Objectives

- Review the general signs & symptoms associated with lower GI pathology
- Discuss the common illnesses/conditions involving the lower GI and hepatic/biliary organs
  - signs & symptoms
  - etiology
  - management

Lower GI Pathology

- General signs & symptoms
  - Diarrhea
  - Constipation
  - Cramping

Lower GI Pathology

- Inflammatory bowel diseases
  - Crohn’s disease
  - Ulcerative colitis
  - Irritable bowel syndrome
  - Appendicitis
  - Diverticulosis and diverticulitis
  - Hernias
  - Hemorrhoids

Lower GI Pathology

- Inflammatory bowel diseases
  - Crohn’s disease – etiology
    - unknown
    - not believed to be caused by stress or irritating food
    - research currently underway in fields of immunology & microbiology
    - some believe it is triggered by an interaction between a virus and the body’s immune system
Lower GI Pathology

- Inflammatory bowel diseases
  - Crohn’s disease – signs & symptoms
    - abdominal pain in RLQ
    - chronic diarrhea
    - hematochezia
  - Ulcerative colitis
    - chronic inflammatory & ulcerative condition involving the only the mucosal lining of the colon
    - autoimmune disease
    - often begins in
      - rectum or sigmoid colon – then may extend upward into entire colon

Lower GI Pathology

- Inflammatory bowel diseases
  - Crohn’s disease – management
    - diet
    - lifestyle changes
    - medication
    - surgery
      - colectomy
      - ileostomy
    - athletes should be monitored during activity for proper hydration
  - Crohn’s disease – signs & symptoms
    - weight loss
    - loss of appetite
    - skin rash
    - joint pain that comes & goes

Lower GI Pathology

- Inflammatory bowel diseases
  - Crohn’s disease – prognosis
    - worsens over time
    - complications may include
      - obstruction
      - fistula formation
      - peritonitis
      - sepsis
  - Ulcerative colitis
    - results in
      - uniform inflammation or ulceration
      - fibrosis (thickening or toughening)
      - necrosis and narrowing of the small intestine and colon
### Lower GI Pathology

**Inflammatory bowel diseases**
- Ulcerative colitis – etiology
  - same as Crohn’s disease

**Ulcerative colitis – signs & symptoms**
- weight loss
- signs of dehydration
- tends to occur periodically followed by remission of symptoms

**Ulcerative colitis – etiology**
- increased risk for colorectal cancer when condition involves the whole colon and extends beyond 8-10 years

**Ulcerative colitis – management**
- diet
- lifestyle changes
- medication
- surgery in severe cases
  - colonoscopy to determine severity
  - colectomy (severe cases)
  - ileostomy (severe cases)
- athletes should be monitored during activity for proper hydration

**Irritable Bowel Syndrome**
- Similar to inflammatory bowel diseases, but less severe
- Results in irritation, not inflammation, of colon & intestines
- Caused by poor diet & stress
- More prevalent in young adult women
Lower GI Pathology

- Irritable Bowel Syndrome
  - Signs & symptoms
    - Diarrhea
    - Constipation
    - Bloating & abdominal distention

- Appendicitis – Management
  - Immediate referral
  - Surgical removal of appendix
  - 3-4 week recovery usually required before return to activity (physician will dictate this time frame)

- Appendicitis – Signs & Symptoms
  - general epigastric abdominal pain that eventually progresses to be more local to LRQ
  - nausea (sometimes vomiting)
  - loss of appetite
  - pain & rebound tenderness with palpation of McBurney’s point
  - fever

- Diverticulosis
  - small, pouchlike herniations in the intestinal wall (diverticula)
  - most commonly forms in sigmoid colon
  - Doesn’t typically produce symptoms

- Diverticulitis
  - acute inflammation of the diverticula

- Irritable Bowel Syndrome
  - Management
    - Change in diet
    - Reduction of stress
    - Reduction in use of alcohol, tobacco, & caffeine
    - medication

