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 Triglyceride levels were monitored every 12 hours until they normal (1.23 uIU/mL). TSH was (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

<table>
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<th>Date</th>
<th>Date known of initial presentation at outside hospital</th>
<th>7/6/19</th>
<th>7/7/19</th>
<th>7/8/19</th>
<th>7/9/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triglycerides (mg/dL)</td>
<td>&gt;5,250</td>
<td>4,213</td>
<td>771</td>
<td>416</td>
<td>308</td>
</tr>
</tbody>
</table>

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.

Bibliography