Pancreatitis (Acute and Chronic)

Pancreatitis is inflammation of the pancreas, and it can occur in two forms: acute pancreatitis and chronic pancreatitis. Both conditions can be serious and require prompt medical attention, but they differ in terms of causes, progression, and treatment strategies.

Acute Pancreatitis

Definition:
Acute pancreatitis is the sudden inflammation of the pancreas, usually resulting from injury or blockage to the pancreas or its ducts. The inflammation can range from mild discomfort to severe illness and life-threatening complications.

Causes:

- Gallstones: The most common cause. Gallstones can block the bile duct, leading to inflammation in the pancreas.
- Alcohol consumption: Heavy or binge drinking is another leading cause.
- Trauma or surgery: Injury to the pancreas (e.g., blunt force trauma or post-surgical complications).
- Medications: Certain medications (e.g., corticosteroids, diuretics, and some antibiotics) can trigger acute pancreatitis.
- Infections: Viral infections like mumps, or bacterial infections can cause inflammation.
- Hyperlipidemia: Very high levels of triglycerides in the blood.
- Hypercalcemia: Elevated calcium levels in the blood.
- Genetic factors: Hereditary pancreatitis, cystic fibrosis.
- Endoscopic retrograde cholangiopancreatography (ERCP): A procedure used to diagnose and treat pancreatic and bile duct disorders that can occasionally cause pancreatitis as a complication

Symptoms:

- Severe upper abdominal pain: Sudden and intense pain, usually in the upper abdomen or just below the chest, which may radiate to the back.
- Nausea and vomiting: Often accompanies the pain.
- Fever: Mild to moderate fever may be present.
- Bloating: Abdominal distension or bloating.
- Elevated heart rate (tachycardia): Due to the inflammatory response.

- Jaundice: Yellowing of the skin and eyes (if bile duct is involved).
- Hypotension: Low blood pressure in severe cases.

Diagnosis and Investigation

- Clinical evaluation: History of recent alcohol use, gallstones, or medication use, alongside the classic symptom of severe abdominal pain.
- Blood tests:
    - Amylase and Lipase:
    - Liver enzymes: To rule out bile duct obstruction.
    - Complete blood count (CBC):
    - Electrolyte levels:
    - C-reactive protein (CRP):
- Imaging:
    - Abdominal Ultrasound: To check for gallstones or bile duct obstructions.
    - CT scan: The gold standard for identifying complications like pancreatic necrosis, fluid collections, or pseudocysts.
    - MRI or MRCP (Magnetic Resonance Cholangiopancreatography): For more detailed imaging of the pancreas and biliary tree.
    - Endoscopic ultrasound (EUS): Sometimes used to evaluate the pancreas when other imaging is unclear.

Management:

Supportive care:

- Fluid resuscitation: Intravenous (IV) fluids are given to treat dehydration, maintain blood pressure, and improve kidney function.
- Pain management: Analgesics like acetaminophen or NSAIDs; more severe pain may require narcotics (morphine).
- Fasting: Patients are usually kept nil by mouth (NPO) to rest the pancreas and allow it to heal.
- Nutritional support: In severe cases, enteral feeding (tube feeding) may be started once the acute phase resolves.

Specific treatment:

- Treat the underlying cause:

- If gallstones are the cause, an ERCP may be performed to remove stones or decompress the bile duct.
- If alcohol use is the cause, cessation of alcohol intake is critical.
- Hypertriglyceridemia may require lipid-lowering agents.
- Antibiotics: Only used if infection is suspected, such as in cases of infected pancreatic necrosis.
- Surgery: In severe cases, surgical interventions is necessary to remove necrotic tissue, drain abscesses, or treat complications.

  MIS (Minimal Invasive surgery) VARD, Laparoscopic asst. and hand Asst. necrosectomy

- Endoscopic procedures: To manage complications like pancreatic pseudo cysts or bile duct obstructions.

Chronic Pancreatitis

Definition:
Chronic pancreatitis is long-term inflammation of the pancreas that leads to permanent damage, fibrosis (scarring), and loss of pancreatic function. This condition often develops after repeated episodes of acute pancreatitis or from ongoing risk factors like alcohol use.

Causes:

- Chronic alcohol abuse: The most common cause of chronic pancreatitis in adults.
- Genetic mutations: Conditions like cystic fibrosis or hereditary pancreatitis.
- Idiopathic: In some cases, the exact cause cannot be determined.
- Autoimmune conditions: Autoimmune pancreatitis is a rare condition where the body's immune system attacks the pancreas.
- Obstructions: Chronic obstruction of the pancreatic duct due to stones or strictures.

Symptoms:

- Chronic abdominal pain: Often described as a dull, deep ache that comes and goes, or becomes constant over time. It may worsen after eating.
- Weight loss: Unintentional weight loss due to malabsorption of nutrients.
- Steatorrhea: Fatty, foul-smelling stools due to poor fat digestion.
- Nausea and vomiting: Often due to pancreatic insufficiency.
- Jaundice: Can occur if there is obstruction of the bile duct.
- Diabetes: Long-term damage to the insulin-producing cells of the pancreas can lead to diabetes.

Diagnosis and Investigation:

- Blood tests:
- Amylase and Lipase: May be mildly elevated during an acute flare, but normal levels are common in chronic pancreatitis.
- Blood glucose levels: To assess for the development of diabetes.
- Liver enzymes: To check for bile duct involvement.
- Imaging:
- CT scan: Detects calcifications, ductal dilation, or pancreatic atrophy, which are hallmark signs of chronic pancreatitis.
- MRI/MRCP: Can provide detailed imaging of the pancreatic duct and any obstructions or pseudocysts.
- Endoscopic ultrasound (EUS): Very sensitive for detecting early changes in the pancreas, even before calcifications appear.
- ERCP: Rarely used for diagnosis but may be useful to visualize the bile and pancreatic ducts.

Management:

Pain management:

- Pain is a common feature in chronic pancreatitis and often requires long-term management, which may include NSAIDs, acetaminophen, and opioids in severe cases.
- Celiac plexus block: A procedure to reduce pain by injecting alcohol or other substances near nerves supplying the pancreas.

Dietary modifications:

- Low-fat diet to reduce the workload on the pancreas.
- Pancreatic enzyme replacement therapy (PERT): Helps digest food and improve nutrient absorption if the pancreas is not producing enough digestive enzymes.
- Vitamin and mineral supplementation: To address deficiencies caused by malabsorption (e.g., fat-soluble vitamins A, D, E, K).
- Managing diabetes: Insulin therapy or oral hypoglycemic agents may be required if the pancreas fails to produce enough insulin.

Treatment of complications:

- Pseudocysts: Can be drained surgically or endoscopically if they cause pain or obstruction.

- Endoscopic interventions: To manage strictures or blockages in the pancreatic duct.
- Surgical management: In severe cases, surgery may be necessary to remove damaged tissue, address obstructions, or treat complications like pancreatic cancer.
- Pancreatic surgery: Such as a pancreaticoduodenectomy (Whipple procedure) or partial resection.