LUCENT NCLEX REVIEWS

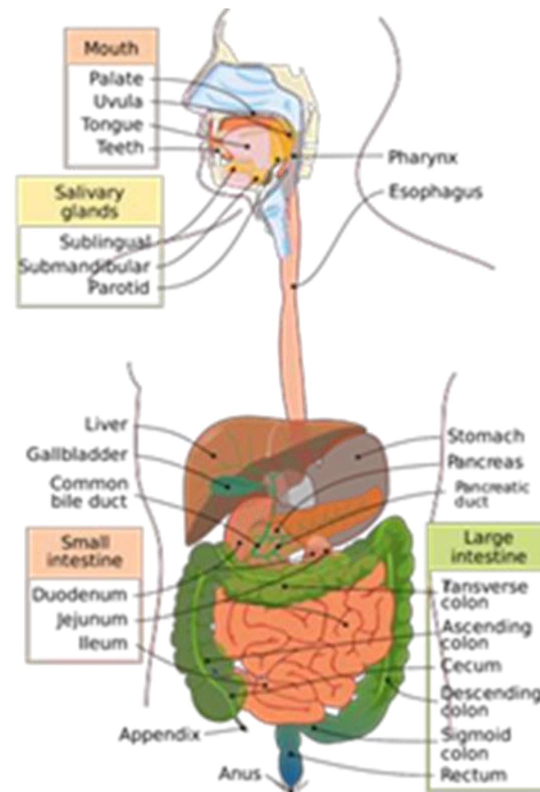
Gastrointestinal System & Disorders

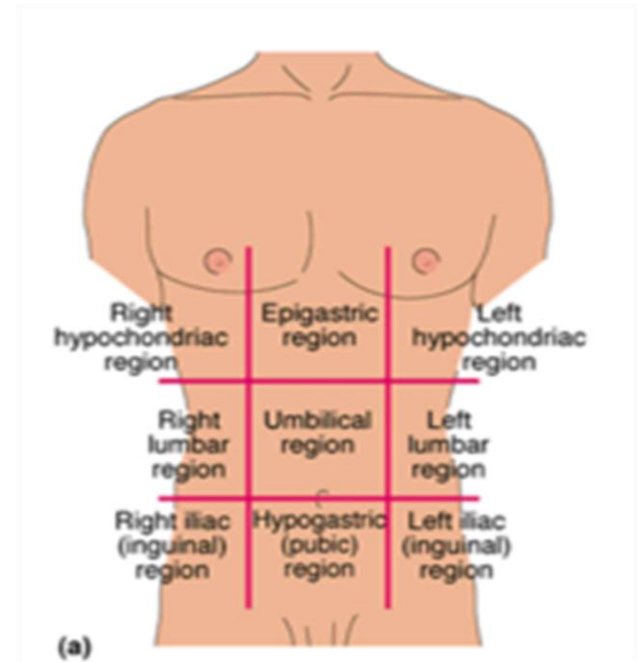
Dr. Daniel Ampomah

The Abdominal Examination

The sequence to follow is:

- Inspection
- Auscultation
- Percussion
- Palpation





Fecal Occult Blood Test (Hemoccult Test)

- Examination of stool consistency, color and the presence of occult blood.
- Provide container for the specimen
- Instruct the patient to adhere to a 3-day meatless diet
- No intake of NSAIDS, aspirin and anti-coagulant
- Screening test for colonic cancer

Fecal Fat Test

- Examination of stool for the presence of fat.
- Explain procedure to the patient
- Instruct the client to abstain from alcohol and to maintain a high fat diet for 3 days before and during the 72 hour stool collection
- Provide container for the specimen
- Refrigerate the specimen until they are sent to the lab
- Document current medications

Upper GI Study: Barium Swallow

- Examines the upper GI tract
- Barium sulfate is usually used as contrast

Pre-test :

- NPO post-midnight

Post-test :

- Laxative is ordered,
- increase patient fluid intake,
- instruct that stools will turn white,
- monitor for obstruction

Gastric Analysis

Measures the acidity of gastric secretions aspirated through an NG tube

- Aspiration of gastric juice to measure pH, appearance, volume and contents

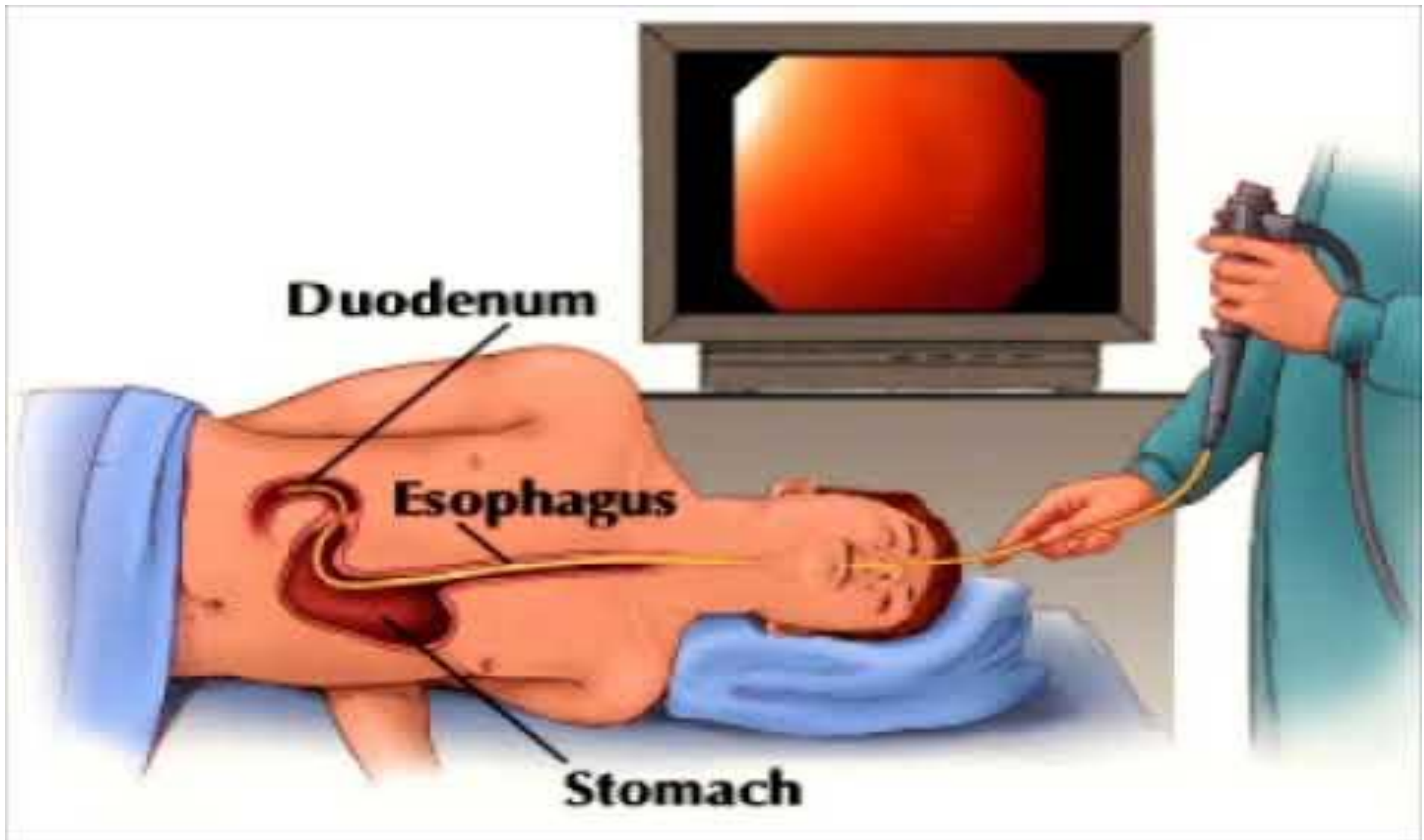
***Pre-test*:**

- NPO and no smoking after midnight
- avoidance of stimulants, drugs and smoking

***Post-test*:**

- resume normal activities
- Obtain vital signs

Esophagogastroduodenoscopy



Esophagogastroduodenoscopy

Endoscopy

- Visualization of the upper GIT by endoscope

Pre-test :

- ensure consent, NPO 8 hours,
- pre-medications like atropine and anxiolytics

Intra-test: position :

- LEFT lateral to facilitate salivary drainage and easy access

Post-test :

- NPO until gag reflex returns,
- place patient in SIMS position until he awakens , monitor for complications,
- saline gargles for mild oral discomfort

Lower GI Study: Barium Enema

- Examines the lower GI tract

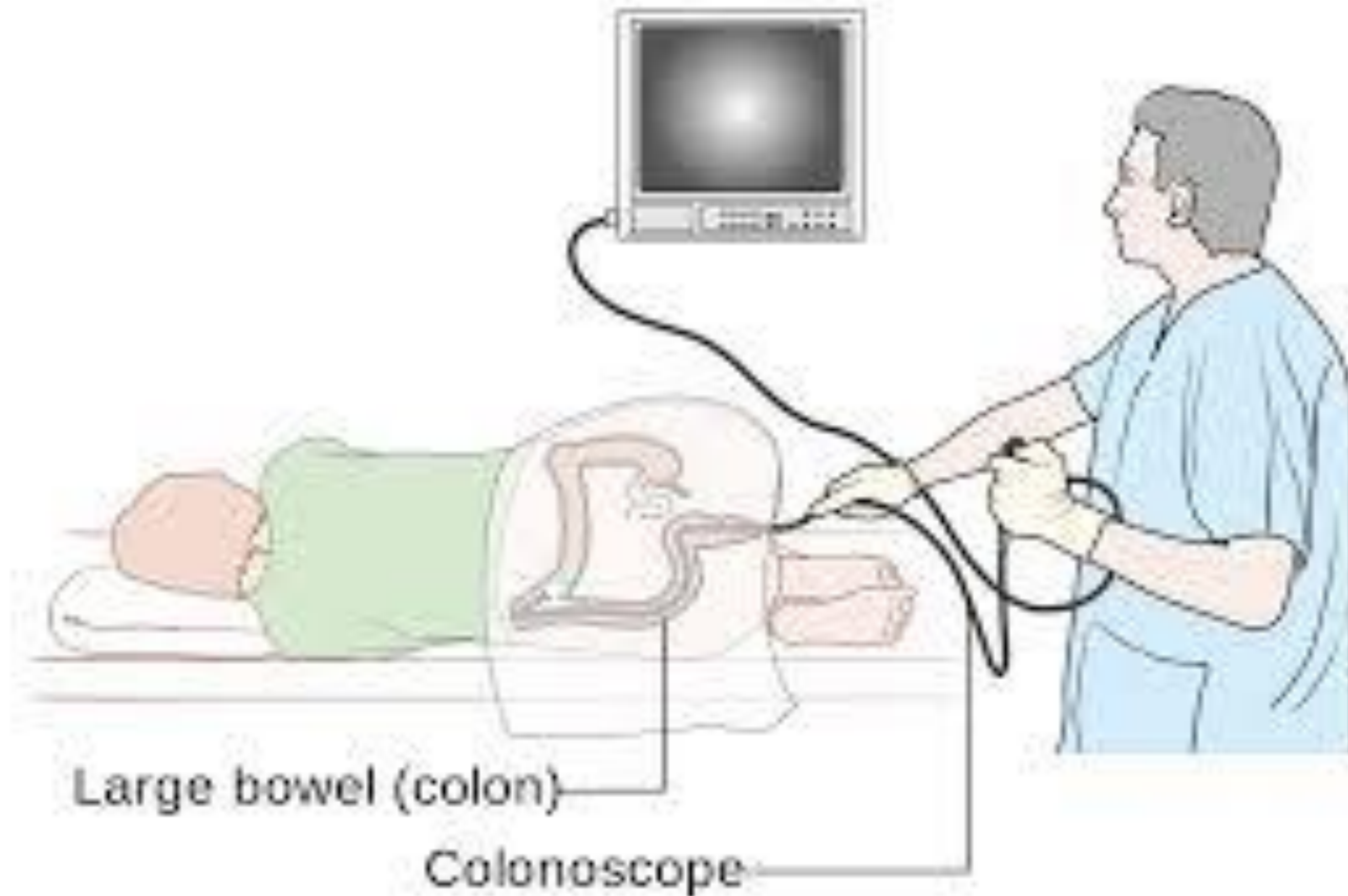
Pre-test :

- Clear liquid diet and laxatives,
- NPO post-midnight,
- cleansing enema prior to the test

Post-test:

- Laxative is ordered,
- increase patient fluid intake,
- instruct that stools will turn white, monitor for obstruction

Colonoscopy



Colonoscopy

- Lower GI- scopy
- Use of endoscope to visualize the anus, rectum, sigmoid and colon

***Pre-test*:**

- consent, NPO 8 hours, cleansing enema until return is clear, may use Golytely or Magnesium Citrate

Intra-test:

- position is LEFT lateral, right leg is bent and placed anteriorly

***Post-test*:**

- bed rest, monitor for complications like bleeding and perforation

ERCP

Endoscopic Retrograde Cholangiopancreatography is a radiographic exam of the hepatobiliary tree and pancreatic ducts using a contrast medium and a lighted scope

Pre-test:

- Explain the procedure to the client, Informed Consent
- NPO after midnight
- Note allergies to iodine, sea food, and dye

***Post-test*:**

- Monitor for respiratory depression, and urine retention
- Assess the clients gag reflex and withhold food until it returns
- Assess for procedure induced pancreatitis (abdominal pain, nausea and vomiting)

