Nursing Care of the Gastro-Intestinal System

Quick review notes – SN Lumbini

Nursing Care of the Gastro-Intestinal System (6.3.4)

The gastrointestinal (GI) system is responsible for digestion, absorption of nutrients, and elimination of waste. Disorders of the GI system can lead to significant discomfort, nutritional deficiencies, and systemic complications. Nursing care focuses on symptom management, prevention of complications, and patient education for long-term health. Below is a detailed breakdown of nursing care for the specified GI conditions.

6.3.4.1. Gastritis and Peptic Ulcer

Definition:

- **Gastritis**: Inflammation of the stomach lining.
- **Peptic Ulcer**: Erosions in the stomach (gastric ulcer) or duodenum (duodenal ulcer) lining.

Causes:

- *Helicobacter pylori* infection, NSAID use, excessive alcohol, stress.
- Risk factors: Smoking, spicy foods, chronic stress.

Symptoms:

- Epigastric pain (burning or gnawing), nausea, vomiting.
- Gastritis: Bloating, early satiety, and anorexia.
- Peptic Ulcer: Pain relieved (duodenal) or worsened (gastric) by eating; hematemesis or melena (if bleeding).

Nursing Assessment:

- Assess for epigastric pain (location, timing, relation to meals).
- Monitor for signs of bleeding (melena, hematemesis, tachycardia).
- Check for dehydration (dry mucous membranes, poor skin turgor).

Nursing Interventions:

- **Medications**:
  - Proton pump inhibitors (e.g., omeprazole) to reduce acid production.
  - H2-receptor blockers (e.g., ranitidine) for acid suppression.
  - Antibiotics (e.g., amoxicillin, clarithromycin) for *H. pylori* eradication.
- **Dietary Management**: Advise small, frequent meals; avoid irritants (spicy foods, caffeine, alcohol).
- **Pain Management**: Administer antacids (e.g., aluminum hydroxide) for immediate relief.
- **Monitor Complications**: Watch for perforation (sudden severe pain), bleeding (hematemesis, melena), or gastric outlet obstruction (vomiting).
- **Stress Reduction**: Teach relaxation techniques (e.g., deep breathing) to reduce stress-related acid production.
- **Hydration**: Provide IV fluids if vomiting leads to dehydration.

Patient Education:

- Educate on avoiding NSAIDs, alcohol, and smoking to prevent recurrence.
- Teach to eat small, frequent meals and avoid trigger foods.
- Advise reporting signs of complications (e.g., black stools, severe pain).

6.3.4.2. Esophageal Varices

Definition: Esophageal varices are dilated veins in the lower esophagus, often due to portal hypertension from liver disease.

Causes:

- Cirrhosis (e.g., from alcohol or hepatitis), portal vein thrombosis.
- Risk factors: Chronic liver disease, alcohol abuse.

Symptoms:

- Hematemesis (massive upper GI bleeding), melena.
- Hypovolemic shock (tachycardia, hypotension).
- Abdominal distension (from ascites), jaundice (if liver disease).

Nursing Assessment:

- Monitor for signs of bleeding (hematemesis, melena, pallor).
- Assess vital signs for hypovolemic shock (hypotension, tachycardia).
- Check for signs of liver dysfunction (jaundice, ascites, spider angiomas).

Nursing Interventions:

- **Emergency Management**: For active bleeding, establish IV access (large-bore), administer fluids/blood products.
- **Medications**:
  - Vasoconstrictors (e.g., octreotide, vasopressin) to reduce portal pressure.
  - Beta-blockers (e.g., propranolol) for prophylaxis.
- **Endoscopic Therapy**: Assist with band ligation or sclerotherapy to control bleeding.
- **Monitor Complications**: Watch for rebleeding, hepatic encephalopathy (confusion, asterixis), or infection.
- **Transfusion**: Administer packed red blood cells (PRBCs) and fresh frozen plasma (FFP) as needed.
- **Positioning**: Keep the patient in a semi-Fowler's position to reduce aspiration risk during vomiting.

Patient Education:

- Educate on avoiding alcohol and managing liver disease (e.g., hepatitis treatment).
- Teach to report signs of bleeding (vomiting blood, black stools) immediately.
- Advise regular follow-ups to monitor liver function and varices.

