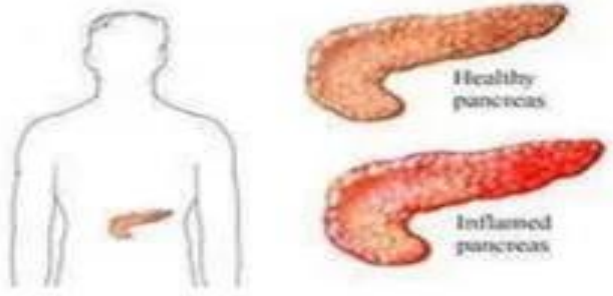


Acute Pancreatitis

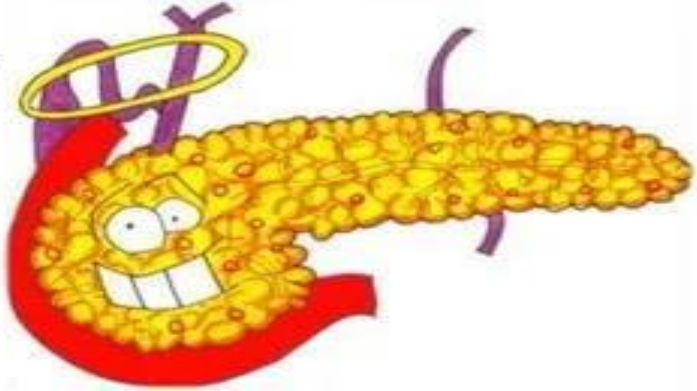
Name: Ayush Patel
Omkumar Pansuriya
Saifaz Chhapawala

Group: 11

Pancreatitis

- Inflammation of the pancreatic parenchyma.
- **Types:**

1. Acute: Emergency condition.
2. Chronic: Prolonged & frequently lifelong disorder resulting from the development of fibrosis within the pancreas.

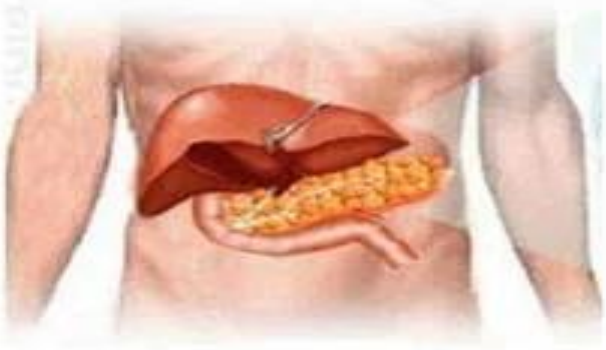


Acute Pancreatitis

- **Definition:**

  Acute condition of diffuse pancreatic inflammation & autodigestion, presents with abdominal pain, and is usually associated with raised pancreatic enzyme levels in the blood & urine.

- Reversible inflammation of the pancreas



- Ranges from mild to severe.

Epidemiology

- Acute pancreatitis accounts for 3% of all cases of abdominal pain among patients admitted to hospital in the UK.
- Affect 2 – 28 per 100 000 of population.
- It may occur at any age, peak incidence is between 50 and 60 years.
- Women are affected more the men, but men are more likely to suffer recurrent attacks.

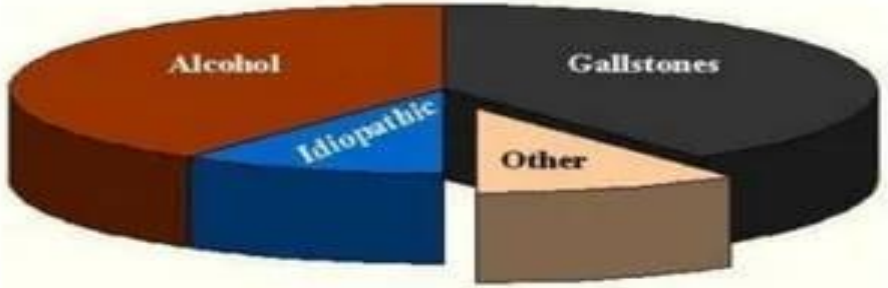
Etiology

- **80%** of the cases are due to gallstones & alcohol.

- The remaining **20 %** of cases are due to:

1. Congenital: Pancreatic divisum
2. Metabolic: Hyperlipidemia, Hypercalcemia.
3. Toxic: Scorpion venom
4. Infective: Mumps, Coxsackie B, EBV, CMV.

