

Evaluation of Electrolytes and Blood Glucose Level in Aluminum Phosphide Poisoning

Mehrpour O (1), Shadnia S (2), Soltaninejad K (3), Chalaki N (4). 1. Forensic Medicine Department, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, Iran; 2. Loghman-Hakim Hospital Poison Center, Faculty of Medicine, and Toxicological Research center (TRC), Shaheed Beheshti University of Medical sciences, Tehran, Iran; 3. Assistant Professor of toxicology of Legal Medicine Organization, Tehran, Iran; 4. Birjand University of medical sciences, Iran

Objective : Aluminum Phosphide or rice tablet is a solid fumigant pesticide widely used in the Iran especially in north of Iran as a grain preservative(1).Unfortunately there is no known antidote for aluminum phosphide intoxication.(2) Recently research show dramatic increase in number of cases of aluminum phosphide poisoning in Iran(1). The aim of this study is evaluation of electrolytes and blood glucose level in this poisoning as a prognostic factor. **Methods :** Forty-five patients with aluminum phosphide poisoning due to ingestion were studied in a teaching hospital poisoning management center over a period of 14 months starting in March 2006. Patients were divided to survived and non-survived groups and statistical comparisons were made in various parameters including demographic, electrolytes and blood glucose level. **Results :** Between March 2006 to May 2007, 45 patients with aluminum phosphide poisoning of these 21(47%) were females and 24(53%) males. The mean ages of cases were 27.29 (+/- 11.58) with a range of 14- 62. All of them were hospitalized in ICU. The route of exposure to aluminum phosphide was deliberate ingestion in all patients. The mean of blood glucose level 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). The mean of Sodium and potassium level in non-survived were 140.38 ± 1.1 and 3.95 ± 0.14 . And in survived were 139.69 ± 1.13 and 3.86 ± 0.11 . the mean of Bicarbonate level in non-survived was 11.25 ± 0.9 and in survived was 12.3 ± 1.08 . **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. There was a significant correlation with hyperglycemia and mortality and it seems evaluation of blood glucose level in this poisoned have important role as a prognostic factor, comparison with electrolytes and bicarbonate. **Reference :** 1. Shadnia S, Mehrpour O, Abdollahi M. Unintentional poisoning by phosphine released from aluminum phosphide. *Hum Exp Toxicol* 2008; 27: 87–89. 2. O Mehrpour , S Alfred, S Shadnia, D E. Keyler, K Soltaninejad, N Chalaki, M Sedaghat. Hyperglycemia in Acute Aluminum Phosphide Poisoning as a Potential Prognostic Factor. *Hum Exp Toxicol*. 2008; 27:591-595.