

CHOLECYSTITIS WITH CHOLELITHIASIS

Cholecystitis is an acute or chronic inflammation of the gallbladder, usually associated with gallstone(s) impacted in the cystic duct, causing distension of the gallbladder. Stones (calculi) are made up of cholesterol, calcium bilirubinate, or a mixture caused by changes in the bile composition. Gallstones can develop in the common bile duct, the cystic duct, hepatic duct, small bile duct, and pancreatic duct. Crystals can also form in the submucosa of the gallbladder causing widespread inflammation. Acute cholecystitis with cholelithiasis is usually treated by surgery, although several other treatment methods (fragmentation and dissolution of stones) are now being used.

CARE SETTING

Severe acute attacks may require brief hospitalization on a medical unit. This plan of care deals with the acutely ill, hospitalized patient.

RELATED CONCERNS

Cholecystectomy

Fluid and electrolyte imbalances, see Nursing Plan CD-ROM

Psychosocial aspects of care

Total nutritional support: parenteral/enteral feeding

Patient Assessment Database

ACTIVITY/REST

May report: Fatigue

May exhibit: Restlessness

CIRCULATION

May exhibit: Tachycardia, diaphoresis, lightheadedness

ELIMINATION

May report: Change in color of urine and stools

May exhibit: Abdominal distension
Palpable mass in right upper quadrant (RUQ)
Dark, concentrated urine
Clay-colored stool, steatorrhea

FOOD/FLUID

May report: Anorexia, nausea/vomiting
Intolerance of fatty and "gas-forming" foods; recurrent regurgitation, heartburn, indigestion, flatulence, bloating (dyspepsia)
Belching (eructation)

May exhibit: Obesity; recent weight loss
Normal to hypoactive bowel sounds

PAIN/DISCOMFORT

May report: Severe epigastric and right upper abdominal pain, may radiate to mid-back, right shoulder/scapula, or to front of chest
Midepigastric colicky pain associated with eating, especially after meals rich in fats
Pain severe/ongoing, starting suddenly, sometimes at night, and usually peaking in 30 min, often increases with movement

May exhibit: Recurring episodes of similar pain
Rebound tenderness, muscle guarding, or abdominal rigidity when RUQ is palpated; positive Murphy's sign

RESPIRATION

May exhibit: Increased respiratory rate
Splinted respiration marked by short, shallow breathing

SAFETY

May exhibit: Low-grade fever; high-grade fever and chills (septic complications)
Jaundice, with dry, itching skin (pruritus)
Bleeding tendencies (vitamin K deficiency)

TEACHING/LEARNING

May report: Familial tendency for gallstones
Recent pregnancy/delivery; history of diabetes mellitus (DM), IBD, blood dyscrasias

Discharge plan considerations: **DRG projected mean length of inpatient stay: 4.3 days**
May require support with dietary changes/weight reduction
Refer to section at end of plan for postdischarge considerations.

DIAGNOSTIC STUDIES

Biliary ultrasound: Reveals calculi, with gallbladder and/or bile duct distension (frequently the initial diagnostic procedure).

Oral cholecystography (OCG): Preferred method of visualizing general appearance and function of gallbladder, including presence of filling defects, structural defects, and/or stone in ducts/biliary tree. Can be done IV (IVC) when nausea/vomiting prevent oral intake, when the gallbladder cannot be visualized during OCG, or when symptoms persist following cholecystectomy. IVC may also be done perioperatively to assess structure and function of ducts, detect remaining stones after lithotripsy or cholecystectomy, and/or to detect surgical complications. Dye can also be injected via T-tube drain postoperatively.

Endoscopic retrograde cholangiopancreatography (ERCP): Visualizes biliary tree by cannulation of the common bile duct through the duodenum.

Percutaneous transhepatic cholangiography (PTC): Fluoroscopic imaging distinguishes between gallbladder disease and cancer of the pancreas (when jaundice is present); supports the diagnosis of obstructive jaundice and reveals calculi in ducts.

Cholecystograms (for chronic cholecystitis): Reveals stones in the biliary system. *Note:* Contraindicated in acute cholecystitis because patient is too ill to take the dye by mouth.

Nonnuclear CT scan: May reveal gallbladder cysts, dilation of bile ducts, and distinguish between obstructive/nonobstructive jaundice.

Hepatobiliary (HIDA, PIPIDA) scan: May be done to confirm diagnosis of cholecystitis, especially when barium studies are contraindicated. Scan may be combined with cholecystokinin injection to demonstrate abnormal gallbladder ejection.

Abdominal x-ray films (multipositional): Radiopaque (calcified) gallstones present in 10%–15% of cases; calcification of the wall or enlargement of the gallbladder.

Chest x-ray: Rule out respiratory causes of referred pain.

CBC: Moderate leukocytosis (acute).