6.3.4.3. Hernias

Definition: A hernia is the protrusion of an organ or tissue through a weak area in the surrounding muscle or connective tissue (e.g., inguinal, umbilical, hiatal).

Causes:

- Increased intra-abdominal pressure (e.g., lifting, obesity, chronic cough).
- Congenital defects, surgical incisions (incisional hernia).

Symptoms:

- Bulge at the site (e.g., groin, abdomen), worse with straining.
- Pain or discomfort, especially with activity.
- Strangulation (emergency): Severe pain, nausea, vomiting, irreducible bulge.

Nursing Assessment:

- Inspect for a visible bulge (check while standing, coughing).
- Assess for pain, tenderness, or signs of strangulation (redness, fever).
- Monitor for bowel obstruction (nausea, vomiting, constipation).

Nursing Interventions:

- **Pre-Surgical Care**: Encourage weight loss and smoking cessation to reduce surgical risks.
- **Pain Management**: Administer analgesics for discomfort.
- **Monitor Complications**: Watch for strangulation or incarceration (irreducible hernia); prepare for emergency surgery if present.
- **Post-Surgical Care**:
    - Monitor for infection (redness, fever) at the surgical site.
    - Encourage early ambulation to prevent DVT but avoid heavy lifting.
- **Support**: Use a truss (for inguinal hernia) if surgery is delayed, but only under medical guidance.

Patient Education:

- Teach to avoid heavy lifting and straining (e.g., constipation, coughing).
- Educate on recognizing signs of strangulation (severe pain, nausea).
- Advise maintaining a healthy weight and following post-op instructions (e.g., activity restrictions).

6.3.4.4. Appendicitis

Definition: Appendicitis is the inflammation of the appendix, often leading to a surgical emergency if untreated.

Causes:

- Obstruction of the appendix (e.g., fecalith, infection).
- Risk factors: Young age (10-30 years), dietary factors.

Symptoms:

- Periumbilical pain shifting to the right lower quadrant (McBurney's point).
- Nausea, vomiting, low-grade fever, anorexia.
- Rebound tenderness, Rovsing's sign (pain in RLQ with LLQ palpation).

Nursing Assessment:

- Assess for RLQ pain, rebound tenderness, and guarding.
- Monitor vital signs for fever and signs of peritonitis (rigidity, tachycardia).
- Check for nausea, vomiting, and appetite changes.

Nursing Interventions:

- **Pre-Surgical Care**:
    - Keep NPO (nothing by mouth) in preparation for surgery.
    - Administer IV fluids for hydration.
    - Avoid laxatives or enemas (may cause rupture).
- **Pain Management**: Administer analgesics cautiously (avoid masking symptoms before diagnosis).
- **Antibiotics**: Administer broad-spectrum antibiotics (e.g., ceftriaxone) for infection.
- **Post-Surgical Care** (Appendectomy):
    - Monitor for signs of peritonitis (fever, abdominal rigidity) or wound infection.
    - Encourage early ambulation to prevent complications (e.g., DVT).
- **Monitor Complications**: Watch for abscess formation or sepsis.

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Patient Education:

- Educate on recognizing symptoms of appendicitis (e.g., RLQ pain, fever) for early intervention.
- Teach post-op wound care and activity restrictions (e.g., no heavy lifting for 4-6 weeks).
- Advise reporting signs of infection (fever, redness) post-surgery.

6.3.4.5. Intestinal Obstruction

Definition: Intestinal obstruction is a blockage that prevents the normal passage of intestinal contents, classified as mechanical (physical blockage) or functional (paralytic ileus).

Causes:

- Mechanical: Adhesions (post-surgical), hernias, tumors, volvulus.
- Functional: Paralytic ileus (e.g., post-op, electrolyte imbalances).

Symptoms:

- Abdominal pain (cramping, colicky), distension, and vomiting (fecal vomiting in severe cases).
- Constipation or obstipation (no flatus/stool).
- Hyperactive bowel sounds (early) or absent (late).

