

Acute Pancreatitis

Definition of acute pancreatitis:

Inflammation of the pancreas, ranging from mild, self-limiting disease to complete necrosis of the entire organ.

By definition, acute pancreatitis occurs on the background of a normal pancreas and can return to normal on resolution (cf. chronic pancreatitis, which has irreversible changes)

Epidemiology of acute pancreatitis:

- About 300 cases per million per year
- Of these, 20% are mild and resolve without serious complications

Causes of acute pancreatitis:

- I – Idiopathic (most common)
- G – Gallstones
- E – Ethanol
- T – Trauma
- S – Steroids
- M – Mumps
- A – Autoimmune (eg. PAN)
- S – Scorpion Venom – black Trinidadian scorpion (*tityus trinitatis*)
- H – Hyperlipidaemia, Hypercalcaemia
- E – ERCP
- D – Drugs (azathioprine, thiazides, valproate, asparaginase, allopurinol)
- And Pregnancy

Presentations of acute pancreatitis:

- History:
 - Severe epigastric pain, radiating through to the back
 - Pain worse on lying down and relieved sitting forward
 - Vomiting
 - Recent excess alcohol intake
 - Previous gallstone disease
 - FHx gallstones
- Examination:
 - Tachycardia
 - Fever
 - Abdominal/epigastric tenderness
 - Jaundice
 - Rigid abdomen
 - Reduced bowel sounds
 - Periumbilical staining (Cullen's sign)
 - Flank staining (Grey-Turner's sign)
 - Shock

Differential diagnosis of acute pancreatitis:

- Any other cause of an acute abdomen
- Myocardial infarction
- Pericarditis
- Aortic dissection

Scoring systems for severity of acute pancreatitis:

Glasgow criteria for predicting severity: PANCREAS mnemonic

- PaO₂ <8Kpa
- Age < 55yrs
- Neutrophils (WBC > 15)
- Calcium <2mmol/L
- Renal function (Urea > 16)
- Enzymes (LDH > 600, AST > 200)
- Albumin < 32g/L
- Sugar > 10mmol/L

3 or more positive factors predicts a severe pancreatitis and the patient should be managed in an HDU/ITU setting.

Initial management of acute pancreatitis: Current BSG guidance

<http://www.bsg.org.uk/images/stories/docs/clinical/guidelines/pancreatic/pancreatic.pdf>

- Blood tests:
 - Amylase – often >1000 but CAN be normal initially (esp if acute on chronic)
 - Lipase – more sensitive and specific than amylase but less readily available as a test
 - FBC (for neutrophils), U+Es (assess renal function), LFTs (for albumin and transaminases/bilirubin), Calcium
- Arterial blood gas
- Intravenous fluids – patients need prompt and adequate fluid resuscitation
- Oxygen supplementation
- Analgesia – patients usually require regular opiates
- Feeding – if nutritional support is required then the enteral route should be the preferred option if this is tolerated.

Further management of acute pancreatitis:

- Antibiotics – Current evidence is not conclusive regarding prophylactic antibiotics to prevent infection of necrosis.
- Antisecretory agents – there is no evidence to support the use of these in acute pancreatitis.
- CT abdomen – current guidelines recommend this be done after 6-10 days if persisting signs of organ failure, ongoing sepsis or clinical deterioration. This can be performed earlier if there remains significant diagnostic uncertainty.
- ERCP – urgent therapeutic ERCP with sphincterotomy should be performed within 72 hours in patients with acute severe pancreatitis and evidence of jaundice/common bile duct dilatation/cholangitis.
- Surgical intervention – all patients with infected necrosis will require radiological or surgical drainage and/or surgical debridement.

Complications of acute pancreatitis:

- Early:
 - Shock
 - Acute kidney injury

- Acute respiratory distress syndrome
- DIC
- Sepsis
- Hypocalcaemia
- Hyperglycaemia
- Pancreatic necrosis
- Late:
 - Pancreatic necrosis
 - Pancreatic pseudocyst
 - Pancreatic fluid in lesser sac
 - Fluid in lesser sca
 - Presents > 6 weeks later
 - Abdominal mass may be present
 - May need internal (via stomach) or external drainage
 - Abscess
 - Thrombosis – splenic/gastroduodenal arteries
 - Fistulae

Prognosis of acute pancreatitis:

- This is a high mortality condition, especially for severe disease with an overall mortality of 12%
- Infection of necrosis carries a 40% mortality.

Common questions concerning acute pancreatitis:

What are the causes of acute pancreatitis?

Causes of acute pancreatitis:

- I – Idiopathic (most common)
- G – Gallstones
- E – Ethanol
- T – Trauma
- S – Steroids
- M – Mumps
- A – Autoimmune (eg. PAN)
- S – Scorpion Venom – black Trinidadian scorpion (tityus trinitatis)
- H – Hyperlipidaemia, Hypercalcaemia
- E – ERCP
- D – Drugs (azathioprine, thiazides, valproate, asparaginase, allopurinol)
- And Pregnancy

What is the Glasgow scoring system for severity?

Glasgow criteria for predicting severity: PANCREAS mnemonic

- PaO₂ <8Kpa
- Age < 55yrs
- Neutrophils (WBC > 15)
- Calcium <2mmol/L
- Renal function (Urea > 16)
- Enzymes (LDH > 600, AST > 200)
- Albumin < 32g/L
- Sugar > 10mmol/L

What are the complications of acute pancreatitis?

Complications of acute pancreatitis:

- Early:
 - Shock

- Acute kidney injury
- Acute respiratory distress syndrome
- DIC
- Sepsis
- Hypocalcaemia
- Hyperglycaemia
- Pancreatic necrosis
- Late:
 - Pancreatic necrosis
 - Pancreatic pseudocyst
 - Pancreatic fluid in lesser sac
 - Fluid in lesser sca
 - Presents > 6 weeks later
 - Abdominal mass may be present
 - May need internal (via stomach) or external drainage
 - Abscess
 - Thrombosis – splenic/gastroduodenal arteries
 - Fistulae