Review of the Diseases of the Lower GI Tract

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Learning Objectives
1. Discuss the diagnosis and treatment of irritable bowel syndrome
2. Recognize the common forms of malabsorption
3. Review the diagnosis and treatment of cancer of the small intestine, large intestine and anus
4. Summarize other clinical entities of the lower GI tract, including constipation and infections

1. Irritable Bowel syndrome is characterized by all of the following EXCEPT:

A. Vomiting
B. Abdominal distention
C. Nocturnal diarrhea
D. Dyspepsia

Irritable Bowel Syndrome
• Defined
  – GI syndrome characterized by altered bowel habits and abdominal pain, in the absence of detectable structural abnormalities
  – Prevalence
    • 10-15% in North America

Irritable Bowel Syndrome
Clinical Features
• Patterns
  – 80% diarrhea + constipation + pain
  – 20% painless diarrhea only
• Altered bowel habits
  – Alternation of diarrhea with constipation
    • Usually beginning in adult life, one usually predominant
    • Usually, constipation begins as episodic, later becomes constant
    • Evacuation usually feels incomplete
    • No nocturnal diarrhea
    • Worse with stress

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Additional Clinical Features…

- Abdominal Pain
  - Episodic and cramping, highly variable; rarely interferes with sleep
- Gas and flatulence
  - c/o distention, increased belching, increased flatulence (objective measurements are normal)
- Upper GI Symptoms
  - 25-50% c/o dyspepsia, heartburn, nausea, vomiting

Irritable Bowel Syndrome

Pathophysiology

- Remains uncertain
- Heredity and environmental factors play a potential role
- Abnormal myoelectric activity
  - Basal rhythm 3 cycles/min in IBS (6 cycles/min is normal)
- Visceral afferent hypersensitivity
- Microscopic mucosal inflammation
- Psychosocial dysfunction

Irritable Bowel Syndrome

Diagnosis

- Not purely a diagnosis of exclusion
- Careful H&P
  - Timing and pattern of pain
  - Targeted testing when no alarm symptoms
- All patients
  - CBC, chemistry panel
- If diarrhea predominant
  - TSH, Stool for C&F, 24 h stool occasionally helpful
  - If > 40 at onset
    - Consider Flex sig, BE, or colonoscopy to r/o cancer
    - If younger, consider endoscopy to rule out inflammatory bowel disease
- If mostly diarrhea
  - r/o lactase deficiency, sorbitol excess, celiac disease
- If mainly upper GI symptoms
  - Consider EGD

Irritable Bowel Syndrome

Treatment

- Patient Education, cognitive behavioral treatment
- Dietary changes, when indicated
- Stool bulking agents
  - High-fiber diet, bran, psyllium
- Antispasmodics
  - Dicyclomine, tincture of belladonna, hyoscyamine
- Antidepressants
  - Low dose, analgesia, mood, colonic transit slowing
- Antidiarrheal agents
  - Diphenoxylate, loperamide; no help with pain

IBS Treatments

Evidence-Based Recommendations

- Antidepressant treatment of pain – predominant IBS
  - TCAs (SOR B)
  - SSRIs (Insufficient data)
- Psychologic treatment
  - Hypnotherapy (SOR B)
  - Cognitive-Behavioral therapy (SOR B)

Malabsorption

- Defined
  - Impaired absorption of nutrients
- Clinical Features
  - Symptoms (consistent across types)
    - Weight loss
    - Diarrhea
    - Bloating and flatulence
    - Malnutrition

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### Classification of Malabsorptive Disorders*

| Luminal Disorders | Mucosal Abnormalities | Malabsorption
<table>
<thead>
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<tbody>
<tr>
<td>Hepatobiliary Disease</td>
<td>Structural</td>
<td>Physical Findings</td>
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<tr>
<td>Pancreatic Insufficiency</td>
<td>Celiac Disease (Sprue)</td>
<td>Pallor, anemia</td>
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<tr>
<td>Altered bacterial flora</td>
<td>Tropical Sprue</td>
<td>Muscle wasting</td>
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<tr>
<td>Jejunal Diverticulosis</td>
<td>Radiation Enteritis</td>
<td>Hair loss</td>
</tr>
<tr>
<td>Blind-loop Syndrome</td>
<td>Agammaglobulinemia</td>
<td>Edema</td>
</tr>
<tr>
<td>Scleroderma</td>
<td>“Biochemical”</td>
<td>Pagophagia (ice pica)</td>
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</table>