Nursing Assessment:

- Assess for abdominal distension, pain, and vomiting (note character of vomitus).
- Auscultate bowel sounds (hyperactive early, absent late).
- Monitor for dehydration (dry mucous membranes, tachycardia).

Nursing Interventions:

- **NPO Status**: Keep the patient NPO to reduce intestinal workload.
- **NG Tube**: Insert a nasogastric (NG) tube for decompression (suction to remove gas/fluids).
- **IV Fluids**: Administer fluids and electrolytes (e.g., potassium, sodium) to correct imbalances.
- **Monitor Complications**: Watch for bowel perforation (sudden severe pain, fever) or ischemia (hypotension, tachycardia).
- **Surgical Intervention**: Prepare for surgery (e.g., adhesiolysis) if mechanical obstruction doesn't resolve.
- **Pain Management**: Administer analgesics as prescribed; avoid over-sedation.

Patient Education:

- Educate on preventing recurrence (e.g., manage constipation, avoid heavy lifting if at risk for hernias).
- Teach to report symptoms of obstruction (abdominal pain, vomiting) immediately.
- Advise dietary changes (e.g., high fiber) to prevent future obstructions.

6.3.4.6. Ascites

Definition: Ascites is the accumulation of fluid in the peritoneal cavity, often due to liver disease or malignancy.

Causes:

- Cirrhosis (most common), portal hypertension, liver cancer.
- Other causes: Peritoneal carcinomatosis, heart failure, nephrotic syndrome.

Symptoms:

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- Abdominal distension, weight gain, and discomfort.
- Dyspnea (due to diaphragmatic pressure), early satiety.
- Shifting dullness and fluid wave on physical exam.

Nursing Assessment:

- Measure abdominal girth daily to monitor fluid accumulation.
- Assess for respiratory distress (dyspnea, tachypnea).
- Monitor for signs of infection (spontaneous bacterial peritonitis—fever, abdominal pain).

Nursing Interventions:

- **Fluid Restriction**: Limit fluid and sodium intake to reduce accumulation.
- **Diuretics**: Administer spironolactone and furosemide to promote diuresis.
- **Paracentesis**: Assist with therapeutic paracentesis to remove fluid; monitor for hypotension post-procedure.
- **Albumin Infusion**: Administer IV albumin to maintain intravascular volume after large-volume paracentesis.
- **Positioning**: Place in a semi-Fowler's position to ease breathing.
- **Monitor Complications**: Watch for infection (fever, cloudy ascitic fluid) or hepatorenal syndrome (oliguria, rising creatinine).

Patient Education:

- Teach about dietary restrictions (low sodium, <2 g/day) to manage fluid retention.
- Educate on monitoring weight and abdominal girth daily.
- Advise reporting signs of infection (fever, abdominal pain) immediately.

6.3.4.7. Tuberculosis of Abdomen

Definition: Abdominal tuberculosis (TB) is an extrapulmonary form of TB affecting the gastrointestinal tract, peritoneum, or abdominal lymph nodes.

Causes:

- *Mycobacterium tuberculosis*, often secondary to pulmonary TB.
- Spread via ingestion of infected sputum, hematogenous spread, or direct extension.

Symptoms:

- Abdominal pain, distension, and weight loss.
- Fever, night sweats, and anorexia.
- Ascites, diarrhea, or palpable mass (if lymph node involvement).

Nursing Assessment:

- Assess for abdominal pain, distension, and weight loss.
- Monitor for fever, night sweats, and signs of peritonitis (rigidity, rebound tenderness).
- Check for ascites (shifting dullness, fluid wave).

Nursing Interventions:

- **Antitubercular Therapy**: Administer a 6-9 month regimen (e.g., isoniazid, rifampin, ethambutol, pyrazinamide); monitor for side effects (e.g., hepatotoxicity).
- **Nutrition**: Encourage a high-calorie, high-protein diet to combat weight loss.
- **Isolation Precautions**: Use airborne precautions if pulmonary TB is active; otherwise, standard precautions.
- **Monitor Complications**: Watch for bowel obstruction (adhesions) or perforation (sudden severe pain).

- **Support Adherence**: Use directly observed therapy (DOT) to ensure compliance.
- **Pain Management**: Administer analgesics for abdominal discomfort.

