Fomepizole for Severe Disulfiram-Ethanol Reactions
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Introduction
- Disulfiram-ethanol reactions (DER) occur when disulfiram is consumed with ethanol.
- Acetaldehyde accumulation leads to a histamine-like reaction.
- Symptoms range from mild nausea and flushing to angioedema and hypotension.
- Fomepizole inhibits alcohol dehydrogenase and may halt this DER reaction.
- We present 2 cases of severe DERs treated with fomepizole.

Discussion
- This is the first English language description of disulfiram overdose leading to severe DER treated with fomepizole.
- Despite aggressive supportive care, our two patients had progressive DERs. Only after blockade of ethanol metabolism did hypotension improve.
- Acetaldehyde is a major factor in development of severe DERs.
- Blocking acetaldehyde accumulation may mitigate toxicity.
- Fomepizole may prevent or halt the progression of the DER reaction by blocking ethanol metabolism to acetaldehyde.

Cases
Case 1: 20 year-old female presented after ingestion of vodka and disulfiram. After 11 hours of resuscitation she had skin flushing, lip swelling, tachycardia, and hypotension; Antihistamines, steroids and an additional 2 liters of NS were given without improvement. Fomepizole 15 mg/kg was given with improvement within 1.5 hours and she was ultimately discharged with no clinical sequelae.

Case 2: 47 year-old female presented after overdose of vodka and disulfiram. She was tachycardic and hypotensive upon presentation. After administration of 3 liters NS, vital signs were unchanged. One dose of fomepizole 15 mg/kg was given with normalization of her heart rate and blood pressure within 1 hour. She had no further sequelae of her ingestion.

Conclusions
- Fomepizole is safe and effective for severe DERs unresponsive to supportive care.
- Ethanol clearance appears to follow first-order elimination kinetics following fomepizole blockade.
- Supportive care is likely sufficient in the majority of DERs