NURS 2150
Pancreatic & Hepatic Disorders

Class Objectives
- Correlate clinical manifestations and laboratory test findings with the pathophysiology of liver disease
- Prioritize care for the client experiencing liver disease to improve quality of life and prevent complications
- Identify emergency interventions for the client experiencing complications of liver disease

Class Objectives
- Compare and contrast the pathophysiology of acute and chronic pancreatitis in terms of clinical presentation, laboratory findings, and nursing priorities
- Evaluate effectiveness of interventions for the client with pancreatitis
Liver Disease

- Etiologies
  - Hepatitis
  - Cirrhosis
  - Cancer
  - Right sided heart failure
  - Gall bladder disease
- Functions of the liver

Major Complications

- Portal hypertension leading to
  - Splenomegaly
  - Ascites
  - Peripheral edema
  - Varices
  - Hepatorenal syndrome
- Hepatic encephalopathy
- Coagulation defects
- Spontaneous bacterial peritonitis due to GI tract contamination

Portal Hypertension

- Abnormally elevated blood pressure within the portal vein and its branches from blockage and increased resistance. This causing shunting of blood into collateral circulation around the high pressure area.
- Contributes to the rest of the major manifestations
Hepatic Encephalopathy

- AKA portal-systemic encephalopathy (PSE)
- R/T accumulation of wastes normally metabolized by the liver
- Manifested by altered mentation, consciousness, & motor function
- Portal HTN increases risk for hepatic encephalopathy

Stages of Hepatic Encephalopathy

- Prodromal
- Impending
- Stuporous
- Coma

Precipitating Factors for PSE

- High protein diet
- Infections
- Hypovolemia
- Hypokalemia
- Constipation
- GI bleed related to large amount of protein in intestines
- Drugs which potentially constipate or dehydrate
Hepatorenal Syndrome

- Characterized by functional renal failure with advancing azotemia, oliguria, and intractable ascites
- Results from portal hypertension and systemic vasodilation causing a decrease in renal blood volume and loss of normal kidney function due to extreme renal vasoconstriction
- Common cause of death in cirrhosis

Laboratory & Diagnostics

- Serum electrolytes & glucose
- CBC w/platelets
- Bilirubin & liver enzymes
- Total protein, serum protein, ammonia
- PT/INR
- Liver biopsy
- EGD

Management Objectives

- Fluid management—diurese & block aldosterone, salt poor albumin, possible fluid restriction.
- Nutrition—high calorie, high carb, low sodium diet with varied levels of protein depending on stage of disease
- Nitrogen removal—lactulose used to bind with ammonia; neomycin sulfate or metronidazole (Flagyl) to decrease normal flora in bowel and thereby decrease protein breakdown in bowel and ammonia levels
Management continued..

- Prevention of bleeding—Vitamin K and platelets, beta blockers to decrease varices pressure and heart rate
- Avoidance of medications metabolized by liver
- Monitor for respiratory problems due to increase intra abdominal pressure and increased fluid accumulation.

Surgical & Treatment Management

- Paracentesis
- Sengstaken Blakemore tube
- Sclerotherapy or banding of varices
- Peritoneovenous shunting
- Transjugular intrahepatic portosystem shunt
- Liver transplant

Nursing’s Agenda

- Fluid volume management
- Patient safety
- Bleeding precautions
- Protection from further complications
Acute Pancreatitis

- Inflammatory disorder resulting in autodigestion of the pancreas

Theories as to cause

- Blockage of common bile or pancreatic duct
- Alcohol induced—acute alcohol ingestion can cause edema of duodenum and ampulla of Vater which results in pancreatic duct flow problems

Clinical Manifestations

- Severe epigastric or LUQ pain radiating to left back made worse by supine position
- Nausea & vomiting w/weight loss
- Jaundice, Cullen’s Sign (blue-gray discoloration around umbilicus), Turner’s Sign (flank discoloration)
- Abdominal rigidity, tenderness, guarding

Diagnostics & Lab

- Ultrasound, X-ray, CT scan
- Endoscopic retrograde cholangioplancreatography
- Biopsy
- Amylase, Lipase, Trypsin, Elastase
- Bilirubin and LFT to assess for liver involvement
- ESR & glucose
- Serum calcium & magnesium
- WBC differential
Complications
- Pancreatic infection potentially causing death from SIRS/MODS or DIC
- Hypovolemia & hypotension
- Hemorrhage
- Diabetes mellitus
- Tetany due to hypocalcemia
- Pulmonary complications: pneumonia, pleural effusion, atelectasis, ARDS

Management
- Pain management, IV fluids, antibiotics, H2 blockers, antiemetics, & Proton pump inhibitors.
- If related to blocked common bile duct an endoscopic retrograde cholangiopancreatography (ERCP) may be performed
- Accurate I&O

Dietary Management
- Severe cases: NPO, NG to suction, TPN
- Mild cases: IV fluids until serum amylase levels WNL, bowel sounds present, & pain lessens. Begin with clear liquids & progress as tolerated to high carb, high protein, low fat.
- Avoid caffeine, spices, and alcohol
**Chronic Pancreatitis**

- Progressive destruction of pancreas characterized by exacerbations and remissions leading to pancreatic insufficiency and decreased function.
- Most commonly related to chronic alcohol abuse, but other causes may be present.

**Clinical Manifestations**

- Continuous, gnawing pain in upper abdomen with tenderness
- Respiratory compromise related to pain
- Steatorrhea, clay colored stools
- Weight loss
- Jaundice
- Dark urine
- Diabetes mellitus

**Treatment**

- Appropriate analgesic management
- Enzyme replacement with each meal
- Diabetes management often requires insulin
- Stomach acid control
Avoiding Exacerbations

- Avoid caffeine, alcohol, and nicotine
- Bland, low fat, high protein, high carb diet up to 4000-6000 calories per day
- Taking pancreatic enzymes

The End