Paracentesis

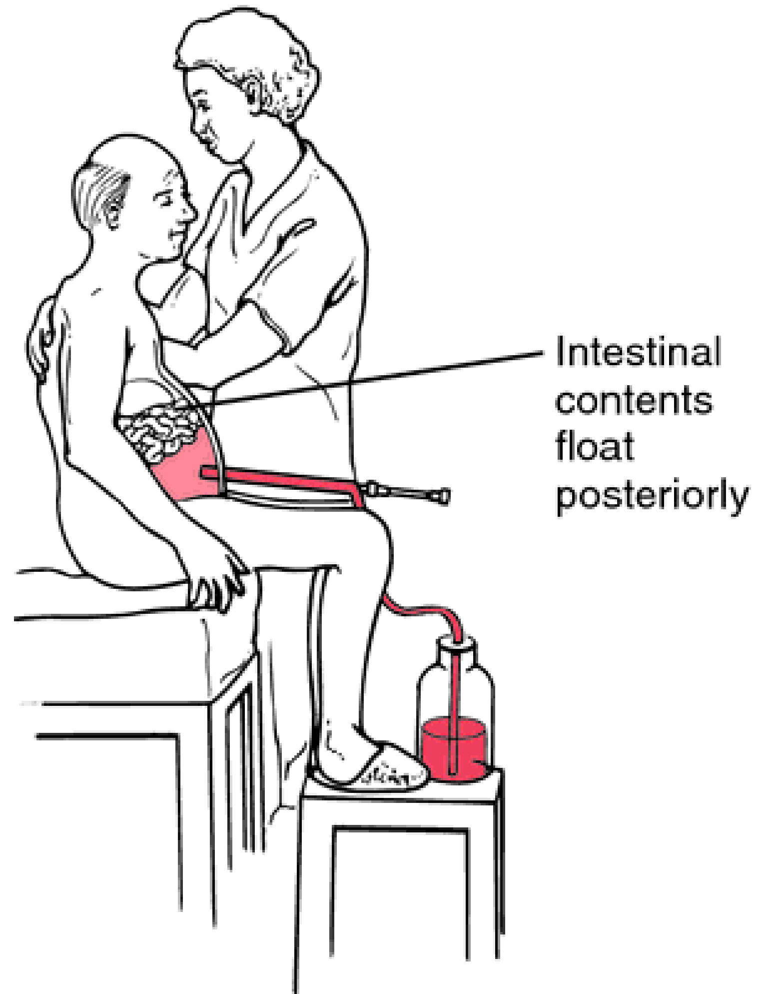
- Removal of peritoneal fluid for analysis

Pre-test:

- ensure consent, instruct to VOID and empty bladder, measure abdominal girth

Intra-test:

- Upright on the edge of the bed, back supported and feet resting on a foot stool



Liver Biopsy

Pretest:

- Consent, NPO, Check for the bleeding parameters

Intratest

- Position: Supine position to expose right side of abdomen
- Client voids prior to procedure
- Client instructed to hold breath during needle insertion
- Local anesthetics applied

Post-test :

- position on RIGHT lateral with pillow underneath,
- Direct pressure applied to site after sample obtained.
- monitor VS and complications like bleeding, perforation (hypotension, tachycardia, oliguria)
- Instruct to avoid coughing, lifting objects or straining for 1 week to 2 weeks

LUCENT NCLEX REVIEW

Hiatal Hernia

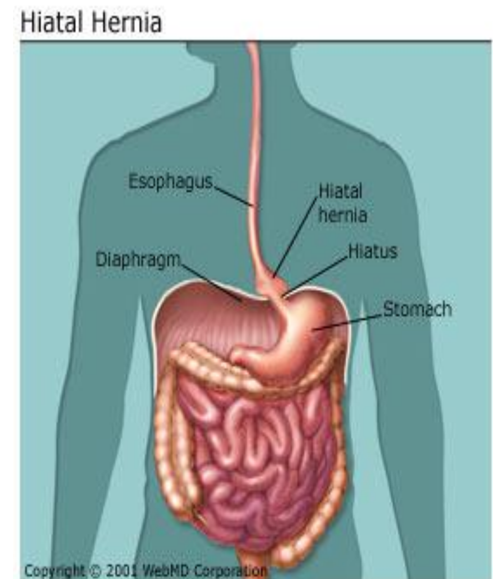
Protrusion of the esophagus into the diaphragm thru an opening. Ex. (sliding or paraesophageal)

CAUSES

- Trauma, congenital weakness, age, increased abdominal pressure

ASSESSMENT Findings in Hiatal hernia

1. Heartburn
2. Regurgitation
3. Dysphagia
4. Atypical chest pain
5. 50%- without symptoms



Nursing Intervention

- Provide small frequent feedings
- AVOID supine position for 1 hour after eating
- Elevate the head of the bed on 8-inch block
- Provide pre-op and post-op care

Gastroesophageal Reflux Disease

- Backflow of gastric contents into the esophagus.
- Usually due to incompetent lower esophageal sphincter.
- Symptoms may mimic ANGINA or MI

ASSESSMENT (for GERD)

- Heartburn
- Dyspepsia
- Regurgitation
- Epigastric pain
- Difficulty swallowing
- Ptyalism

COMPLICATIONS

- Esophageal strictures
- Barretts esophagus – changes in cell lining esophagus with increased risk of esophageal cancer

Nursing Interventions

- Instruct to avoid spices, coffee, tobacco and carbonated drinks
- Avoid foods that delay gastric emptying such as (chocolate, fatty foods, alcohol, peppermint)
- Avoid milk products at night
- Small frequent meals, eat LOW-FAT, HIGH-FIBER diet
- Avoid foods and drinks TWO hours before bedtime
- Elevate the head of the bed with an approximately 8-inch block
- Avoid lying down after eating to decrease chance of acid reflux.
- Surgery – Nissens fundoplication

Drug Therapy

- Antacid: aluminium hydroxide administered 1hr and 3 hrs after meals and at bed time example, Maalox, Mylanta, Gaviscon
- GI stimulants: metoclopramide (Reglan) gastric emptying, bethanechol (Urecholine)
- H2 antagonist: cimetidine (Tagamet), ranitidine (Zantac), famotidine (Pepcid)
- PPI: esomeprazole (Nexium), omeprazole (Prilosec), Protonix

- H2 BLOCKERS – DECREASE ACID PRODUCTION
- PPI – REDUCE GASTRIC SECRETIONS

Gastritis

Inflammation of the gastric mucosa. May be Acute or Chronic

Causes: Acute- bacteria, irritating foods, NSAIDS, alcohol, bile and radiation

Causes: Chronic- Ulceration, bacteria, Autoimmune disease, diet, alcohol, smoking

DIAGNOSTIC PROCEDURE

- EGD- to visualize the gastric mucosa for inflammation
- Low levels of HCl
- Biopsy to establish correct diagnosis whether acute or chronic

Assessment Findings

- **ASSESSMENT (Acute)**
  - Dyspepsia
  - Headache
  - Anorexia
  - Nausea/Vomiting

- **ASSESSMENT (Chronic)**
  - Pyrosis
  - Sour taste in the mouth
  - Dyspepsia
  - N/V/anorexia
  - Pernicious anemia

Nursing Interventions

- NPO status to rest GI tract for 6 – 12 hours,
- Reintroduce clear liquids gradually and progress;
- IV fluid and electrolytes if indicated
- Medications: (PPI) or H2-receptor blocker; sucralfate (carafate) acts locally; coats and protects gastric mucosa
- If gastritis from corrosive substance: immediate dilution and removal of substance by gastric lavage
- Monitor for signs of complications like bleeding
- Instruct to avoid spicy foods, irritating foods, alcohol and caffeine
- inform the need for Vitamin B12 injection if deficiency is present

Peptic Ulcer Disease

- An ulceration of the gastric and duodenal lining
- May be referred as to location as Gastric ulcer in the stomach, or Duodenal ulcer in the duodenum
- Most common Peptic ulceration: anterior part of the upper duodenum
- Disturbance in acid secretion and mucosal protection
- Increased acidity or decreased mucosal resistance >>> erosion and ulceration
- **RISK FACTORS**
  - ❑STRESS, SMOKING, ALCOHOL, H-PYLORI
  - ❑NSAID ABUSE

Gastric vs. Duodenal Ulcer

GASTRIC

- Older
- Normal Acidity (PH)
- Pain early after eating
- Worsens by food, relieved by vomiting
- Bleeding, weight loss and vomiting
- Anorexia
- Wakes up at night
- (+) cancer

DUODENAL

- Younger
- PH Higher (more alkaline)
- Pain late after eating (2-4 hours)
- Relieves by food
- Less likely bleeding and vomiting
- Weight gain
- Take NSAIDS with meals
- (-) cancer

Nursing Intervention

- Give BLAND diet, small frequent meals during the active phase of the disease
- Administer prescribed medications- H2 blockers, PPI, mucosal barrier protectants and antacids
- Monitor for complications of bleeding, perforation and intractable pain
- provide teaching about stress reduction and relaxation techniques
- Advise client to avoid risk factors such as cigarette smoking and excessive use of aspirin or NSAIDS

Pharmacological management

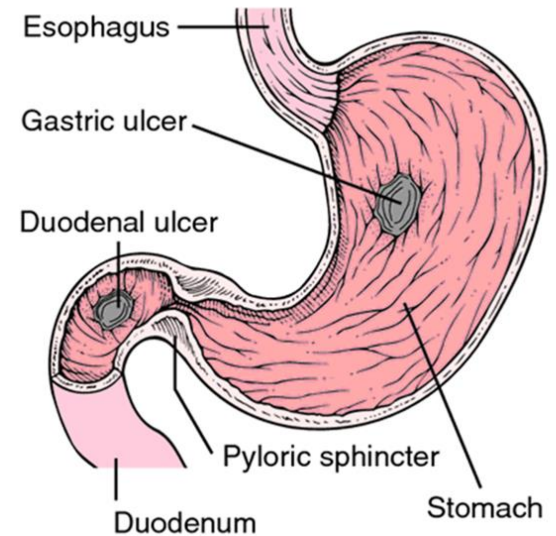
- **Antacid**: Maalox
- **Histamine blockers** (Tagamet, Zantac, Axid)
  - Blocks gastric acid secretion
- **Carafate** - Forms protective layer over the site
- **Mucosal barrier enhancers** (colloidal bismuth (Peptobismol), prostaglandins (Cytotec) - Protect mucosa lining from injury
- **Antibiotics** (if *H.pylori* is present) amoxicillin (Amoxil), metronidazole (Flagyl)
- **Combination treatment** (if *H. pylori* is present): two antibiotics with acid suppressor or cytoprotective agent (Prevpac, Helidac)
- **Anticholinergic** – dicyclomine (Bentyl)
- **Vasoconstrictor** – vasopression to manage bleeding

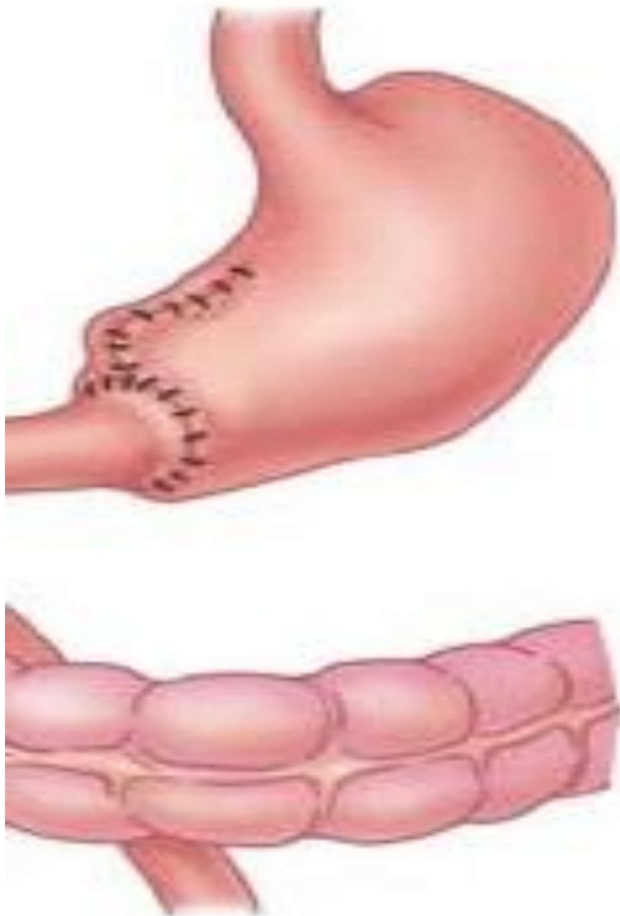
Nursing Interventions for Bleeding

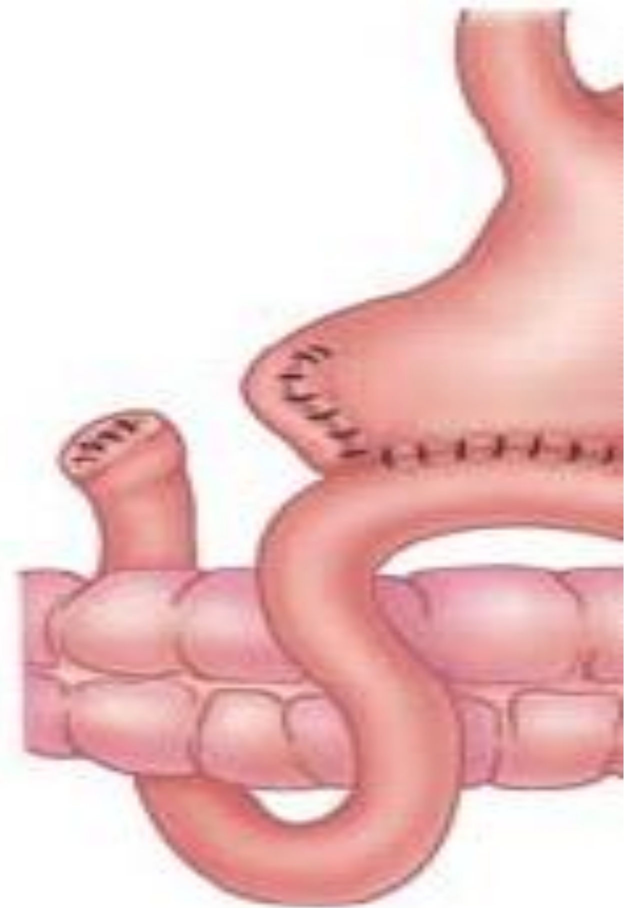
- Maintain on NPO
- Administer IVF and medications
- Monitor hydration status, hematocrit and hemoglobin
- Assist with SALINE lavage
- Insert NGT for decompression and lavage
- Prepare to administer blood transfusion
- Prepare to give VASOPRESSIN to induce vasoconstriction to reduce bleeding
- Prepare patient for SURGERY if warranted

Surgical Procedures for PUD

- Total gastrectomy, vagotomy, gastric resection, Billroth I and II, pyloroplasty
- **Post-operative Nursing management**
  - Monitor VS
  - Post-op position: FOWLER'S
  - NPO until peristalsis returns
  - Monitor for bowel sounds
  - Monitor for complications of surgery
  - Monitor I and O, IVF
  - Maintain NGT
  - Diet progress: clear liquid > full liquid > six bland meals
  - Manage DUMPING SYNDROME




