

A fatal human exposure to sodium dichloroisocyanurate tablets

Vickery RH, Thompson JP

National Poisons Information Service (Cardiff), Cardiff and Vale University Health Board, Cardiff, UK, CF64 2XX.

Objective

To describe a fatal ingestion of household sterilising tablets containing sodium dichloroisocyanurate.

Case Report

A 73-year-old male patient presented to the Emergency Department following a suspected ingestion of two Diversity Titan Chlor tablets® containing 20 – 30% sodium dichloroisocyanurate and 3 – 10% sodium carbonate. He was originally discharged after a brief period of observation.

The patient re-presented 24 hours after ingestion with dysphagia and clinical symptoms of bilateral pneumonia, which was later confirmed on a chest X-ray. Investigations taken on re-presentation revealed metabolic acidosis (lactate 5.3 mmol/L, bicarbonate 18 mmol/L), blood glucose 19.6 mmol/L, haemoglobin 138 g/L, white cell count $12.8 \times 10^9/L$, platelets $143 \times 10^9/L$, prothrombin time 12 s, activated partial thromboplastin time 26 s, fibrinogen 5.4 g/L, albumin 47 g/L, alkaline phosphatase 73 U/L, alanine transaminase 17 U/L, bilirubin 29 $\mu\text{mol/L}$, sodium 144 mmol/L, potassium 4.4 mmol/L, urea 9.0 mmol/L, chloride 77 mmol/L, C-reactive protein 194 mg/L.

He was transferred to ITU and treated with intravenous tazocin, fluids and oxygen.

Despite supportive treatment, the patient's condition deteriorated. Treatment was withdrawn and patient died six days post ingestion.

Discussion

When ingested, sodium dichloroisocyanurate comes into contact with stomach acid and produces an exothermic reaction which can liberate chlorine gas. Respiratory distress may develop if liberated chlorine gas is inhaled¹. Toxic pulmonary oedema and cardiovascular failure can occur if the poisoning takes a fulminating course¹. A literature search reveals that there are only a few similar reported cases. The characteristic symptoms upon presentation to the emergency department include vomiting and stridor². All previously reported cases involved ingestion of one tablet and were treated successfully without sequelae. In this case, the patient ingested two tablets and had delayed onset of features.



Conclusion

In this case, two tablets were ingested, there were co-morbidities and there was a delay in administering supportive treatment. These may have been contributing factors to the fatal outcome of this patient. Ingestion of two tablets containing 20 – 30% sodium dichloroisocyanurate may be fatal.

References

1. Okonek S, Reinecke HJ, Krienke EG, Oberdisse U, Brambach U, Smend J, Gadeke R, Fabricius W, Preussner K. Poisoning by hypochlorite-containing disinfectants. A retrospective analysis of 594 cases of poisoning. *Deutsche Medizinische Wochenschrift* 1984; 109(49):1874-7.
2. Siodlak MZ, Gleeson MJ, Wengraf CL. Accidental ingestion of sterilising tablets by children. *British Medical Journal Clinical Research* Ed 1985; 290(6483):1707-8.