

Extrapancreatic Sources of Lipase

Reports now abound in the literature indicating that serum lipase is more specific and sensitive than amylase for detecting acute pancreatitis in patients presenting with acute abdominal pain (1-7). Amylase has been the mainstay biochemical test for the investigation of acute pancreatitis for many years, whereas lipase has not been widely used primarily because, until recently, reliable lipase assays were not suitable for rapid turnaround of results. Now, reliable and rapid lipase results are available at HSC, St. Boniface General Hospital, Seven Oaks General Hospital and Grace General Hospital.

It is generally well appreciated that increases in serum amylase are seen not only in pancreatic disorders, but also in a number of non-pancreatic abdominal and non-abdominal diseases (1). With increased use of lipase, it has become increasingly recognized that lipase too can be elevated in clinical conditions that do not involve the pancreas. Even though the superiority of lipase over amylase for investigating acute pancreatitis has been shown repeatedly in recent literature (2-5), it is important to be aware that there are a number of clinical conditions that can give rise to elevated nonpancreatic lipase:

- 1) A recent study (2) has shown that some patients presenting with acute abdominal pain have elevations in serum lipase that are due to extrapancreatic disease processes. The sources of elevated lipase were attributed to a number of intra-abdominal anatomic locations other than the pancreas, including the biliary tract, esophagus, stomach, duodenum and small intestine. It should be kept in mind though, that even with rigorous patient evaluation criteria, it is possible that lipase elevations seen in some extrapancreatic diseases are in fact due to subclinical pancreatic inflammation. Pancreatic inflammation may be present even though the pancreas appears normal by CT, ultrasound, ERCP or laparotomy. Lipase was still recommended over amylase by the authors of this study since it had a better overall diagnostic efficiency and is more cost effective.
- 2) Another clinical situation that arises is an incidental finding of a chronically elevated lipase in a patient with no evidence of pancreatic involvement. The source of this elevated lipase is usually unknown. There have been a couple of reports (8,9) describing patients with persistently elevated lipase levels who have died of malignancies. It is also clear from local experience that persistently elevated nonpancreatic lipase levels occur in patients without malignancies.
- 3) Lipase, like amylase, can also exist as a macroenzyme, which is a complex between immunoglobulin and lipase. While there are a number of reports (10,11) documenting the presence of macrolipase, it's occurrence is exceedingly rare. In such cases, serum lipase levels remain persistently elevated. Its clinical significance is unknown.

If you have any questions or comments on this topic, please contact one of the above Clinical Biochemists.

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