PANCREATITIS.

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ACUTE PANCREATITIS.

- An acute condition presenting with abdominal pain usually associated with raised blood/urine pancreatic enzyme as a result of pancreatic inflammation.
- Reversible pancreatic parenchymal injury associated with inflammation.

ACUTE PANCREATITIS.

- PATHOPHYSIOLOGY–
- Premature activation of pancreatic enzymes within the pancreas.
- Anything that injures the acinar cells and impairs the secretion of zymogen granules or damages the duct epithelium and thus delays enzymatic secretion , can trigger acute pancreatitis.
- Once cellular injury has been initiated , the inflammatory process can lead to pancreatic oedema, haemorrhage, and eventually necrosis.

ETIOLOGY.

- ACUTE PANCREATITIS-
- As an acute inflammatory process of the pancreas with variable involvement of other regional tissues or remote organ system.

- Two major causes are—
- Biliary calculi(50-70%)
- Alcohol abuse (25%).

- The remaining causes may be idiopathic or rare.

ALCOHOL.

- Approx. 25 % cases of Acute pancreatitis.
- Act by increasing the synthesis of enzymes by pancreatic acinar cells.
- Over-sensitization of acini to cholecystokinin.
- SMOKING-
- cigarette smoking is an independent risk factor for acute and chronic pancreatitis.

HYPERTRIGLYCERIDEMIA.

- Serum concentration above 1000 mg/dl ppt. Attacks of acute pancreatitis.
- A triglyceride level higher than 2000 mg/dl confirm the diagnosis of acute pancreatitis.
- **HYPERCALCEMIA-**

Hypercalcemia of any cause can lead to acute pancreatitis.

- Deposition of calcium in the pancreatic duct and calcium activation of trypsinogen within the pancreatic parenchyma.

Causes of Acute pancreatitis.

- Gall stone.
- Alcoholism.
- Abdominal trauma.
- Hyperparathyroidism.
- Hypercalcaemia.
- Autoimmune pancreatitis.
- Viral infection.

Gall stone pancreatitis.

- Transient blockage of common bile duct—reflux of bile into pancreatic duct and impair flow of normal pancreatic juice –premature activation of pancreatic enzymes within duct system.

CLINICALLY.

- Presenting with 2 of the following 3 criteria
- Epigastric pain consistent with pancreatitis.
- Serum amylase or lipase level greater than 3 times the upper limit of normal.
- Radiologic imaging consistent with pancreatitis(usually CT or MRI).

HISTORY TAKING.

- 1.Abdominal pain-

➢ Site– Diffuse, upper abdominal pain.

- Onset—sudden.
- Character– Boring pain.
- Radiation–––Radiate to back.
- Associated factor– Nausea, vomiting...
- Timing—Pain escalates in intensity and peaks within 10–20 minutes of onset.
- Elevation of temperature is often is acute pancreatitis.

Abdominal Examination.

- 1.Inspection-- abdominal distension.
- 2.Palpation—
- Hepatomegally.
- Tenderness.
- Cullen sign.(Blue discoloration around umblicus)
- Gray turner sign. (Blue red purple discoloration around flank).
- Peritoneal sign
- Rigidity and Guarding.

- Percussion—
- Dullness suggesting ascites.

Auscultaion-

- ascultate the abdomen for hypoactive or an absent bowel sound.

INVESTIGATION.

- BIOCHEMICAL---
- Serum Amylase increase 3x than normal or more than 1000IU/mL.(Peak within the first 24 hrs after onset of symptom.
- Serum lipase has longer half life thus more useful in delayed case.
- Serum lipase: more sensitive and specific for pancreatitis than Amylase.

Amylase and Lipase.

- Elevated serum amylase and Lipase levels in combination with severe abdominal pain. Often trigger the initial diagnosis of acute pancreatitis.
- Serum lipase rises 4 to 8 hrs from the onset of symptoms and normalise within 7 to 14 days after treatment.
- Marked elevation of serum amylase level during 24 hrs.
- If lipase level is about 2.5 to 3 times that of Amylase, it is an indication of pancreatitis due to Alcohol or gall stone.

Biochemical investigation.

