

Chapter 45

Care of the Patient with a Gallbladder, Liver, Biliary Tract, or Exocrine Pancreatic Disorder

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Laboratory and Diagnostic Examinations

- Serum bilirubin test
 - > Direct bilirubin: 0.1-0.4 mg/dL
 - > Indirect bilirubin: 0.2-0.8 mg/dL
 - > Total bilirubin: 0.3-1.2 mg/dL
- Serum lipase test: 10-140 units/L
- Ultrasound of the liver
 - > Wave forms are used to assess for abnormalities in liver structure
- Nursing interventions: Keep patient NPO prior to test

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Laboratory and Diagnostic Examinations cont'd

- Liver enzymes
 - > AST
 - > ALT
 - > LDH
 - > Alkaline phosphatase
 - > GGT
- Nursing interventions: monitor puncture site for bleeding

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Laboratory and Diagnostic Examinations cont'd

- Serum protein test
 - > Total protein: 6.4-8.3 g/dL
 - > Albumin: 3.5-5 g/dL
 - > Globulin: 2.3-3.4 g/dL
 - > Albumin/globulin ratio: 1.2-2.2 g/dL
- Nursing interventions: Monitor puncture site for bleeding
- Oral cholecystogram (OCG) provides roentgenographic visualization of the gallbladder after the oral ingestion of a radiopaque dye
- Nursing interventions: assess allergies to dye and administer oral agent

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Laboratory and Diagnostic Examinations cont'd

- Intravenous cholangiography
- Operative cholangiography
- T-tube cholangiography
- Nursing interventions: assess allergies to iodine, keep patient NPO prior to exam, protect patient from infection postprocedure
- Ultrasonography (ultrasound, echogram) is an imaging technique that visualizes deep structures of the body by recording the reflections (echoes) of ultrasonic waves directed into the tissues
- Nursing interventions: keep patient NPO prior to exam

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Laboratory and Diagnostic Examinations cont'd

- Gallbladder scanning
- Nursing interventions: advise patient radioactivity is minimal, keep patient NPO prior to exam
- Needle liver biopsy: a safe, simple, and valuable method of diagnosing pathologic liver conditions
- Nursing interventions: verify consent, examine related laboratory values, after the procedure monitor the patient for symptoms of bleeding
- Radioisotope liver scanning: used to outline and detect structural changes of the liver
- Nursing interventions: keep patient NPO prior to exam

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Laboratory and Diagnostic Examinations cont'd

- Serum ammonia level
- Hepatitis virus studies
- Serum amylase studies
- Serum lipase
- Nursing interventions: monitor puncture site for bleeding
- Urine amylase test
- Nursing interventions: record exact time of beginning and end of collection, keep specimen on ice or refrigerated

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Laboratory and Diagnostic Examinations cont'd

- Computed tomography of the abdomen
- Nursing interventions: keep patient NPO prior to exam
- Endoscopic retrograde cholangiopancreatography of the pancreatic duct (ERCP)
 - > Involves inserting a fiberoptic duodenoscope through the oral pharynx, through the esophagus and the stomach, and into the duodenum and injecting dye
- Nursing interventions: keep patient NPO prior to exam, check PT/INR level, instruct patient that exam takes 1-2 hours; after exam, keep patient NPO until gag reflex returns, assess for pancreatitis, monitor vital signs

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Cirrhosis

- A degenerative disease of the liver in which the lobes are covered with fibrous tissue, and the lobules are infiltrated with fat
- Early stage is characterized by
 - > Firmness over the liver
 - > Generalized weakness
 - > Malaise
 - > Vague flu-like symptoms
- Later stages are characterized by
 - > Upset stomach
 - > Ascites
 - > Jaundice
 - > Malaise
 - > Spider telangiectasis

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Cirrhosis cont'd

- Diagnostic tests
 - ALT
 - AST
 - LDH
 - GGT
 - Protein levels
 - Prothrombin time
 - ERCP

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Cirrhosis cont'd

- Medical management
 - Eliminate alcohol use
 - Diet modification
 - Antiemetics
 - Benadryl
 - Dramamine

