Unit five
Nursing care of patient have Gastrointestinal disease
Gastrointestinal Assessment:

**Nursing History (hx):**

1. Ask about hx of abdominal pain.

2. Assess character of pain in detail (location, onset, and frequency, precipitating factors, aggravating factors, type of pain, severity, and course).

3. Observe client’s movement and position.

4. Assess normal bowel habits and stool character; ask if client use laxatives.

5. Assess if client has had abdominal surgery, trauma, or diagnostic tests of GI tract.

6. Assess if client has had recent weight changes.
7. Assess if client has common GI symptoms: nausea, vomiting, cramping, difficulty in swallowing (dysphagia), belching, flatulence, appetite, emesis (haematemesis), black or tarry stools, heartburn, diarrhea, or constipation.

Physical Assessment:

1. Landmarks: Xiphoid process, symphysis pubis, and umbilicus.
2. Clients must be relaxed for abdominal examination.
3. Keep quiet and warm environment, good light and warm hands and instruments.

Nutritional Assessment:
1. Diet history (e.g., food intake for the 2 days or use food diary)
2. Ask about appetite and GI symptoms such as altered taste perception, nausea, vomiting, and diarrhea.
3. Socioeconomic circumstances also can affect nutrition Can the patient afford to buy food? Who does the shopping?
4. Is cognitive impairment causing the patient to forget to eat?
5. Use of drug.
6. Ask or observe whether patient is eating all meals

Lab test:
1. Albumin: 3.2 to 4.5 g/dl is considered normal
2. Prealbumin: is a very sensitive indicator of acute protein loss.
3. Triglyceride are lipids measures
4. Cholesterol is lipid measures
5. 24-hour urine creatinine if low levels are excreted, little muscle is being produced (↓ protein).
6. Hemoglobin and hematocrit are used to assess for Anemia, which may arise from a deficiency state.
7. Vitamin B12 and folate: ↓ cause a macrocytic anemia
8. Assess the blood sugar.

Diagnostic Studies

(A). Radiologic Examinations:

1-Abdominal X-ray examination.

Uses of
- To size and position of organs
- To determine the presence of any masses
- To determine the disturbances in intestinal gas, fluids, or calcifications.

No preparation is needed except teaching patient about the procedure and inform him to remove all metal materials from the area to be examined
2-Ultrasound:

- Used for examination of the gallbladder and biliary system, liver, spleen, and pancreas to determine the presence of abscesses or to evaluate the stage of rectal cancer.
- Ultrasonography determines the size, shape, and position of the organ being examined.

Nursing care:

- (NPO) before the examination (this reduces the amount of gas in the bowel).
- When the gallbladder: the patient is given a fat-free meal the evening before to promote accumulation of bile in the gallbladder.
- The test will take 15 to 30 minutes.
- A water-soluble lubricant is applied to the abdomen.
- After the procedure, the lubricant is washed from the abdomen and the patient may resume his usual diet.
- Ultrasound should be performed before any barium x-rays.

Abdominal Computed tomography (CT):

CT can distinguish various tissues. Used for the biliary tract, liver, kidney, and pancreas or to identify tumors or abscesses in the abdominal cavity.

Nursing care:

1. NPO (nothing by mouth) before the procedure.
2. CT may be done with or without contrast medium. (If oral contrast medium is used it is administered approximately 2 to 4 hours before the procedure). Ask about allergy.
3. The patient is positioned supine on radiographic table in the center of the scanner

Magnetic resonance imaging (MRI):

1. Most useful in evaluating soft tissue and blood vessels in addition to other types if tissue.
2. Used to assist in evaluation of the fistulas and sources of GI bleeding.

Nursing care:

1. NPO before abdominal MRI.
2. Determine whether the patient has any metallic devices or implants devices (contraindications to the use of MRI).

**Gastrointestinal series**

- Use a radiopaque contrast media (barium) to provide an outline of the GI tract.
- Used to detect GI tract tumors, ulcerative lesions, problems with motility.

**Upper gastrointestinal series:**

Provides visualization of the

1. esophagus
2. stomach
3. small intestine,

Nursing care:

1. NPO before the examination.
2. After the examination the nurse monitors the color and consistency of stool to ensure that the barium contrast material is completely passed.

**Lower gastrointestinal series (barium enema).**

1. Visualize the lower intestine above the sigmoid
2. The patient is usually in a clear liquid diet for 24 hours before the test.
3. Laxatives and enemas are administered

**Endoscopy:**

Can be used for the upper and lower GI tract.