Patient Education:

- Educate on completing the full course of treatment to prevent drug resistance.
- Teach about proper nutrition and weight monitoring.
- Advise TB screening for close contacts and reporting recurrence symptoms (e.g., fever, weight loss).

6.3.4.8. Ulcerative Colitis

Definition: Ulcerative colitis (UC) is a chronic inflammatory bowel disease (IBD) affecting the colon and rectum, characterized by mucosal inflammation.

Causes:

- Exact cause unknown; likely autoimmune, genetic, and environmental factors.
- Triggers: Stress, infections, dietary factors.

Symptoms:

- Bloody diarrhea, abdominal pain (cramping), and urgency.
- Fever, weight loss, and fatigue during flares.
- Extraintestinal manifestations: Joint pain, skin lesions (e.g., erythema nodosum).

Nursing Assessment:

- Assess for frequency and character of stools (bloody, mucus-filled).
- Monitor for dehydration (dry mucous membranes, tachycardia).
- Check for signs of complications (e.g., toxic megacolon—fever, distension).

Nursing Interventions:

- **Medications**:
  - Anti-inflammatories (e.g., mesalamine) for mild-moderate UC.
  - Corticosteroids (e.g., prednisone) for flares.
  - Immunosuppressants (e.g., azathioprine) for severe cases.
- **Hydration**: Administer IV fluids for dehydration; encourage oral rehydration.
- **Nutrition**: Provide a low-residue diet during flares; avoid triggers (e.g., dairy, spicy foods).
- **Monitor Complications**: Watch for perforation (sudden severe pain), toxic megacolon, or colorectal cancer risk.
- **Emotional Support**: Address anxiety and stress (common triggers); offer counseling if needed.
- **Surgical Intervention**: Prepare for colectomy in severe, refractory cases.

Patient Education:

- Teach about medication adherence and recognizing flare symptoms (e.g., bloody diarrhea).
- Educate on dietary management (low-residue during flares, balanced diet in remission).
- Advise regular colonoscopies to monitor for colorectal cancer risk.

6.3.4.9. Hemorrhoids

Definition: Hemorrhoids are swollen veins in the rectum or anus, classified as internal (above the dentate line) or external (below the dentate line).

Causes:

- Straining during bowel movements, chronic constipation, or diarrhea.
- Pregnancy, obesity, prolonged sitting.

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Symptoms:

- Rectal bleeding (bright red blood on toilet paper), itching, and pain.
- External: Visible painful lumps; internal: Prolapse, mucus discharge.
- Thrombosed hemorrhoids: Severe pain, swelling.

Nursing Assessment:

- Assess for rectal bleeding, pain, and itching.
- Inspect for visible external hemorrhoids or prolapse.
- Monitor for signs of infection (fever, redness) or thrombosis (severe pain).

Nursing Interventions:

- **Pain Management**: Apply cold packs initially, then warm sitz baths (15-20 minutes, 2-3 times/day) to reduce swelling.
- **Medications**: Use topical hydrocortisone or witch hazel for itching; administer analgesics for pain.
- **Dietary Modifications**: Encourage a high-fiber diet (25-30 g/day) and increased fluids to soften stools.
- **Stool Softeners**: Administer docusate sodium to prevent straining.
- **Monitor Complications**: Watch for thrombosis (severe pain, lump); prepare for surgical intervention (e.g., hemorrhoidectomy) if needed.
- **Hygiene**: Teach proper anal hygiene (avoid harsh soaps, pat dry).

Patient Education:

- Educate on a high-fiber diet and hydration to prevent constipation.
- Teach to avoid straining and prolonged sitting on the toilet.
- Advise reporting severe pain or persistent bleeding (may indicate complications).

6.3.4.10. Hepatitis

Definition: Hepatitis is inflammation of the liver, often viral (A, B, C, D, E), but can also be caused by alcohol, drugs, or autoimmune conditions.

Causes:

- Hepatitis A: Fecal-oral transmission (contaminated food/water).
- Hepatitis B/C: Bloodborne (e.g., IV drug use, unprotected sex).
- Other: Alcohol, toxins (e.g., acetaminophen overdose), autoimmune hepatitis.