- **Serum amylase-**
- Levels turn normal after 48-72 hrs even with the continuing of pancreatitis, serum lipase should be sent that remains high for 7-14 days.
- Persistent elevation suggests pseudocyst, pancreatic abscess or non pancreatic cause(intestinal obstruction, mumps,narcotics).
- Serum lipase- Remains elevated for 7-14 days. It is diagnostic.

Serum Lipase.

- The sensitivity of serum lipase is similar to that of serum Amylase and is between 85% to 100%.
- Lipase may have greater specificity for pancreatitis than amylase.
- Serum lipase always is elevated on the first day of illness and remains elevated longer than does the serum amylase.

Other laboratory Findings.

WBC-	15000----30OOO Leucocytosis
GLUCOSE	HIGH Hyperglycemia in severe cases.
BUN	MAY BE ELEVATED
SERUM CALCIUM	MAY BE LOW IN 25% OF CASES.
AST,BILIRUBIN,ALP	ARE TRANSIENTLY ELEVATED,ALBUMIN IS LOW IN 10% OF CASES AND INDICATE SEVERE PANCREATITIS
ELEVATED LDH	SUGGEST POOR PROGNOSIS and indicate biliary tract disease.
Assesment of C-reactive	Good indicator of progress.
ABG shows	HYPOXIA.

Other cause of increased serum Amylase.

- Renal failure.
- Liver cirrhosis.
- Peritonitis.
- Ruptured ectopic pregnancy.
- Salivary gland inflammation(parotitis).

OTHER BLOOD TEST.

FULL BLOOD COUNT	Elevated Leucocyte count for Ranson's criteria and to predict prognosis.
LFT	To asses cause of pancreatitis/obstructive jaundice.
Random blood glucose	Damage to beta cells interferes with insulin production causing Hyperglycemia(in severe cases).
Serum calcium	Hypocalcaemia suggest saponification.

Ranson score

PREDICTING THE SEVERITY OF ACUTE PANCREATITIS.

- At admission

. age in years > 55

- WBC count > 16000 cells/mm3.
- Blood glucose > 200 mg/dl
- Serum AST > 250 IU/L
- Serum LDH > 350 IU/L
- At 48 hrs
- Calcium- < 8 mg/dl
- Hypoxia (po2 < 60mmHg)
- Increased BUN

IMAGING –ULTRASOUND.

- USG should be performed within 24 hrs in all patient.
- To detect--- Gallstones.
- To rule out-- Acute Cholecystitis.
- To determine whether the common bile duct is dilated.
- To evaluate change on pancreas i.e. Edema. Mass in pancreas.

CT SCAN.

- Not neccessary for all patients.
- May reveal pseudocyst or abscess.(complication of acute pancreatitis).

- CT Findings—
- significant swelling and inflammation of the pancreas.

Management Acute pancreatitis.

- Mild Acute pancreatitis—
- 1.Nill by mouth.
- 2.Fluid resuscitation-4 pint.
- 3.Analgesia-IM Tramal 50mg TDS.
- 4.Treat underlying cause.
- 5. NO role of antibiotic.

Severe Acute Pancreatitis.

- Admission to ICU.
- Oxygen supplementation.
- Analgesia.
- Aggressive fluid rehydration.
- Monitor vital sign.
- Monitor haematological and biochemical parameters.
- Nasogastric drainage.
- Antibiotic prophylaxis—imipenem, cefuroxime.

CASE 1.

- 56-years-old obese man who is in cardio-respiratory distress. While reviewing the patients record you see that he has a four-yrs h/o alcohol abuse and he was admitted to the hospital via the emergency room 36 hrs previously with a two day h/o Epigastric pain and vomiting.....

On admission vital sign..

- Blood pressure-------95/30
- Pulse rate -------110/min
- Respiratory rate -----28 breath/min.
- temp. ------38.6
- Abdomen was distended and diffusely tender.
- No Bowel sound were heard.

Laboratory data included:

- WBC count----18,000/ml
- Blood glucose---220 mg/dl
- Calcium -------- 7 mg/dl
- Creatinine -----2 mg/dl
- LDH -----980 IU/l
- CRP ------15 mg/dl
- Amylase ---180 IU/l
- Lipase 1540 IU/l
- The serum was Lipemic.