1. The endoscope is an instrument containing a group of glass fibers that transmit light and return an image to a scope at the head of the instrument (fiberoptics).
2. Uses:
1. Used in diagnosing inflammatory, ulcerative, infectious, and neoplastic diseases of the gastrointestinal tract

2. removal of a foreign body.


4. pictures can be taken

**Types:**

1). **Upper Gi (Esophagogastroduodenoscopy (EGD)):**

1. direct visualization of the mucosal surface and luminal structures of the:
   1. Esophagus (Esophagoscopy).
   2. Stomach (Gastroscopy).
   3. Duodenum (Duodenoscopy).

**Nursing care:**

**Before and during procedure:**

1. NPO before the procedure.
2. An intravenous line is started.
3. Instruct the patient on the purpose of and the procedure
4. consent form must be signed.
5. The patient is given a sedative such as diazepam (Valium) before the procedure. Atropine may be given to reduce secretions
6. Vital signs are taken
7. The nurse maintains the patient on a cardiac monitor throughout the procedure (because of the potential for cardiac arrhythmias).
8. Position the patient on the left side with the head of the bed elevated
9. Suction may be applied to remove fluid and secretions

**After the procedure:**

1. Assess vital signs until the patient is fully awake.
2. Food and fluid are withheld until the gag reflex returns (the gag reflex is assessed by touching the back of the throat with a tongue blade).

3. Observe for severe pain in the throat, neck, stomach, elevated temperature, back, or shoulder (could indicate perforation).

Patient should be instructed to observe the vomitus or stool for blood and report it immediately to the physician.

**Lower GI: Examination of the:**

- Rectum alone (proctoscopy) and the rectum and sigmoid colon (sigmoidoscopy).

**Nursing care** for proctoscopy and sigmoidoscopy:

1. Administration of enema before the examination.
2. Diet restriction according to the policy.
3. Position the patient on knee-chest or lateral position.
4. Provide privacy
5. After the examination the patient is observed for signs of perforation.

**Laboratory Studies:**

- Laboratory studies that provide information about GI function include:

**blood**

1. Nonspecific: Serum electrolytes, hematocrit and hemoglobin, white blood cell count, and serum osmolarity and bicarbonate.
2. Specific: Carcinoembryonic antigen (CEA) is a protein seen on some cancerous tissues of the GI system.

**Urine:** Urine urea nitrogen is used to assess protein balance.

**Stool** (fecal) analysis: examined for bacteria, parasites, pus, fat, or blood (occult or hidden blood)

**other Diagnostic Tests:**

*Gastric secretion analysis for acids:*

Aspiration of gastric secretion by NGT (many specimens at different time according to the physician's directions).
Nursing care:

- NPO according to the physician's directions.
- Each specimen must be carefully labeled with the order it was taken.
- Explain the procedure to the patient.
- Prepare emesis basin because patient may become gagging during the procedure.

**Peptic Ulcer Disease**

*Peptic ulcers* are erosions or ulcers that form in the esophagus, stomach, or the duodenum.

**Main types:**

1. Gastric ulcers:
   - The erosions in the stomach

**Cause**

1. exposure to irritants such as NSAIDs, smoking, alcohol, food allergens, toxic chemicals, stress (cause bleeding in many sites),
2. H. pylori infections,
3. impaired mucosal defenses (not able to secrete adequate quantity or quality of mucous to protect the stomach).

- Signs and symptoms of Gastric ulcers:
  - Pain 1 to 2 hours after eating. Eating may increase pain.
  - Weight loss.
  - Bleeding.

Duodenal ulcers:

refer to ulcers in the duodenum related to a high secretion of HC1.

**Signs and symptoms:**

1. Pain 2 to 4 hours after eating.
2. Nocturnal pain may be present (between midnight and 3:00 a.m).
3. Eating frequently relieves symptoms.

3. Esophageal ulcer: the least common.

**Complication of Peptic ulcers:**

1. Life-threatening hemorrhage.

2. Perforation: gastric or intestinal contents entering the abdominal cavity → peritonitis.

**Diagnosis of Peptic ulcers is based on:**

1. Symptoms and history.

2. UGI or an EGD performed to visualize the ulcer.

3. H-pylori infection is suspected, a biopsy is obtained during an EGD and a culture is performed.

4. Stools test may be positive for blood (occult blood).

5. Anemia (Hb q 4 hours).

**Management:**

**A-Medical**

1. If an ulcer bleeds, an EGD may be performed and the ulcer is either injected with epinephrine to cause vasoconstriction or a special electrical probe is used to burn the tissue that is bleeding.

