

An episode of Monocrotophos poisoning with high morbidity

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Objectives: Organophosphate pesticides (OPs) continue to be the most common type of pesticides involved in acute poisoning in countries like India and Sri Lanka (1-2). A large number of them, including monocrotophos, are registered for use in India. Among the OP-poisoning cases reported at PIC-NIOH, monocrotophos is the third most common OPs encountered in the poisoning and found to cause severe poisoning among 67.9 % of its cases of poisoning; the highest among all OPs encountered at our centre. Monocrotophos is a highly toxic OP belonging to WHO class 1 b category. Episodes of mass poisoning due to OPs have been reported from developing countries like Pakistan, Sri Lanka and India. Morbidity and mortality from OPs remains high in rural settings where facilities for intensive care are either absent or limited. The present report describes a mass poisoning involving monocrotophos, highlighting the problem of mass OP-poisoning in developing countries resulting in high morbidity and mortality. **Case Report:** An episode of mass poisoning happened at a far off village in India where facilities for managing emergency situations were not available. It occurred after eating a meal containing breads made from bajra and contaminated Bavta (a millet). Eight people (5 adults and 3 children; 4 males and 4 females) were affected. Within 2-3 hours, all started complaining of severe abdominal pain, difficulty in respiration, diarrhea and vomiting and some had frothing from mouth. Seven of them were transported to the civil hospital in Nadiad (about 20 km) and one to a local private consultant where they were given primary treatment. Later on they were transferred to the civil hospital, Ahmedabad (about 60 km) at different intervals of time where they were initially given symptomatic treatment for food poisoning. Routine laboratory investigations were carried out at the hospital. Plasma cholinesterase and RBC cholinesterase estimations were carried out at Poison Information Centre (PIC) laboratory from blood samples using modified Ellman's method (3). All of them showed depressed levels of Plasma and RBC cholinesterase showing involvement of an organophosphate pesticide in this episode. Thereafter they were treated for OP-poisoning. All the three children showed higher grade of toxicity as depicted by their level of consciousness and very low levels of RBC cholinesterase (0, 61 and 0 U/L; reference value: 1700-2300 U/L; one child died after about 41 hours). On analysis of the Bavta flour by GC-NPD, it was found to contain a very amount of monocrotophos (938 ppm). **Conclusions:** Quick absorption and delay in the treatment seemed to be the main factors responsible for very high morbidity observed in this episode. The present report highlights the problem of mass OP-poisoning in India, resulting in high morbidity and also stresses the importance of a good laboratory support in a poison centre. **References:** 1. Eddleston M. Patterns and problems of deliberate self poisoning in the developing world countries. *Q J Med* 2000; 93: 715-31. 2. Karalliedde L, Eddleston M, Murry V. The global picture of organophosphate insecticide poisoning. In: *Organophosphates and Health*. Karalliedde L, Feldmen F, Henry J, Marrs T eds., London Imperial Press, 2001: 432-471. 3. Ellman GL, Courtney KD, Andres V Jr, Featherstone RH. A new and rapid colorimetric determination of Acetylcholinesterase activity. *Biochem Pharmacol.* 1961; 7: 88-95.