PANCREATITIS

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Surat
Acute pancreatitis

- Pathophysiology - insult leads to leakage of pancreatic enzymes into pancreatic & peripancreatic tissue leading to acute inflammatory reaction
Acute pancreatitis

- **Etiologies**
  - Idiopathic
  - Gallstones
  - Alcoholism
  - Trauma
  - Steroids
  - Mumps (and other viruses: CMV, EBV)
  - Autoimmune

- Hyper TG
- ERCP
- Drugs (thiazides, sulfonamides, ACE-I, NSAIDS, azathioprime)
Signs & Symptoms

- Severe epigastric abdominal pain - abrupt onset (may radiate to back)
- Nausea & Vomiting
- Weakness
- Tachycardia
- Fever
- Hypotension or shock
  - [Grey Turner sign](#) - flank discoloration due to retroperitoneal bleed in pt. with pancreatic necrosis
  - [Cullen’s sign](#) - periumbilical discoloration
• Grey Turner sign

• Cullen’s sign
Differential

- Biliary disease
- Intestinal obstruction
- Mesenteric Ischemia
- MI (inferior)
- Abdominal aortic aneurism
- Distal aortic dissection
- Peptic Ulcer Disease
Evaluation

• $\uparrow$ **amylase**…Nonspecific !!!
  - Amylase levels $> 3\times$ normal very suggestive of pancreatitis
    - May be normal in chronic pancreatitis.
  - False (+): other abdominal or salivary gland process

• $\uparrow$ **lipase**
  - More sensitive & specific than amylase
Evaluation

- Other inflammatory markers will be elevated
  - C - Reactive Protein
- ALT > 3x normal → gallstone pancreatitis
- Depending on severity may see:
  - ↓ Calcium
  - ↑ WBC
  - ↓ Hct (PCV)
  - ↑ Glucose
Radiographic Evaluation

- Ultrasonography or CT-Scan
  - Enlarged pancreas
  - Abscess
  - Fluid collections
  - Hemorrhage, necrosis or pseudocyst
- MRI or MRCP (Magnetic Resonance Cholangiopancreatography)
- ERCP (Endoscopic Retrograde Cholangiopancreatography)
CT Scan of acute pancreatitis

- CT shows significant swelling and inflammation of the pancreas
Gall stone pancreatitis by ERCP

A  Normal Pancreas

B  Moderate Pancreatitis

C  Severe Pancreatitis

- Normal pancreatic duct
- Dilated pancreatic duct
- Stones in pancreatic duct
- Very dilated pancreatic duct
- Large stones in pancreatic duct
Prognosis

• Many different scoring systems
  ▪ Ranson
  ▪ APACHE II
  ▪ CT severity Index

• Atlanta Classification used to help compare various scores (clinical research trials)
Ranson Criteria

- **During Admission**
  - Age > 55
  - WBC > 16,000
  - Glucose > 200
  - LDH > 350
  - AST > 250

- **During first 48 hours**
  - Hematocrit drop > 10%
  - Serum calcium < 8
  - Base deficit > 4.0
  - Increase in BUN > 5
  - Fluid sequestration > 6L
  - Arterial PO2 < 60

5% mortality = <2 signs
15-20% mortality = 3-4 signs
40% mortality = 5-6 signs
99% mortality = >7 signs
CT Severity Index

- **CT Grade**
  - A is normal (0 points)
  - B is edematous pancreas (1 point)
  - C is B plus extrapancreatic changes (2 points)
  - D is severe extrapancreatic changes plus one fluid collection (3 points)
  - E is multiple or extensive fluid collections (4 points)

- **Necrosis score**
  - None (0 points)
  - < 1/3 (2 points)
  - > 1/3, < 1/2 (4 points)
  - > 1/2 (6 points)

- **TOTAL SCORE** = CT grade + Necrosis

  0-1 = 0% mortality
  2-3 = 3% mortality
  4-6 = 6% mortality
  7-10 = 17% mortality
Therapy

• Remove offending agent (if possible)
• Supportive !!!

1- NBM (until pain free)
  ▪ Naso-Gastric suction for patients with ileus or emesis
  ▪ TPN

2- Volume repletion intravenously

3- Narcotic analgesics
  ▪ usually necessary for pain relief
Therapy continued

4- Urgent ERCP and biliary sphincterotomy
   ▪ within 72 hours improves outcome of severe gallstone pancreatitis
   ▪ Reduced biliary sepsis
5- Proton pump inhibitor
6- Somatostatin or Octreotide intravenous infusion
   ▪ Decrease gastric – duodenal secretion
7 Prophylactic antibiotics
   ▪ Cephalosporin
Complications

- Necrotizing pancreatitis
- Pseudocysts
- Infection
  - Abscess
- Renal failure
- Pulmonary
  - Pleural effusion, Pneumonia, ARDS
- Metabolic disturbances
  - Hypocalcemia, Hypomagnesemia, Hyperglycemia
- G.I. Track
  - G.I. bleeds
  - Stress gastritis
Prognosis

• 85-90% = mild, self-limited
  ▪ Usually resolves in 3-7 days

• 10-15% severe requiring ICU admission
  ▪ Mortality = 50% in severe cases
Chronic pancreatitis

- Pathophys - irreversible parenchymal destruction leading to pancreatic dysfunction
- Persistent, recurrent episodes of severe pain
- Anorexia, nausea
- Constipation, flatulence
- Steatorrhea
- Diabetes
Chronic pancreatitis

Etiology

- Chronic alcoholic (90%)
- Gallstones
- Hyperparathyroidism
- Congenital malformation
- Idiopathic
• ↑ or normal amylase and lipase
• Plain AXR / CT = calcified pancreas
• Pain management critical
  ▪ EtOH cessation may improve pain
  ▪ Narcotic dependency is common
Complications

- Weight loss
- Steatorrhea
  - Manage with low-fat diet and pancreatic enzyme supplements (Pancrease, Creon)
- *Endocrine insufficiency*
  - Diabetes