Serum bilirubin and amylase: Elevated.

Serum liver enzymes—AST; ALT; ALP; LDH: Slight elevation; alkaline phosphatase and 5-nucleotidase are markedly elevated in biliary obstruction.

Prothrombin levels: Reduced when obstruction to the flow of bile into the intestine decreases absorption of vitamin K.

NURSING PRIORITIES

1. Relieve pain and promote rest.
2. Maintain fluid and electrolyte balance.
3. Prevent complications.
4. Provide information about disease process, prognosis, and treatment needs.

DISCHARGE GOALS

1. Pain relieved.
2. Homeostasis achieved.
3. Complications prevented/minimized.
4. Disease process, prognosis, and therapeutic regimen understood.
5. Plan in place to meet needs after discharge

NURSING DIAGNOSIS: Pain, acute

May be related to

Biological injuring agents: obstruction/ductal spasm, inflammatory process, tissue ischemia/necrosis

Possibly evidenced by

Reports of pain, biliary colic (waves of pain)

Facial mask of pain; guarding behavior

Autonomic responses (changes in BP, pulse)

Self-focusing; narrowed focus

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Pain Control (NOC)

Report pain is relieved/controlled.

Demonstrate use of relaxation skills and diversional activities as indicated for individual situation.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Independent</p> <p>Observe and document location, severity (0–10 scale), and character of pain (e.g., steady, intermittent, colicky).</p> <p>Note response to medication, and report to physician if pain is not being relieved.</p> <p>Promote bedrest, allowing patient to assume position of comfort.</p> <p>Use soft/cotton linens; calamine lotion, oil (Alpha Keri) bath; cool/moist compresses as indicated.</p> <p>Control environmental temperature.</p> <p>Encourage use of relaxation techniques, e.g., guided imagery, visualization, deep-breathing exercises. Provide diversional activities.</p> <p>Make time to listen to and maintain frequent contact with patient.</p>	<p>Assists in differentiating cause of pain, and provides information about disease progression/resolution, development of complications, and effectiveness of interventions.</p> <p>Severe pain not relieved by routine measures may indicate developing complications/need for further intervention.</p> <p>Bedrest in low-Fowler’s position reduces intra-abdominal pressure; however, patient will naturally assume least painful position.</p> <p>Reduces irritation/dryness of the skin and itching sensation.</p> <p>Cool surroundings aid in minimizing dermal discomfort.</p> <p>Promotes rest, redirects attention, may enhance coping.</p> <p>Helpful in alleviating anxiety and refocusing attention, which can relieve pain.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Collaborative</p> <p>Maintain NPO status, insert/maintain NG suction as indicated.</p> <p>Administer medications as indicated:</p> <p>Anticholinergics, e.g., atropine, propantheline (Pro-Banthi-ne);</p> <p>Sedatives, e.g., phenobarbital;</p> <p>Narcotics, e.g., meperidine hydrochloride (Demerol), morphine sulfate;</p> <p>Monoctanoin (Moctanin);</p> <p>Smooth muscle relaxants, e.g., papaverine (Pavabid), nitroglycerin, amyl nitrite;</p> <p>Chenodeoxycholic acid (Chenix), ursodeoxycholic acid (Urso, Actigall);</p> <p>Antibiotics.</p> <p>Prepare for procedures, e.g.:</p> <p>Endoscopic papillotomy (removal of ductal stone);</p> <p>Extracorporeal shock wave lithotripsy (ESWL);</p> <p>Endoscopic sphincterotomy;</p>	<p>Removes gastric secretions that stimulate release of cholecystokinin and gallbladder contractions.</p> <p>Relieves reflex spasm/smooth muscle contraction and assists with pain management.</p> <p>Promotes rest and relaxes smooth muscle, relieving pain.</p> <p>Given to reduce severe pain. Morphine is used with caution because it may increase spasms of the sphincter of Oddi, although nitroglycerin may be given to reduce morphine-induced spasms if they occur.</p> <p>This medication may be used after a cholecystectomy for retained stones or for newly formed large stones in the bile duct. It is a lengthy treatment (1–3 wk) and is administered via a nasal-biliary tube. A cholangiogram is done periodically to monitor stone dissolution.</p> <p>Relieves ductal spasm.</p> <p>These natural bile acids decrease cholesterol synthesis, dissolving gallstones. Success of this treatment depends on the number and size of gallstones (preferably three or fewer stones smaller than 20 mm in diameter) floating in a functioning gallbladder.</p> <p>To treat infectious process, reducing inflammation.</p> <p>Choice of procedure is dictated by individual situation.</p> <p>Shock wave treatment is indicated when patient has mild or moderate symptoms, cholesterol stones in gallbladder are 0.5 mm or larger, and there is no biliary tract obstruction. Depending on the machine being used, the patient may sit in a tank of water or lie prone on a water-filled cushion. Treatment takes about 1–2 hr and is 75%–95% successful. <i>Note:</i> This procedure is contraindicated in patients with pacemakers or implantable defibrillators.</p> <p>Procedure done to widen the mouth of the common bile duct where it empties into the duodenum. This procedure may also include the manual retrieval of stones from the duct by means of a tiny basket or balloon on the end of the endoscope. Stones must be smaller than 15 mm.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Collaborative</p> <p>Surgical intervention.</p>	<p>Cholecystectomy may be indicated because of the size of stones and degree of tissue involvement/ presence of necrosis. Refer to CP: Cholecystectomy.</p>