- Wall Disease
- Regional Enteritis
- Amylod Disease
- Vascular Disease
- Mesenteric artery disease
- Cardiac failure
- Metabolic Disorders
- Pancreatic adenoma
- Carcinoid
- Hypothyroidism
- Carcinoma of the Bronchus
- Lymphatic Abnormalities
- Whipple's Disease
- Lymphangiectasia
- Lymphphome
- Iatrogenic Causes
- Surgery and Drugs

- Abetalipoproteinemia
- Amino Acid Absorptive Disorders

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### Malabsorption

#### Diagnostic Tests
- Decrease in serum carotene, cholesterol, albumin
- Quantitative or qualitative fecal fat
- Carbon 14 Triolein Breath Test
  - Decrease CO₂ fat malabsorption
- Small intestine films and biopsy
- Cultures from small intestine
- Breath hydrogen tests (for bacterial overgrowth)
- General therapy for malabsorption is Nutritional

### Common Syndromes

#### Maldigestive and Malabsorptive
- Exocrine Pancreatic Insufficiency
  - DX – Steatorrhea + normal D-xylose (No proximal small bowel dysfunction)
  - TX – Pancreatic Enzyme Replacement
- Bile Acid Deficiency – Short gut
- Parasitic Diseases
  - Giardiasis
  - Cryptosporidium
- Immunodeficiency states
- Lactase Deficiency
  - DX – Breath Hydrogen Lactose Challenge
  - TX - Diet

### 2. Which of the following is true regarding Celiac Sprue?

A. Histologically the jejunal mucosa is found to be flat  
B. Steatorrhea is uncommon  
C. Folate deficiency is rare with the disorder  
D. Parasitic diseases have been shown to be the etiologic agent

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Celiac Sprue

- Chronic intestinal malabsorption disorder
  - Intolerance to the gliadin fraction of gluten in wheat
- Features
  - Flat jejunal mucosa with clinical and/or histologic improvement following withdrawal of dietary gluten

Celiac Sprue

- Symptoms and Signs
  - No typical presentation
  - May be asymptomatic
  - Steatorrhea common
  - Failure to thrive
  - Anemia
  - Symptoms of various deficiency states
  - Bone loss
  - Arthritis
  - Neuropsychiatric disease
- Laboratory
  - Fe deficiency anemia in children
  - Adults
    - Folate deficiency
    - Vitamin D deficiency

Celiac Sprue

**Diagnosis and Treatment**

- IgA anti-tissue transglutaminase Ab
- IgA endomysial Ab
- Biopsy
- D-xylose test
- Gluten avoidance

Inflammatory Bowel Disease

- Onset
  - Usually young adults
  - Affects men and women equally
  - More common among Caucasians in N. America and N. Europe
- Ulcerative Colitis
- Crohn’s Disease

3. Inflammatory Bowel Disease is characterized by which of the following?

- A. Men are affected more often than women
- B. Older children tend to be most often affected
- C. An association with an infection with Giardia
- D. An immune role as mediator of tissue injury in the disorder

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**Inflammatory Bowel Disease**

- **Spectrum**
  - Crohn’s, Indeterminate, Ulcerative Colitis
  - 600,000 people in the US have some form of Inflammatory Bowel Disease
- **Pathogenesis**
  - Some genetic role
  - No identified infectious agent
  - Strong evidence for immune role as mediator of tissue injury – unknown trigger
  - Serologic markers (ASCA, G0F/G2F, etc.)

