

## Case Report

# Accidental Mass Poisoning in Children – A Case Report

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### ABSTRACT

Accidental poisoning, a common paediatric emergency, is one of the important causes of morbidity and mortality in children. More than half of all cases reported to the American Association of Poison Control Centers involve children under the age of six. And sadly, the majority of these accidental poisonings occur at home. However in India, the precise incidence of accidental poisoning among children is uncertain due to lack of reporting of all the cases. In India, pesticides are used abundantly for cultivation and are stored negligently at home, making them a potential source of accidental poisoning in children especially in rural areas. The best way to minimize paediatric accidental poisoning is by creating awareness about safe use and storage of poisonous substances and constant supervision of children. A case of accidental paediatric mass poisoning due to organophosphorus pesticide is being reported in this article.

**Key Words:** Accidental poisoning; Paediatric

### Introduction

Poisoning is one of the most common unnatural causes of morbidity and mortality among children. Occurrence of accidental poisoning is more in children than adults. More than half of all cases reported to the American Association of Poison Control Centers involve children under the age of six. And sadly, the majority of these accidental poisonings occur at home.<sup>1</sup> However, in India the precise incidence of accidental poisoning among children is uncertain due to lack of reporting of all the cases.

Children of less than 15 years of age account for most cases of accidental poisoning, but fortunately they are associated with relatively low mortality.<sup>2</sup> Accidental poisoning, a common paediatric emergency, is one of the important causes of morbidity and mortality in children especially in India and other developing countries. Thousands of innocent children under the age of five years are poisoned accidentally every year throughout the world, mainly due to their inquisitive and exploratory nature and mouthing tendencies.<sup>3</sup> India being predominantly an agricultural country, pesticides are used abundantly for cultivation and access to these poisonous substances by the population is easy. These pesticides are stored negligently at home, making them a potential source of accidental poisoning in children.

In this article we report a case of accidental paediatric poisoning of three siblings involving an organophosphorus pesticide (quinalphos). This incident occurred due to the ignorance and negligence of the parents.

**The Case:** Three sisters aged 1½, 3, and 6 years were brought to the emergency department of our hospital in a state of altered consciousness. There was a history of vomiting and abdominal pain, followed by loss of consciousness. As per the history furnished by the mother, a pesticide bought for use on the crop grown by the family was stored in a fruit juice bottle at home. The oldest child consumed it in the belief that it was fruit juice, and also gave it to her sisters.

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On examination, all the three children had tachycardia with respiratory discomfort; pupils were constricted and sluggishly reactive to light; conjunctivae congested and moist; consciousness altered, with response only to painful stimuli. The 3-year old child had increased bronchial secretions with frothing from the mouth. Investigations revealed a substantial reduction in plasma cholinesterase level which indicated a diagnosis of acute organophosphorus compound poisoning. Subsequent testing in the Poison Detection Center, Belgaum, proved that the compound was quinalphos. All the children were treated as per the standard protocol for organophosphorus pesticide poisoning with atropine, oxime and other supportive care. Fortunately, all the children recovered completely without any residual effects.

### Discussion

Children are naturally curious. Many household chemicals, medicines, and cleaning products can be potentially dangerous if ingested. Children may not understand the danger of ingesting something that has not been approved by their parent. They are inquisitive by nature and often put things they find into their mouths. In addition, as toddlers grow and become more mobile, they are more able to access dangerous items. For this reason, all measures possible should be taken to child-proof dangerous substances.

Along with the exploratory behaviour of children, negligence and ignorance of the parents also contribute towards the occurrence of accidental poisoning in children. Poverty and ignorance go hand in hand. India, a country of unity in diversity, has a literacy rate of 61.1% and Gross Domestic Product per capita of 640. Two hundred and fifty million people are below the poverty line and 75% of them live in rural areas.<sup>4</sup> Karnataka, one of the forward states in India, has a total literacy rate of 67.04%, and literacy rate among males is 76.29% and females is 57.45%.

In the present case, improper storage of a dangerous pesticide due to negligence of the parents resulted in potentially serious accidental poisoning of their children. Accidental poisoning due to pesticides largely depends upon the literacy status and socio-economic status of family members. Several behaviours unique to childhood also increase a child's opportunity for excess exposure.

Fortunately, incidents of accidental poisoning in children occurring at home are preventable and prevention is always the best way to keep children from coming into contact with harmful chemicals. So, the need of the hour is to educate people, especially from rural areas where pesticides are most commonly used, and at the same time most negligently stored in the house which will be easily approachable by all members of the family without knowing the toxicological severity.

Following are some important measures which will help in the prevention of cases of accidental poisoning in children:

- Medicines and poisonous substances should not be kept in any place where children can easily reach them.
- All chemicals should be kept locked and out of reach of children.
- Chemicals should not be stored in food or drink containers.
- Original label bearing details of the chemical should not be removed from the container.
- Toxic household chemicals should not be used in close proximity of the children
- Parents should not take any medicines in front of children as they tend to imitate their parents.
- Children should be under constant supervision of their parents or any other senior member of the family.

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