Symptoms:

- Jaundice, dark urine, and pale stools.
- Fatigue, nausea, vomiting, and right upper quadrant (RUQ) pain.
- Fever, anorexia, and hepatomegaly.

Nursing Assessment:

- Assess for jaundice, RUQ pain, and hepatomegaly.
- Monitor liver function tests (ALT, AST, bilirubin) and viral serologies (e.g., HBsAg for Hepatitis B).
- Check for signs of liver failure (e.g., encephalopathy—confusion, asterixis).

Nursing Interventions:

- **Infection Control**:
  - Hepatitis A/E: Use standard precautions; emphasize hand hygiene.
  - Hepatitis B/C: Use bloodborne precautions (gloves, safe needle disposal).
- **Supportive Care**: Encourage rest, hydration, and a balanced diet (avoid alcohol, high-fat foods).
- **Medications**:

- Antivirals (e.g., tenofovir for Hepatitis B, sofosbuvir for Hepatitis C).
- No specific treatment for Hepatitis A (supportive care only).

- **Monitor Complications**: Watch for fulminant hepatitis (acute liver failure) or chronicity (Hepatitis B/C).
- **Vaccination**: Administer Hepatitis A and B vaccines for prevention (if not immune).
- **Nutrition**: Provide small, frequent meals to manage nausea.

Patient Education:

- Educate on vaccination (Hepatitis A/B) and safe practices (e.g., safe sex, needle hygiene).
- Teach to avoid alcohol and hepatotoxic drugs (e.g., acetaminophen) during recovery.
- Advise regular follow-ups for Hepatitis B/C to monitor for chronic liver disease.

6.3.4.11. Cirrhosis of Liver

Definition: Cirrhosis is the irreversible scarring of the liver, leading to impaired liver function and portal hypertension.

Causes:

- Chronic alcohol abuse, viral hepatitis (B/C), non-alcoholic fatty liver disease (NAFLD).
- Other: Autoimmune hepatitis, hemochromatosis.

Symptoms:

- Jaundice, ascites, and peripheral edema.
- Esophageal varices (risk of bleeding), hepatic encephalopathy (confusion, asterixis).
- Spider angiomas, palmar erythema, and coagulopathy (easy bruising).

Nursing Assessment:

- Assess for ascites (abdominal girth, shifting dullness), jaundice, and encephalopathy (mental status, asterixis).
- Monitor for bleeding (hematemesis, melena, low platelet count).
- Check liver function tests (elevated bilirubin, low albumin) and INR.

Nursing Interventions:

- **Ascites Management**: Restrict sodium (<2 g/day) and fluids; administer diuretics (spironolactone, furosemide).
- **Encephalopathy**: Administer lactulose to reduce ammonia levels; restrict dietary protein if severe.
- **Bleeding Precautions**: Avoid IM injections, monitor for variceal bleeding, and administer vitamin K if coagulopathy is present.
- **Nutrition**: Provide a high-calorie, moderate-protein diet (unless encephalopathy); supplement with vitamins (e.g., thiamine).
- **Monitor Complications**: Watch for hepatorenal syndrome (oliguria, rising creatinine) or spontaneous bacterial peritonitis.
- **Liver Transplant**: Prepare for transplant evaluation in end-stage cases.

Patient Education:

- Educate on complete alcohol abstinence and avoiding hepatotoxic drugs.
- Teach to monitor for signs of bleeding or infection (fever, abdominal pain).
- Advise regular follow-ups to monitor liver function and screen for hepatocellular carcinoma.

6.3.4.12. Cholecystitis and Cholelithiasis

Definition:

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- **Cholecystitis**: Inflammation of the gallbladder, often due to gallstone obstruction.
- **Cholelithiasis**: Presence of gallstones in the gallbladder or bile ducts.

Causes:

- Gallstones (cholesterol or pigment stones), infection, or bile stasis.
- Risk factors: "4 Fs"—Female, Fat, Forty, Fertile; high-fat diet, obesity.

Symptoms:

- Right upper quadrant (RUQ) pain, often radiating to the right shoulder.
- Nausea, vomiting, fever, and jaundice (if bile duct obstruction).
- Murphy's sign (pain on inspiration with RUQ palpation).

