

## **Abstract**

### **BACKGROUND:**

Aluminium phosphide (AIP) is used as a fumigant. It produces phosphine gas which is a mitochondrial poison. Although this poisoning has been repeatedly reported in literature with a high mortality rate, there is no known antidote for AIP intoxication. In the present study, we studied the effects of hyperbaric oxygenation (HBO) on the survival time of AIP intoxicated rats.

### **METHODS:**

Intoxicated rats with AIP (11.5 mg/kg, oral gavage) were placed in hyperbaric oxygenation with different concentrations of compressed air and oxygen.

### **RESULTS:**

All the animals exposed to AIP died within 5 days. The mean survival times of rats exposed to AIP without any intervention, treated with hyperbaric condition by compressed air, and treated with hyperbaric condition by pure O<sub>2</sub> were  $91 \pm 1$ ,  $262 \pm 8$ , and  $276 \pm 6$  minutes, respectively. In analysis of survival times, there was a significant difference between Group 2 which received AIP and the groups which underwent intervention (Groups 2 and 3,  $p < 0.001$ ; Groups 2 and 4,  $p < 0.001$ ).

### **CONCLUSIONS:**

Hyperbaric oxygenation may probably improve the survival time of the intoxicated rats with aluminium phosphide, but it may not decrease the mortality rate.