2. A nasogastric (NG) tube may be inserted to remove gastric contents and blood, and iced isotonic saline may be administered to help cause vasoconstriction and stop the bleeding.

**B-Surgical**

1. Vagotomy:

   ■ the vagus nerve is cut removing vagal innervation to the fundus of the stomach. This eliminates the production of hydrochloric acid, decreases function of the gastrin hormone, and slows motility of the stomach.

   ■ Vagotomy eliminates the complications of the more aggressive surgeries, such as gastrectomies

2. Gastrectomy:
1. Gastrectomy performed when the ulcer continues to bleed or if the ulcer has perforated. In gastrectomies the portion of the stomach or duodenum that is perforated is removed and the bowel is reconnected with an anastomosis.

C. Pharmacological:

1. Antacids
2. Histamine (H2) receptor antagonists (H2 blockers).
3. Antibiotics If H. pylori are present.

Diet:

1. Foods that increase acid secretions such as milk, coffee, coffee, tea, colas, and chocolate should be consumed only in small amounts or eliminated if possible.
2. Avoid bedtime eating as it increases nocturnal acid secretions.

Nursing care:

1. Ask client about lifestyle, NSAID usage, stress, smoking, and alcohol use and starts lifestyle modifications as needed.
2. Assess client for sings and symptoms, and complication
3. Help in diagnostic and treatment modalities.
4. Instruct client to stop use of NSAIDs such as ibuprofen and indomethacin (they compromise mucosal defenses and increase acid secretion).
5. Administer medications as ordered.
6. Check vital signs every 4 hours and PRN.
7. If ordered keep client NPO.

Gastro-Intestinal Bleeding (GIB)

**GIB:** is internal bleeding or hemorrhage that can be seen with vomits (haematemesis) or with black stool (containing digested blood called malaena) and fresh blood (lower GI bleeding).

**Causes:**

1. Peptic ulcers
2. Oesophageal varices
4. Haemorrhoids and anal fissures.

5. Ulcerative colitis

**Diagnosis:**

1. Examine vomits to determine that it is from stomach: it contain food and contain small clots.
2. Occult blood test.
3. Visualization procedures.

**Treatment:**

1. Bed rest.
2. Assess vital signs, client colour and general status (consciousness).
3. Administer medication (antiacids, antibiotic, vit K).
4. Keep client NPO as ordered.
5. Administer IV fluids and blood.
6. Prepare patient for diagnostic procedure: EGD with:
   - A-Epinephrine to cause vasoconstriction.
   - B-Electrical probe is used to burn the tissue that is bleeding.
7. Insertion of nasogastric (NG) tube

**Irritable Bowel Syndrome or Disease (IBS)**

is marked by chronic or periodic diarrhea alternating with constipation and accompanied by abdominal cramps. It includes common conditions including spastic colon, spastic illus, and mucous colitis. Irritable bowel syndrome occurs mostly in women.

**Signs and symptoms:**

1. Chronic constipation, diarrhea, or both.
2. Lower abdominal pain (usually in the left lower quadrant) that's often relieved by defecation or passage of gas.
3. Small stools with visible mucus.
4. Dyspepsia, abdominal bloating, heartburn, dizziness, and weakness.
5. Anxious.

**Diagnostic tests:**

1. The most frequently tests include the following:
   1. Barium enema may reveal colonic spasm and a tubular appearance of the descending colon. It also rules out certain other disorders, such as diverticula, tumors, and polyps.
   3. Stool examination for occult blood, parasites, and pathogenic bacteria is negative.

**Treatment:**

The aim of treatment is to control symptoms through:

1. Dietary changes.
2. Stress management.
3. Lifestyle modifications.

**Drug therapy:**

1. Antispasmodic drugs.
2. Antiemetics.
3. Simethicone: to relieve belching and bloating from gas in the stomach and intestines.
4. Diazepam, prescribed for a short time to help reduce psychological stress associated with irritable bowel syndrome

**Nursing care:**

1. Explain the disorder to the patient and reassure her that irritable bowel syndrome can be relieved but not cured.
2. Educate client to eat at regular intervals
3. Advise client to eat slowly and carefully to prevent swallowing air and to increase her intake of dietary fiber.
4. Encourage the patient to increase intake of water.
5. Encourage client to avoid beverages that increase GI discomfort such as caffeinated drinks, fruit juices.
6. Help the patient to implement lifestyle changes that will reduce stress.
7. Encourage more time for rest and relaxation
8. Discourage smoking.

