Unit 7

GI Problems
Digestion, Nutrition and Elimination

Objectives

Medical – Surgical Disorders
• Cirrhosis
• Hepatitis
• Neoplasms (GI Cancer)
• Esophageal
• Gastric
• Pancreatic
• Colorectal
• Acute Pancreatitis
• Review Chronic Pancreatitis Complications

Gastric Surgeries
• Bilroth
• Billroth II
• Pyloroplasty
• Antrectomy
• Vagotomy
• Gastrectomy
• Clinical Manifestations

A & P of the GI system

- Oral Cavity
- Esophagus
- Stomach
- Pancreas
- Liver and Gallbladder
- Small Intestine
- Large Intestine
Terminology

- Mastication
- Salivary Glands

Focused Physical Exam

- History
  - Demographic Data
    - Age, gender, culture, occupation
  - Family History and Genetic Risk
    - Any family members with GI disorders
  - Personal History
    - Surgeries, meds, NSAIDS, travel history, laxative use

- Diet History
  - Special diet
  - Food allergies
  - Loss of appetite (Anorexia)
  - Heartburn/indigestion (dyspepsia)

- Socioeconomic Status
- Current Health Problems

Guidelines for assessment

- Inspection
- Auscultation
- Percussion
- Palpation
Changes with aging

- Stomach
- Small Intestine
- Large Intestine
- Pancreas
- Liver

Diversity Concerns

- Sometimes cultural based foods may pose a problem for the client
  - Ex. Spices or hot peppers used in cooking may aggravate or precipitate GI tract complaints
- 80%-90% of black individuals are lactose intolerant
  - Bloating, cramping and diarrhea
- Much smaller percentage in white individuals
  - **Lactose intolerance results as a result of lack of the enzyme lactase. Lactase is needed to convert lactose in milk and other dairy products to glucose and galactose.**

Cirrhosis

- **Clinical Manifestations**
  - Liver tissue becomes nodular
  - Early disease the liver is enlarged, firm and hard
- **Stages of Cirrhosis**
  - Compensated
  - Decompensated
    - Complications of Decompensated are:
      - Portal hypertension
      - Ascites
      - Bleeding esophageal varicies
      - Coagulation defects
      - Jaundice
      - Portal systemic encephalopathy
      - Peritonitis
      - Hepatorenal syndrome
Portal Hypertension

Ascites

Jaundice
Cirrhosis
- Hepatic encephalopathy or PSE
  - Results from toxic build up from lack of liver function (bypassed or ineffective function)
  - High ammonia levels

Coagulation defects

Care
- Nutrition
  - Need simple carbohydrates (CHO), decreased proteins (PRO), moderate Fat
- Pharmacological Agents
  - Meds are used sparingly because the liver cannot metabolize them well
  - Often clients use meds used to reduce ammonia levels
- Surgical and Non-surgical interventions
  - Tips
    - Peritoneovenous shunt
    - Paracentesis
    - Diet Therapy
    - Comfort measures
- Communicating to the physician
Hepatitis

- **Definition**
  - Widespread inflammation of liver cells
  - Usually caused by a virus
  - Several types of hepatitis
  - A
  - B
  - C
  - D
  - E
  - F & G are uncommon
  - Toxic and Drug induced

- **Hepatitis A**
  - Mild course
  - Fecal Oral

- **Hepatitis B**
  - Clinical course 25-180 days
  - Blood transmission, unprotected sex, needle sticks, blood transfusions, maternal fetal

- **Hepatitis C**
  - 21-140 days (incubation of 7 weeks)
  - Blood to Blood transmission

- **Hepatitis D**
  - Co-infects with HBV

- **Hepatitis E**
  - Associated with waterborne epidemics in other countries

- **Toxic and Drug induced Hepatitis**
  - Prescription meds, OTC, herbals and pollutants may all cause hepatitis
Hepatitis

- Nutrition
- Pharmacological Agents
- Surgical and Non surgical interventions
- You tell me:
  - Nursing Diagnosis
  - Communicating to the physician

Cancer of the Liver

- One of the most common tumors in the world
- Most common complaint is abdominal discomfort
- Detected by ultrasound and CAT scan with contrast
- Surgery may be used if the cancer is confined to one lobe of the liver.