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Cirrhosis cont'd

- Nursing interventions
 - Monitor VS closely
 - Monitor for GI bleed
 - Monitor fluid status
 - Direct patient to resources to deal with alcoholism
 - Provide patient education
 - Monitor laboratory values
 - Place patient on bleeding precautions as appropriate

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Complications of Cirrhosis

- Fluid retention
 - > Diuretics are commonly used to decrease fluid retention
 - > Albumin may be given to increase osmotic pull into vascular space
 - > LeVeen peritoneal shunt
 - > Paracentesis may be performed
- Esophageal varices: veins in the esophagus become enlarged and engorged
 - > Susceptible to ulceration and hemorrhage
 - > Prophylactic treatment includes beta blockers
 - > Varices can rupture as a result of anything that increases abdominal venous pressure, such as coughing, sneezing, vomiting, or the Valsalva maneuver
 - > Rupture of a varix is an emergency and should be treated as such

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Complications of Cirrhosis cont'd

- Hepatic encephalopathy: a type of brain damage caused by liver disease and consequent ammonia intoxication
- Signs and symptoms progress from inappropriate behavior, disorientation, asterixis, and twitching of the extremities to stupor and coma
- Treatment consists of supportive care to prevent further damage to the liver

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Carcinoma of the Liver

- Diagnosis is difficult, in early stages may mimic cirrhosis
- Treatment is usually palliative and prognosis is commonly bleak
- Chemotherapy and surgery may be used
- Nursing interventions focus on maintaining as high a quality of life as possible

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Hepatitis

- Exists as type A, B, C, D, E, G
- Symptoms vary greatly and many patients are asymptomatic
- Prevention is the best treatment
- Serum tests similar to those for cirrhosis may be completed
- Serum test for hepatitis markers
- Medical treatment focuses on decreasing viral load

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Hepatitis cont'd

Nursing Interventions

- Protect patients from injury, as they may have a decreased LOC
- Place on bleeding precautions as indicated
- Provide dietary education
- Monitor I&O
- Administer antiemetics as needed and indicated

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Liver Abscess

- A walled-off area of infection contained within the liver
- Left untreated, can be fatal (fatality rate used to be 100% due to vague symptoms)
- Symptoms include pain, fever, abdominal pain, chills
- The nurse should assess signs and symptoms and monitor the liver's ability to function normally (assess lab values)
- Diagnosed radiographically
- Usually treated with IV antibiotics, but can be drained surgically
- Nursing interventions: provide continuous monitoring and supportive care

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Cholecystitis and Cholelithiasis

- The two most common conditions of the gallbladder are cholecystitis (inflammation of the gallbladder) and cholelithiasis (presence of gallstones in the gallbladder)
- Cholecystitis can be caused by an obstruction, gallstone, or tumor
- May be acute or chronic
- Characterized by indigestion, nausea, and vomiting
- Patient often reports pain in the upper right quadrant that radiates to the right shoulder
- Diagnosis made by ultrasound or HIDA scan
- Medical management usually aimed at surgical correction

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Pancreatitis

- Inflammatory condition of the pancreas that may be acute or chronic
- Generally caused by alcohol ingestion or biliary disease
- Pancreatic enzymes build up and begin to digest the pancreas
- The development of pseudocysts or abscesses is a serious complication

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Pancreatitis cont'd

Clinical Manifestations and Assessment

- Severe abdominal pain radiating to the back
- Pain is usually located in the left upper quadrant
- Assess
 - > Pain
 - > Fever
 - > Leukocytosis
 - > Nausea
 - > Vomiting
 - > Hypotension

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Pancreatitis cont'd

Medical Management

- NPO
- Medications
- Pain control
- Antiemetics
- H₂ antagonists
- Total parenteral nutrition (TPN)

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Pancreatitis cont'd

Nursing Interventions

- The patient is kept NPO and an NG tube is inserted
- Assess and treat pain
- Treat nausea and vomiting
- Administer anticholinergic medications as prescribed
- Administer H₂ antagonist as prescribed
- As diet advances, begin patient on a clear liquid diet
- Patient may be required to be on TPN
- If patient is on TPN, monitor glucose levels closely

