

## Unintentional poisoning by phosphine released from aluminum phosphide

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**Background:** Aluminum phosphide (ALP) is used as a grain preservative. Fumigation depends on release of phosphine gas from the ALP (1). Very rare reports describe unintentional exposure secondary to grain fumigation. The majority of case reports involve oral intentional ingestion. **Case report:** In this presentation, we describe an accidental severe poisoning in a 35 year old woman, her 18 year old daughter and 6 year old son, caused by inhalation of phosphine gas released from 20 tablets of ALP stored in the 15 rice bags. The boy died 2 days after exposure before admission to hospital and any special treatment but the others were admitted approximately 2 days after inhalation. They had signs and symptoms of severe toxicity, and their clinical course included metabolic acidosis, electrocardiographic changes and hypotension. They were treated by intravenous administration of sodium bicarbonate, magnesium sulphate, and calcium gluconate. Conservative and supportive therapies in intensive care unit were also provided. The patients survived following treatment and supportive care and were discharged after 3 days and followed up for one week after discharge. **Discussion:** ALP is absorbed rapidly by inhalation, dermal exposure or ingestion. Both pesticide applicators and individuals in the vicinity of application are at the risk of accidental exposure and injury from phosphine inhalation; however acute accidental poisoning happens rarely. The high mortality of ALP should raise the attention of the physicians to the problem of ALP poisoning and also necessitates the awareness of the public to the hazard of this poison. The extensive use of this pesticide poses the hazard of acute accidental and intentional exposure. Among our cases one of the individuals that had no treatment died; the two others that were admitted and treated in hospital recovered. Acute inhalation of phosphine gas if it is not diagnosed and treated can be surely lethal. **References:** 1. International Program in Chemical Safety (IPCS), World Health Organization, [WWW.INCHEM.ORG](http://WWW.INCHEM.ORG), accessed August 3, 2007.