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Unexplained Metabolic Acidosis: Alcoholic Ketoacidosis or Propylene Glycol Toxicity
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Abstract
Introduction: Severe metabolic acidosis with elevated anion and osmol gap is suggestive of toxic alcohol ingestion. The absence of detectable methanol or ethylene glycol in the serum could mean that metabolism is complete or that other hypotheses have to be considered. Ingestion of less common alcohol or alcoholic ketoacidosis should be investigated as illustrated by the present observation. Case Report: A 46-year-old woman was admitted with altered consciousness in the Emergency Department. In the presence of a high anion gap (peak value 39 mEq/L) metabolic acidosis with mildly increased osmol gap (peak value 19 mOsm/kg), there was a high suspicion of toxic alcohol ingestion in an individual with alcohol use disorder (AUD). Serum arterial lactate concentration was particularly high at 27 mmol/L. Urinalysis failed to reveal the presence of ketone bodies or oxalate crystals. The results of the serum determination of ethanol, methanol, ethylene glycol, and isopropanol were obtained within 2 h and were negative. Due to the severity of lactic metabolic acidosis and the persisting suspicion of intoxication by a less common toxic alcohol, antidotal therapy with ethanol was initiated together with hemodialysis. Correction of lactic metabolic acidosis was obtained. Results of urinalysis obtained later revealed the presence not only of propylene glycol and D-lactate but also of significant concentrations of ß-hydroxybutyrate as a marker of alcoholic ketoacidosis. Discussion: The combination of propylene glycol ingestion and alcoholic ketoacidosis may have contributed to the severity of lactic acidosis. © 2022, American College of Medical Toxicology.

Author Keywords
Alcoholic ketoacidosis; Antidote; Hemodialysis; L,D-lactate; Lactic acidosis; Propylene glycol ingestion

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