GI Cancer

- Colorectal Cancer
- clinical manifestations, complications and diagnostic data
Colorectal cancer

Cells that line the colon are very active, constantly dividing and creating new cells. Most polyps are small, benign, and eventually stop growing.

But a tiny percentage of these polyps keep growing, sometimes for 10 years or more. As the polyps become larger, the surrounding tissue can become cancerous. Tumors.

As these tumors grow larger, they gather more blood and nutrients and spread to other organs.

Once the cancer invades the blood and lymph systems, multiple cells are divided and spread to other organs, such as the liver, lungs, and stomach.

Nutrition
- Encourage low fat, refined CHO

Pharmacological Agents
- Used to interrupt the DNA production of cancer cells and improve survival
- Used for pain relief
- Used to alleviate symptoms associated with CRC

Surgical and Non-surgical interventions
- Radiation
- Chemotherapy
- Surgery (colectomy/ileostomy etc.)

Communicating to the physician

Nursing Diagnosis
- Anticipatory grief
- Fatigue r/t disease state, anemia, and stress
- Disturbed body image r/t illness treatment
- Ineffective coping r/t uncertainty and high degree of threat to image, health etc.
- Imbalanced Nutrition: less than body requirements r/t inability to digest or absorb foods
- Powerlessness r/t illness-related regimen
Colostomy

Ileostomy

Anatomy review - Pancreas

- Normal anatomy
  - Liver
  - Gallbladder
  - Pancreas
  - Small intestine
    - Duodenum
Acute Pancreatitis
- Acute Pancreatitis is an inflammatory condition of the pancreas that is painful and at times deadly.
- Four processes are characteristic of acute pancreatitis (early release of trypsin)
  - Lipolysis
  - Proteolysis
  - Necrosis
  - Inflammation
- Complications of acute pancreatitis

Assessment of Acute Pancreatitis
- Clinical manifestation vary widely and depend on the severity of inflammation.
- Typically:
  - Sudden onset
  - Mid-epigastric area
  - Left upper quadrant
  - May radiate to back, left flank, or left shoulder

Laboratory assessment
- Elevated WBC’s
- Elevated glucose
- Elevated bilirubin
- Elevated Alk Phos
- Elevated Lipase
- Elevated Amylase
Other diagnostic assessment

- X-ray
- CT scan with contrast
- US
- MRI

Treating acute pancreatitis

- Reducing the discomfort by decreasing GI tract activities
  - NPO
  - IV fluids to prevent dehydration
  - NG tube

Acute Pancreatitis

Pharmacological Agents
- Opioid analgesics
- Anticholinergics

Surgical and Non surgical interventions
- Help the patient lie in the fetal position
- Lower the clients anxiety
  - Explain procedures
- Surgery is not usually indicated for pancreatitis
Case Study
Mr. Schmidt went to the ED C/O severe LUQ pain radiating to his back and shoulder that started suddenly four hours ago. He claims the pain was aggravated by eating and was not relieved when he vomited. He C/O nausea. He arrives on the step down unit via stretcher lying in the fetal position.

Physical assessment findings:
- T 100.6, P 98, R 26, BP 102/64
- Abdominal guarding
- Bluish discoloration of the flanks
- Ecchymosis of the umbilical area
- Hypoactive Bowel sounds
- Dyspnea, crackles in lungs, cyanosis
- Jaundice

What else do you want to know?

Mr. Schmidt’s immediate orders:
- NPO
- Bedrest
- Morphine 5mg IV q 3 hours PRN abdominal pain
- IVF LR 125 cc/hr
- NGT to LIS

The laboratory personnel calls with results from serum drawn in the ED and asks to speak with Mr. Schmidt’s nurse. She explains that she has a critical value report. What is the procedure to be followed for a critical lab value? Which of the following does the nurse identify as abnormal?