Nursing Assessment:

- Assess for RUQ pain, fever, and Murphy's sign.
- Monitor for jaundice, dark urine, and pale stools (bile duct obstruction).
- Check for signs of complications (e.g., gallbladder rupture—peritonitis, sepsis).

Nursing Interventions:

- **NPO Status**: Keep NPO initially to rest the gallbladder; advance to a low-fat diet.
- **Pain Management**: Administer analgesics (e.g., ketorolac) and antispasmodics (e.g., hyoscine).
- **Antibiotics**: Administer for cholecystitis (e.g., ceftriaxone) if infection is present.
- **Surgical Intervention**: Prepare for cholecystectomy (laparoscopic or open); manage post-op care (monitor for bile leak, infection).
- **Hydration**: Provide IV fluids for dehydration due to vomiting.
- **Monitor Complications**: Watch for cholangitis (fever, jaundice, RUQ pain) or pancreatitis (elevated amylase/lipase).

Patient Education:

- Educate on a low-fat diet to prevent recurrence (avoid fried foods, cheese).
- Teach to report signs of complications (e.g., fever, jaundice, severe pain).
- Advise weight management and regular exercise to reduce risk.

6.3.4.13. Pancreatitis

Definition: Pancreatitis is inflammation of the pancreas, classified as acute (sudden onset) or chronic (progressive damage).

Causes:

- Acute: Gallstones, alcohol abuse, hypertriglyceridemia, trauma.
- Chronic: Long-term alcohol use, cystic fibrosis, autoimmune pancreatitis.

Symptoms:

- Acute: Severe epigastric pain radiating to the back, nausea, vomiting, fever.
- Chronic: Chronic pain, weight loss, steatorrhea (fatty stools), diabetes (if endocrine function is impaired).
- Cullen's sign (periumbilical bruising) or Grey Turner's sign (flank bruising) in severe cases.

Nursing Assessment:

- Assess for epigastric pain (intensity, radiation), nausea, and vomiting.
- Monitor for fever, tachycardia, and signs of hypovolemic shock (hypotension).
- Check labs: Elevated amylase, lipase, and glucose; low calcium (severe cases).

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Nursing Interventions:

- **Acute Pancreatitis**:
  - **NPO Status**: Keep NPO to rest the pancreas; provide IV fluids for hydration.
  - **Pain Management**: Administer IV analgesics (e.g., morphine, but avoid if sphincter of Oddi dysfunction).
  - **Nutrition**: Transition to enteral feeding (low-fat) once inflammation subsides; avoid oral intake until pain-free.
  - **Monitor Complications**: Watch for pancreatic necrosis (fever, worsening pain), pseudocyst, or ARDS (hypoxemia).
- **Chronic Pancreatitis**:
  - **Pain Management**: Use non-opioid analgesics; consider pancreatic enzyme supplements (e.g., pancrelipase) with meals.
  - **Diabetes Management**: Monitor blood glucose; administer insulin if needed.
  - **Nutrition**: Provide a low-fat, high-calorie diet; supplement with fat-soluble vitamins (A, D, E, K).
- **Electrolyte Balance**: Correct hypocalcemia (calcium gluconate IV) and hypomagnesemia.

Patient Education:

- Educate on complete alcohol abstinence to prevent recurrence.
- Teach about a low-fat diet and taking pancreatic enzymes with meals.
- Advise monitoring blood glucose (chronic) and reporting signs of complications (e.g., severe pain, fever).

General Nursing Considerations for Gastro-Intestinal Conditions

- **Nutrition**: Focus on dietary modifications to manage symptoms and prevent exacerbations.
- **Hydration**: Ensure adequate fluid intake, especially in conditions causing vomiting or diarrhea.
- **Monitoring**: Regularly assess for complications (e.g., bleeding, perforation, infection).
- **Patient Education**: Emphasize lifestyle changes (e.g., alcohol cessation, weight management) and early symptom recognition.
- **Multidisciplinary Care**: Collaborate with gastroenterologists, dietitians, and surgeons for comprehensive care.

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