

Acute arsenic toxicity after oral ingestion of intravenous arsenic trioxide purchased on the internet

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Background: Acute arsenic toxicity is uncommon and generally occurs as a result of a suicide or homicide. Toxicity is also reported as a result of therapeutic errors in patients receiving arsenic trioxide for acute promyelocytic leukemia.

Methods: This is a single patient chart review. A 49-year-old female with a past medical history of hip surgery and chronic pain presented to an Emergency Department with diarrhea and persistent nausea and vomiting after an intentional ingestion of arsenic trioxide. She reported ingesting 12 vials of 10 mg intravenous arsenic trioxide solution purchased online to "end the pain permanently" 14 hours prior to her presentation. On arrival she reported odynophagia, headache, and severe abdominal pain. Significant physical exam findings included diaphoresis, pallor, and diffuse lower abdominal tenderness. Her initial vital signs were: heart rate, 118/minute; blood pressure, 106/62 mmHg; respiratory rate, 18/minute; temperature, 38° C; and O₂, 95%. Her ECG demonstrated sinus rhythm with a QRS of 62 ms and a QTc of 435 ms. An abdominal x-ray did not reveal any radio-opaque foreign body.

Results: The patient was treated with a single dose of 3 mg/kg IM BAL and started on 10 mg/kg of oral succimer every 8 hours for 7 days followed by 10 mg/kg of oral succimer every 12 hours for 14 days. A 24 hour urine collection started the day of presentation revealed a total arsenic concentration of 9,550 mcg/L and an inorganic arsenic concentration of 7,900 mcg/L. One day after completing the course of chelation a repeat 24 hour urine arsenic level showed a total arsenic concentration of 34 mcg/L with an undetectable inorganic arsenic concentration. At the time of discharge the patient did not report any clinical manifestations of peripheral neuropathy.

Discussion: Acute arsenic toxicity causes significant GI symptoms, QTc prolongation, and cardiovascular collapse. Early management involves supportive care, fluid resuscitation, and chelation.

Conclusion: Oral ingestion of intravenous arsenic trioxide solution results in significant absorption and acute toxicity requiring emergent treatment. This product can be purchased online and should be considered in patients with significant GI symptoms and QTc prolongation.