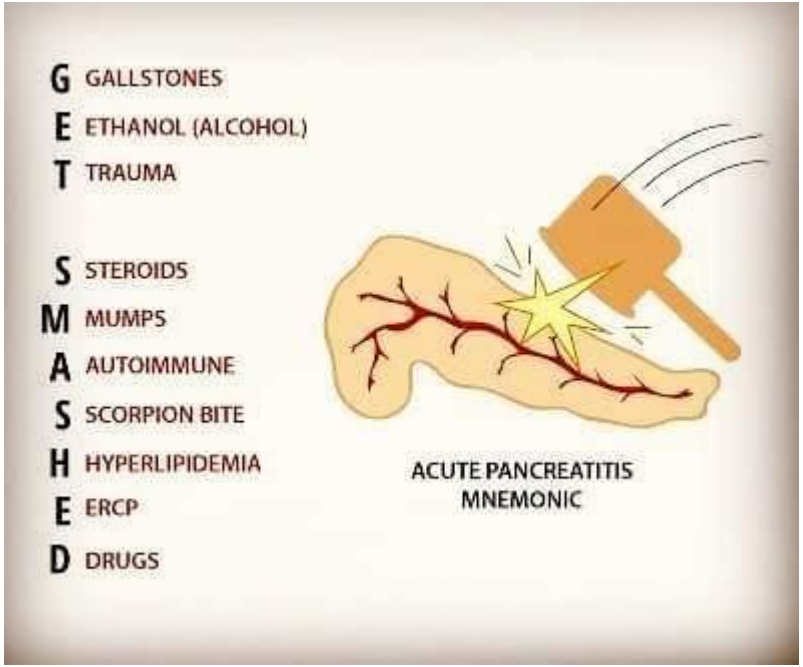
Tityus Trinitatis
(Found in Central/
South America and
the Caribbean)



5. Drugs: Azathioprine, Sulfonamides, Steroids, Thiazides, Estrogens.
6. Vascular: Ischemia, Vasculitis (SLE,PAN).
7. Autoimmune: Hereditary pancreatitis.
8. Traumatic.
9. Miscellaneous: CF, Hypothermia, Periampullary Tumors.
10. Idiopathic.

