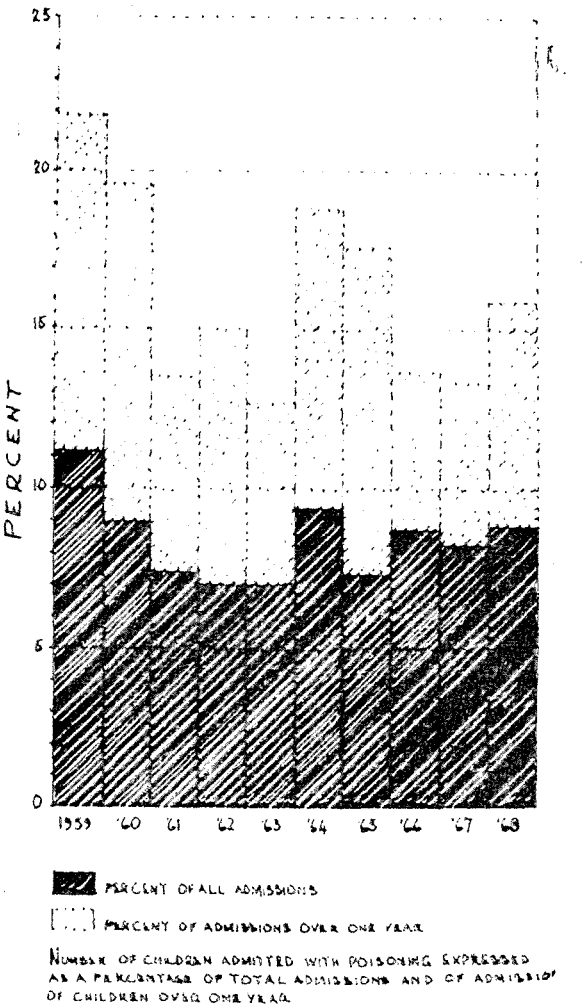
outnumbered non-manual workers by a ratio of almost four to one.

Number of Siblings

The only child in the family was the poisoned child in 22% of cases. Almost as many (21%), however, were children from large families (more than five persons, excluding parents). Indeed, an analysis of the number of children poisoned accidentally related to the number of persons in the same household showed a greater vulnerability of the child in the larger household than in the case of the only child, or the child with one or two siblings.

Problem Families (father dead, father abroad, parents separated, unmarried mother)

There were only 30 cases in this category. In some of these cases, the mother went out to work and the children were left with friends or relatives. It is unusual for the mother to go out to work in Malta. In no instance did the child come from an institution, where the accessibility of the poisons seems to be much less than in the home.



Comments

The number of children admitted with poisoning accounts for 7-11% of total admissions to the children's ward at St. Luke's Hospital. However, if the infants (children under one year of age) are excluded from the number of admissions, the proportion rises to 13-22% *(see fig. 3)*. This means that poisoning is a very important cause of hospital morbidity in childhood, and if it can be prevented the the number of admissions to the children's wards could be substantially reduced. There has been no real increase in the number of children admitted with poisoningn throughout the period under review, in contrast to the trend elsewhere.

There was only one death due to poisoning in our series of 1088 cases, a mortality rate of less than 0.1%. McKendrick (1960) gave a fatality rate of 0.4% for combined English series (777 cases) and 0.45% for pooled American series (3,100 cases). The low mortality of poisoning in children parallels the low mortality of poisoning in adults in Malta (Fenech and Grech, 1970).

The public should be made aware that accidental poisoning in children is largely preventable. Admission to hospital, which more often than not is necessary for proper observation and treatment, causes avoidable distress to both the child and the parents. The child from one to to three years old is especially vulnerable, and is notoriously intolerant to separation from the mother. We feel that it is not futile to reiterate the fact that everything

accessible to children, whether a medicinal preparation or a potentially harmful household agent, should be regarded as a possible danger to the exploring child. These articles should be kept out of reach and under lock and key if possible.

The child who has ingested a potentially harmful substance should have the benefit of medical help without delay. In the Casualty Department there should be available skilled help and advice for the management of poisoning. Emergency treatment can be life-saving in selected cases. A list of non-toxic household agents, such as chalk, ink, etc., should be readily available so that the parents could be suitably reassured and admission avoided if possible. (Mofenson and Greensheer, 1970). Such information should also be available to general practitioners if it is requested.

About 50% of all cases of poisoning in children were due to kerosene ingestion. In almost all cases, the kerosene was drunk from a soft drinks or wine bottle. In only a few instances was the kerosene drunk from a can. We believe that the incidence of kerosene poisoning can be drastically reduced by urging all housewives to store kerosene in cans with a screw cap. If this fact were sufficiently publicised, through the usual media, the number of admissions of cases of poisoning in children could be reduced by almost one half.

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