Risk of Sweet ‘Ethylene Glycol’ Consumption

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A 75-year-old woman with cognitive impairment had eaten the contents of an ice pack. The next day she vomited and subsequently fainted. Laboratory data showed kidney injury and severe metabolic acidosis: serum creatinine, 1.31 mg/dL; pH, 7.229; PaCO₂, 23.3 Torr; and bicarbonate, 9.5 mEq/L. We suspected ethylene glycol poisoning and administered vitamin B₁, B₆, 10% ethanol and sodium bicarbonate. Despite receiving this therapy, the patient showed episodes of disturbed consciousness and oliguria. She underwent hemodialysis six times, following which her symptoms improved.

Ethylene glycol is a sweet-tasting, viscous, nonvolatile, colorless and hygroscopic liquid. Toxicity is caused by the compound’s more toxic metabolites such as glycolic acid and calcium oxalate. Metabolic acidosis, kidney injury and central nervous system disorders are the major symptoms of ethylene glycol poisoning. Ethanol inhibits the ethylene glycol metabolism. Hemodialysis has been shown to be highly effective for the removal of both unmetabolized ethylene glycol and glycolic acid.

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