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Cancer of the Pancreas

- Most common risk factor is cigarette smoking
- Other risk factors include exposure to chemical carcinogens, diabetes mellitus, cirrhosis, and chronic pancreatitis
- Begins with vague symptoms (anorexia, nausea)
- Abdominal pain in midepigastic region may occur
- About half of patients with cancer develop diabetes mellitus

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Cancer of the Pancreas cont'd

- May be diagnosed with CT, ultrasound, or needle biopsy
- Treatment is usually surgical and there is a high mortality rate
- Radiation and chemotherapy may also be used

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Jaundice

- The discoloration of body tissues caused by abnormally high blood levels of bilirubin
- Assess pain skin color, and color of mucus membranes and sclera of the eye

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Hepatitis

- Inflammation of the liver caused by viruses, bacteria, and noninfectious causes of liver inflammation such as alcohol ingestion and drugs
- Hepatitis A, B, and C are the most common viruses that cause hepatitis
- Hepatitis D and E occur in conjunction with B and C respectively

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Hepatitis cont'd

Transmission

- Hepatitis A (HAV): Fecal-oral
- Hepatitis B (HBV): Body fluids
- Hepatitis C (HCV): Body fluids
- Hepatitis D (HDV): Body fluids, occurs concurrently with HBV
- Hepatitis E (HEV): Body fluids, occurs concurrently with HCV

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Hepatitis cont'd

Assessment

<ul style="list-style-type: none">● Subjective<ul style="list-style-type: none">> Malaise> Aching muscles> Fatigue> Photophobia> Chills> Abdominal pain	<ul style="list-style-type: none">● Objective<ul style="list-style-type: none">> Enlarged lymph nodes> Weight loss> Jaundice> Tea-colored urine
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Liver Transplantation

- Indications for liver transplantation include
 - > Congenital biliary abnormalities
 - > Inborn errors of metabolism
 - > Hepatic malignancy (confined to the liver)
 - > Sclerosing cholangitis
 - > Chronic end-stage liver disease

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Liver Transplantation cont'd

Medications to Prevent Rejection

- Cyclosporine
- Azathioprine (Imuran)
- Corticosteroids
- Tacrolimus (Prograf)
- Mycophenolate mofetil (Cellcept)
- Basiliximab (Simulect)
- Daclizumab (Zenapax)

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Liver Transplantation cont'd

Nursing Interventions

- Assess neurologic status
- Monitor vital signs
- Monitor for hemorrhage
- Monitor lab values
- Pulmonary toileting
- Monitor drainage tubes
- Prevent infection

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Surgical Treatment of Cholecystitis and Cholelithiasis

- The treatment of choice for cholecystitis and cholelithiasis is surgery
- Two types of surgical procedures are performed
 - Laparoscopic cholecystectomy
 - Open abdominal cholecystectomy

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Laparoscopic Cholecystectomy

- The most common treatment for cholecystitis and cholelithiasis
- Uses a laser or cautery to remove the gallbladder
- Replaces the open surgical procedure 80-85% of the time

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Laparoscopic Cholecystectomy cont'd

Surgical Procedure

- The abdominal cavity is inflated with 3-4 liters of air
- A laparoscope is inserted into the abdomen
- The surgeon removes the gallbladder with the laparoscope

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Laparoscopic Cholecystectomy cont'd

Advantages

- Less invasive
- Less scarring
- Less pain
- A quicker return to normal activity

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Laparoscopic Cholecystectomy cont'd

Postsurgical Care

- Assess and treat pain
- Assess vital signs routinely
- Provide patient education

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Open Abdominal Cholecystectomy

- The abdomen is opened and the gallbladder is removed
- Recovery time is longer
- Greater risk for infection
- The patient will usually have a drain placed
- Nursing care will follow the same path as laparoscopy; however, drain care will also be performed and recovery will be more extensive

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