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Amylase and lipase: to trend or not to trend in acute pancreatitis

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Acute pancreatitis is defined as two of the three Atlanta criteria: Abdominal pain, serum amylase and/or lipase greater than three times the upper limit of normal, and characteristic findings of acute pancreatitis on CT scan. Trending serum amylase and lipase is frequently seen in the inpatient setting. However, it does not correlate with the severity or overall prognosis of acute pancreatitis.

A 28-year old female with no significant past medical history presented with intermittent, sharp epigastric pain that radiated to the right upper quadrant for 3 weeks. Patient was seen by her primary care physician who ordered a right upper quadrant ultrasound that was unremarkable. She later went to the ED for worsening post-prandial pain, nausea, and vomiting. Her amylase was 157 and lipase was 3762. CT scan of the abdomen showed normal pancreas. Patient met two of the three Atlanta criteria and was diagnosed with acute pancreatitis. She was placed on aggressive fluid resuscitation, pain management, and bowel rest with diet advancement as tolerated. On the following day, patient was placed on a clear liquid diet and tolerated it well. Amylase and lipase were ordered, which showed improvement. On the third day, her abdominal pain significantly improved, and she tolerated a general diet. Amylase and lipase were ordered, which were worse than the previous ones. Patient's vitals were stable, and she was discharged home with gastroenterology follow-up.

This case illustrates the insignificance of serial lipase and amylase in acute pancreatitis. There is no role in trending lipase and amylase on a daily basis once the diagnosis is made as it is not useful for monitoring clinical improvement or guide treatment. In addition, serum lipase has a better diagnostic value as compared to amylase due to its super specificity and longer half-life. It is recommended to check serum lipase on initial presentation. If negative in the presence of high clinical suspicion of pancreatitis, consider checking amylase before proceeding with imaging studies. Therefore, serial lipase and amylase can give physicians inaccurate information on patients' clinical progress. Overall improvement in clinical status and pain are better prognostic factors then serial amylase and lipase.

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Conflicts of interset

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