Billroth I


Billroth

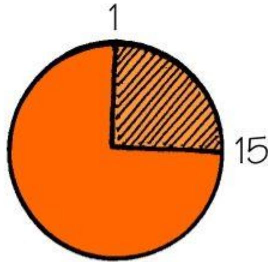
Dumping Syndrome

- A condition of rapid emptying of the gastric contents into the small intestine usually after a gastric surgery
- **Symptoms occur 30 minutes after eating**

PATHOPHYSIOLOGY

- Foods high in CHO and electrolytes must be diluted in the jejunum before absorption takes place.
- The rapid influx of stomach contents will cause distention of the jejunum
- The hypertonic food bolus >>>will draw fluid from the blood vessels to dilute the high concentrations of CHO and electrolytes in the food bolus
- Later, there is increased blood glucose >>>stimulating the increased secretion of insulin
- Then, blood glucose will fall>>>causing reactive hypoglycemia

DUMPING SYNDROME



Occurs 15-30 Minutes After Eating

- Weakness
- Dizziness, vertigo
- Diaphoresis
- Tachycardia
- Abdominal Cramping
- Self-Limiting
- Epigastric Fullness

Stomach

High Carbs High Fluids

Duodenum

C.J. MILLER

- No Fluids With Meals
- No High Carbs i.e., Bread, Potatoes

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ASSESSMENT & INTERVENTIONS

ASSESSMENT FINDINGS: early symptoms

- Nausea and Vomiting ; Abdominal fullness
- Abdominal cramping ; palpitation ; Diaphoresis

ASSESSMENT FINDINGS: LATE symptoms:

- Drowsiness ; Weakness and Dizziness
- Hypoglycemia

INTERVENTIONS

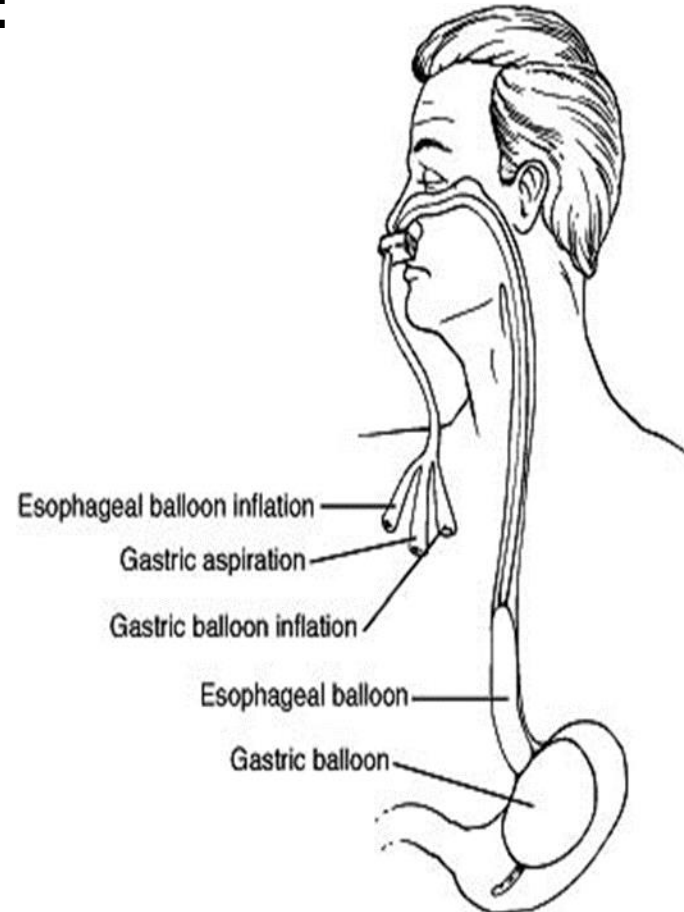
- Instruct to LIE DOWN after meals
- Administer anti-spasmodic medications to delay gastric emptyinG
- Eat Small frequent meals, LOW-carbohydrate HIGH-fat and HIGH-protein diet
- Instruct to AVOID consuming FLUIDS with meals

COMPLICATIONS

- B12 DEFICIENCY; LOSS OF INTRINSIC FACTOR

Upper GI Bleed

- **Predisposing factors include:** drugs, esophageal varicies, esophagitis, PUD, gastritis and carcinoma
- **Signs and Symptoms**
  - Coffee ground vomitus
  - Black, tarry stools
  - Melena
  - Decreased B/P
  - Vertigo
  - Drop in Hct, Hgb
  - Confusion
  - syncope



Treatments

- **Volume replacement**
  - Crystalloids- normal saline
  - Blood transfusions
- **NG lavage**
- **EGD**
  - Endoscopic treatment of bleeding ulcer
  - Sclerotheraphy-injecting bleeding ulcer with necrotizing agent to stop bleeding
- Sengstaken-Blakemore tube
  - Used with bleeding esophageal varicies
- Surgical intervention
- Removal of part of the stomach

Gastroenteritis

Inflammation of the mucosa of the stomach and small intestine

- **Clinical manifestations:**
  - N/V, diarrhea ,
  - abd cramping, and distention,
  - fever, leukocytosis,
  - blood or mucus in stool
- Etiology can be bacterial, viral or parasitic
  - Amebiasis
  - Norwalk virus

Interventions

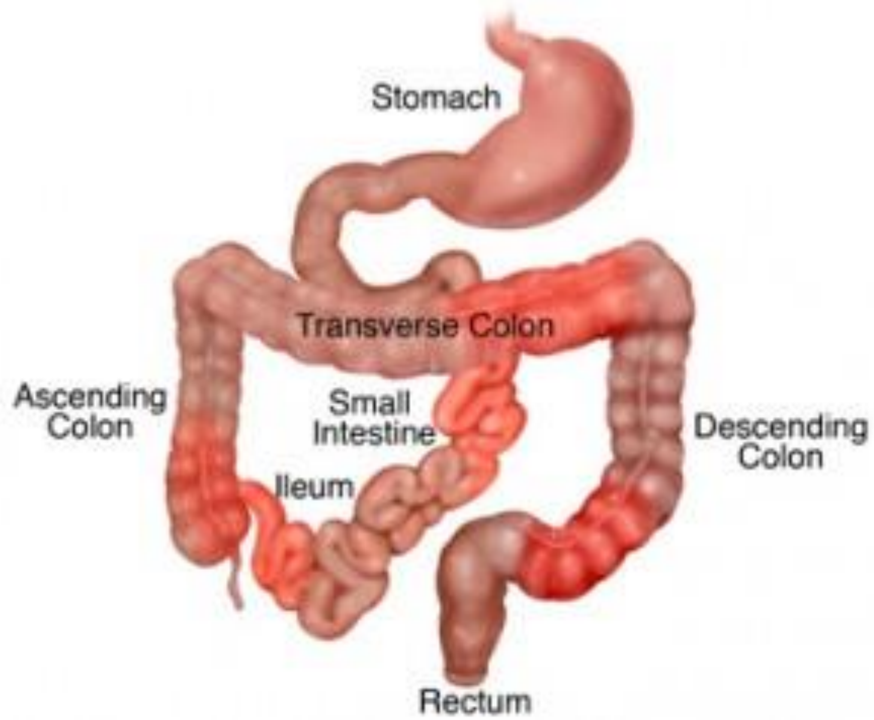
- Monitor Intake and output.
- Replace lost fluid
- Strict medical asepsis
- Infection control precautions
- Enteric precautions must be continued
- Instruct patient on the importance of food handling and preparation properly
- Rest
- Care for pain
- Anti-infectives (metronidazole- Flagyl)
- Anti-diarrheal: loperamide (Imodium)

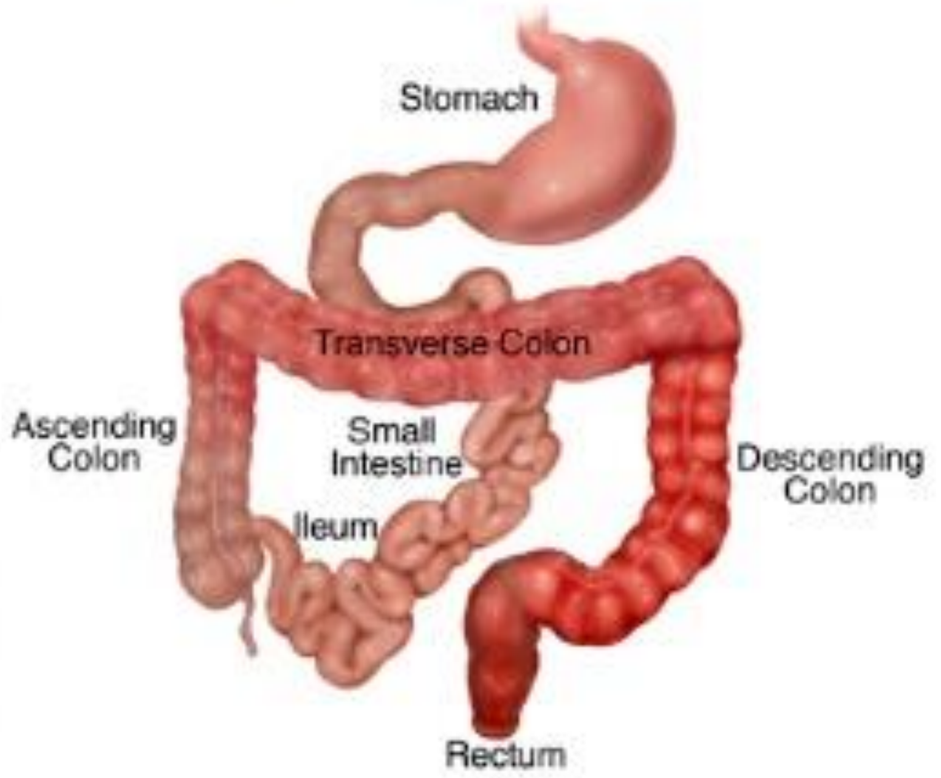
Conditions of the Lower GI Tract

small & large intestines

INFLAMMATORY BOWEL DISEASE (IBD)

Regional Enteritis





CROHN'S DISEASE

- Familial Tendencies
- Peaks Ages 15-40 Yrs
- ? Autoimmune Factors
- Nausea & Vomiting

- Abdominal Pain and Distention
- Tenderness in RLQ

- Severe Diarrhea
- Low Grade Fever
- Bloody Stools
- Weight Loss
- Severe Malabsorption

* Later S & S's *

- Dehydration
- Electrolyte Imbalance
- Anemia

* Complications *

- Intra-abdominal Abscesses
- Intestinal Fistulas
- Peritonitis
- Development of Fistulas

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DIAGNOSTIC TEST

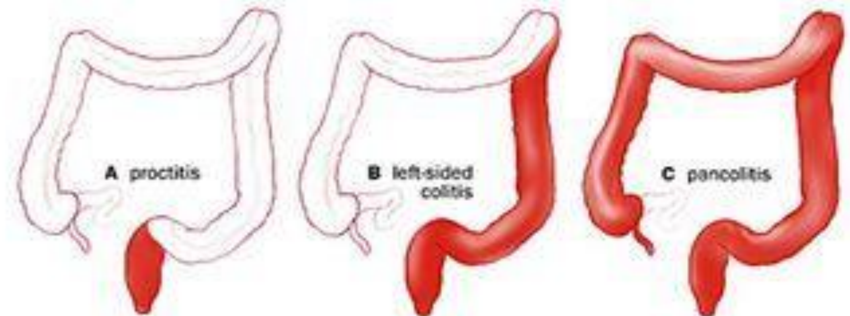
- Fecal fat test shows increased fat
- Fecal occult blood test is positive
- Abdominal x-ray
- Barium enema
- Colonoscopy identifies pattern of the disease

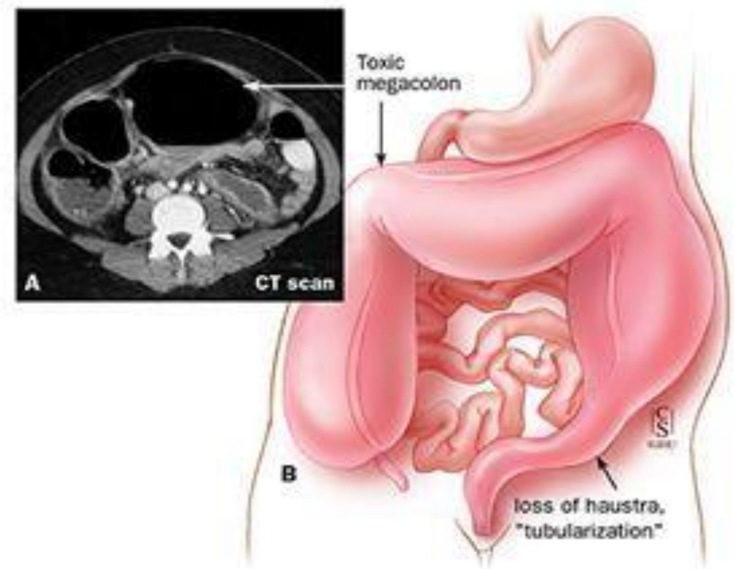
Nursing Diagnosis

- Anxiety
- Diarrhea
- Acute pain
- Imbalanced nutrition less than body requirement

Ulcerative Colitis

- Involvement localized to the colon and mucosal layer of the colon
- Symptoms
  - Diarrhea predominant
  - Bloody stools
  - Frequent stools
  - Abdominal pain
  - Weight loss
  - Increased symptoms with certain dietary triggers (milk)
- Serious Signs that require MD referral
  - Fever
  - Tachycardia
  - Leukocytosis
  - Can all be signs of possible toxic megacolon





Drug Treatment for CD & UC

- Analgesics: meperidine (Demerol), morphine
- Antianemics: ferrous sulphate (Feosol), ferrous gluconate (Fergon)
- Antibiotics: ciprofloxacin (Cipro), metronidazole (Flagyl)
- Anticholinergics: Bentyl
- Antidiarrheal: diphenoxylate with atropine, loperamide (Imodium),
- Antiemetic: prochlorperazine
- Anti-inflammatory agents: 5-ASA (apriso), sulfasalazine (Azulfidine)
- Immunosuppresants: prednisone, azathioprine (Imuran), methotrexate (Trexall)

Interventions & Treatments

CROHNS DISEASE

- Maintain NPO during the active phase
- TPN to rest the bowel
- Restricted intake of milk and AVOID gas-forming foods,
- Low roughage diet and no milk and milk products
- Antibiotics
- Corticosteriods
- Anticholinergics
- Antidiarrheals agents
- Colostomy or ileostomy (may be permanent)
- Bed rest
- Emotional support