**Ulcerative Colitis**

- **Incidence** - 10/100,000; 25% Family History
- **Pathology**
  - CONFINED TO MUCOSA
  - Starts in rectum, moves proximally WITHOUT skips
- **Clinical Features**
  - Mild to severe at start
  - Abrupt onset
  - Rectal bleeding, diarrhea, fever, cramping pain, weight loss

**Ulcerative Colitis**

- **Diagnosis** - Rule out
  - Specific infections with cultures and exam for O&P
  - Crohn’s with biopsy, colonoscopy, radiography
- **Treatment**
  - Patient education
  - Diet

**Ulcerative Colitis**

- **Link with Colon Cancer**
  - 2.8-15x as likely to develop colon cancer
  - Colonoscopy q 1-2 years*
    - After 8 years of pancolitis
    - After 15 years of left-sided colitis
    - No RCTs evaluating surveillance


**Crohn’s Disease**

- **Pathology**
  - FULL WALL THICKNESS
  - Any part of GI tract may be affected
  - Terminal ileum most common site
  - SKIPS
- **Clinical Features**
  - Insidious onset
  - Commonly with mild diarrhea and pain
- **Diagnosis**
  - Cultures
  - O&P
  - Biopsy
  - Colonoscopy
  - Radiographs
4. Possible treatments for Crohn’s disease include all of the following EXCEPT:

A. Steroids
B. Aspirin
C. Cyclosporine
D. Sulfasalazine

Crohn’s - SORT:
Key Recommendations for Practice

- Ultrasoundography, CT, and scintigraphy are helpful for excluding extramural complications.
- Colonoscopy with biopsy and biopsies is valuable initial test in diagnosis of fistulizing Crohn’s disease.
- FOGI is recommended if patient has upper GI symptoms.
- No difference between elemental and nonelemental diets in inducing remission in patients with Crohn’s disease.
- Budesonide is effective in inducing, but not maintaining, remission.
- Corticosteroids are more effective than placebo and 5-ASA products in inducing remission.
- Azathioprine and 6-MP are effective in inducing remission in patients with active disease.
- Methotrexate is effective in inducing and maintaining remission.


Common GI Infections

- Goals
  - Replace the fluid lost through diarrhea and vomiting
  - Identify and eradicate the causative agent
- Diagnosis
  - History: Work, travel, eating, others ill, recent antibiotics, immunocompromised, HIV
  - Vomiting implies gastric involvement with preformed toxin
  - Pain implies distention and inflammation
  - Lab: Stool for fecal blood and leukocytes, cultures, O&P

O&P: Most acute diarrhea is viral and self-limited. Order O&P if history of travel or diarrhea is chronic.
Rehydration Recommendations

- Oral Fluid Therapy (ORT)
  - Recommended by the AAP as "the preferred treatment of fluid and electrolyte losses caused by diarrhea in children with mild to moderate dehydration."
  - WHO reduced-osmolality ORS now recommended for all rehydration in children, both cholera-endemic areas and non-cholera endemic
  - Pedialyte, Rehydrolyte, Ceralyte, Infalyte
  - Sports drinks, diluted fruit juices, watery soups (adults)

- Intravenous Therapy
  - Parenteral saline and electrolytes
  - Ringer’s lactate

- Dietary Adjustments (following rehydration)
  - Boiled vegetables, starches, soups, yogurt
  - Avoid high fat
  - Simple sugars as opposed to complex carbohydrates

5. The most common cause of infectious diarrhea in the United States is:

- A. Campylobacter
- B. Rotavirus
- C. Shigella
- D. Enterovirus

Common GI Infections

- Rotavirus
- Salmonellosis
- Shigella
- Campylobacter
- Amebiasis
- Giardiasis
- Cryptosporidium
- Pseudomembranous Enterocolitis
- Traveler’s Diarrhea
- Vibrio cholerae

Rotavirus

- Most important viral cause of severe gastroenteritis in children worldwide
- Most common cause in US
  - Large volume diarrhea without blood or leukocytes in stool
  - Daycare centers – fecal oral spread
- Dx – Immune-based assays of stool, PCR
- Complications – necrotizing enteritis, biliary atresia, intussusception; chronic diarrhea

Rotavirus (cont.)

- Treatment is generally supportive
- Immunization (SOR A)
  - CDC/AAP recommend universal immunization in US with oral PRV vaccine
    - 2 months
    - 4 months
    - 6 months
6. Which of the following organisms is the most common cause of bloody diarrhea?

