Effect of aluminum phosphide on blood glucose level.

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Objective: Aluminum Phosphide (ALP) is a solid fumigant pesticide widely used in the Iran as a grain preservative (1,2,3). It produces phosphine gas which is a mitochondrial poison that interferes with enzymes and protein synthesis (4,5). Over the last 3 years there has been a dramatic increase in the number of cases of ALP poisoning in Iran. Although ALP can cause an increase or decrease in blood glucose levels (6), we felt bound to examine the role of blood glucose level as a mortality prognostic factor.**Methods:** Forty-five patients with ALP poisoning due to ingestion were studied in a Loghman-Hakim Hospital Poison Center over a period of 14 months. All of them were treated with the same protocol (sodium bicarbonate, magnesium sulphate, calcium gluconate, and adequate hydration). Patients were divided to dead or alive groups and statistical comparisons were made in various parameters including blood glucose.**Results:** Between March 2006 and May 2007, 45 patients with ALP poisoning were admitted; of these 47% were female and 53% were male. The mean age of cases was 27.29 ± 11.53 years old with a range of 14-62 years old. All of them were hospitalized in the intensive care unit. The route of exposure to ALP was deliberate ingestion in all patients. The mean of blood glucose was 222.59 ± 20.18 mg/dL and 143.38 ± 13.7 mg/dL in survived and expired groups respectively which was statistically significant (*P value* <0.05).**Conclusion:** Aluminum phosphide can cause either elevation, decrease or no change in blood glucose level. However in non-survived cases, these changes are wider and the mean of blood glucose level is higher than survived group. This hyperglycemic effect of ALP in non-survived group correlated with mortality, and suggested that the use of treatment which increases entrance of glucose to cells may be reducing oxygen consumption and may have useful role in the treatment of these patients. **References:** (1)Abdollahi M, Jalali N, Sabzevari O, Hoseini R , Ghane T. A retrospective study of poisoning in Tehran. *J Toxicol Clin Toxicol* 1997; 35: 387-93.(2)Abdollahi M, Jalali N, Sabzevari O, Nikfar S, Fallahpour M. Pesticide poisoning during an 18-month period (1995-1997) in Tehran, Iran. *Irn J Med Sci* 1999; 24: 77- 81. (3) Nikfar S, Abdollahi M, Cheraghali A. Going from strength to strength; A drug and poison information centre. *Essent Drugs Monit* 2000; 28: 30-31. (4) Haddad LM, Shannon MW, Winchester JF. Clinical management of poisoning and drug overdose, 3rd Edition. Philadelphia. PA: Saunders, 1988: 872-73, 963-65. (5) Singh S, Bhalla A, Verma S k, Kaur A, Gill K. Cytochrome-c oxidase inhibition in ALP poisoned patients. *Clin Toxicol* 2006; 44(2): 155-8. (6) Abder-Rahman H. Effect of aluminum phosphide on blood glucose level. *Vet Hum Toxicol* 1999; 41(1): 31-2.