Clinical Update: The Utility of Serum Lipase Analysis

Background

A recent audit carried out by the Biochemistry and Surgery departments identified that almost 1500 requests for lipase analysis per month are received by the Biochemistry department (combined primary and secondary care requests). Approximately 250 requests were audited for clinical appropriateness using clinical details/discharge notes etc. This identified that at least 28% of all serum lipase are inappropriate (i.e. clinical details/presenting symptoms were not related to a diagnosis of acute pancreatitis or were repeat requests in patients already known to have a diagnosis of acute pancreatitis).

Diagnosis of Acute Pancreatitis

Unless, there is a strong suspicion of acute pancreatitis, analysis of lipase is NOT recommended. The most recent consensus international guideline (Classification of acute pancreatitis—2012: revision of the Atlanta classification and definitions by international consensus. 2013. Gut. 62:102–111) states:

A diagnosis of acute pancreatitis requires 2 or more of:

1. **Abdominal pain** consistent with acute pancreatitis (acute onset of persistent, severe, epigastric pain radiating to the back).
2. **Elevated serum lipase** (or amylase) activity at least 3 times greater than the upper limit of normal (ULN).
3. Characteristic findings of acute pancreatitis on imaging (contrast enhanced CT or MRI).

If abdominal pain is strongly suggestive of acute pancreatitis but lipase is <3 times the upper limit of normal, pancreatic imaging is suggested (as it may be an early or late presentation. Imaging should be organised if appropriate by the General Surgical team when the patient is referred). If abdominal pain strongly suggestive and lipase/amylase >3 times the upper limit of normal then imaging is not usually required.

The audit group identified a number of other pathologies that were associated with raised lipase including:

- Acute cholecystitis
- Acute kidney injury, renal colic, pyelonephritis
- GI or liver disease
- Malignancy (inc. pancreatic, cholangiocarcinoma, oesophageal, breast, lymphoma and renal cell)

Repeat Requesting

Pancreatic lipase activity in serum does not correlate well with severity of acute pancreatitis and lipase levels are of no prognostic value once a diagnosis of acute pancreatitis has been made. There is usually little clinical utility in repeating lipase analysis.