A. Salmonella
B. Shigella
C. E. coli 0157:H7
D. Campylobacter

Shigella

- Most common cause of bloody diarrhea
- Fecal oral spread
  - Highly contagious
- Principal effect on colon mucosa
  - Low Volume Diarrhea
  - Blood
  - Mucous
  - Fever
  - Tenesmus
- Diagnosis
  - Culture

Salmonellosis

- 10-15% of U.S. acute diarrhea
  - Leading cause of food-borne disease in US
- Non-typhoidal starts 6-48 hours after exposure; resolves spontaneously
  - Vomiting
  - Nausea
  - Pain
  - Diarrhea
- Sources
  - Eggs and poultry
  - Pet reptiles

Salmonellosis (cont.)

- Clinical
  - Self-limited
  - Rarely
    - Rectal prolapse, proctitis, toxic megacolon, perforation, obstruction, seizures in children, HUS
- Treatment
  - TMP-SMX (children)
  - Quinolone
  - Fluids
  - No vaccine
E. coli O157:H7 (EHEC)

- Sporadic and large outbreaks
  - Produces Shiga toxin
  - Diagnose with culture
  - Clinical
    - Dysentery
    - Striking abdominal pain
    - Usually no fever

E. coli O157:H7 (EHEC) [cont.]

- Complication
  - Hemolytic uremic syndrome
- Source
  - Contaminated meat
- Treatment
  - Supportive
  - Antibiotic NOT indicated

Campylobacter

- 10-15% of U.S. acute diarrhea
- Animal Reservoir
  - Most human cases are contaminated poultry
- Severe cramps, diarrhea, anorexia, malaise; Guillain-Barre, reactive arthritis
- Diagnosis – Culture
- Treatment
  - Spontaneous clearing without antibiotics or
  - Erythromycin if culture proven
  - FQ > resistance

Amebiasis

- 5% reported U.S. carriage rate
- E. histolytica mostly
  - Fecal/oral spread
  - Abdominal cramps
  - Chills/Fever
  - Liquid BMs with bloody mucus
- Diagnosis
  - Sigmoidoscopy
  - O&P
  - Stool/serum antigen
  - Serology
- Treatment
  - Metronidazole etc.

Giardiasis

- Common
  - Mostly from contaminated water
- Symptoms
  - Abdominal cramps
  - Malabsorption
  - Nausea and vomiting
  - Watery diarrhea
- Diagnosis
  - O&P
  - Giardia antigen assay
- Treatment
  - Metronidazole

7. Of the following antibiotics, which is the agent recommended for treatment of pseudomembranous enterocolitis?

A. Amoxicillin
B. Ciprofloxacin
C. Metronidazole
D. Doxycycline
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- A. Amoxicillin
- B. Ciprofloxacin
- C. Metronidazole
- D. Doxycycline

Pseudomembranous Enterocolitis

- Common in “post-antibiotic” setting
  - Amoxicillin is most common offending antibiotic
  - Occurs with most antibiotics
- Etiology
  - Toxin from *Clostridium difficile*
- Diagnosis
  - Cytotoxin assays
  - Immunoassays to toxin
- Treatment
  - Stop antibiotic – use metronidazole or vancomycin
  - No reported resistance
  - Fluids
  - Relapse and carrier rates are possible (10-25%)

C. difficile in the Elderly

- Common due to frequent exposure to antibiotics
- Toxin titer correlates with illness severity
- 2007 Treatment Guidelines – Vancomycin (125 mg po QID) if 2 or more factors:
  - Age > 60
  - Albumin < 2.5
  - WBC > 15,000

Traveler's Diarrhea

- If Treatment Is Needed…
  - Travelers who develop > 3 loose stools in an 8-hour period especially if associated with nausea, vomiting, abdominal cramps, fever, or blood in stools
  - Antibiotics*
  - Fluoroquinolones are drugs of choice when needed single-dose or 1-day (increasing resistance)
  - Alternative: Azithromycin (500mg q day for 1-3 days)
  - NO Trimethoprim-sulfamethoxazole or doxycycline because of high levels of resistance
  - Bismuth subsalicylate may also be used for treatment
  - One fluid oz or two 262 mg tablets q 30 minutes for up to eight doses in a 24-hour period.