Intestinal Obstruction

**Intestinal obstruction** occurs when the contents cannot pass through the intestine → large amounts of fluid, bacteria, and swallowed air are collected → Distention and poor absorption → water and salts move from the circulatory system to the intestine.

**Obstructions** may occur in the large or the small intestine (ileum is the most common).

**Types of obstructions:**

1. Mechanical: may be a partial or complete obstruction caused by:
   1. Tumor.
   2. Fecal impaction.
   3. Hernia.
   5. Adhesions: scar tissue in the abdomen from previous surgeries

2. Neurogenic: known as a paralytic ileus, occurs when nerve transmission to the bowel is interrupted by trauma, infection, or medications, resulting in a portion of the bowel being paralyzed.

3. Vascular: occurs when blood flow to a portion of the bowel is interrupted, as in atherosclerosis, and that portion of the bowel becomes necrotic

**Signs and symptoms:**

1. Colicky abdominal pain.
2. Nausea.
3. Constipation.
4. Bloating (abdominal distention).
5. Abdominal tenderness on palpation.
6. Elevated amylase level, electrolytes, BUN, and hemoglobin.

**Diagnostic test:**

1. Abdominal x-ray
2. Barium enema or UGI (barium meal).

**Management:**

Treatment of the obstruction is dependent on the cause and location.

A. **Medical:**

1. Inserting an NG tube for decompression
2. Providing IV fluids for rehydration
3. Treating the cause, such as the use of enemas for fecal impaction.

B. **Surgical:**

Most bowel obstructions require surgery. A bowel resection is performed to remove the portion of the bowel affected by the obstruction.

C. **Pharmacological:**

1. Non-narcotic analgesics.
2. Antibiotics.

D. **Activity:** In cases of paralytic ileus, ambulation should be encouraged to help bowel function return.

**Nursing care:**

1. Help in diagnostic test and treatment procedures.
2. Administer medication.
3. If surgery is ordered, prepare client for surgery.
4. After surgery encourage clients to turn, cough, and deep breathe every 2 hours initially postoperatively.
5. Continuous assessment of vital signs
7. Keep client NPO.
8. Assess weight daily.
9. Maintain and monitor NG tube as ordered for abdominal decompression.

**Acute Inflammatory Intestinal Disorders (Appendicitis)**

- Acute inflammation of appendix
- **Clinical Manifestations**
  1. Rt Lower Quadrant pain
  2. Low Grade Fever, nausea, vomiting, anorexia
  3. Rebound & Revosing signs
  4. Local tenderness when pressure applied
  5. Increase W.B.C's count
- **Complications:**
  - perforation → peritonitis or abdominal abscess, occurs after 24 hrs after onset of symptoms (pain, Tenderness, fever, & toxic appearance)

**Medical Management**

1. Surgery is indicated if surgery diagnosed (laparoscopic or open appendectomy)
2. NPO, IV, antibiotics
3. Analgesic after diagnosis is made

**Nursing Management**

1. Relieving pain & preventing FVD
2. Elimination of potential infection
3. Maintaining skin integrity
4. Reducing anxiety
5. Pre & post care

**Peritonitis**

*Peritonitis* is the inflammation of the peritoneum (the membranous covering of the abdomen). It is a life-threatening condition.

**Causes:** irritating substances because of ruptured portion of the digestive system (such as the appendix) and ruptured tubal pregnancy eg of substances:
1. Feces.
2. Gastric acids.
3. Bacteria.

**Signs and symptoms:**

1. Abdominal pain.
2. Nausea.
3. Constipation.
4. Absent bowel sounds.
5. Distended abdomen with tenderness on palpation.
6. Shallow and rapid respirations.
7. Dry mucous membranes, low urine output, and fever.

**Diagnostic tests:**

1. Laboratory analysis: elevated WBC, hemoglobin (if bleeding) will be low, and Electrolytes may show low sodium, potassium, and chloride.
2. Abdominal x-ray and ultrasound.

**Complications:**

1. Adhesions (scar tissue).
2. Ileus (obstruction).
3. Pneumonia.

**Management:**

A. **Surgical**

1. Repair of the cause.
2. Irrigation of the abdominal cavity with saline and antibiotic solutions and apply Drains from the abdomen (for several days to allow removing of any fluid).
3. Administer NGT.