ULCERATIVE COLITIS

- Diet progression- clear liquid >> LOW residue, high protein diet
- Milk free diet
- Antibiotics
- Corticosteriods
- TPN
- Physical and emotional rest
- Colostomy or Ileostomy
- PRBC Blood transfusion
- Monitor severe bleeding, dehydration, electrolyte imbalance (low K, high WBCs, Low H&H)
- Bedrest
- Emotional support

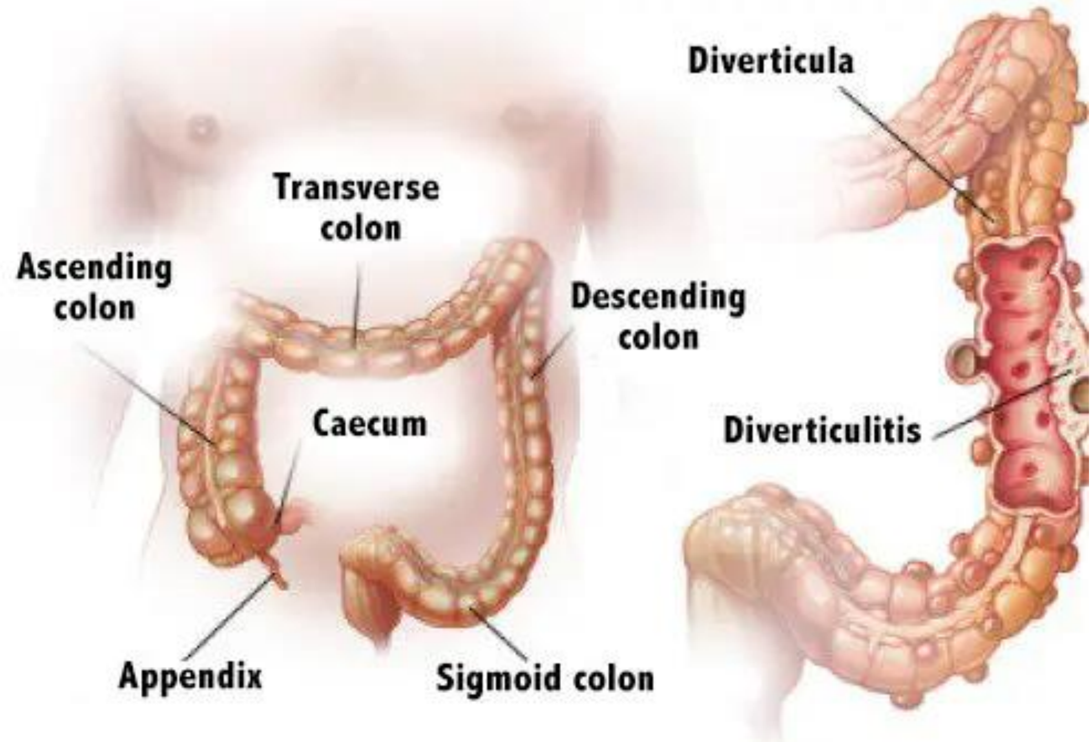
DIVERTICULOSIS AND DIVERTICULITIS

Diverticulosis

- Abnormal out-pouching of the intestinal mucosa occurring in any part of the LI most commonly in the sigmoid

Diverticulitis

- Inflammation of the diverticulosis



DIVERTICULOSIS AND DIVERTICULITIS

ASSESSMENT findings for D/D

- Left lower Quadrant pain
- Flatulence
- Bleeding per rectum
- nausea and vomiting
- Fever
- Anorexia
- Palpable, tender rectal mass

DIAGNOSTIC STUDIES

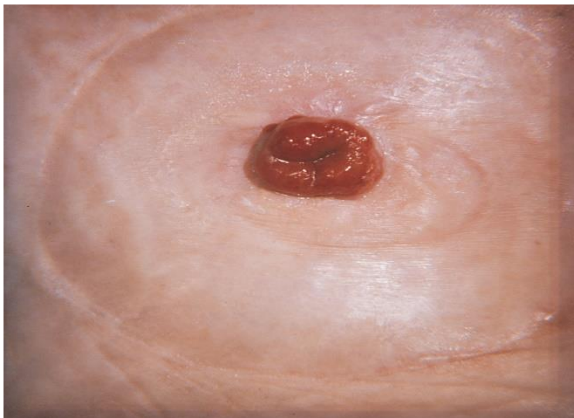
- If no active inflammation, COLONOSCOPY and Barium Enema
- CT scan is the procedure of choice!
- Abdominal

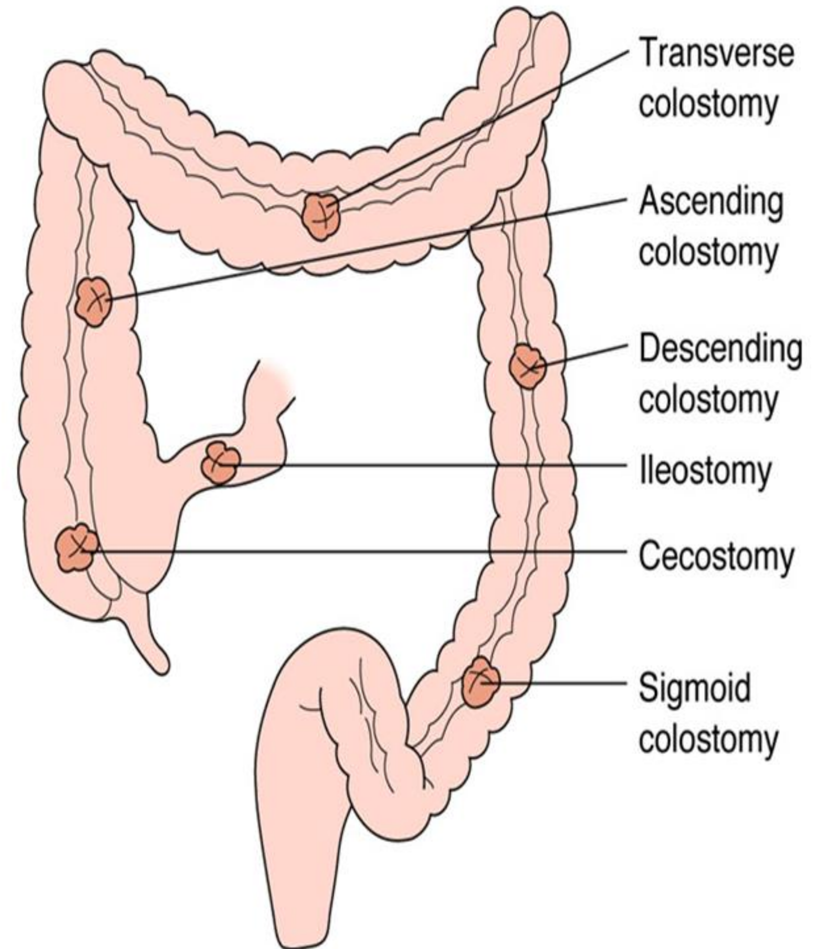
Nursing Interventions

- Maintain NPO during acute phase
- Provide bed rest
- Pain is around LL quadrant
- Administer antibiotics, analgesics like meperidine (morphine is not used) and anti-spasmodics
- Monitor for potential complications like perforation, hemorrhage and fistula
- Increase fluid intake
- Avoid gas-forming foods or HIGH-roughage foods containing seeds, nuts to avoid trapping
- Low Residue Diet
- Instruct to avoid activities that increase intra-abdominal pressure

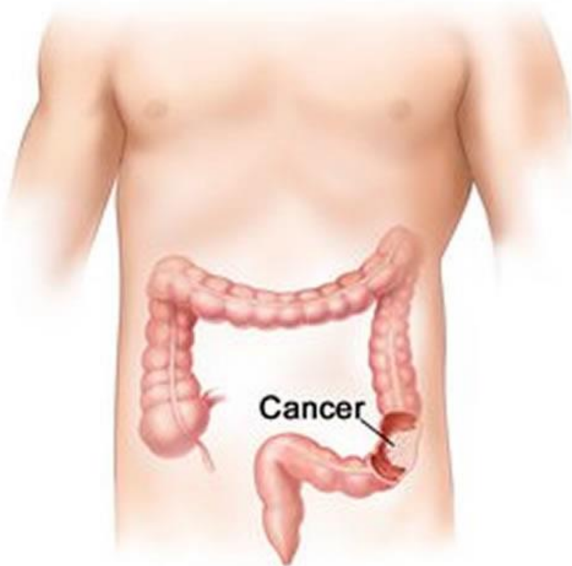
Ostomy Surgery

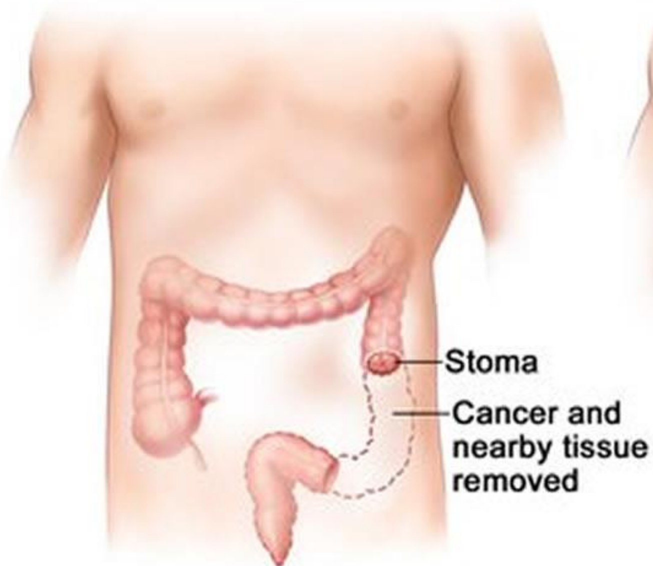
- Ostomy is a surgical procedure where an opening is made to allow passage of intestinal contents from the bowel through a stoma.
- Ileostomy is an opening from the ileum to the abdominal wall
- Colostomy is an opening from the colon and the abdominal wall

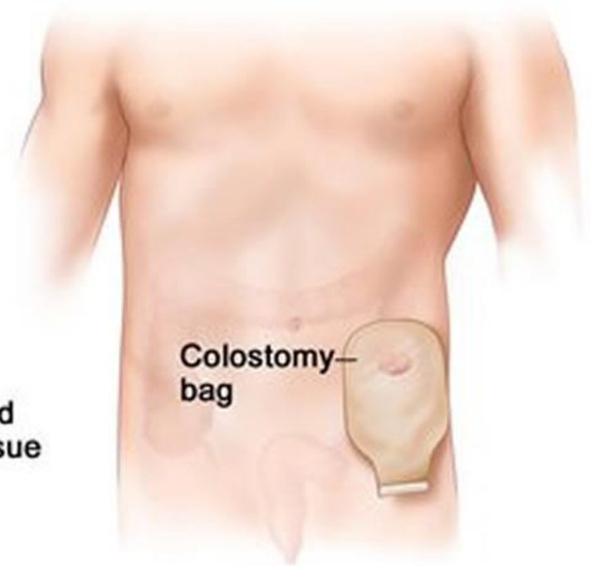


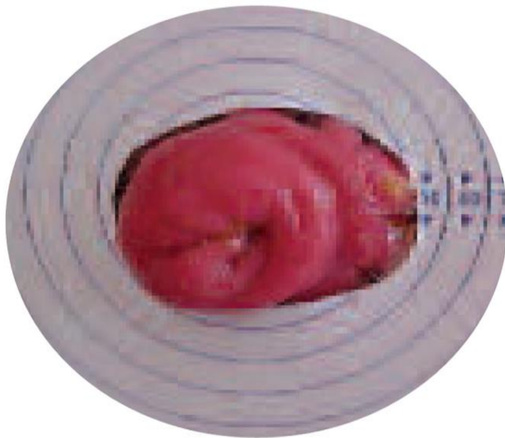


Colostomy









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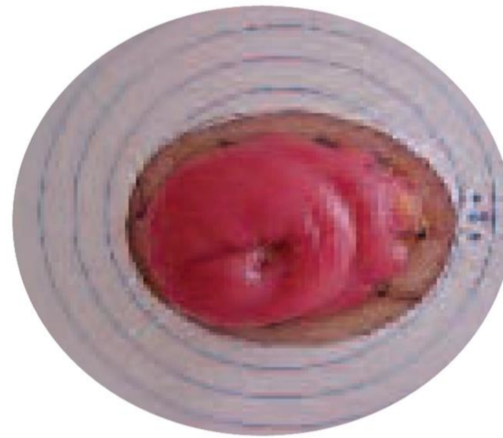


Incorrect

Types of colostomies

- Double -barrel : Two separate stomas are created. The distal colon is not remove but bypassed.
- The proximal stoma which is functional, diverts fecal flow to the abdominal wall.
- The distal portion (mucus fistula) expel mucus from the distal colon.
- This temporary colostomy may be temporary or permanent, being created for cases of trauma, tumor or inflammation.