- Diverticulosis
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  - Most commonly forms in sigmoid colon
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- Diverticulitis
  - Acute inflammation of the diverticula
### Lower GI Pathology

#### Diverticulosis – signs & symptoms
- abdominal cramps
- bloating
- constipation

#### Diverticulitis – signs & symptoms
- Vary from person to person
- Not everyone with diverticulosis develops diverticulitis
- Typically include:
  - Abdominal pain in LLQ (may be relieved following a bowel movement)
  - Fever, chills, vomiting, malaise (if infection is present)
  - Abdominal muscle spasms, guarding, tenderness
  - Constipation/diarrhea

#### Diverticulitis – etiology
- accumulation of intestinal matter within a diverticulum – produces a fecalith
  - may be caused by low fiber diet
  - bacteria multiply & attack the inner surface of the diverticulum
  - resulting inflammation can lead to perforation

#### Diverticulitis – diagnostic tests
- colonoscopy
- sigmoidoscopy
- blood testing

#### Diverticulitis – management
- high fiber diet
- bran
- bulk additives
- stool softeners
- antibiotics
- hospitalization & surgery in severe cases

#### Diverticulitis – prognosis
- less favorable with advancing age
- dietary measures & antibiotics can usually reduce incidence of acute episodes
- perforation can lead to peritonitis, sepsis, & shock
## Lower GI Pathology

**Hemorrhoids**
- Dilated veins in the mucous membrane of the anus or rectum
  - Internal
  - External

**Hemorrhoids – etiology**
- Straining at stool
- Constipation
- Anorectal infections
- Prolonged sitting

**Hemorrhoids – signs & symptoms**
- Rectal bleeding
- Vague discomfort

**Hemorrhoids – diagnostic tests**
- Physical exam by physician – external
- Proctoscopy – internal

**Hemorrhoids – management**
- Focused on easing discomfort
  - Warm sitz baths
  - High roughage diet
  - Stool softeners
  - Medication (ointment)

**Abdominal hernias**
- Protrusion of a portion of the intestine through an abnormal opening in the musculature of the abdominal wall
- Categorized by location
  - Abdominal
  - Inguinal
  - Umbilical
Lower GI Pathology

- Abdominal hernias – etiology
  - congenital weakness of abdominal wall or muscle
  - heavy lifting
  - pregnancy
  - obesity
  - straining at stool

- Abdominal hernias – signs & symptoms
  - lump that tends to disappear when the person is supine – unless strangulated
  - sharp, steady pain in the groin
  - strangulation will cause severe pain & bowel obstruction

Lower GI Pathology

- Abdominal hernias – diagnostic procedures
  - physical exam
  - medical history of sharp abdominal pain when lifting or straining
  - x-ray may be ordered if bowel obstruction is suspected

Hepatic-Biliary Diseases

- Hepatitis
- Gallstones & Gallbladder disease
- Acute & chronic pancreatitis

Hepatic-Biliary Diseases

- Hepatitis
  - A
    - contracted orally (usually through food)
    - persons infected with A usually recover fully
  - B, C, & D
    - contracted through contact with body fluids
    - B & C cause the most damage to the liver

Pain Patterns

- Lower GI

[Diagram of pain patterns]
### Hepatic-Biliary Diseases

#### Hepatitis
- **Signs & Symptoms**
  - Jaundice
  - Fatigue
  - Loss of appetite
  - Dark urine
  - Light stools
  - Diarrhea
  - Fever
  - Joint pain
  - Pain in RUQ
  - Enlarged liver

#### Gallstones & gallbladder disease
- **Cholelithiasis – formation of gallstones within the gallbladder or bile ducts**
  - More common among women than men
  - Gallstones may be present without producing symptoms
  - Symptoms begin when stones obstruct biliary duct

#### Gallstones & gallbladder disease
- **Cholelithiasis – signs & symptoms**
  - Acute onset of pain in URQ
  - Radiating pain to shoulder and back (shoulder blade)
  - Nausea, vomiting
  - Flatulence, belching, & heartburn
  - Tend to follow large meals or fatty foods

