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A case of severe lactic acidosis caused by broflanilide insecticide poisoning treated by continous renal replacement therapy

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Case Study: Broflanilide is a meta-diamide [3-benzamido-N-(4-(perfluoropropan-2-yl)phenyl)benzamide] that exhibits high larvicidal activity against Spodoptera litura. It has been suggested that broflanilide is metabolized to desmethyl-broflanilide and that it acts as a noncompetitive resistant-to-dieldrin (RDL) γ-aminobutyric acid (GABA) receptor antagonist. However, there are no reports about broflanilide poisoning in human. Herein, we report a severe case of broflanilide poisoning in which the patient was improved by continuous renal replacement therapy.

A 65-year-old Korean man visited our emergency department several hours after ingesting approximately 200 ml of Broflanilide in a suicidal attempt. He had a history of major depressive disorder, however, has not been taking medication for several years. He was drowsy with a Glasgow Coma Scale (GCS) of E2V4M5. On admission, he had a temperature of 36.5 ºC, pulse rate of 104 beat/min, blood pressure of 105/70 mmHg, and respiratory rate 20/min. The blood urea nitrogen and serum creatinine concentrations were 9 mg/dL (reference: 8-20 mg/dL) and 0.7 mg/dL (reference, 0.6-1.2 mg/dL), respectively. An initial arterial blood gas analysis revealed severe lactic acidosis (pH=7.200, pCO2=31.0 mmHg, HCO3-=12.1 mmol/L and lactate=16.4 mmol/L). The patient was admitted to the intensive care unit and started on continuous veno-venous hemodiafiltration (CVVHDF), which was initiated with 1L/h of dialysate flow and 35 mL/kg/h of hemofiltration using solutions from Gambro. Following 12 hours of CVVHDF, the GCS increased to 12 (E3V4M5), and the metabolic acidosis completely improved(Figure1). The patient was discharged without any complications on the eighth day.

Figure 1. Clinical course of the patient.