Client and Family Teaching

- Explain the principles of ostomy and pouch care
- Instruct on dietary and fluid intake
- Explain the importance of follow up care
- Report fever, diarrhea, skin irritation, stoma problems, inversion, eversion, discoloration or infection

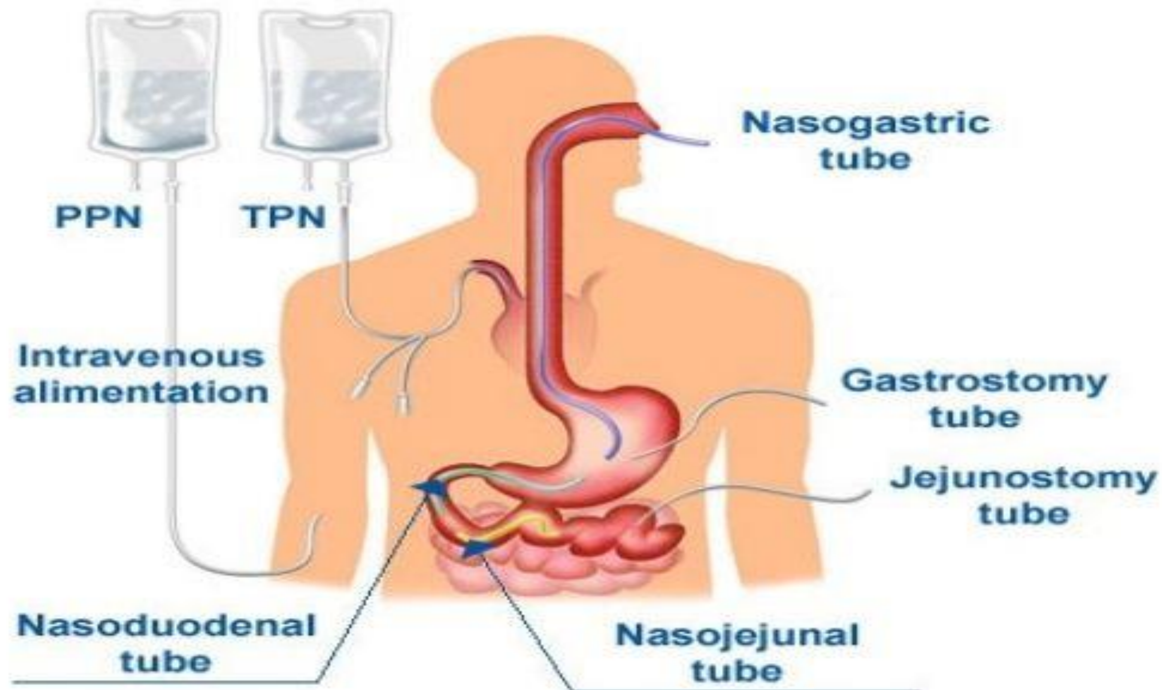
GASTROINTESTINAL DRAINS

- **HEMOVAC**
- **JACKSON PRATT (JP) DRAIN**

HYPERALIMENTATION/TOTAL PARENTERAL NUTRITION (TPN)

- Check Label with 2nd nurse
- Check the rate of infusion
- Patency of central line
- Watch for S/S of infection
- Hyper & Hypoglycemia
- Change tubings Q24 hrs
- Finger blood testings Q6hrs
- I&O
- Daily weights
- Thaw for an hour in room temp before administration

ENTERAL FEEDINGS

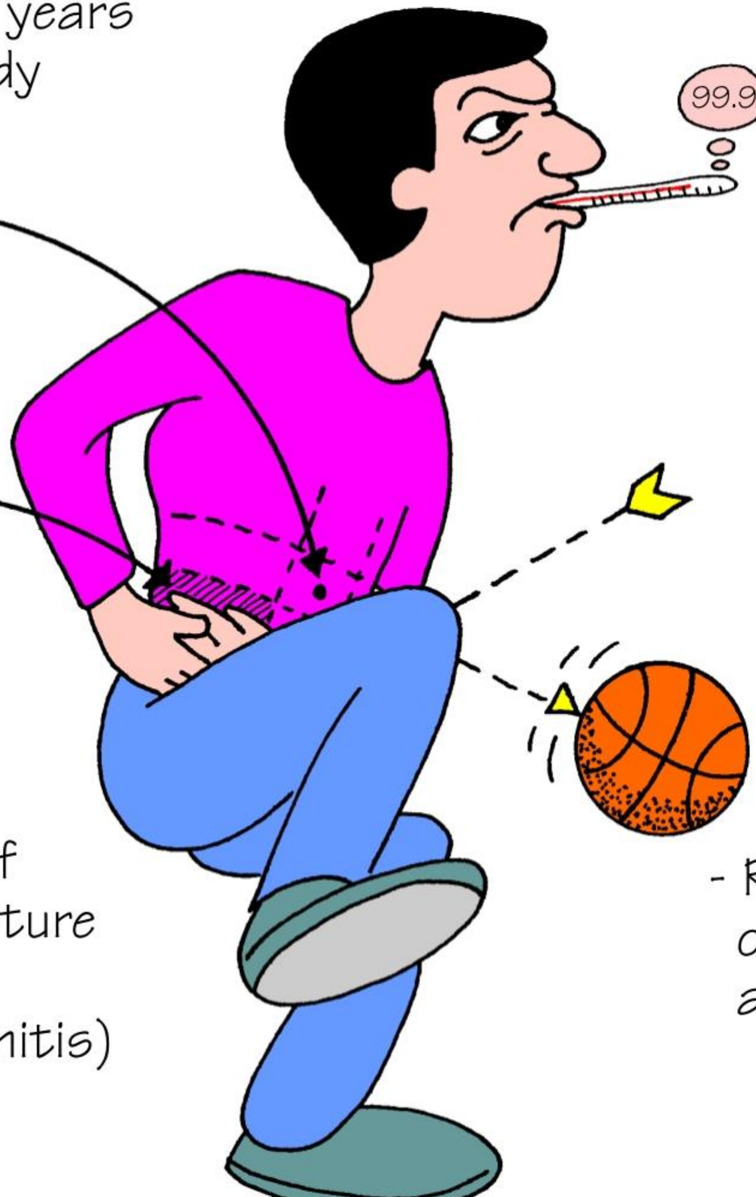


ENTERAL FEEDING HINTS

- Elevate HOB at least 30-45 degrees
- Administer at room temperature
- Formula hung no more than 4 hours (unless in a closed system)
- 30mL water every 4 hours to flush
- Check placement of NG tube EVERYTIME before you use it
- Monitor for tolerance
  - Residual, diarrhea, fluid overload

APPENDICITIS

- Peak incidence 10-12 years
- Begins as dull, steady pain in periumbilical area... Progresses over 4-6 hours & localizes to right lower quadrant



- Low grade fever
- Nausea
- Anorexia

- Sudden pain relief may indicate rupture of appendix (Leads to peritonitis)

Diagnosis

- Clinical signs and symptoms
- ↑ WBC
- Abdominal Sonogram
- Exploratory Lap

- Rebound Pain or Tenderness (RLQ) at McBurney's Point

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Appendicitis: Assessment

PAINS

Pain (RLQ)

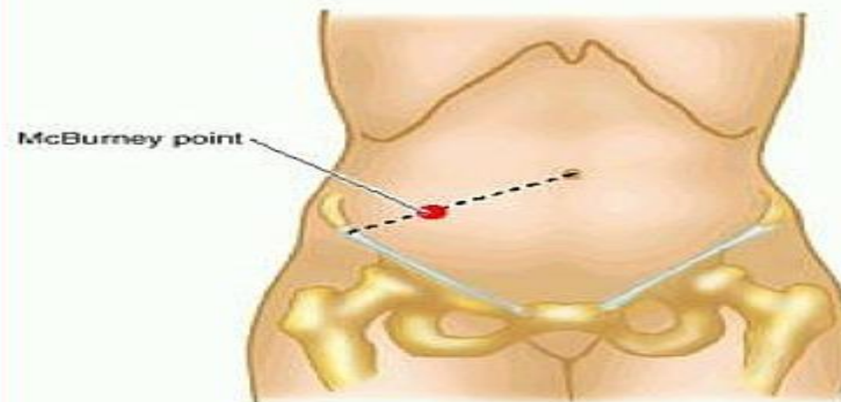
Anorexia

Increased temperature,
WBC (15,000–20,000)

Nausea

Signs (McBurney's, Psoas)

- Begins as dull,steady pain in periumbilical area..
- Progresses over 4-6 hours & localizes to right lower quadrant.
- Sudden pain relief may indicate rupture of appendix (leads to peritonitis)



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Nursing Intervention

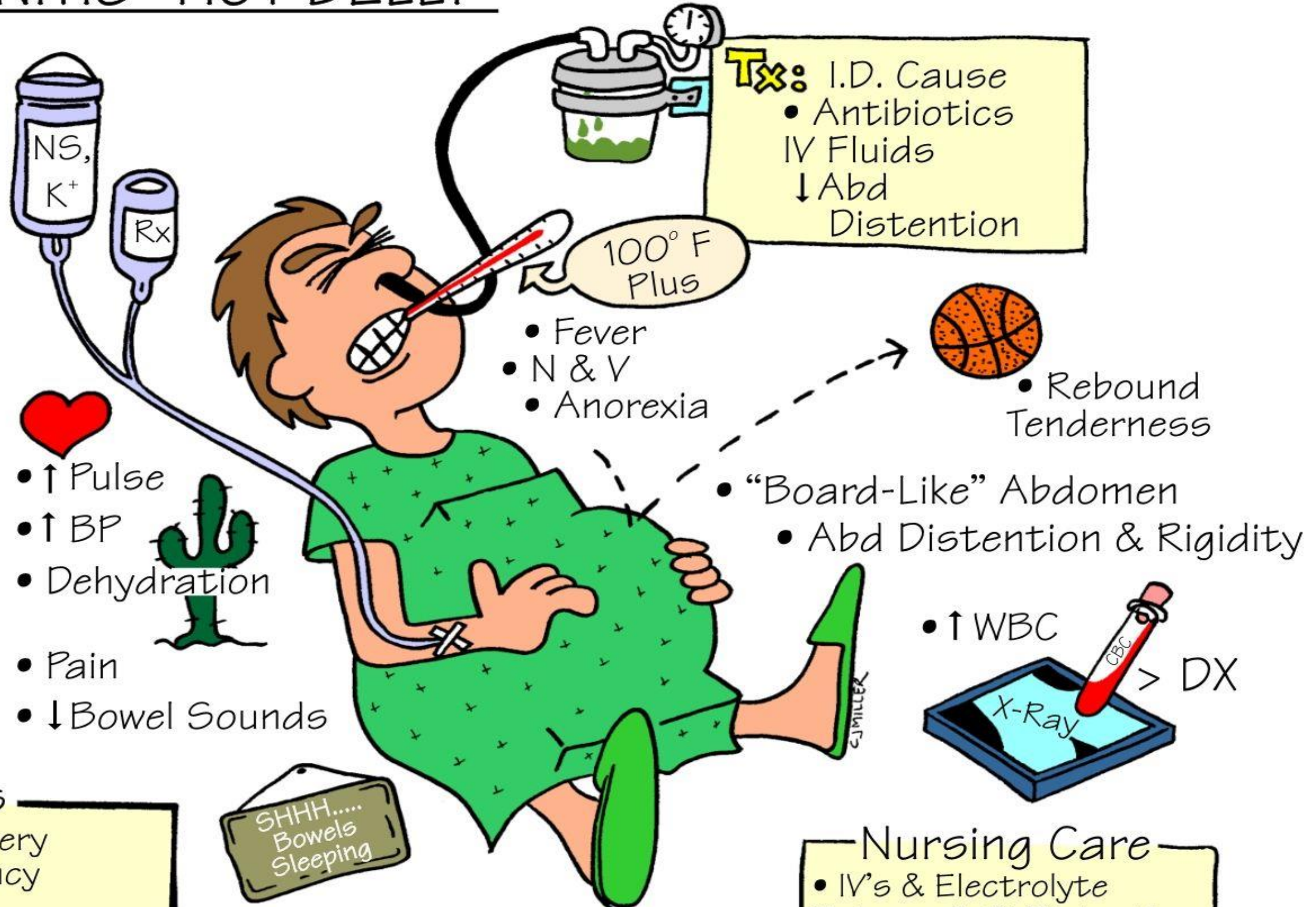
Preoperative care

- NPO , Consent
- Monitor for perforation and signs of shock
- Monitor bowel sounds, fever and hydration status
- POSITION of Comfort: RIGHT SIDELYING in a low FOWLER'S
- Avoid Laxatives, enemas & HEAT APPLICATION

Post-operative care

- Monitor VS and signs of surgical complications
- Maintain NPO until bowel function returns
- If rupture occurred, expect drains (JP drain) and IV antibiotics
- POSITION post-op: RIGHT side-lying, semi- fowler's to decrease tension on incision, and legs flexed to promote drainage
- Administer prescribed pain medications ex. meperidine (Demerol), morphine (giving only when diagnosis is confirmed
- Antibiotics

PERITONITIS



Risk Factors

- Abdominal Surgery
- Ectopic Pregnancy
- Perforation:
  - ☆ Trauma
  - ☆ Ulcer
  - ☆ Appendix Rupture
  - ☆ Diverticulum

Life Threatening

Nursing Care

- IV's & Electrolyte Balance & GI Distention
- ↓ Infection Process
- Prevent Complications:
  - Immobility
  - Pulmonary
  - Fluid Balance

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Colorectal Cancer

- It is a malignant tumor arising from the epithelial Tissue of the colon or rectum.
- It is the second leading caused of cancer death in Western countries.
- In the United states the incident is 5%

Causes:

- Aging
- Chronic constipation
- Chronic ulcerative colitis
- Diverticulosis
- Low –fiber, high carbohydrate diet
- Family history of colorectal cancer

Lab and diagnostic for colorectal cancer

- Colorectal cancer is a silent disease and treatment in the early stages has high cure rate.
- The American cancer society recommends screening for early detection of the disease.
- CBC
- Barium enema
- Blood chemistry
- Biopsy
- CEA is positive
- Colonscopy
- Digital Rectal Exams
- Annual digital rectal examination for all people over age 40.
- Annual guaiac testing for occult fecal blood for people over 50.
- Flexible sigmoidoscopy every 3 to 5 years for any body over the age of 50.
- Fecal occult blood test is positive
- Low H&H
- Sigmoidoscopy

S/S:

- Bleeding (melena)
- Changes in bowel habits
- Pain, anorexia, weight loss (late sign)
- Palpable abdominal or rectal mass might be present.
- Anemia caused from occult bleeding.

Treatment of bowel cancer

Treatment of bowel cancer is surgery

- Surgical resections may be accompanied by a colostomy for diversion of fecal contents.
- A colostomy is an ostomy made in the colon.