B. **Pharmacological**
1. Analgesics.

2. Antibiotics.

**C. Diet:** Clients will be NPO preoperatively and postoperatively until bowel sounds return → clear, liquid diet → lowly progressed to a regular diet.

**D. Activity**

1. Preoperatively, clients will be placed on bed rest.

2. Postoperatively, clients need to be encouraged to turn, cough, and deep breathe.

**Nursing care:**

1. Monitor I & O every shift.

2. Monitor for signs of dehydration (dry mucous membranes, poor skin turgor, and low urine output).

3. Assess VS including temperature every 4 hours.

4. Administer medications as ordered.

5. Keep client NPO and administer diet as ordered.

6. Administer analgesics as ordered.

7. Encourage activity such as coughing and deep breathing after analgesics.

8. Monitor NG tube to decompress abdomen.

9. Teach splinting of incision for cough and deep breathing.

10. If surgery is ordered, prepare client for surgery.

**Conditions Affect the Pancreatic and Hepatobiliary Systems**

**A. Pancreatititis**

*Pancreatititis* is the Inflammation of the pancreas (acute and chronic). Mortality rate of Pancreatititis is 10%.

- Chronic pancreatitis causes irreversible tissue damage.

- Pancreatitis involves autodigestion: The enzymes normally excreted by the pancreas digest pancreatic tissue.

**Causes**
1. Abnormal organ structure (gallstone).
2. Pancreatic cysts or tumors, penetrating peptic ulcers, or trauma.
3. Drugs: glucocorticoids, thiazides.

**Predisposing factors:**
1. Heredity.
2. Emotional or neurogenic factors.
3. It is associated with biliary tract disease, alcoholism, and trauma.

**Signs and symptoms:**
1. Intense epigastric pain centered close to the umbilicus and radiating to the back. Pain is aggravated by eating fatty foods and consuming alcohol.
2. Weight loss, with nausea and vomiting.
4. Inspection of stools may reveal steatorrhea (sign of chronic pancreatitis).
5. Abdominal palpation: tenderness and rigidity.

**Diagnostic tests:**
1. Increase serum amylase and lipase levels (diagnostic hallmark that confirms pancreatitis).
2. Supportive laboratory studies:
   1. ↑ WBC and serum bilirubin level
   2. Stools contain elevated lipid and trypsin levels.
3. Abdominal and chest X-rays: differentiate pancreatitis from other diseases that cause similar symptoms and detect pleural effusions.

**Complications:**
1. Diabetes mellitus may occur.
2. Respiratory complications: pleural effusion and pneumonia

3. GI: paralytic ileus and GI bleeding.

4. Pancreatic abscess.

**Treatment:**

The goals of treatment are to:

1. Maintain circulation and fluid volume
2. Relief pain
3. Decrease pancreatic secretion.

In acute pancreatitis:

1. NGT is usually to decrease gastric distention and ↓ pancreatic secretions.

2. Give medications

If biliary tract obstruction, a laparotomy may be required.

For chronic pancreatitis: No surgery.

1. Relieve abdominal pain
2. Treatments for diabetes mellitus.
3. Pancreatic enzyme replacement.
4. Surgical drainage is required for an abscess.

**Nursing interventions:**

1. Administer analgesics as ordered.
2. Maintain the NG tube for drainage or suctioning.
3. Restrict the patient to bed rest, comfortable position, such as Fowler's position.
4. Strict intake and output measurement: at least output must 30 ml/ h.
5. Provide I.V. fluids and parenteral nutrition as ordered.
6. Prepare the patient for surgery (Pancreatectomy) if ordered.
7. Weigh the patient daily.
8. Teach patient to watch for and report any of the following S&S: fatty, frothy, foul-smelling stools; abdominal distention, and cramping
**Cholecystitis and Cholelithiasis**

**Definitions:**

*Cholelithiasis* is the presence of gallstones or calculi (concentration of mineral salts) in the gallbladder.

*Cholecystitis* is an inflammation of the gallbladder. It may caused by cholelithiasis.