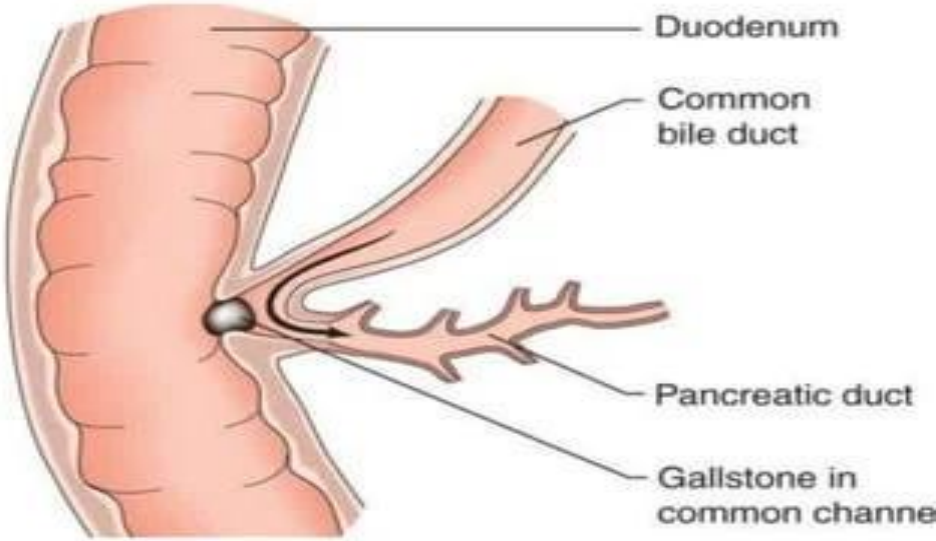
Causes of Acute Pancreatitis

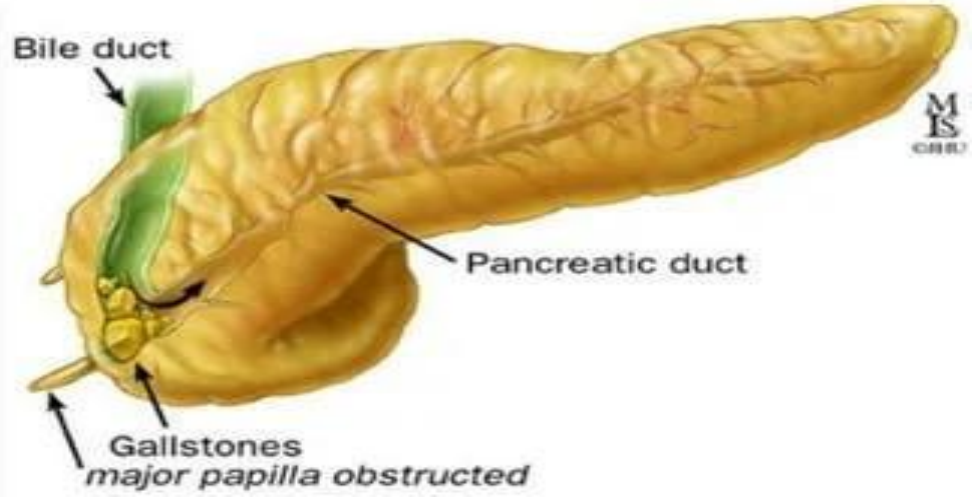
Idiopathic
Gallstones
Ethanol
Trauma
Steroids
Mumps Autoimmune
Mnemonics
Scorpion/Snakes
Hyperlipidemia/Hypercalcemia
ERCP
Drugs



- **Biliary Pancreatitis:**

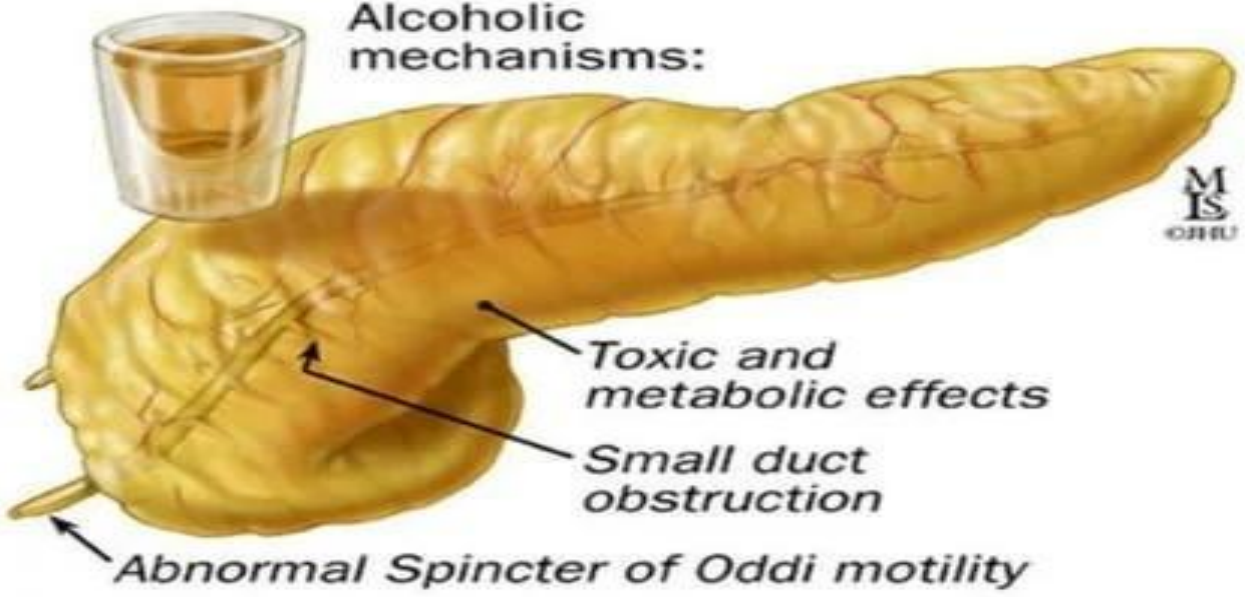
1. Common channel theory
2. Incompetent sphincter of Oddi
3. Obstruction of the pancreatic duct





Alcoholic Pancreatitis:

- Direct toxic effect on the pancreatic acinar cells
- Stimulation of the pancreatic secretion
- Constriction of the sphincter of Oddi

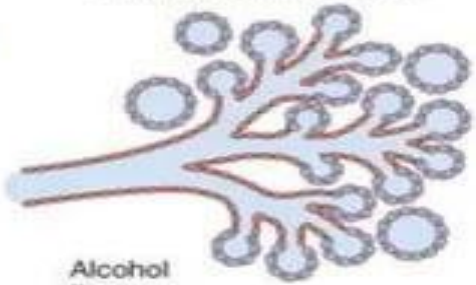


CAUSES:

DUCT OBSTRUCTION

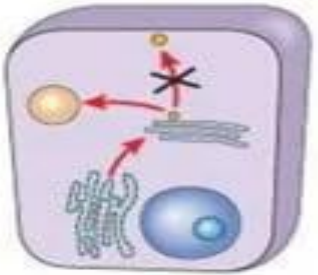
Cholelithiasis
Ampullary obstruction
Chronic alcoholism
Ductal concretions

ACINAR CELL INJURY



Alcohol
Drugs
Trauma
Ischemia
Viruses

DEFECTIVE INTRACELLULAR TRANSPORT



Metabolic injury (experimental)
Alcohol
Duct obstruction

MECHANISMS:

Interstitial edema
↓
Impaired blood flow
↓
Ischemia

Release of intracellular proenzymes and lysosomal hydrolases
↓
Activation of enzymes (intra- or extracellular)

Delivery of proenzymes to lysosomal compartment
↓
Intracellular activation of enzymes