- Chemotherapy (adjunct) and radiation (adjunct)
- Drug Therapy
  - Analgesics: morphine, hydromorphone (Dilaudid)
  - Antineoplastics: doxorubicin, 5-fluorouracil
  - Antiemetics: ondansetron (Zofran),
  - Folic acid derivative - leucovorin

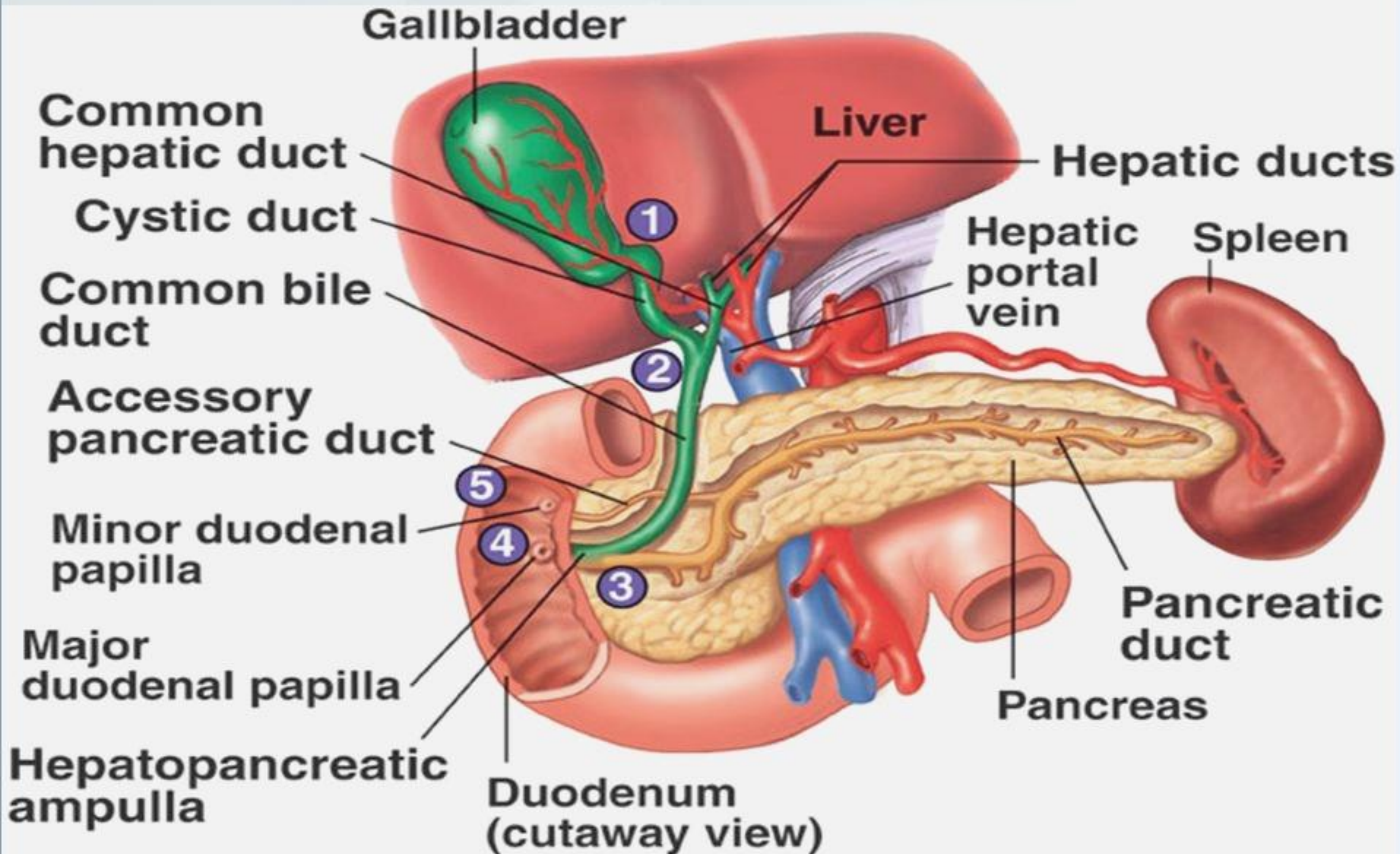
Nursing Care

- Preoperative teaching
- Monitor color, consistency and amount of stool
- Maintain the client in semi-fowlers position to promote emptying of the GI tract
- Ostomy care
- Administer TPN
- Monitor for bleeding, electrolyte imbalance
- Wound healing
- Side-to-side positioning
- Short walks are better than sitting
- Taking sitz bath
- Phantom rectal sensation
- Provide post - chemotherapeutic and radiation care

Conditions of the GIT accessory organs

The Liver

ANATOMY OF LIVER



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Liver Functions

Normal	*Abnormal*
Stores Glycogen	Hypoglycemia
Synthesizes proteins	Hypoproteinemia
Synthesizes globulins	Decrease antibody formation
Synthesizes clotting factors	Bleeding tendencies
Secreting bile	Jaundice & pruritus
Converts ammonia to urea	Hyperammonemia
Stores Vit & minerals	Vit & min deficiencies
Metabolizes estrogen	Gynecomastia

Liver Diagnostic Tests: Liver Enzymnes

- ALT, AST, ALKALINE PHOSPHATESE
- ALBUMIN
- COAGULATION FACTORS

LUCENT NCLEX REVIEW

MANIFESTATIONS OF LIVER DISORDERS

JAUNDICE:

CAUSES:

- ❖Hemolytic jaundice – increased breakdown of RBC which produces an increased amount of bilirubin in the blood.
- ❖Hepatic jaundice – livers altered ability to take up bilirubin from the blood or to excrete it
- ❖Obstructive jaundice – obstruction of bile flow within the biliary system impairs bilirubin excretion.

MANIFESTATIONS OF LIVER DISORDERS

HEMORRHAGE

Due to inadequate prothrombin & other clotting factors

Management :

- Bile salts (PO)
- Vitamin K (PO & Parenteral)
- Use of small needle with injection,
- Use of soft toothbrush,
- check urine and stool for blood.

MANIFESTATIONS OF LIVER DISORDERS

PRURITUS & ITCHING

Caused by bile pigment deposited to skin

Management:

- bathing with tepid water & use of oil-based lotion
- cholestyramine (Questran – binds with bile salts and facilitates excretion with feces)
- Use soft linen
- Short fingernails

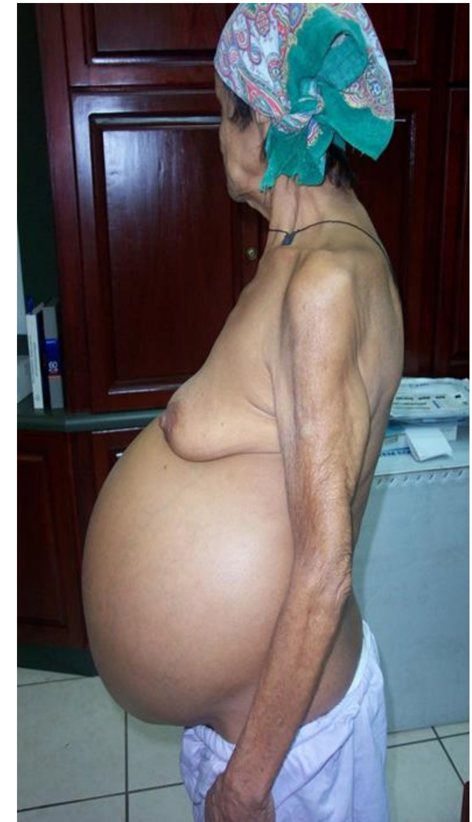
MANIFESTATIONS OF LIVER DISORDERS

ASCITES

Accumulation of abdominal fluid rich in protein; hypoalbuminemia, sodium and water retention

Management :

- Daily weight & abdominal girth
- Low Na diet, fluid restriction,
- diuretics
- Relieve symptoms from pressure of ascites :
  - High fowler's
  - Turning & positioning
  - IV albumin, Paracentesis



MANIFESTATIONS OF LIVER DISORDERS

GENERALIZED EDEMA

- Low serum albumin level (hypoalbuminemia) leads to fluid accumulation by reducing osmotic draw of fluids back into vessels.

INTOLERANCE OF SEDATION

- Most sedatives are metabolized in the liver except *phenobarbital*

NURSING ASSESSMENT

MANIFESTATIONS OF LIVER DISORDE

- Jaundice
- Hemorrhage / bleeding problems
- Pruritus and itching
- Ascites
- Generalized Edema
- Intolerance of Sedation
- RUQ abdominal pain
- Signs of portal hypertension

HEPATITIS

- GENERAL RULES FOR ALL FORMS OF HEPATITIS:
- IMMUNITY DOES NOT TRANSFER
- INFECTIOUS WHEN NO SYMPTOMS PRESENT
- HIGH PROTEIN, LOW FAT DIET
- S/SX THE SAME
- IGG SHOW IMMUNITY

COMPLICATIONS

- Fulminant hepatitis
- Chronic hepatitis
- Cirrhosis of the liver
- Liver cancer

HEPATITIS A

FECAL-ORAL ROUTE

- VACCINE – HAVRIX
- SERIES OF 2 SHOTS
- SECOND ONE ALWAYS 6-12 MONTHS AFTER FIRST INJECTION
- IGG CONFERS IMMEDIATE IMMUNITY – BUT ONLY LASTS 2-3 MONTHS
- BEST GIVEN WITHIN 2 WEEKS OF EXPOSURE

HEPATITIS B

TRANSMITTED

- SEXUALLY
- THROUGH BLOOD
- FROM MOTHER TO BABY
- VACCINE IS SERIES OF 3 INJECTIONS
- 2ND SHOT 2-3 MONTHS AFTER FIRST
- 3RD SHOT 6 MONTHS AFTER FIRST

HEPATITIS C

- Blood and blood products
- Healthcare workers at high risk
- No vaccine
- No cure

S/S FOR ALL TYPES OF HEPATITIS

- Flu like symptoms
- Abdominal pain
- Nausea, Vomiting & Diarrhea
- Dark amber urine
- Clay colored stools
- Jaundice & Hepatomegaly* late signs

TEACHING

- No OTC Medications
- No alcohol
- Cannot donate blood
- Immunity to one form of hepatitis does not guarantee immunity to another form
- Explain infectious period

LIVER CIRRHOSIS

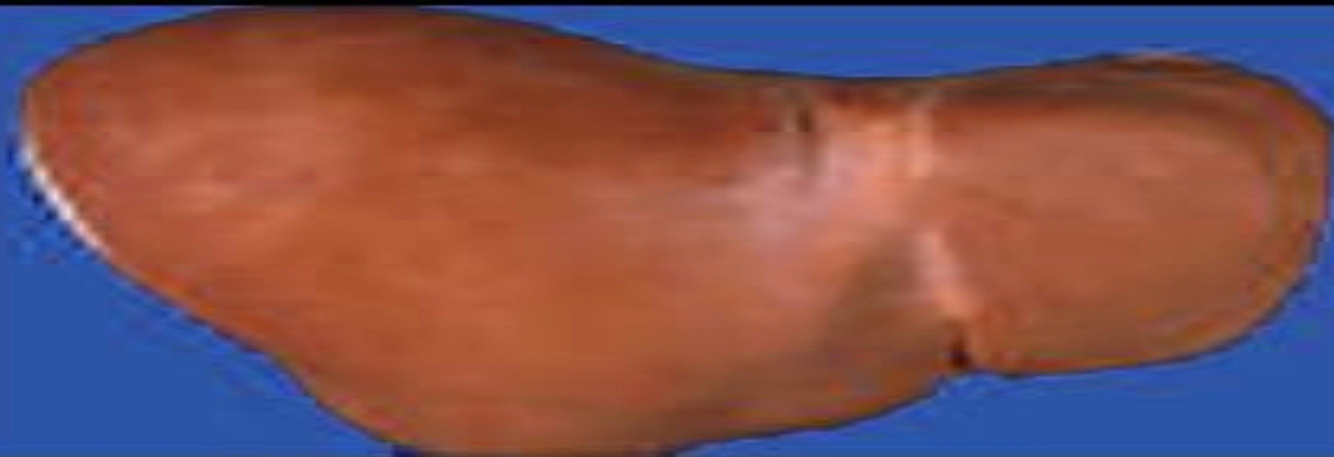
A chronic, progressive disease characterized by a diffuse damage to the hepatic cells. End stage of chronic liver disease, progressive, irreversible

CAUSES:

- Post-infection, Alcohol, Cardiac diseases, Biliary obstruction

TYPES:

1. Posthepatic Cirrhosis – chronic HepB or C
2. Laenec's Cirrhosis – due to alcoholism
3. Biliary Cirrhosis – obstruction of bile flow
4. Cardiac Cirrhosis – from portal hypertension



This is a normal healthy appearing liver.
The surface is smooth and uninform.

The surface of this liver is very nodular
and deformed from severe cirrhosis.

LUCENT NCLEX REVIEW

Liver Cirrhosis

ASSESSMENT FINDINGS

- Anorexia and weight loss
- Jaundice
- Fatigue
- Early morning nausea and vomiting
- RUQ abdominal pain
- Ascites
- Signs of Portal hypertension
- Pruritis, Ecchymoses
- Dyspnea

Nursing Interventions

- Low sodium diet to reduce edema
- Low potassium diet to reduce ammonia production
- Benadryl & mild soap to relieve itching
- Pressure onto injection site to prevent bleeding
- Assist in paracentesis to relieve abdomen pressure
- Ferrous sulfate and folic acid to treat anemia
- Keep equipment ready including Sengstaken-Blakemore tube
- Use of electric razor and soft-bristled toothbrush

- **Administer Meds**
  - Diuretic
  - Lactulose
  - Albumin, Amino acid
  - Vitamin K
  - Antacids and Neomycin = to kill bacterial flora that cause NH production (neomycin is ototoxic, nephrotoxic, neurotoxic.

