Isopropanol

Isopropanol (isopropyl alcohol) is found in rubbing alcohol, glass window cleaners, jewelry cleaners, frost removers, disinfectant cleaners, liquid detergents and stain spot removers. Toxicity can develop following ingestion, inhalation and dermal application.

Isopropanol is a potent CNS depressant and produces greater CNS depression than ethanol at comparable blood levels. Symptoms have occurred with serum levels as low as 50 mg/dL. Isopropanol is metabolized much slower than ethanol and symptoms can be more prolonged. Isopropanol is metabolized to acetone which can cause significant ketonemia and ketonuria without metabolic acidosis. Acetone will begin to appear in the urine by 3-4 hours after exposure. Unlike methanol and ethylene glycol, isopropanol is not metabolized to a highly toxic metabolite and an alcohol dehydrogenase inhibitor (i.e. fomepizole or ethanol) is not indicated for isopropanol exposures.

**Signs and Symptoms**

**CNS:** Dizziness, decreased mental status, coma. Seizures are very rare.

**CV:** Hypotension, vasodilatation, myocardial depression.

**GI:** Nausea, vomiting, hemorrhagic gastritis, fruity odor on breath.

**Metabolic:** Hypoglycemia in children. Metabolic acidosis usually does not occur from isopropyl alcohol ingestions.

**Decontamination**

- Activated charcoal is not indicated as it does not bind well to isopropanol.
- Wash exposed skin with soap and water to minimize dermal absorption.

**Treatment**

- There is no specific antidote. Provide good supportive care (i.e. maintain airway and breathing, treat hypotension, etc.).
- Hemodialysis is rarely needed for isopropanol ingestions, but is appropriate for patients with persistent hypotension, coma or respiratory failure that is unresponsive to good supportive care. Patients with isopropanol levels exceeding 200 to 300 mg/dL are generally in this category. Patients with renal failure may also be candidates for dialysis. Isopropanol levels should be monitored for 12-24 hours after dialysis as isopropanol can redistribute from the tissues into the serum after dialysis.

Sue Ringling, RN, BSN, CSPI
Certified Specialist in Poison Information