<p>NURSING DIAGNOSIS: Fluid Volume, risk for deficient</p> <p>Risk factors may include</p> <p>Excessive losses through gastric suction; vomiting, distension, and gastric hypermotility</p> <p>Medically restricted intake</p> <p>Altered clotting process</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms and establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Hydration (NOC)</p> <p>Demonstrate adequate fluid balance evidenced by stable vital signs, moist mucous membranes, good skin turgor, capillary refill, individually appropriate urinary output, absence of vomiting.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Fluid/Electrolyte Management (NIC)</p> <p>Independent</p> <p>Maintain accurate record of I&O, noting output less than intake, increased urine specific gravity. Assess skin/mucous membranes, peripheral pulses, and capillary refill.</p> <p>Monitor for signs/symptoms of increased/continued nausea or vomiting, abdominal cramps, weakness, twitching, seizures, irregular heart rate, paresthesia, hypoactive or absent bowel sounds, depressed respirations.</p> <p>Eliminate noxious sights/smells from environment.</p> <p>Perform frequent oral hygiene with alcohol-free mouthwash; apply lubricants.</p> <p>Use small-gauge needles for injections and apply firm pressure for longer than usual after venipuncture.</p>	<p>Provides information about fluid status/circulating volume and replacement needs.</p> <p>Prolonged vomiting, gastric aspiration, and restricted oral intake can lead to deficits in sodium, potassium, and chloride.</p> <p>Reduces stimulation of vomiting center.</p> <p>Decreases dryness of oral mucous membranes; reduces risk of oral bleeding.</p> <p>Reduces trauma, risk of bleeding/hematoma formation.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Fluid/Electrolyte Management (NIC)</p> <p>Independent</p> <p>Assess for unusual bleeding, e.g., oozing from injection sites, epistaxis, bleeding gums, ecchymosis, petechiae, hematemesis/melena.</p> <p>Collaborative</p> <p>Keep patient NPO as necessary.</p> <p>Insert NG tube, connect to suction, and maintain patency as indicated.</p> <p>Administer antiemetics, e.g., prochlorperazine (Compazine).</p> <p>Review laboratory studies, e.g., Hb/Hct, electrolytes, ABGs (pH), clotting times.</p> <p>Administer IV fluids, electrolytes, and vitamin K.</p>	<p>Prothrombin is reduced and coagulation time prolonged when bile flow is obstructed, increasing risk of bleeding/hemorrhage.</p> <p>Decreases GI secretions and motility.</p> <p>Provides rest for GI tract.</p> <p>Reduces nausea and prevents vomiting.</p> <p>Aids in evaluating circulating volume, identifies deficits, and influences choice of intervention for replacement/correction.</p> <p>Maintains circulating volume and corrects imbalances.</p>

