

Products

- Isopropyl Alcohol
- Rubbing Alcohol
- Hand sanitizers

Toxic Acids

- None.
 - Isopropanol does not get metabolized to a toxic acid metabolite like ethylene glycol and methanol.

Toxicity

- Inebriation (Intoxication)
- GI (rarely, Hemorrhagic gastritis)

Metabolic Pathway**Isopropanol***Alcohol Dehydrogenase (ADH)***Acetone**

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Lab Findings

- Normal anion gap
- Elevated osmol gap
- Normal arterial pH
- False elevations in serum creatinine
 - Isopropanol gets metabolized to acetone, which can interfere with colorimetric creatinine assay, especially those using the Jaffe alkaline picrate reaction.
 - BUN remains normal

Conversion Factor

- Conversion Factor = 6.0
- How to estimate isopropanol concentration (while waiting for actual level):
 1. Calculate Osm = $(2 \times \text{Na}) + (\text{BUN}/2.8) + (\text{Glucose}/18) + (\text{Ethanol level}/4.6)$
 2. Determine Osm Gap = $(\text{Measured Osm}) - (\text{Calculated Osm})$
 - If Gap > 15 = abnormal
 - If Gap > 25 = very high → give empiric fomepizole (Antizol) if unsure of ingestion
 3. Estimate Isopropanol Concentration (mg/dL) = $6.0 \times \text{Osm gap}$

Treatment Considerations

- **General Notes:**
 - Call or consult with Poison Center 1-800-222-1222
 - The half-life of the parent compound (isopropanol)
 - No Treatment = 3 hrs
- **GI Decontamination:**
 - Generally avoided
 - Rarely helpful unless very early on (within 15-30 min) since alcohols are rapidly absorbed or co-ingestions and airway is protected
- **Proton Pump Inhibitor Therapy:**
 - May theoretically help reduce the risk of hemorrhagic gastritis

Clinical Considerations:

- There is no antidote as isopropanol does not get metabolized to a toxic acid.
- Since isopropanol gets metabolized to acetone you might notice a fruity odor due to ketosis

References

- South Med J 2009;102:867-69.
- Am J Med 2006;119:e9.
- Am J Kidney Dis 2002;40:e12.

Editors & Reviewers

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