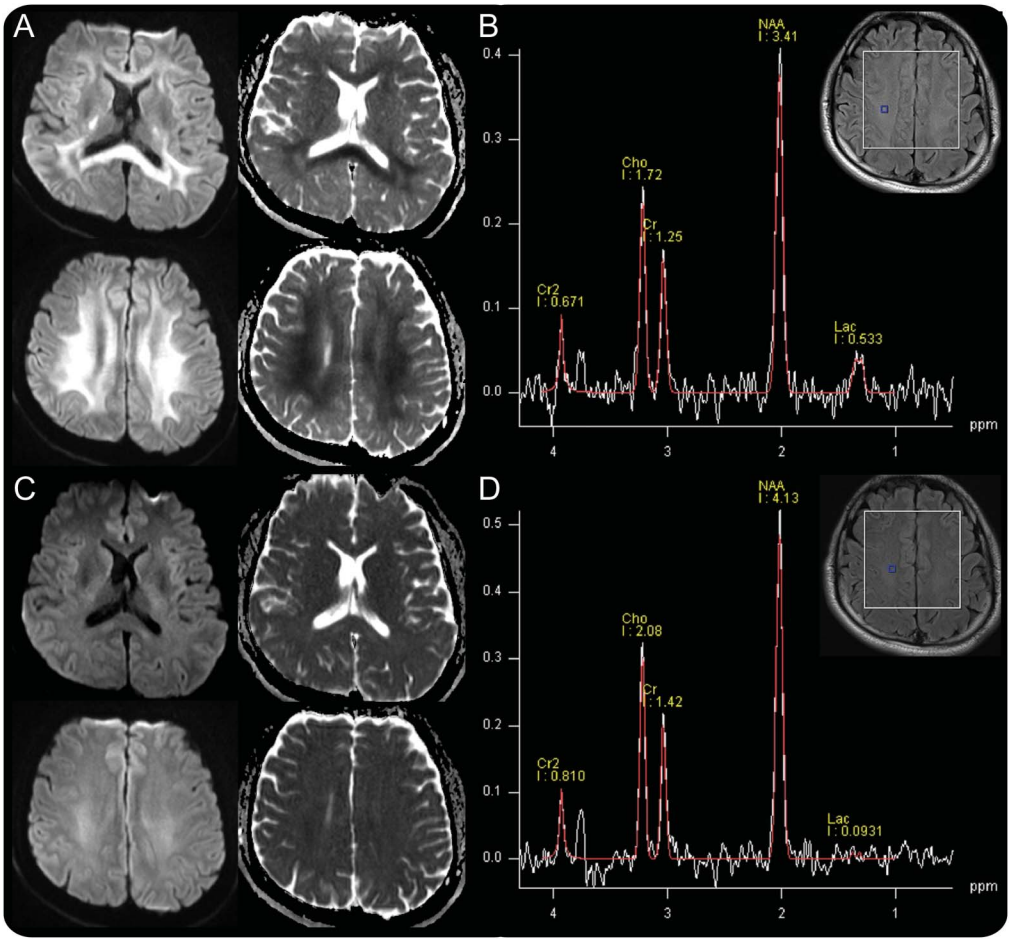
Reversible leukoencephalopathy in sodium monofluoroacetate intoxication

Figure Serial diffusion-weighted imaging and magnetic resonance spectroscopy findings



Initial diffusion-weighted imaging (DWI) shows restricted diffusion in widespread white matter (A) and magnetic resonance spectroscopy (^{1}H-MRS) shows normal *N*-acetylaspartate (NAA)/creatine and choline/creatine ratio (B). Follow-up DWI and ^{1}H-MRS performed 1 month later reveal complete resolution of white matter abnormalities (C) with unchanged NAA/creatine and choline/creatine ratio (D).

A 38-year-old man presented with vomiting and progressive mental deterioration after ingesting 210 mL sodium monofluoroacetate solution (SMFA, 2%), a toxic rodenticide, in a suicide attempt. Neither seizure nor tetany was observed. Laboratory tests including ECG, arterial blood gas, serum calcium, and electrolyte were unremarkable. Initial MRI revealed extensive white matter restricted diffusion without disrupted neuronal integrity (figure, A and B). He improved to normal over 2 weeks. Follow-up MRI showed resolution of white matter abnormalities with unaltered metabolic markers (figure, C and D). SMFA selectively inhibits glial Krebs cycle and lowers energy production, with eventual cell death.[1] Reversible MRI cytotoxic edema without neuronal loss[2] suggests that SMFA intoxication is in the differential diagnosis of reversible leukoencephalopathy.

Jung Bin Kim, MD, Ji-Wan Jang, MD, Ji Hyun Kim, MD, PhD

From Korea University Guro Hospital, Korea University College of Medicine, Seoul.

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Correspondence to Dr. J.H. Kim: jhkim.merrf@gmail.com

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