Tamoxifen-Induced Hypertriglyceridemia Causing Acute Pancreatitis

J. Beau Liljenquist, DO

McLaren Greater Lansing Internal Medicine

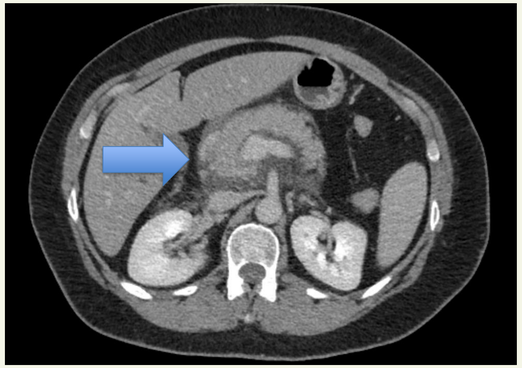
Abstract

Acute pancreatitis is an inflammatory disease and can be associated with significant morbidity and mortality. Common causes include gallstones, significant alcohol use, and hypertriglyceridemia. Many medications have been known to cause hypertriglyceridemia including tamoxifen, a selective estrogen receptor modulator. We present a rare case of acute pancreatitis caused by tamoxifen-induced hypertriglyceridemia.

Case

A 53-year-old female presented with diffuse, sharp abdominal pain that radiated to her chest. Laboratory workup revealed an elevated lipase at 1693. CT of the abdomen and pelvis showed inflammatory changes at the head of the pancreas suggesting acute pancreatitis. To determine the etiology of the disease, a triglyceride level was obtained showing a level > 1000 mg/dL. The patient was then started on an insulin drip and admitted to the ICU. It was noted that the patient had been diagnosed with breast cancer about 5 years prior to admission. She had also been taking tamoxifen during that time. Chart review revealed a triglyceride level performed in the outpatient setting a year prior with a result greater than 4000 mg/dL. Unfortunately, the patient reported that this was determined to be a lab error and was left untreated. The patient's pain and triglycerides decreased after IV fluids and insulin drip. Tamoxifen was discontinued and the patient was started on fenofibrate and atorvastatin.

Figure 1



Inflammatory change in the pancreatic head region suggestive of acute pancreatitis

Table 1

	Triglycerides
1 yr prior	>4000 mg/dL
On Admission	>1000 mg/dL
Day 2	915 mg/dL
Day 10 (Discharged)	459 mg/dL

Discussion

Acute pancreatitis is an inflammatory disease and can be associated with significant morbidity and mortality. Common causes include gallstones, significant alcohol use, and hypertriglyceridemia. Diagnosis is based on the Revised Atlanta Criteria which should include 2 or more of the following symptoms: epigastric pain, serum lipase >3 times the upper limit of normal, and/or characteristic findings on abdominal imaging. Further testing should be done if no clear etiology. Treatment includes aggressive IV fluids, analgesia, and directed therapy based on etiology.

Hypertriglyceridemia causing acute pancreatitis accounts for about 1%-4% of cases. Elevation in triglycerides can cause sludging of pancreatic vasculature and increasing activity of pancreas lipases leading to cytotoxic injuries. Tamoxifen is a selective estrogen receptor modulator. The proposed pathogenesis is that Tamoxifen increases the synthesis of triglycerides and very low-density lipoproteins. It is also proposed to decrease the activity of lipoprotein and triglyceride lipase. Treatment of hypertriglyceridemia included discontinuing the offending agent with insulin drip or plasmapheresis.

Conclusion

Few cases have been reported of tamoxifen causing hypertriglyceridemia and subsequent pancreatitis. This case suggests that those on tamoxifen should have regular monitoring of serum lipids. This also is a reminder to treat any abnormal lab value as significant until proven otherwise.

References and Acknowledgements

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