Vibrio Cholerae

- In U.S., generally associated with travel
  - Asia
  - China
  - South/Central America
- OR consumption of contaminated seafood
- OR recent consumption of contaminated imported foods
- Treatment
  - Vigorous rehydration
  - Doxycycline

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Key Learning Points - Diarrhea

- **Rotavirus** is the leading cause of infectious diarrhea in the US
- **Salmonella** is the leading cause of food-borne disease in the US
- **Shigella** is the most common cause of bloody diarrhea in the US
- Antibiotics are not indicated for treatment of **E. coli 0157:H7**
- Amoxicillin is most common offending antibiotic for pseudomembranous enterocolitis
- Prophylaxis for traveler’s diarrhea is **NOT recommended**

8. Which of the following statements is true regarding diverticular disease?

- **A.** 90% of patients are symptomatic at some point
- **B.** Irregular defecation is uncommon
- **C.** Occult blood is a common finding on rectal exam with diverticulosis
- **D.** Treatment usually consists of a high-fiber diet

Diverticular Disease

- **Diverticulosis**
  - Presence of diverticula
  - Actually pseudo-diverticula – formed as herniations of mucosa through the muscularis at the site of penetrating arteries
- **Diverticulitis**
  - Inflammation of diverticula
  - Increase with age
    - 30% at age 60
    - 80% at age 80
    - 90% of people will remain asymptomatic

8. Which of the following statements is true regarding diverticular disease?

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Diverticulosis

- **Symptoms**
  - 90% asymptomatic
  - Intermittent LLQ abdominal pain
  - Irregular defecation
- **Exam**
  - Tender LLQ
  - (-) rectal exam without occult blood
- **Diagnosis**
  - Flexible sigmoidoscope and barium enema
- **Treatment**
  - High-fiber diet (Unprocessed bran, hydrophilic bulk laxatives)

Diverticulitis

- **Clinical Presentation**
  - Acute lower abdominal pain
  - Fever
  - Tachycardia
- **Physical findings**
  - Tender lower abdomen, possibly with rebound
  - Acute abdomen, is possible

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**Diverticulitis**

**Diagnostic Studies**
- CBC – leukocytosis with “left shift”
- UA – sometimes wbc and rbc’s
- Plain films – sometimes free air
- U/S – sometimes abscess
- CT – evolving as preferred method
- AVOID endoscopy and BE

**Treatment**
- General
  - Depends on severity
  - May require only clear liquids and oral antibiotics
  - (Ciprofloxacin and/or metronidazole)
- OR MAY NEED
  - NPO
  - NG Suction
  - IV fluids
  - IV antibiotics
  - Amoxicillin + aminoglycoside + metronidazole OR
  - Imipenem/cilastatin OR
  - Piperacillin/tazobactam

**Treatment (cont.)**
- Surgery
  - For peritonitis, perforation, unresolved obstruction, and colovesical fistula
  - Avoid for uncomplicated diverticulitis
- Bleeding
  - 15-40%
  - Profuse, painless
  - Generally self-limited

**Cancer of Small Intestine**
- Rare
  - Most commonly seen in Crohn’s
- Adenocarcinoma – 46%
  - Others – lymphoma, carcinoid
- Diagnosis
  - Usually imaging study
- Treatment
  - Usually surgery

**Colonic Polyps**
- Types
  - Adenomas
    - Tubular
    - Villous
    - Tubulovillous
  - Hamartomas
  - Hyperplastic
  - Inflammatory
- Clinical Presentation
  - Asymptomatic or
  - Bleeding
  - Rarely
    - Obstruction or intussusception

**Diagnostic Studies**
- Endoscopy superior to barium enema
- Treatment
  - Remove during colonoscopy
  - If found during flexible sigmoidoscopic exam – biopsy AND have patient undergo colonoscopy

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9. All of the following are true regarding colon cancer EXCEPT:

A. 95% of large intestine neoplasms are squamous cell carcinomas
B. Colon cancer is the second most frequent cause of cancer death in the United States
C. Colon cancer is equally frequent in men and women
D. Inflammatory bowel disease predisposes an individual to colon cancer