COMPLICATIONS OF LIVER CIRRHOSES

1. HEPATIC COMA
2. PORTAL HTN
3. ESOPHAGEAL VARICES

DEGENERATIVE DISEASE OF THE BRAIN FROM LIVER FAILURE
DUE TO INABILITY OF THE LIVER TO CONVERT AMMONIA TO UREA

S/S:

- CHANGES IN PERSONALITY AND BEHAVIOR
- LETHARGY
- CONFUSION
- TREMORS
- STUPOR
- DIZZINESS
- COMA
- FETOR HEPATICUS – FRUITY ODOR BREATH
- ELEVATED SERUM AMMONIA LEVELS

HEPATIC COMA

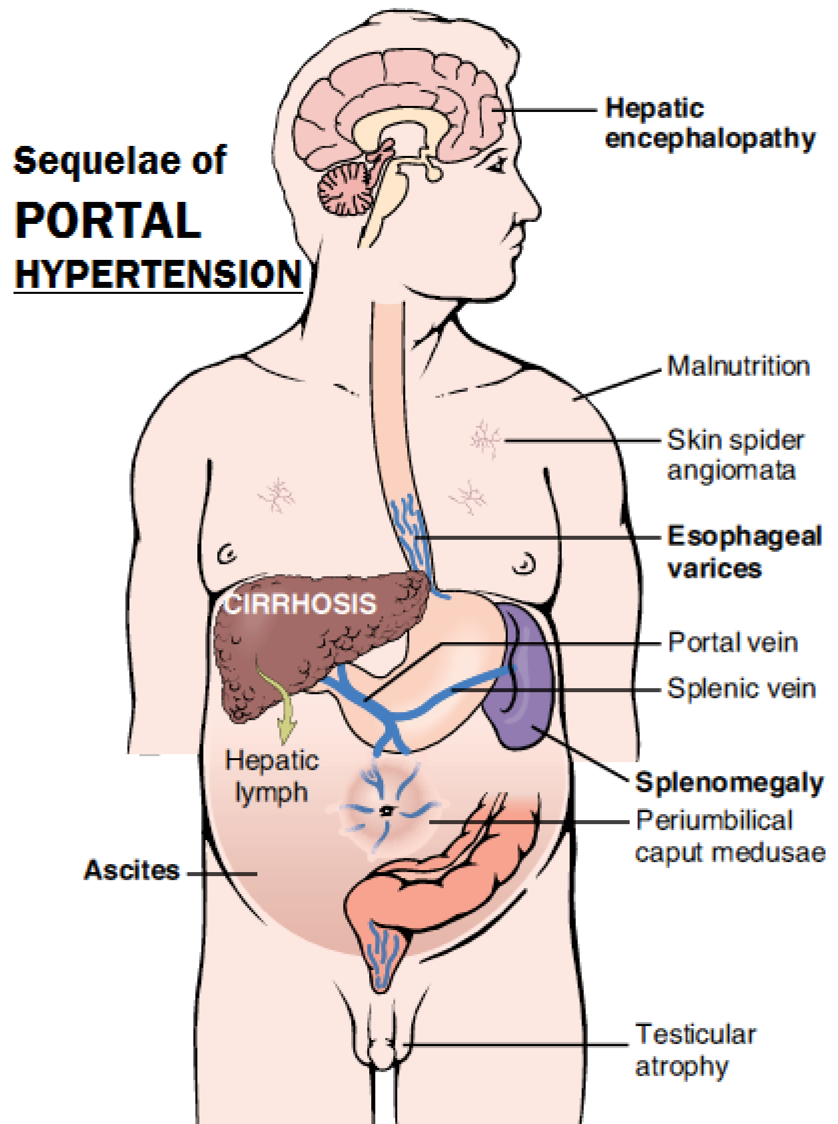
MANAGEMENT:

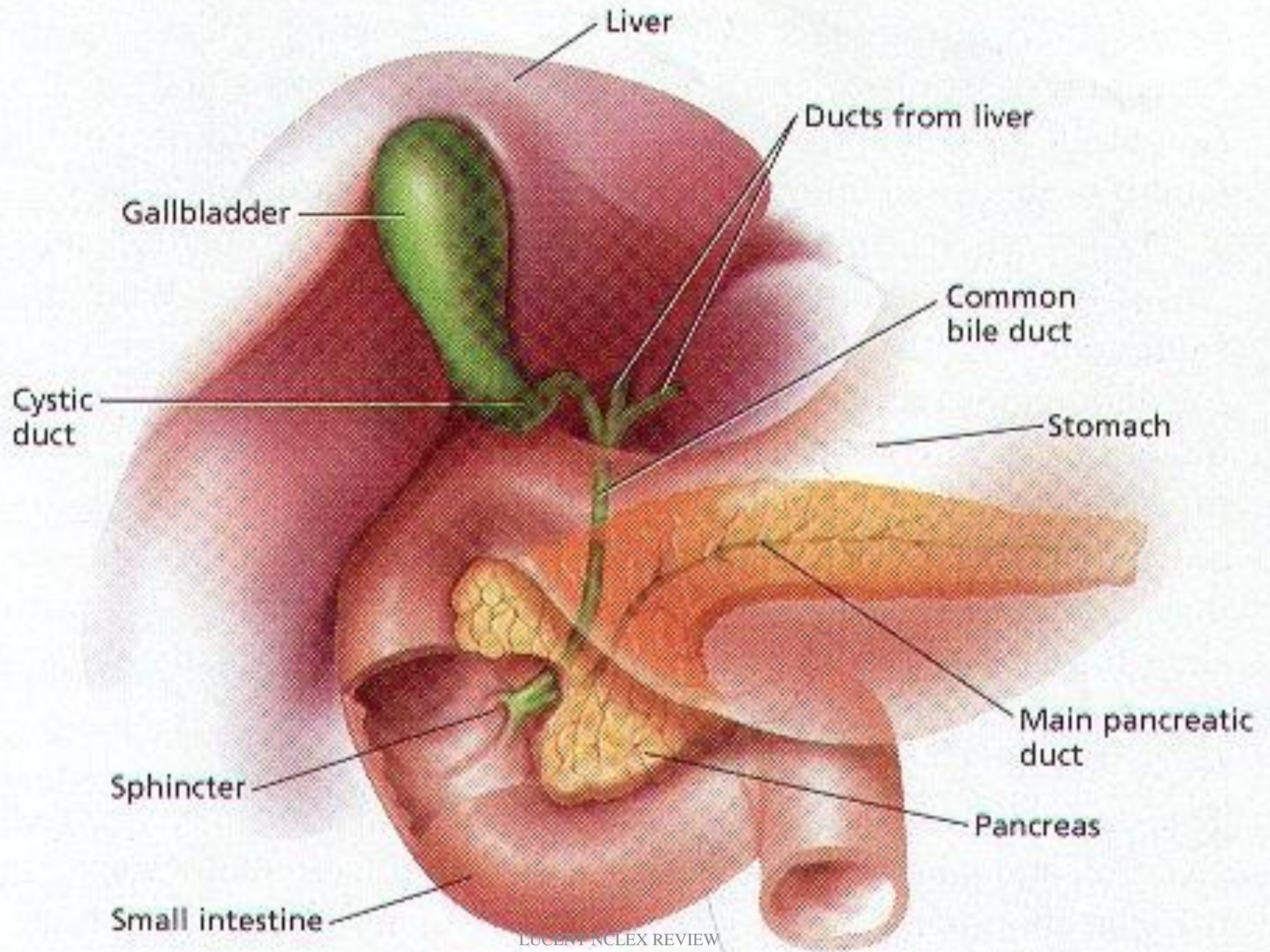
1. Neuro monitoring
2. Diet : Restrict P, high C, with Vit K
3. Administer:
   - *LACTULOSE (ENEMA OR PO) – conversion of ammonia to nonabsorbable ammonium*
   - *intestinal antibiotics – NEOMYCIN*
4. Management for cirrhosis

PORTAL HTN & ESOPHAGEAL VARICES

Nursing Interventions

- Assess for signs of hypovolemia and shock
- Insertion of Sengstaken-Blakemore tube:
- Safety measures: scissors at bedside, cut tubing to deflate if dislodges, obstruction, or asphyxia occurs.
- Oral hygiene; GI Suction
- Octreotide (sandostatin) decreases bleeding from varices without causing strong vasoconstriction
- Admin Vitamin K
- Pitressin (vasopressin) constricts veins & decreases portal pressure
- May need surgical repairs to varices: TIPS Shunting procedures



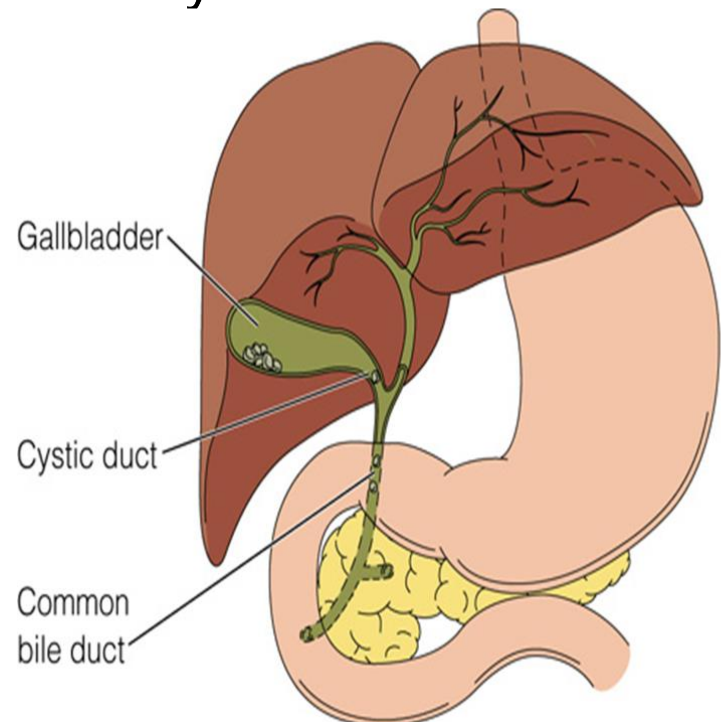


LUCENT NCLEX REVIEW

Gallbladder Disorders

Cholelithiasis and Cholecystitis

- Definitions
  - Cholelithiasis: formation of stones (calculi) within the gallbladder or biliary duct system
  - Cholecystitis: inflammation of gall bladder
  - Cholangitis: inflammation of the biliary ducts
- Gallstones form due to
  - Abnormal bile composition
  - Biliary stasis
  - Inflammation of gallbladder



RISK FACTORS: (4 F's : female, fat, forty, fertile)

- Oral contraceptives ; Cirrhosis
- Obesity; Hyperlipidemia
- Total parenteral nutrition ; Bile stasis
- Sickle-cell anemia

ASSESSMENT: (Biliary colic)

- RUQ pain, usually postprandially, weight loss
- Murphy sign: pain increases with deep inspiration
- Dark amber urine (tea colored)
- Nausea & vomiting
- Clay colored stools; Elevated alkaline phosphatase

DIAGNOSTICS

- ERCP; ULRASOUND; ABD XRAY
- Elevated bilirubin, amylase & lipase levels

Treatments & Medications

Medications:

- Smooth Muscle relaxants: reduce spasm of the duct & permit bile passage
    - Papaverine
    - Nitroglycerine
    - NO Morphine! Usually Demerol (MEPERIDINE)
    - Codeine and Morphine may cause spasm of the Sphincter of odi increased pain. Morphine cause MORE PAIN
- Bile acids – Chenodeoxycholic acid (CHENIX) and Ursodeoxycholic acid (ACTIGALL)
- For clients who are at poor risk for surgery
    - Ursodiol (Actigall) – decreases cholesterol production in liver
    - Chenodiol (Chenix) – can be hepatoxic, cause diarrhea

Treatments & Medications

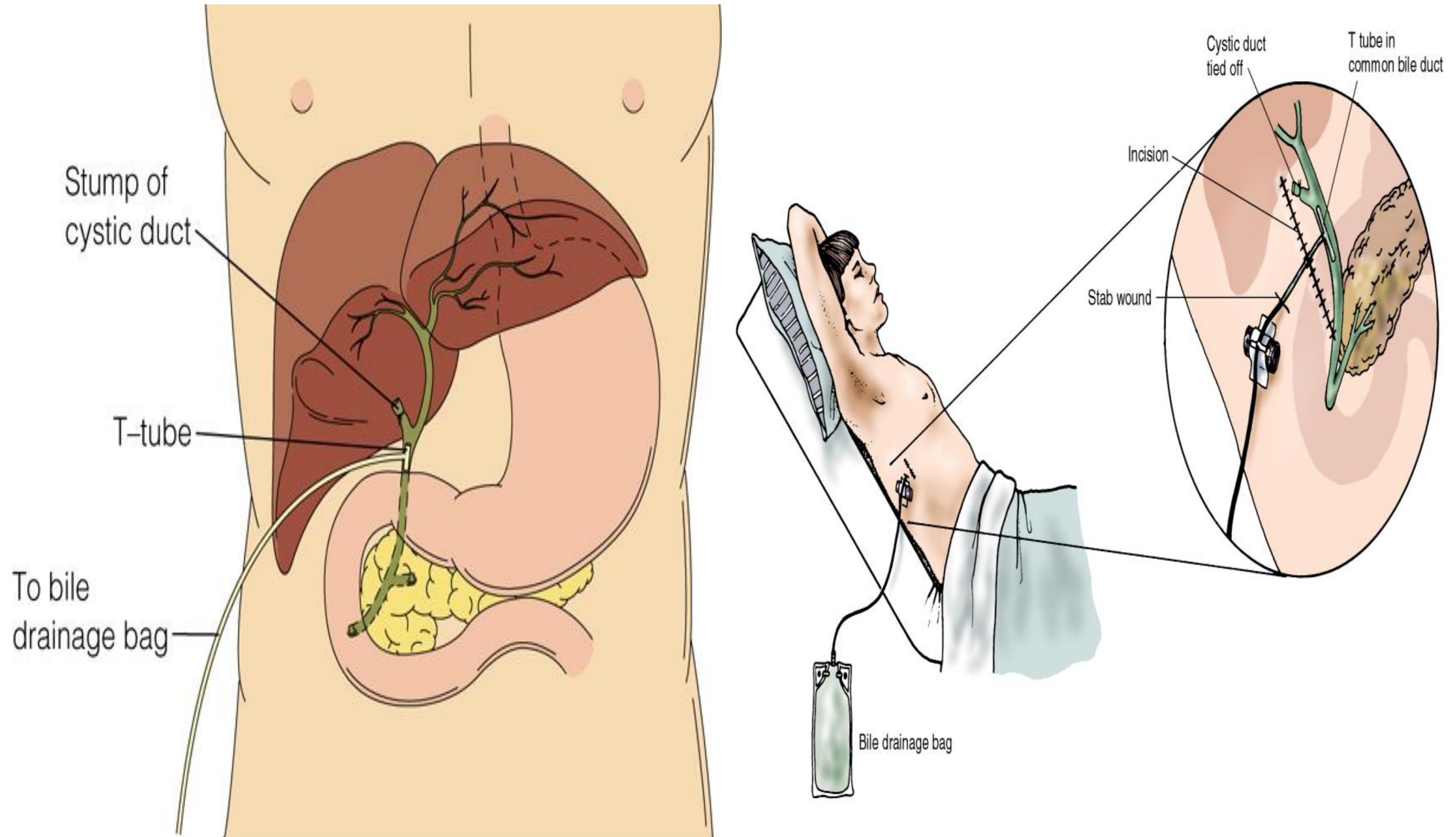
Treatment of choice is laparoscopic cholecystectomy

- Minimally invasive procedure with low risk of complications; required hospital stay< 24 hours.
- Manage pain
- Post-op splint the abdomen when coughing
- If exploration of the common bile duct is done with the cholecystectomy, the client may have a T-tube inserted which promotes bile passage to the outside as area heals

Nursing Diagnoses

- Pain
- Imbalanced Nutrition: Less than body requirements
- Risk for Infection

T – Tube Placement



T- Tube Care

BILIARY DRAINAGE:

- Bloody drainage – normal during 1st 2 hrs
- Greenish brown drainage - after 2 hrs
- 400 ml in 1st 24 hrs, 200 ml/24 hrs thereafter
- Placed above the bile duct to collect overflow drainage
- T tube stays for 6 wks to 6 mos before it is removed
- Color to urine & stool should be observed after removal of the tube
- Chills and fever is normal with clamping of T tube during healing period.