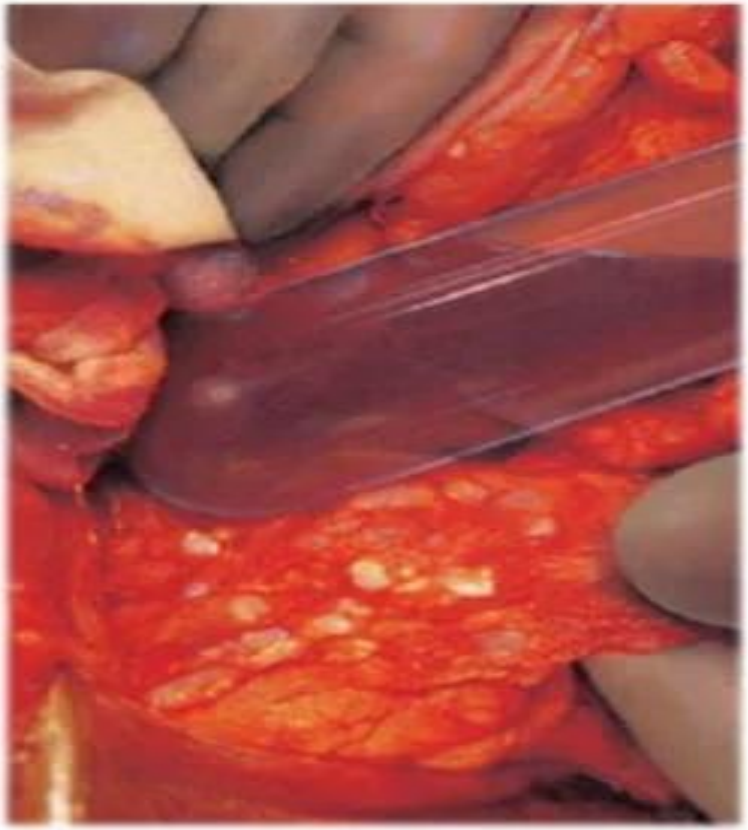
Acinar cell injury
↓
ACTIVATED ENZYMES

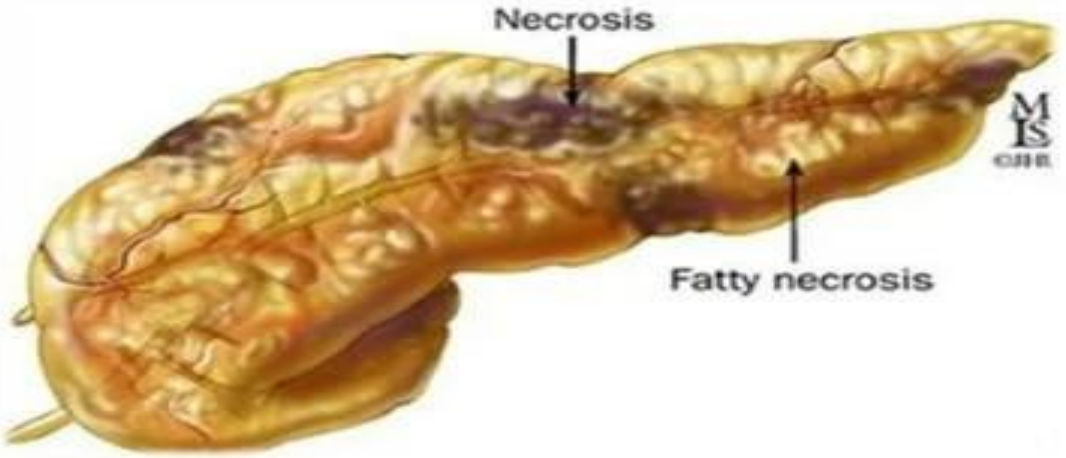
LESIONS:

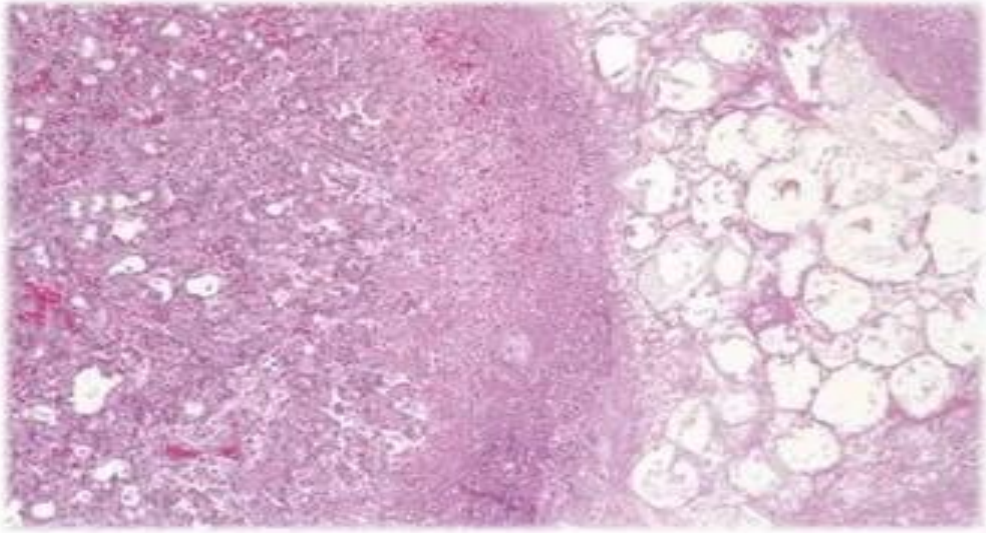
Interstitial inflammation and edema + Proteolysis (proteases) + Fat necrosis (lipase, phospholipase) + Hemorrhage (elastase)

↓

ACUTE PANCREATITIS




Necrosis
Fatty necrosis



Symptoms

- Upper Abdominal pain, sudden onset, sharp, severe, continuous, radiates to the back, reduced by leaning forward.

  Generalized abdominal pain, radiates to the shoulder tips. Patient lies very still.
- Nausea, non-projactile vomiting, retching
- Anorexia
- Fever, weakness

Signs

- Distressed, moving continuously, or sitting still
- Pale, diaphoretic. Confusion
- Low grade fever
- Tachycardia, Tachypnea
- Shallow breathing
- Hypotension
- Mild icterus

- Abdominal distension (Ileus, Ascites)
- Grey Turner's sign, Cullen's sign, Fox's sign
- Rebound tenderness, Rigidity
- Shifting dullness, reduced bowel sounds

Differential Diagnosis

- ✓ Perforated viscus (DU)
- ✓ Acute cholecystits, Biliary colic
- ✓ Acute intestinal obstruction
- ✓ Esophageal rupture
- ✓ Mesenteric vascular obstruction
- ✓ Renal colic
- ✓ Dissecting aortic aneurysm
- ✓ Myocardial infarction
- ✓ Basal pneumonia
- ✓ Diabetic ketoacidosis

Investigations

Blood tests:

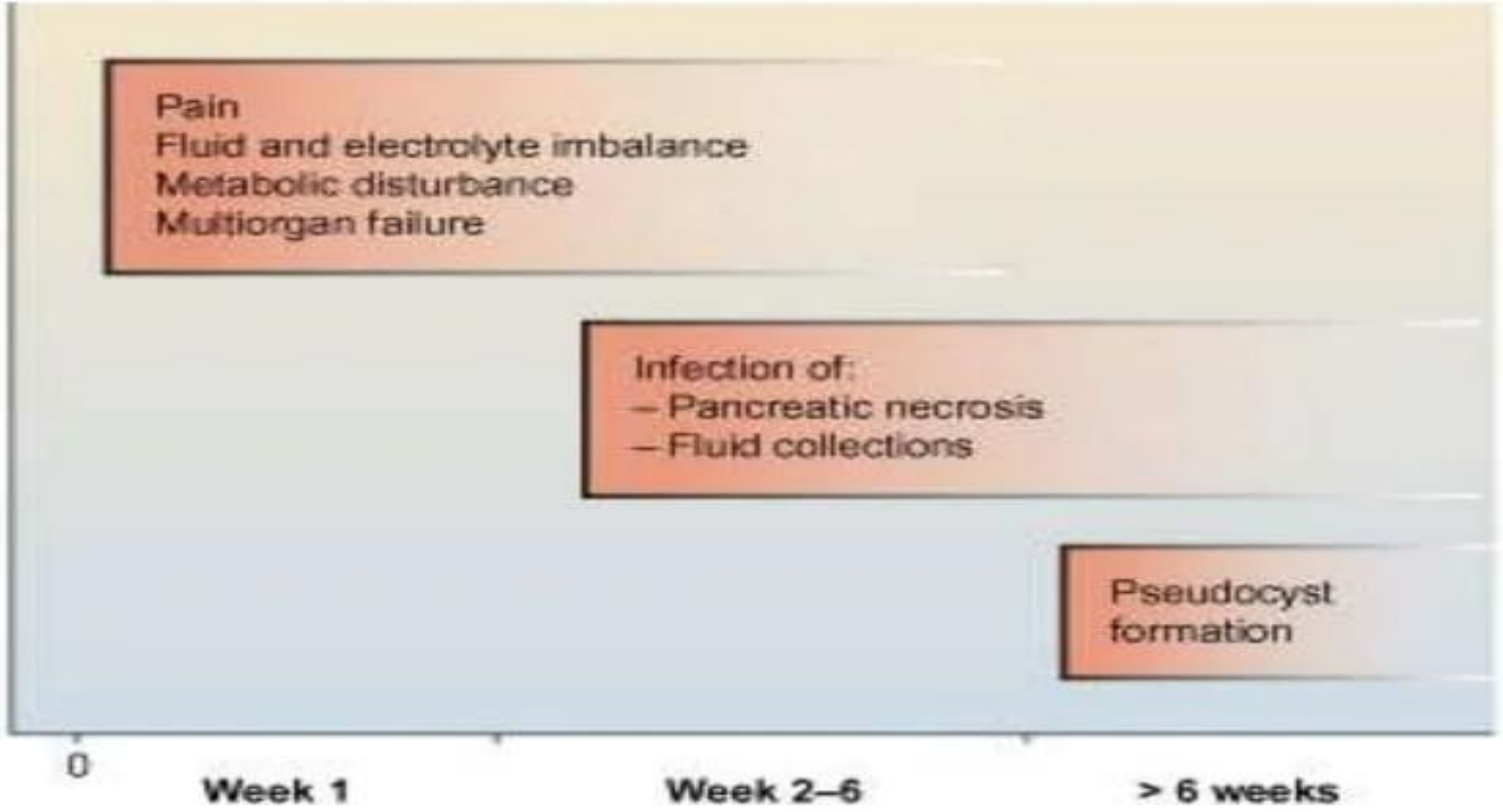
- Complete Blood Count
- Serum amylase & lipase
- C-reactive Protein
- Serum electrolytes
- Blood glucose
- Renal Function Tests
- Liver Function Tests
- LDH
- Coagulation profile
- Arterial Blood Gas Analysis

Role of Antibiotics

- Prophylactic antibiotics have shown **No decrease** in mortality in severe acute pancreatitis.
- **Antibiotics are justified if:**

