

FATAL POISONING WITH ZINC HEXAFLUOROSILICATE (VOGEL-FLUAT®) [165]

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Objective: Vogel-Fluat® contains 54.95% zinc hexafluorosilicate. It is a colourless salt with good solubility in water used as “insulating salt” for wood preservation and for brickwork draining. Alkali liberates the fluoride ion. **Case report:** A 51-year-old woman ingested about 50 ml solution with an unknown amount of Vogel-Fluat®. She was admitted to hospital two hours later with unconsciousness, cardiovascular shock, and respiratory depression. Cardiac monitoring showed irregular rhythm with atrioventricular block turning into ventricular fibrillation about four hours after ingestion. Oesophagogastroscope confirmed the burn of distal oesophageal and gastric mucosa with discolouration to black. Cornea was also burned by ascending vapours at the moment of drinking. Chest X-ray was without pathologic findings. Laboratory findings proved metabolic acidosis (serum pH 7.0; serum bicarbonate 8 mmol/L), and hypocalcaemia (0.3 mmol/L). Calcium gluconate was given but the serum calcium level couldn't be stabilised. Resuscitative measures were done over three hours without success.

Case series: From 1994 to 2003 our poison centre recorded 21 cases (7 children, 14 adults) of zinc hexafluorosilicate exposures. Majority of cases (81%) was accidental with small amounts without symptoms. A 2-year-old child suffered from metabolic acidosis, hypocalcaemia, hyperglycaemia (18.0 mmol/L), ventricular fibrillation, and seizures after ingestion of “washing powder” but survived. Mistakes without dangerous consequences (use instead of curing agent and salt for icy roads, respectively) were reported twice. In two cases the ingestion was suicidal with fatality. **Conclusion:** Clinical presentation and treatment of poisoning with zinc hexafluorosilicate correspond to sodium fluoride. Death has been reported in adults after ingestion of 1-2 g after 3-4 hours as result of cardiac fibrillation. The prognosis of severe suicidal poisoning is unfavourable.

References: Krämer M, Giebelmann R. Tödliche Intoxikationen mit Zinkhexafluosilikat. *Dt Gesundheitswesen* 1975; **30**:2057-2059.