A case report of laryngeal oedema and metabolic acidosis after glutaraldehyde ingestion.

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Introduction: Management of patients poisoned with new agents is a challenging clinical experience. Glutaraldehyde (GA) and quaternary ammonium compounds (QACs) are widely used as disinfectants and sterilizing agents (1). Ominicide® is a poultry biocide containing a complex formulation of glutaraldehyde (GA) 15% w/v and cocobenzyldimethyl ammonium chloride 10% w/v. Data on human exposure to GA is limited to mucous membrane irritation such as the eye and the upper respiratory tract and occupational asthma (2). There are no published reports of oral GA poisoning. We describe a case of Omnicide® ingestion associated with laryngeal edema and severe metabolic acidosis.**Case report:** A 19 year old, healthy woman presented 1.5 hrs after the deliberate ingestion of 75ml of Omnicide®. She had pain on swallowing, vomiting and abdominal pain soon after ingestion. On admission she had normal pulse, blood pressure, respiratory rate and peripheral oxygen saturation. Initial laboratory findings revealed a haemoglobin level of 10 g/dL, white blood count of $11.3x10^9$ /L with neutrophilia, normal hepatic transaminase and serum electrolytes. Ten hours after admission she developed dyspnoea, accompanied by a rapid pulse of 126 beats/min. Her blood pressure was 110/80 mmHg, which remained stable throughout her illness. She was tachypnoeic with a respiratory rate of 31/min, had audible stridor and a few bilateral basal crepitations. As she desaturated, she was intubated and ventilated. During intubation laryngeal oedema was noted. Arterial blood gas analysis soon after intubation revealed a severe metabolic acidosis with a pH of 7.11, PCO_2 of 12.4 mmHg, PO_2 of 162 mmHg, actual bicarbonate of 3.9 mEq/L and a base excess of -25.6 mmol/L. An ECG showed sinus tachycardia and a chest x-ray was normal. Intravenous fluids with normal saline alternating with half normal saline at a rate of 112 mL/hour was started for the first 24 hours. The patient's metabolic acidosis resolved within the first 24 hours with supportive care. She had an uncomplicated course in the ICU and was extubated on the 6^{th} day and discharged on the 9^{th} day after ingestion. **Discussion:** This case illustrates that Omnicide® can cause life-threatening laryngeal oedema and metabolic acidosis. The constituent, GA, is probably oxidized to semialdehyde and then to glutaric acid causing metabolic acidosis. The systemic toxic mechanisms of QACs remain uncertain. Laryngeal oedema was thought to be due to direct corrosive effects of GA, similar to that observed with formaldehyde and/or due QACs poisoning. Early recognition and appropriate supportive care can prevent complications due to ingestion of Omnicide®.**References:**

1. Ellenhorn MJ. Ellenhorn's Medical Toxicology, 2nd Edition. Baltimore: Williams & Wilkins, 1997; 2. Sullivan JB, Krieger GR. Hazardous Materials Toxicology - Clinical Principles of Environmental Health. Baltimore: Williams & Wilkins, 1992.