<p>NURSING DIAGNOSIS: Nutrition: imbalanced, risk for less than body requirements</p> <p>Risk factors may include</p> <p>Self-imposed or prescribed dietary restrictions, nausea/vomiting, dyspepsia, pain</p> <p>Loss of nutrients; impaired fat digestion due to obstruction of bile flow</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Nutritional Status (NOC)</p> <p>Report relief of nausea/vomiting.</p> <p>Demonstrate progression toward desired weight gain or maintain weight as individually appropriate.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Nutrition Management (NIC)</p> <p>Independent</p> <p>Estimate/calculate caloric intake. Keep comments about appetite to a minimum.</p>	<p>Identifies nutritional deficiencies/needs. Focusing on problem creates a negative atmosphere and may interfere with intake.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Nutrition Management (NIC)</p> <p>Independent</p> <p>Weigh as indicated.</p> <p>Consult with patient about likes/dislikes, foods that cause distress, and preferred meal schedule.</p> <p>Provide a pleasant atmosphere at mealtime; remove noxious stimuli.</p> <p>Provide oral hygiene before meals.</p> <p>Offer effervescent drinks with meals, if tolerated.</p> <p>Assess for abdominal distension, frequent belching, guarding, reluctance to move.</p> <p>Ambulate and increase activity as tolerated.</p>	<p>Monitors effectiveness of dietary plan.</p> <p>Involving patient in planning enables patient to have a sense of control and encourages eating.</p> <p>Useful in promoting appetite/reducing nausea.</p> <p>A clean mouth enhances appetite.</p> <p>May lessen nausea and relieve gas. <i>Note:</i> May be contraindicated if beverage causes gas formation/gastric discomfort.</p> <p>Nonverbal signs of discomfort associated with impaired digestion, gas pain.</p> <p>Helpful in expulsion of flatus, reduction of abdominal distension. Contributes to overall recovery and sense of well-being and decreases possibility of secondary problems related to immobility (e.g., pneumonia, thrombophlebitis).</p>
<p>Collaborative</p> <p>Consult with dietitian/nutritional support team as indicated.</p> <p>Begin low-fat liquid diet after NG tube is removed.</p> <p>Advance diet as tolerated, usually low-fat, high-fiber. Restrict gas-producing foods (e.g., onions, cabbage, popcorn) and foods/fluids high in fats (e.g., butter, fried foods, nuts).</p> <p>Administer bile salts, e.g., Bilron, Zanchol, dehydrocholic acid (Decholin), as indicated.</p> <p>Monitor laboratory studies, e.g., BUN, prealbumin, albumin, total protein, transferrin levels.</p> <p>Provide parenteral/enteral feedings as needed.</p>	<p>Useful in establishing individual nutritional needs and most appropriate route.</p> <p>Limiting fat content reduces stimulation of gallbladder and pain associated with incomplete fat digestion and is helpful in preventing recurrence.</p> <p>Meets nutritional requirements while minimizing stimulation of the gallbladder.</p> <p>Promotes digestion and absorption of fats, fat-soluble vitamins, cholesterol. Useful in chronic cholecystitis.</p> <p>Provides information about nutritional deficits/effectiveness of therapy.</p> <p>Alternative feeding may be required depending on degree of disability/gallbladder involvement and need for prolonged gastric rest.</p>

NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding condition, prognosis, treatment, self-care, and discharge needs

May be related to

Lack of knowledge/recall
Information misinterpretation
Unfamiliarity with information resources

Possibly evidenced by

Questions; request for information
Statement of misconception
Inaccurate follow-through of instruction
Development of preventable complications

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Knowledge: Illness Care (NOC)

Verbalize understanding of disease process, prognosis, potential complications.
Verbalize understanding of therapeutic needs.
Initiate necessary lifestyle changes and participate in treatment regimen.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Provide explanations of/reasons for test procedures and preparation needed.</p> <p>Review disease process/prognosis. Discuss hospitalization and prospective treatment as indicated. Encourage questions, expression of concern.</p> <p>Review drug regimen, possible side effects.</p> <p>Discuss weight reduction programs if indicated</p> <p>Instruct patient to avoid food/fluids high in fats (e.g., whole milk, ice cream, butter, fried foods, nuts, gravies, pork), gas producers (e.g., cabbage, beans, onions, carbonated beverages), or gastric irritants (e.g., spicy foods, caffeine, citrus).</p>	<p>Information can decrease anxiety, thereby reducing sympathetic stimulation.</p> <p>Provides knowledge base from which patient can make informed choices. Effective communication and support at this time can diminish anxiety and promote healing.</p> <p>Gallstones often recur, necessitating long-term therapy. Development of diarrhea/cramps during chenodiol therapy may be dose-related/correctable. <i>Note:</i> Women of childbearing age should be counseled regarding birth control to prevent pregnancy and risk of fetal hepatic damage.</p> <p>Obesity is a risk factor associated with cholecystitis, and weight loss is beneficial in medical management of chronic condition.</p> <p>Prevents/limits recurrence of gallbladder attacks.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Review signs/symptoms requiring medical intervention, e.g., recurrent fever; persistent nausea/vomiting, or pain; jaundice of skin or eyes, itching; dark urine; clay-colored stools; blood in urine, stools, vomitus; or bleeding from mucous membranes.</p> <p>Recommend resting in semi-Fowler's position after meals.</p> <p>Suggest patient limit gum chewing, sucking on straw/hard candy, or smoking.</p> <p>Discuss avoidance of aspirin-containing products, forceful blowing of nose, straining for bowel movement, contact sports. Recommend use of soft toothbrush, electric razor.</p>	<p>Indicative of progression of disease process/development of complications requiring further intervention.</p> <p>Promotes flow of bile and general relaxation during initial digestive process.</p> <p>Promotes gas formation, which can increase gastric distension/discomfort.</p> <p>Reduces risk of bleeding related to changes in coagulation time, mucosal irritation, and trauma.</p>

POTENTIAL CONSIDERATIONS following acute hospitalization (dependent on patient's age, physical condition/presence of complications, personal resources, and life responsibilities)

Pain, acute—recurrence of obstruction/ductal spasm; inflammation, tissue ischemia.