

## Pancreatic Pseudocyst Due to Acute Valproic Acid Overdose

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Background: Valproic acid is a frequently used anticonvulsant and mood stabilizer. Acute overdose of the drug is common, with 2,998 single exposures documented in the United States in 2014. A black box label has been placed on valproic acid warning of pancreatitis. Pancreatitis after acute overdose is documented, but pancreatic pseudocysts are rarely reported.

Research question: Can pancreatic pseudocysts occur with acute valproic acid overdose?

Methods/Case Report: This is a single case report. A 37-year-old male with history of seizures and bipolar disorder presented with altered mental status, abdominal pain and vomiting. The patient took 50 tabs of valproic acid 500mg. Initial vital signs were blood pressure 121/85 mmHg, heart rate 104 beats per minute, temperature 36.8C, respiratory rate 18 breaths per minute, and 97% oxygen saturation on room air. The patient was somnolent, followed simple commands, had epigastric abdominal tenderness, and otherwise an unremarkable exam.

Results: The initial valproic acid concentration was >450 (50-100 mcg/mL) and ammonia was 137 (17-60 mcmol/L). Lipase and amylase levels were 2,134 (11-82 U/L) and 582 (29-103 U/L), respectively. Transaminases and bilirubin were normal. Levocarnitine 6 grams every 8 hours was initiated. Within 24 hours, he became more alert and complained of abdominal pain. A computed tomography (CT) scan of the abdomen and pelvis showed pancreatic edema with prominent diffuse peripancreatic inflammatory stranding. After three days, his valproic acid, ammonia, and lipase levels normalized. One week later (still hospitalized), the patient developed a temperature of 38.6C. A repeat CT of the abdomen and pelvis showed a pancreatic pseudocyst. The aspirated fluid collection did not show an infectious etiology. Since his hospitalization, the patient has been evaluated 4 times in 6 months for recurrent pancreatitis with pseudocysts.

Discussion: Patients can develop the rare complication of pancreatic pseudocysts from acute valproic acid toxicity. This patient developed pancreatitis with pseudocyst within one week of an acute ingestion of valproic acid.

Conclusion: Lipase levels with mild abdominal pain after resolution of initial pancreatitis may prove beneficial for early treatment of recurrent pancreatitis, with consideration of avoidance of valproic acid in the future if a patient develops recurrent pancreatitis.