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Hypertriglyceridemia induced pancreatitis: a cost-effective management approach

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Learning Objectives

1. Recognize the presentation of Hypertriglyceridemia (HTG) induced pancreatitis.
2. Discuss cost-effective treatment approach of HTG-induced pancreatitis.

Introduction

- Hypertriglyceridemia (HTG) induced pancreatitis causes up to 15% of cases of acute pancreatitis.
- Typically occurs in patients with triglyceride levels greater than 1,000 mg/dL.
- HTG occurs in primary (genetic) and secondary disorders of lipoprotein metabolism. Secondary causes include diabetes, pregnancy, medication-induced, alcoholism, and thyroid disorders.
- Our patient was diagnosed with HTG-induced pancreatitis that was treated with an insulin infusion.

Case Presentation

- 45-year-old male with a past medical history of former alcohol use presented with acute onset bilious emesis.
- Physical exam demonstrated severe epigastric tenderness with guarding and normoactive bowel sounds.
- Initial blood draws were documented as lipophilic.
- Labs were significant for elevated lipase (1,534 IU/L), total cholesterol (915 mg/dL), triglycerides (>5,250 mg/dL), and incalculable LDL and HDL. He was hypocalcemic (7.7 mg/dL) with low 25-hydroxy vitamin D (16 ng/mL). TSH was normal (1.23 uIU/mL).
- CT abdomen pelvis revealed peri-pancreatic fluid.
- He was diagnosed with acute hypertriglyceridemia induced pancreatitis.
- Patient was treated with insulin infusion along with D5 for blood glucose support over plasmapheresis.
- Triglyceride levels were monitored every 12 hours until they were less than 500 mg/dL, after which insulin infusion was discontinued.
- The patient was concomitantly started on atorvastatin 80 mg daily and fenofibrate 48 mg daily.

Laboratory Values

Date	Date unknown of initial presentation at outside hospital	7/6/19	7/7/19	7/8/19	7/9/19
Triglycerides (mg/dL)	>5,250	4,213	771	416	308

Table 1. Trend of triglyceride lab values during clinic course.

Images

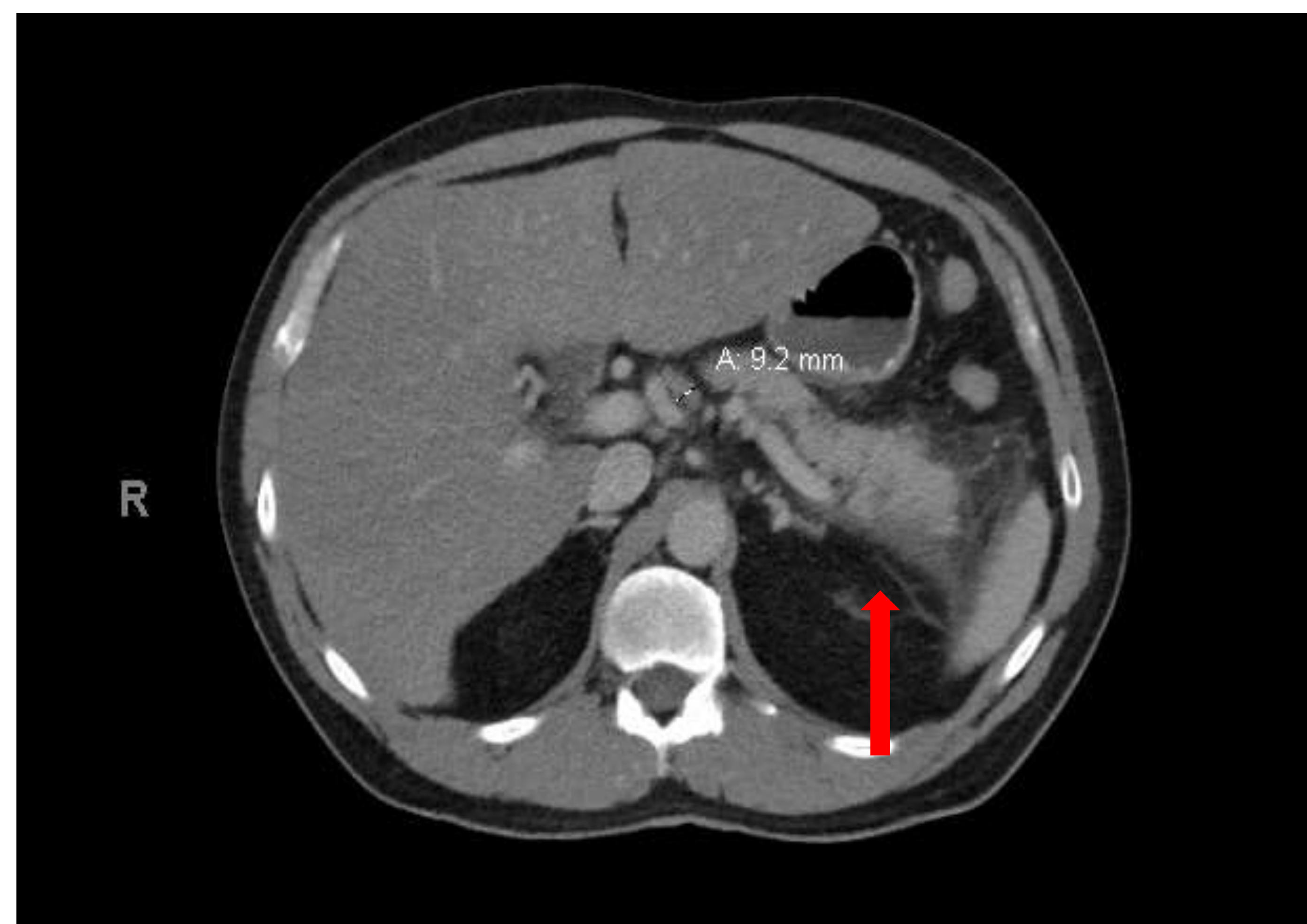


Figure 1. CT abdomen and pelvis demonstrating peri-pancreatic fluid and fat stranding (arrow), which is suggestive of acute pancreatitis.

Discussion

- Early recognition of HTG-induced pancreatitis is important in providing appropriate therapy and preventing future episodes.
- HTG-induced pancreatitis has a presentation similar to acute pancreatitis of other etiologies, although it is associated with higher severity and complications.
- Treatment options include insulin or heparin, which work by increasing lipoprotein lipase activity, and plasmapheresis which removes triglycerides from the serum.
- Recent studies (Bi-TPAI trial) showed insulin therapy for HTG-induced pancreatitis to be non-inferior to plasmapheresis in the critical care setting and to have a cost-benefit advantage.
- In this patient, after assessing cost-benefit therapies, the decision was made to use insulin infusion.
- These studies have treatment implications because insulin therapy offers a safer and non-inferior option.

Conclusion

- Early diagnosis of HTG-induced pancreatitis is important to be able to start early treatment focused on reducing triglyceride levels.
- Based on recent studies, insulin infusion has shown to be non-inferior, in terms of effectiveness, to plasmapheresis in the treatment of HTG-induced pancreatitis, while as being more cost-effective and safer.
- Treatment with insulin infusion is more accessible, thus patients can be treated effectively in a timely manner.

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