**Causes:** The exact cause of the formation of the Cholelithiasis is not known.

**Signs and symptoms:**

1. May produce no symptoms (even when X-rays reveal gallstones).

2. Classic gallbladder attack:
   1. Sudden onset of severe steady or aching pain (biliary colic)
   2. Attack followed eating a fatty meal or a large meal after fasting for an extended time.
   3. Nausea, vomiting, and chills; a low-grade fever, indigestion,
   4. Abdominal distension
   5. Jaundice of the skin, sclera, and oral mucous membranes
   6. Dark-colored urine and clay-colored stools.
   7. Tenderness over the gallbladder (increased on inspiration)

**Diagnostic tests:**

1. Plain abdominal X-rays.

2. Ultrasound is mainly used for diagnosis of the gallbladder gallstones.

**Management:**

A. **Medical:**

A nasogastric tube may also be inserted to relieve vomiting.

B. **Surgical:**

Cholecystectomy (surgical removal of the gallbladder) or laparoscopic cholecystectomy.
C. Pharmacological:

1. Cholestyramine (for severe itching from accumulation of bile salts in the Skin).

2. Pain medication, anticholinergics (relax smooth muscles), I.V. fluids and I.V. antibiotic therapy, and antiemetics.

D. Diet:

1. Low-fat diet with replacement of the fat-soluble vitamins A, D, E, and K and administration of bile salts to facilitate digestion and vitamin absorption.

2. Clients may be NPO for diagnostics tests, treatment and for more observation and investigations.

3. May be on clear liquid diet.

2. Nursing interventions:

1. Provide a low-fat diet or Keep client NPO or on a clear liquid diet as ordered.

2. Replace vitamins A, D, E, and K as ordered.

3. Administer medications as ordered.

4. Monitor NG tube to decompress the abdomen as ordered.

5. Observe for jaundice and bile flow obstruction.

6. Assess vital signs and monitor intake and output for signs of a fluid deficit.

7. Prepare the patient for surgery.

Hepatitis

is a chronic or acute inflammation of the hepatic (liver).

Causes:

A. viruses: most common.

1. Type A: is highly infectious and is usually transmitted by the fecal-oral route (ingestion of contaminated food, milk, or water). It may also be transmitted parenterally.

2. Type B hepatitis: transmitted by the direct exchange of contaminated blood, contact with contaminated human secretions and feces, and perinatal transmission.
3. Type C (non-A, non-B hepatitis): transmitted through blood transfusions and by needle sharing among I.V. drug users.

4. Type D, E, and G.

**B. nonviral hepatitis**: bacteria, drugs, alcohol abuse, or other toxic substances.

**Signs and symptoms: S&S as related to the stages:**

1. Prodromal stage:
   1. Fatigue and generalized malaise.
   2. Anorexia and nausea with vomiting.
   4. High temperature: 37.8° to 38.9° C.
   5. Dark-colored urine and clay-colored stools.

2. Clinical jaundice stage:
   1. Pruritus.
   2. Abdominal pain or tenderness
   3. Indigestion.
   4. Anorexia
   5. Jaundice (last for 1 to 2 weeks).
   6. Enlarge and tender liver.
   7. Ascites

3. Recovery stage (from 2 to 12 Weeks): most symptoms are decreasing or absent, decrease in liver enlargement.

**Diagnostic tests**

A. Liver function studies:
   1. Liver enzymes increased.
   2. Prothrombin time is prolonged.
   3. Liver biopsy.

**Complications:**
1. Serum sickness: arthralgia or arthritis, rash, and misdiagnosis of hepatitis B as rheumatoid arthritis or lupus erythematosus.

2. Liver cancer (hep B or C).

3. Chronic active hepatitis and cirrhosis.

**Treatment:**

1. Hepatitis B globulin is given to individuals exposed to blood or body secretions of infected individuals (effective but expensive).

2. Rest and eating small, high-calorie, high-protein meals (protein should be reduced if signs of precoma (lethargy, confusion, or mental changes-develop).

3. Decrease fat intake.

4. Vitamin K may be ordered if clotting time is prolonged.

5. Vitamin C for healing.


**Prevention:**

1. Hepatitis vaccine.

2. Use of precautions.

**Nursing interventions**

1. Use standard precautions to prevent disease transmission (as well as visitors).

2. Provide rest periods throughout the day.

3. Provide prescribed diet (determine client food preferences).

4. Observe the patient for desired and adverse effects of medications.

5. Record the patient's weight daily and intake and output records.

6. Watch for signs of complications (changes in level of consciousness, ascites, edema, dehydration, respiratory problems).

7. Explain all necessary diagnostic tests.

8. Investigate the patient's history for the source of transmission.
9. Be sure to ask about alcohol consumption, patient's employment, and for possible exposure to toxic chemicals (carbon tetrachloride) → nonviral hepatitis.

10. Report all cases of hepatitis to health officials