Paliperidone-Induced Hypertriglyceridemia Resulting in Acute Interstitial Pancreatitis

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Medication-induced pancreatitis accounts for roughly 5% of pancreatitis cases and has an estimated incidence of 5–80 per 100,000 adults worldwide.[1,2] Boden et al[3] suggested a lack of association between antidopaminergic medications and acute pancreatitis. However, Koller et al[4] showed that atypical antipsychotics may precipitate pancreatitis, with the relationship being strongest with clozapine followed by olanzapine and then risperidone, corresponding with the severity of metabolic side effects. Hypertriglyceridemia, however, is a rare but established cause of pancreatitis when triglycerides reach levels >1,000–2,000 mg/dL.[5] This report describes a case of an extremely elevated triglyceride level secondary to paliperidone long-acting injections likely inducing pancreatitis. Similar case reports have shown olanzapine[6] and paliperidone[7] to cause acute pancreatitis; however, to our knowledge, this is the first report of paliperidone-induced hypertriglyceridemia resulting in pancreatitis.

Case Report

A 33-year-old male patient with a past medical history of schizophrenia and type II diabetes mellitus was brought to the emergency department in January 2021 for acute psychosis and admitted to an inpatient psychiatric hospital. He was discharged on paliperidone palmitate 234 mg every 28 days, thorazine 100 mg orally 3 times/d, depakote extended release 500 mg orally every morning, and trazadone 50 mg orally at night.

In April 2021, the patient presented to the emergency department for sharp, intense abdominal pain. He endorsed nonadherence to his diabetic medications as well as his oral psychotropics but had received another dose of paliperidone palmitate 234 mg approximately 2 weeks ago. The patient's initial vital signs and laboratory findings were significant for tachycardia (heart rate: 108 bpm), hyperglycemia (blood glucose: 259 mg/dL), hypercholesterolemia (serum total cholesterol: 333 mg/dL), extreme hypertriglyceridemia (triglycerides: >4,000 mg/dL), hyperketonemia (β-hydroxybutyrate: >160 mmol/L), increased anion gap of 20 mEq/L, and hyperlipasemia >3 times the normal level (lipase: 10,706 U/L) (Table 1). Computed tomography showed pancreatic fluid in the retroperitoneum with significant fat stranding. The patient's urinary drug screen was positive only for cannabis.

The patient was diagnosed with diabetic ketoacidosis and acute interstitial pancreatitis and was admitted to the hospital for subsequent treatment with intravenous fluid, insulin drip, and attempted pain control. Alcohol levels were not obtained due to lack of clinical suspicion of intoxication. Due to the extreme elevation of triglycerides (>4,000 mg/dL), the patient received a single round of plasmapheresis each day for the first 4 consecutive days of admission, improving the hypertriglyceridemia to approximately 425 mg/dL (Table 1). His clinical presentation improved alongside the triglyceride levels, all but confirming hypertriglyceridemia as the cause of the pancreatitis. Through chart review, the patient's previously measured triglyceride levels were 140 mg/dL in 2010 and 98 mg/dL in 2012, showing the significant acute rise.

Discussion

This report highlights the case of a patient receiving long-acting injectable paliperidone for 2 months who presented with acute interstitial pancreatitis as a result of severe hypertriglyceridemia secondary to paliperidone-induced metabolic side effects. Pancreatitis following an acute elevation of triglycerides from second-generation antipsychotics has been seen in other case reports, one from olanzapine.[6] There is a lack of published information on paliperidone inducing pancreatitis through elevated triglycerides, but paliperidone has been shown to cause acute pancreatitis.[7] In our case, the patient scored a 3 on the Naranjo Adverse Drug Reaction Probability Scale,[8] indicating a possible relationship; however, the specificity and known side effects of paliperidone contribute to this relationship. Looking forward, practitioners should be knowledgeable regarding this rare outcome of long-acting injectable paliperidone, while keeping plasmapheresis in mind as a potential treatment modality, also noted to work in other similar cases.[6]

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Table 1. Laboratory Results During the Initial Course of the Patient's Hospitalization

	Day 1 (plasmapheresis 1)	Day 2 (plasmapheresis 2)	Day 3 (plasmapheresis 3)	Day 4 (plasmapheresis 4)	Day 5/6
Lipase (U/L)	10,706	…	1,337	…	414
Triglycerides (mg/dL)	>4,000	1,546	425	…	105
AST (IU/L)	40	…	30	…	17
ALT (IU/L)	34	…	19	…	14
Calcium (mg/dL)	7.0	6.3	7.2	7.8	…

Abbreviations: ALT = alanine transaminase, AST = aspartate aminotransferase.

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