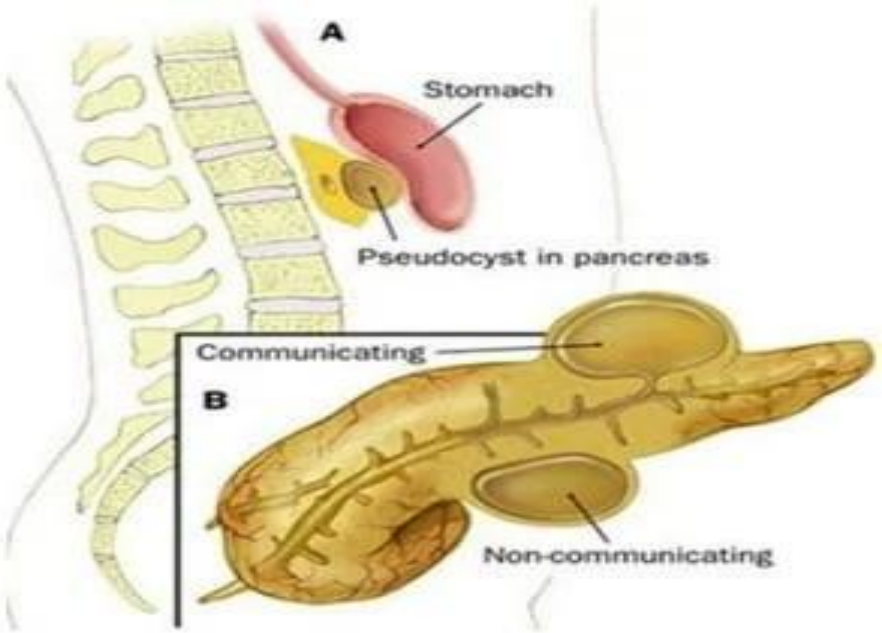
1. Gas in retroperitoneal space
2. Needle aspiration of necrotic material confirms infection
3. Sepsis
4. CRP of > 120 mg/L
5. Peri-pancreatic fluid collection
6. Organ dysfunction
7. APACHE II Score of > 6

Complications



Pancreatic Pseudocyst:

- Wall formed by granulation tissue & fibrosis
- typically presents as abdominal pain, abdominal mass, & persistent hyperamylasemia in a patient with prior pancreatitis.



Distinguishing a pseudocyst from a cystic neoplasm

- History
- Appearance on CT and ultrasound
- FNA of fluid, preferably under EUS guidance
  - CEA (high level in mucinous tumours)
  - Amylase (level usually high in pseudocysts, but occasionally in tumours)
  - Cytology

Intervention in Pseudocyst

- Symptomatic
- Enlarging
- Size > 6 cm
- Duration more than 6 weeks
- Infected pseudocysts
- Complications due to pressure symptoms
  GOO/obstructive jaundice
- Haemosuccus pancreaticus

Treatment

- Percutaneous drainage - for poor risk patients only
- Open procedures
  - Distal pancreatectomy
  - Cystogastrostomy
  - Cystoduodenostomy
  - Roux – en – y cystojejunostomy
  - Whipple procedure
- Endoscopic procedures – stenting
- Laparoscopic procedures

Possible complications of a pancreatic pseudocyst

Process	Outcomes
Infection	Abscess Systemic sepsis
Rupture	
Into the gut	Gastrointestinal bleeding Internal fistula
Into the peritoneum	Peritonitis
Enlargement	
Pressure effects	Obstructive jaundice from biliary compression Bowel obstruction
Pain	
Erosion into a vessel	Haemorrhage into the cyst Haemoperitoneum

Sterile and infected pancreatic necrosis:

- Diffuse or focal area of non-viable parenchyma, typically associated with peripancreatic fat necrosis. These areas can be identified by an absence of contrast enhancement on CT.
- They're sterile to begin with, but can become subsequently infected, due to the gut bacterial translocation.
- Sterile necrotic material should not be drained or interfered with.
- If the patient shows signs of sepsis, then one should determine whether the necrosis is infected.

Mortality

- Mild acute pancreatitis: Mortality rate of 1%
- Severe pancreatitis: Mortality rate of 75-90%
- Overall mortality rate of 15-20%

- First week of illness -> MODS
- Subsequent weeks -> infection


Thank You!