

## The Unpredictable Severity of Ethylene Glycol Toxicity Even with Early Recognition (poster presentation)

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**Abstract**

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### Abstract

#### Introduction

Commonly sold as antifreeze with fluorescent dye, ingestion of ethylene glycol can have detrimental multiorgan side effects with a vague set of nonspecific symptoms driven by glycolic and oxalic acid. It is a medical emergency requiring immediate management and antidotal treatment.

#### Case presentation

A 55 year old female presented to the emergency department with a 2 day history of altered mental status, abdominal pain, nausea, vomiting orange fluid, and dry heaving after ingestion of an unknown substance. Initial lab work up severe anion gap (26.7) metabolic acidosis with a pH of 7.02, Lactic acid was 3.5, BUN/Cr of 9/2.04, and initial CPK within normal limits. Urinalysis was consistent with moderate calcium oxalate crystals, and no detection of ethanol. A toxicology screen was then ordered. Due to a high suspicion of a toxic alcohol ingestion, the patient was treated with emergent hemodialysis, Fomepizole, and sodium bicarbonate. The patient was admitted to the ICU with consults including nephrology, neurology, and psychiatry. Poison control was also contacted. This patient's altered mental status resolved within 12 hrs, acidosis resolved within 36 hrs of admission requiring 2 rounds of dialysis, the stay was then complicated by non-oliguric acute kidney injury.

#### Discussion/Conclusion

In the setting of unexplained elevated anion gap acidosis, clinicians must recognize that early initiation of presumptive treatment is critical to prevent metabolic derangements. Key features that prompt immediate intervention: alcohol intoxication in the absence of ethanol, double elevated anion gap acidosis, urinary calcium oxalate crystals, and/or fluorescent vomitus. Since timing is crucial, treatment must be given without the toxicology screens' confirmation. Even with early recognition and treatment renal function may still be severely affected.

Verbal consent was obtained from the patient. Patient expressed understanding and agreement to all PHI NOT being included.