

Acute deliberate organophosphate (Coumaphos) poisoning with intermediate syndrome in a one year old child

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OBJECTIVE: To report a case of acute organophosphate poisoning in a one year old child and development of intermediate syndrome in just eight hours after exposure.

CASE REPORT: This is a case of a one year old child who came in the emergency room because of sudden onset of difficulty of breathing, cyanosis, excessive oral secretions, one episode of diarrhea and weakness noted three hours earlier after ingesting allegedly contaminated powdered milk formula. Vital signs showed a blood pressure of 90/60, cardiac rate of 112 per minute, respiratory rate of 12 cycles per minute and axillary temperature of 35.4 degrees Celsius. Arterial blood gas analysis showed respiratory acidosis. Endotracheal intubation was immediately done and was hooked on mechanical ventilation. The toxic syndrome of the patient is compatible with acute cholinergic excess; hence a trial dose of atropine was given. Improvements were noted, however we cannot totally rule out the possibility of other common pediatric illnesses because of non-specificity of the clinical manifestations. Eight hours later, neurological examination showed absence of deep tendon reflexes, no spontaneous respiration, no response to pain, flaccid muscle tone, no neck rigidity and lateralizing signs but with spontaneous eye opening. Glasgow Coma Scale of 6. Referral to a Pediatric Neurologist ruled out the possibility of CNS infection or trauma. RBC cholinesterase determination using Michel's method showed a result of 0.057 delta pH/hr, which is significantly depressed. Atropine was given at 0.02 milligrams per kilogram intravenously until full atropinization was achieved. We have no available Pralidoxime or Obidoxime and a laboratory to test biologic fluids for organophosphates in our country. Twenty-four hours later, patient was noted to have response to painful stimuli and spontaneous respiration. A repeat RBC cholinesterase determination showed a result of 0.25 delta pH/hr. Atropine was continued until the patient regained full consciousness and restoration of full motor and sensory function. Test was done on the allegedly contaminated milk using GC-MS. It was positive for Coumaphos. The patient was extubated on the fourth hospital day but was started on antibiotic secondary to pulmonary infiltrates seen on chest x-ray. The rest of hospital stay was unremarkable and was discharge after seven days. Atropine was continued for six weeks.

CONCLUSION: Intermediate syndrome usually develops within 48-96 hours after acute cholinergic crisis due to prolonged inhibition of cholinesterases [1]. There is probably a difference with regards to time of occurrence of Intermediate Syndrome or maybe a difference in acetylcholinesterase function between a very young child and adult. High index of suspicion, taking a good clinical history and presumptive evidence (RBC Cholinesterase) of organophosphate poisoning can lead you to correct diagnosis and save lives.

REFERENCES:

1 Benslama A, et al. The Intermediate Syndrome during Organophosphate Poisoning, *Ann Fr Anesth Reanim.* 2004 Apr;(4):353-6

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