Cancer of Large Intestine

• Most frequent internal neoplasm in the U.S.
  – Second most frequent cause of cancer death AFTER lung cancer
  – 5-6% lifetime risk (1 in 17)
  – More common in Western nations
  – Equal frequency in men and women
  – African-Americans and Caucasians equally affected
  • African Americans have a higher mortality

Conditions Predisposing to Colon Cancer

• Increasing age
• Family history of colon or rectal cancer or polyps
• Low-fiber (controversial), high-fat diet
• Inflammatory bowel disease
• Genital tract cancer in women

Diagnosis of Cancer of the Large Intestine

• Symptoms – variable and nonspecific
  – Rectal bleeding
  – Lower abdominal pain
  – Change in bowel habits
• Physical Findings
  – Abdominal mass
  – Enlarged liver
• Lab
  – Stool for occult blood
• Endoscopy
  – Flexible sigmoidoscopy
  – Colonoscopy
• Imaging
  – Barium enema
  – CT
  – Rectal ultrasound

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10. According to the 2008 ACS Colorectal Cancer Screening Guidelines, colon cancer screening should begin at which age?

A. Age 40  
B. Age 45  
C. Age 50  
D. Age 55

11. Which of the following is NOT a recommended method of screening for colorectal cancer per the 2008 ACS Colorectal Cancer Screening Guidelines?

A. Annual FOBT with Flex Sig q 5 years  
B. Colonoscopy q 10 years  
C. Double-contrast BE q 5-10 years  
D. Flex Sig q 3 years

Summary of Principle Recommendations in National CRC Screening Guidelines

- Screening should begin at age 50
- Recommended Methods
  - Colonoscopy q 10 years (Preferred)
  - Double-contrast BE q 5 years
  - FOBT and Flex Sig combined, annually and q 5 years, respectively
  - Flex Sig every 5 years
  - gFOBT or FIT (fecal immunochemical test for blood) annually
  - CT Colonography every 5 years
  - sDNA – interval uncertain, manufacturer rec q 5 years

Summary of the 2008 Recommendation of the USPSTF on Screening for Colorectal Cancer

<table>
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<tr>
<th>Population (Adults age)</th>
<th>Recommendation</th>
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<td>50-75</td>
<td>Screen with high sensitivity fecal occult blood testing (FOBT), sigmoidoscopy, or colonoscopy</td>
</tr>
<tr>
<td>70-85</td>
<td>Do not screen routinely</td>
</tr>
<tr>
<td>&gt;85</td>
<td>Do not screen</td>
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For all populations, evidence is insufficient to assess the benefits and harms of screening with computerized tomography colonography (CTC) and fecal DNA testing.

Screening tests

- High sensitivity FOBT, sigmoidoscopy with FOBT, and colonoscopy are effective in decreasing colorectal cancer mortality
- The risks and benefits of these screening methods vary - Colonoscopy and flexible sigmoidoscopy entail serious complications
Cancer Screening – 2010

- Data from the 2010 National Health Interview Survey
  - Colorectal Cancer Screening Rate 58.6% (Healthy People 2020 target – 70.5%)
- Other Colorectal Cancer Screening Rates
  - No usual source of health care – 20.8%
  - No health insurance – 20.7%
- Significant upward trends were seen in the proportion of adults up-to-date with colorectal cancer screening from 2000-2010 using any colorectal cancer screening regimen

CDC – MMWR January 27, 2012;61(3)

Algorithm for CRC Screening

AGA, 2008

Symptomatic

Diagnosis

Work-up

Men and Women

Asymptomatic

Age <50 years

Age ≥50 Years

Negative Family History

Positive Family History

Negative Family History

No Screening

Avg. Risk Screening

HNPCC* or FAP

2 or more first-degree relatives affected**

Or 1 first-degree relative

affected at age <60 years

1 first-degree relative

affected at age ≥60 years

Genetic Counseling & Special Screening

Colonoscopy beginning age 40 years or 10 years earlier than the youngest diagnosis**, whichever comes first

Average-risk screening, but beginning at age 40 years

**either colorectal cancer or adenomatous polyp

*HNPCC=hereditary nonpolyposis colorectal cancer & FAP=familial adenomatous polyposis

