

## **A STUDY OF ALPHOS POISONING IN WESTERN UP:**

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**INTRODUCTION:** Pesticide poisoning kills hundreds of thousands of people in the Asia-Pacific region each year. Alphos is a solid fumigant widely sold and used in the Indian subcontinent as a granary pesticide. Chemically alphos is aluminium phosphide, which yields Phosphine gas ( $\text{PH}_3$ ) the active pesticidal component, which is a mitochondrial poison. Over the last 5 years there has been a dramatic increase in the number of cases of alphos poisoning in India, mainly involving the agricultural community. The fatal dose for a 70 kg adult is 0.5 gm.

**AIMS AND OBJECTIVES:** To study cases of alphos poisoning in western UP along with factors determining patient outcome.

**MATERIALS AND METHODS:** A prospective study conducted at a north Indian tertiary health care centre (J.N.M.C.H., AMU ALIGARH) from April 2004 to March 2005, which included patients with alphos poisoning (accidental, homicidal, suicidal or else). Tabulation was done of the demographic profile, socio-economic conditions and intent of poisoning. Clinical examination and investigations were performed to assess patient's status. Initial immediate gastric decontamination was done in the A & E and was thereafter managed in the High dependency Unit.

**RESULTS:** Of a total 104 patients presenting to A & E during the study period 24 patients were excluded due to early mortality (< 1hr.) & thereby inadequate evaluation. Out of 80 pts, 65 (81.2%) were male and 15(18.8%) were females. Mean age was  $22.8 \pm 10.2$  years (mean $\pm$ SD). Majority 72(90%) belonged to the agricultural population. Intents of poisoning were suicidal 77(96.25%) and the rest were cases of accidental ingestion. Causes in the suicidal group included domestic conflict (88%), marital discord (39%), and economic hardships (16%) in overlapping patterns. Causes in teenage group were examination results and relationship failures (90%).

Average time interval between ingestion and hospitalisation were 4 hours (1 to 8 hours). The usual onset of symptoms after ingestion was  $20 \pm 10$  minutes. The most critical phase was the first 12 to 48 hours. The systemic manifestations esp. gastrointestinal, cardiovascular,

respiratory, hepatobiliary, and renal were respectively 100%, 98%, 52%, 20% & 7%.

The poor prognostic markers were delayed medical care, shock at presentation, pulmonary oedema, toxic myocarditis, arrhythmias (esp. VF), tachycardia + hypotension with the mortality of 100%, 98%, 98%, 96%, 80% & 74% respectively. Two factors responsible for the best outcome were ingestion of old formulations, & early gastric decontamination defined as self or induced vomiting or early gastric lavage, with survival being 95% & 86% respectively.

**CONCLUSION:** Our study concluded that alphas is highly toxic, cheap and easily available poison for at risk group. Moreover alphas poisoning is invariably fatal in the absence of early medical care. Ingestion of old formulations & early gastric decontamination carries the better prognosis.