

## Biochemical diagnosis of acute pancreatitis

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The diagnosis of acute pancreatitis requires the presence of at least two of the three diagnostic criteria; characteristic abdominal pain, elevated serum amylase or lipase and radiological evidence of pancreatitis. Serum concentrations of amylase and lipase rise within hours of the pancreatic injury. A threshold concentration 2-4 times the upper limit of normal is recommended for diagnosis. Serum lipase is now the preferred test due to its improved sensitivity, particularly in alcohol-induced pancreatitis. Its prolonged elevation creates a wider diagnostic window than amylase. Laboratory testing of serum amylase and/or lipase levels are central to the diagnosis of acute pancreatitis (AP) as these tests are quick, cheap, reliable and perhaps the only objective criteria available at the bedside at the time of initial presentation. It is important to understand the physiology and biochemistry of these tests in order to get a clear grasp of their diagnostic utility. Lipase is more specific than amylase and stays elevated longer than amylase due to its longer half-life in serum resulting from renal tubular reabsorption. There is no advantage of testing lipase and amylase, as well as no advantage in serially trending them for monitoring the clinical progress of the patient. They have no role in determining the etiology or severity of acute pancreatitis. If the clinical suspicion for acute pancreatitis is high, imaging studies should be performed to confirm or rule out the diagnosis of acute pancreatitis even with low elevation or no elevation of these enzymes. This article is a comprehensive review of the existing literature on serum lipase and amylase as diagnostic tools for AP and their cut off levels used for the diagnosis of AP. Neither enzyme is useful in monitoring or predicting the severity of an episode of pancreatitis in adults. New biomarkers including trypsinogen and elastase have no significant advantage over amylase or lipase.

### Biography

Anil Batta is presently a Professor and Senior Consultant in Baba Farid University of Health Sciences/GGS Medical College, India. He did his MBBS and MD in Medical Biochemistry from Government Medical College, Patiala in 1984 and 1991, respectively. His research interest is mainly in clinical application especially cancer and drug de-addiction. He has published more than 30 international research papers. He is the Chief Editor of *American Journal of Biochemistry*. He is also working as an Advisor to the Editorial Board of *International Journal of Biological and Medical Research*. Recently, he has been deputed advisor to *Pakistan Medical Journal of Biochemistry*.

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