#### Gallstones & gallbladder disease
- **Management**
  - No specific medical treatment
  - Sometimes antiviral meds are used
  - Prevention of spread of disease
    - Hand-washing
    - Proper protection (gloves, etc.)
    - Vaccination

#### Gallstones & gallbladder disease
- **Etiology**
  - Obesity
  - High calorie diets
  - Oral contraceptives
  - Multiple pregnancies
  - Increasing age

#### Gallstones & gallbladder disease
- **Diagnostic procedures**
  - Diagnostic ultrasound

#### Hepatitis
- **Prevention of spread of disease**
  - Proper protection (gloves, etc.)
  - Hand-washing

#### Gallstones & gallbladder disease
- **Symptoms**
  - Fatigue
  - Loss of appetite
  - Jaundice
  - Dark urine
  - Light stools
  - Pain in RUQ
  - Enlarged liver
Hepatic-Biliary Diseases

- Gallstones & gallbladder disease
  - Cholelithiasis – management
    - laparoscopic cholecystectomy to remove gallbladder if symptoms don’t subside on their own

Hepatic-Biliary Diseases

- Gallstones & gallbladder disease
  - Acute cholecystitis
    - severe inflammation of the interior wall of the gallbladder

Hepatic-Biliary Diseases

- Gallstones & gallbladder disease
  - Acute cholecystitis – etiology
    - obstruction of bile ducts by gallstones
    - pressure from accumulated bile in the gallbladder
    - chemical changes in the bile
    - secondary infection from multiplying bacteria

Hepatic-Biliary Diseases

- Gallstones & gallbladder disease
  - Acute cholecystitis – signs & symptoms
    - gradual onset of pain in URQ localized over gallbladder
    - nausea, vomiting
    - low grade fever

Hepatic-Biliary Diseases

- Gallstones & gallbladder disease
  - Acute cholecystitis – diagnostic procedures
    - Blood tests
    - Diagnostic ultrasound
    - Abdominal x-ray

Hepatic-Biliary Diseases

- Gallstones & gallbladder disease
  - Acute cholecystitis – management
    - dietary changes
    - medication to reduce inflammation and/or spasm of gallbladder
### Hepatic-Biliary Diseases

#### Acute Pancreatitis
- severe, life-threatening inflammation of the pancreas
- pancreatic enzymes begin digesting pancreatic tissue producing:
  - swelling
  - tissue necrosis
  - hemorrhage

#### Acute Pancreatitis – signs & symptoms
- sudden onset of severe, persistent abdominal pain
- may radiate pain toward back
- abdominal tenderness
- abdominal distension (not always present)
- persistent vomiting
- alterations in vitals
  - fever
  - tachycardia
  - rapid, shallow respirations
  - decrease in blood pressure

#### Acute Pancreatitis – management
- Aimed at reducing symptoms
  - maintain circulation & fluid volume through IV
  - decrease pain
  - decrease pancreatic secretions

#### Acute Pancreatitis – etiology
- alcoholism
- gallstones
- trauma to abdomen
- viral infections
- drug reactions
- pancreatic cancer
- complications from a duodenal ulcer

#### Chronic Pancreatitis
- Slow, progressive destruction of pancreatic tissue accompanied by:
  - inflammation
  - fibrosis
  - dilation of pancreatic ducts

#### Acute Pancreatitis – diagnostic procedures
- blood tests
  - elevated level of amylase enzyme
- diagnostic ultrasound
- abdominal CT scan

#### Chronic Pancreatitis
- Slow, progressive destruction of pancreatic tissue accompanied by:
  - inflammation
  - fibrosis
  - dilation of pancreatic ducts
### Hepatic-Biliary Diseases

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<td>Most commonly associated with alcoholism</td>
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<td>Palliative – aimed at making person comfortable by managing pain</td>
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<td>Most pancreatic cancers are diagnosed after they have metastasized to the lungs, liver, and bones</td>
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<td>80-85% of cases are advanced at first diagnosis</td>
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### Questions?