CHOLECYSTITIS

CAUSES:

- Infection: Strep, Staph, E. coli, Typhoid
- Gall stones; Sludge; Biliary stasis

S/SX:

- Intolerance to fatty foods
- Unrelenting RUQ pain & tenderness
- Referred pain : right subscapular, epigastric
- Nausea & vomiting
- MURPHY'S SIGN (hypersensitivity to deep palpation in the subcostal area when a patient with gallbladder disease takes a deep breath).

LAB: Increase in amylase and lipase

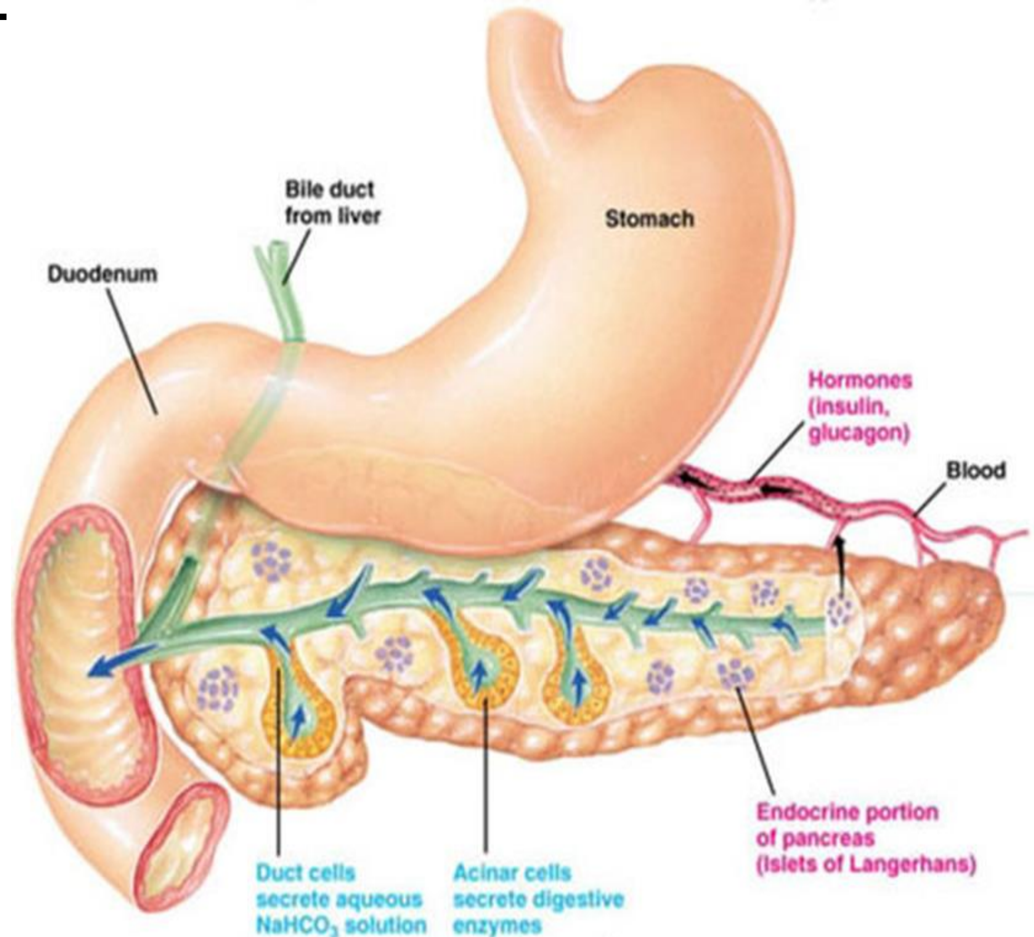
MANAGEMENT: IVF, Antibiotics, NG tube decompression

Cholecystectomy

PANCREASE

ONLY EXOCRINE & ENDOCRINE ORGAN. PRODUCES:

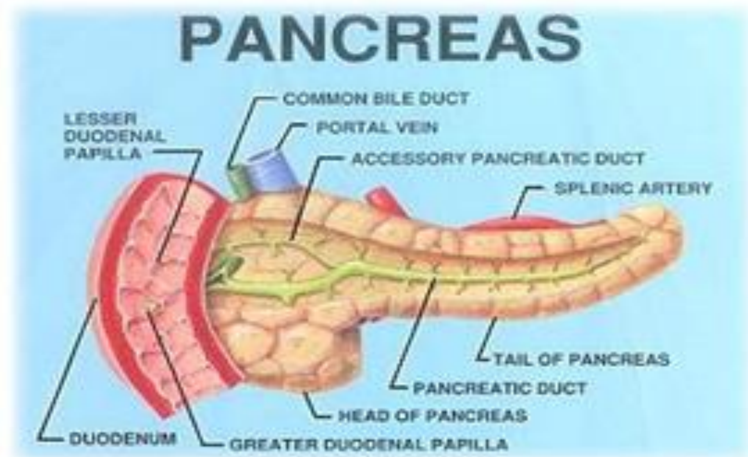
- Insulin
- Glucagon
- Amylase
- Lipase
- Trypsin,
- Cymotrypsin,
- Elastase,
- Phospholipase



Pancreatitis

CAUSES:

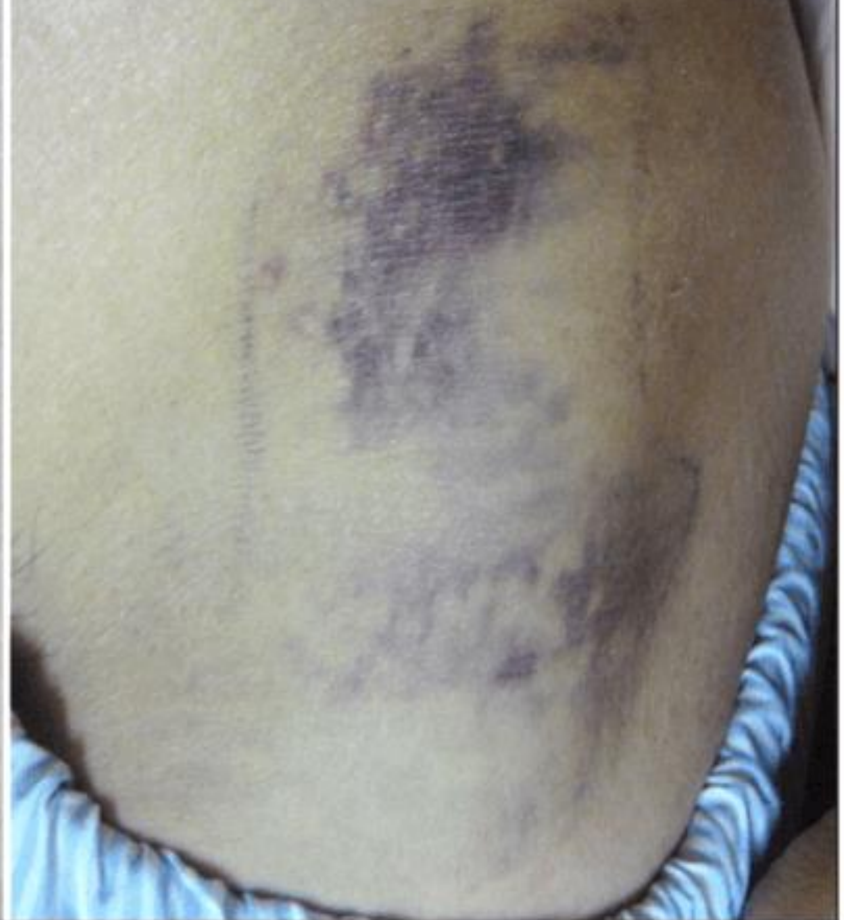
- HIGH TRIGLYCERIDE LEVELS
- THIAZIDES
- STEROIDS – CHRONIC
- ETOH
- MALNUTRITION
- INFECTIONS
- ELEVATED WBC
- ELEVATED LIPASE/AMYLASE
- ELEVATED SUGAR LEVELS



Assessment Findings

- Aggravated by eating or alcohol intake
- Abdominal guarding
- Bruising on the flanks (Grey Turners sign) and umbilicus (Cullen's sign)
- N/V, jaundice
- Hypotension and hypovolemia
- HYPERGLYCEMIA, HYPOCALCEMIA
- Signs of shock , fever
- Steatorrhea
- Tachycardia
- Knee-chest position, fetal position
- Weight loss
- Fecal fat test is positive

A
Cullen's sign


B
Grey Turner's sign

Pancreatitis – Treatment

- Acute pancreatitis is supportive and includes hydration, pain control, and antibiotics, oxygenation
- Chronic pancreatitis includes pain management without causing drug dependence
- Place patient on NPO to inhibit pancreatic stimulation
- **Medications may include**
  - pancrelipase (Pancrease) to reduce steatorrhea
  - H2 blockers or proton pump inhibitors to decrease gastric secretions
  - Antacids and anticholinergics
  - Octreotide (sandostatin) to suppress pancreatic secretion
  - Calcium supplement
  - Hydromorphone (dilaudid IV); NO MORPHINE (AVOID)
  - Hydrocortisone
  - sucralfate (Carafate)

Nursing Interventions

- Position patient in SEMI-FOWLER's to decrease pressure on the diaphragm
- Deep breathing and coughing exercises
- Provide parenteral nutrition (TPN)
- Introduce oral feedings gradually- HIGH carbo, LOW FAT
- Maintain skin integrity
- Manage shock and other complications
- Glucose monitoring to assess for hyperglycemia
- Maintain on bed rest

Pancreatic Cancer

4th leading cause of cancer death in USA

Risk Factors

- Over 65 years
- Smoking
- High fat diet
- History of
- cirrhosis, pancreatitis
- Genetics
- Obesity

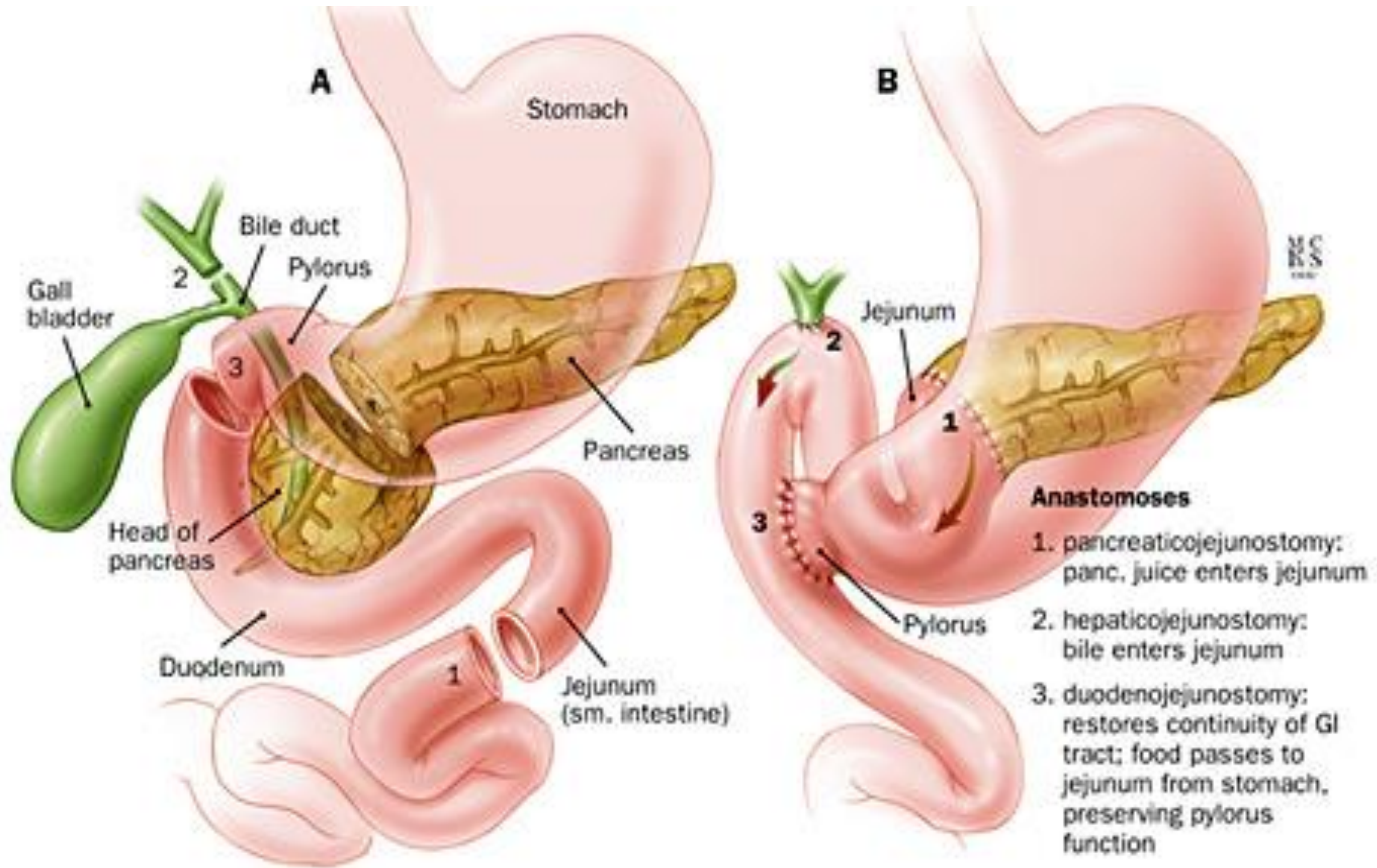
ASSESSMENT

- Indigestion
- Anorexia
- Pain in abdomen or back
- Severe epigastric pain radiating to the back
- Worse with food intake
- Jaundice*
- Nausea*
- Steatorrhea*
- Hyperglycemia*
- Clay colored stool
- Dark urine
- Weight loss
- Late sign.: palpable mass & ascites

Treatment

- Whipple procedure – removal :
- Distal 2/3 of stomach
- Gall bladder
- Cystic and common bile duct
- Head of pancreas & the duodenum
- Proximal 10cm of jejunum & surrounding lymph nodes.
- Radiation and chemotherapy

Whipple Procedure



End of Lesson