

Pesticide Poisoning: A Case Report

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Abstract: Aluminium phosphide (AIP) is a cheap solid fumigant and a highly toxic pesticide which is commonly used for grain preservation. AIP has currently aroused interest with a rising number of cases in the past four decades due to increased use for agricultural and non-agricultural purposes. Its easy availability in the markets has increased also its misuse for committing suicide. Phosphine inhibits cellular oxygen utilization and can induce lipid peroxidation. Poisoning with AIP has often occurred in attempts to commit suicide, and that more often in adults than in teenagers. This is a case of suicidal consumption of aluminium phosphide by a 13-year-old female.

Keywords: Aluminium phosphide, poisoning, childhood

1. Introduction

In many agricultural countries, aluminum phosphides which are highly toxic are commonly used in rodenticides, insecticides and disinfectants.¹⁻³ The cause of widespread usage in agriculture sector, especially in grain storage facilities is associated with their lower costs.⁴ Aluminum phosphides have been marketed with various trade names worldwide

Pills with trade name of Phostoxin which have been marketed in Iran, 3 g weight of each tablet, contain 56% aluminum phosphide and 44% ammonium carbonate.⁵ In India which have higher incidence of aluminum phosphide intoxications than mean incidence in the world, pills with trade name of Celphos and Quickphos, 3 g weight of each tablet, contain 56% aluminum phosphide and 44% ammonium carbonate, also.⁶

2. Case Report

A 13-year-old female child presented to pediatric ICU, she survived initially and started vomiting. On examination, she found to attempt to suicide. Her poisoning severity score was 3. She was immediately admitted to pediatric ICU.

She was diagnosed with suicidal aluminum phosphide poisoning with cardio-pulmonary arrest secondary to arrhythmia. She was given conservative management. The children died on the 72 hours of admission.

3. Discussion

Aluminium phosphide is marketed in India as tablets of Celphos, Quickphos, etc. It is available in small and large packs containing grayish-white tablets weighing about 3 g each, containing 56% aluminium phosphide and 44% aluminium carbonate, capable of releasing 1 g of phosphine.

Following oral ingestion, AIP reacts with water and stomach acid to produce phosphine gas, which may account in large part for its observed toxicity. Phosphine generated in the gastrointestinal tract is readily absorbed into the blood stream. Phosphine may denature or reduce oxyhemoglobin

in addition to enzymes important for respiration and metabolism and may also affect cellular membranes.

The manner of death was reported to be suicidal in 87% of the cases by Dalbir et al. in 1985, 76% in a study by Chugh et al. and 100% in Jain et al. (2005) with all the cases being suicidal.

4. Conclusion

Exposure to phosphine gas released from ALP fumigants increases risks of major morbidity and mortality.

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