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<td>Na 148</td>
<td>Chloride 99</td>
<td>Glucose 263</td>
<td>Potassium 5.3</td>
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<td>Creatinine 0.9</td>
<td>Calcium 7.5</td>
<td>Magnesium 1.8</td>
<td>Phosphorus 3.8</td>
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<tr>
<td>Carbon Dioxide 25</td>
<td>BUN 20</td>
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Critical Lab Values

Na 148 H
Chloride 99
Glucose 263 H
Potassium 5.3 H
Carbon Dioxide 25
BUN 20
Creatinine 0.9

Diagnostic lab Findings

Serum Amylase 244
Serum Lipase 196
Urinary Amylase (24 hr) 4060
Random blood glucose 263
Serum Ca 7.5 (critical value)
Triglycerides 430

What other diagnostic tests could be done?

What diagnosis are you forming for Mr. Schmidt?

Acute Pancreatitis

- Acute inflammatory process ranging from mild edema to severe hemorrhage
- Prevalence
  - Middle aged
  - Effects men > women
- Potentially life-threatening
- Sequelae may develop chronic pancreatitis
What are the priority nursing diagnosis?

Nursing Diagnosis for Pancreatitis
- Acute pain
- Deficient fluid volume
- Imbalanced nutrition: less than body requirements
- Ineffective therapeutic regimen management

Nursing Care
- Monitor vital signs
- IV fluids to correct volume deficit and combat hypotension
- Assess respiratory function (potential ARDS)
- Cough & deep breathe, IS
- Frequent mouth care
- NGT to LWS- check patency and placement
Nursing Care
- Assess for fever as prone to infection
- Monitor for signs of hypocalcemia
  - Assess for Chvostek or Trousseau signs
- Monitor lab values
- Monitor blood glucose
- Control pain & restlessness
- Position for comfort; flexed, semi-fowlers

Home Care & Health Promotion
- Assessment for predisposing factors
- Treatment of cholelithiasis
- Physical therapy for loss of muscle reserve & strength during extended hospitalization
- Counseling regarding abstinence from alcohol, caffeine, and smoking
- Dietary teaching: high carb, low-fat diet
- Teach signs of infection
- Teach about medications
- Indications that pancreatitis is becoming a chronic condition

How will Mr. Schmidt know if his condition is becoming chronic pancreatitis?
**Clinical Manifestations of Chronic Pancreatitis**

- Heavy, gnawing feeling, burning and cramp-like in LUQ or mid-epigastic area
- Malabsorption & weight loss
- Constipation
- Steatorrhea
- Mild jaundice with dark urine
- Diabetes mellitus
- Increased serum amylase
- Increased serum bilirubin
- Increased alkaline phosphatase
- Mild leukocytosis
- Elevated sedimentation rate
- Hyperglycemia
- Arteriography or X-ray shows fibrosis and calcification
- ERCP indicates biliary disease (chronic obstructive or chronic calcifying pancreatitis)

**How is Chronic pancreatitis managed?**

- Prevention of attacks
- Relief of pain with analgesics
- Control of pancreatic exocrine and endocrine insufficiency
- Bland, low-fat, high-carb, high-protein diet
- Pancreatic enzyme replacement
- Pancreatin or pancrelipase
- Control of Diabetes if it develops
- Total elimination of alcohol
- Surgery indicated when biliary disease is present or if obstruction or pseudocyst develops
Pancreatic Carcinoma

- Difficult to diagnose early
- May be a primary site or metastasize from cancer of the lung, breast, kidney, thyroid or skin.
- Regardless of its origin, pancreatic cancer can spread easily through the lymphatic and venous systems to other organs

Pancreatic carcinoma

- Venous thromboembolism is a common complication of pancreatic carcinoma.
- Usually affects those aged 60-80
- Fewer than 20% of people diagnosed with pancreatic cancer live longer than 1 year after diagnosis.

Pancreatic Cancer

- There are no specific blood tests for pancreatic CA although the same levels tested for pancreatitis might be elevated.
  □ What are they?
Managing the pancreatic CA pt.

- Pain management
  - Morphine
- Radiation
  - May shrink tumor not cure
- Surgery
  - Whipple
    - pancreaticoduodenectomy

Whipple
(pancreaticoduodenectomy)

Critical Thinking Skills

- What are the critical thinking skills involved with delivering pain medications to patients with GI complaints
  - Absorption of PO meds
  - Metabolism with liver involvement (Tylenol)
Questions??

Have a great week!