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AGA, 2008

Volume 134, Issue 5; 1570-1595, May 2008

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Age <50 years

Age ≥50 Years

Negative Family History

Positive Family History

Negative Family History

No Screening

Avg. Risk Screening

HNPCC* or FAP

2 or more first-degree relatives affected**

Or 1 first-degree relative

affected at age <60 years

1 first-degree relative

affected at age ≥60 years

Genetic Counseling & Special Screening

Colonoscopy beginning age 40 years or 10 years earlier than the youngest diagnosis**, whichever comes first

Average-risk screening, but beginning at age 40 years

**either colorectal cancer or adenomatous polyp

*HNPCC=hereditary nonpolyposis colorectal cancer & FAP=familial adenomatous polyposis

Algorithm for CRC Screening

AGA, 2008

Volume 134, Issue 5; 1570-1595, May 2008

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Work-up

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Treatment of Cancer of the Large Intestine

- Surgical excision with 5 cm margin
- Clearing colonoscopy at time of diagnosis; thereafter, q 3-5 years
- 40-50% of patients have long-term survival after resection
- Chemotherapy with 5-FU produces partial tumor remission in 15-20%
- New agents: irinotecan and oxaliplatin
- Radiation therapy useful for symptomatic metastases

Answers

1. C
2. A
3. D
4. B
5. B
6. B
7. C
8. D
9. A
10. C
11. D
12. A

Extra Slides

- The following slides were not covered in the lecture, but are referenced by Dr Weismiller and included for your studies.

12. Which of the following statements regarding constipation is true?

A. It is the most common digestive complaint in the general population
B. Hyperthyroidism is a common etiology
C. Acute treatment consists of bowel training
D. Empiric treatment without diagnostic testing should uncommonly be used
12. Which of the following statements regarding constipation is true?

- A. It is the most common digestive complaint in the general population
- B. Hyperthyroidism is a common etiology
- C. Acute treatment consists of bowel training
- D. Empiric treatment without diagnostic testing should uncommonly be used

Constipation

A symptom, not a disease
- Unsatisfactory defecation — difficult, infrequent, incomplete.
- 95% of people have at least three BMs per week
- 2% of people report chronic constipation (M:F 1:3)
- Most common digestive complaint in general population

Etiologies

- Diet
- Drugs
- Lack of adequate fluid intake
- Lack of exercise
- Irritable bowel syndrome
- Depression
- Hypothyroidism
- Pelvic floor dysfunction
- Spinal Cord Injury

History
- Beware of constipation of recent origin
- Stool pattern changes or alarm signs/symptoms — rule out CANCER

Physical Findings
- Rectal exam — fissures, hemorrhoids, sphincter abnormalities, anal/rectal prolapse, impaction
- Abdominal exam — check for abdominal mass
- Check for signs of hypothyroidism

Diagnostic Studies
- Insufficient evidence to support routine use of blood tests, radiography, or endoscopy in work-up without alarm signs/symptoms (CBC, FOBT, TSH)
- Endoscopy — flexible sigmoidoscopy or colonoscopy
- Imaging — barium enema, ultrasound, CT, colonic transit studies, rectal manometry

Treatment

- Depends on etiology
- Empiric treatment without diagnostic testing can be considered when alarm features are absent
- Acute
  - Enemas, suppositories, osmotic laxatives
  - Patient education — lifestyle, exercise, hydration, bowel training
  - Diet — high fiber (psyllium, methylcellulose, bran, polycarbophil)
  - Laxatives — mineral oil, lactulose, polyethylene glycol
  - Rule out fecal impaction
  - Treat depression, if present

Cancer of the Anus

- Uncommon
  - Only 2-3% as frequent as colon CA
  - 50-60% squamous cell CA
    - Associated with chronic inflammation of anus, especially inflammatory bowel disease
  - Diagnosis: Biopsy
  - Treatment: Excision and Radiation

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Hemorrhoids

- Pathogenesis
  - Dilated sinusoids within anal canal and distal rectum
  - External vs. Internal
    - Determined by origin – above/below the dentate line
- History
  - Usually bleeding is the symptom; can experience anal itching (external) or mild pain (internal); severe pain only with thrombosed hemorrhoids
- Physical Exam
  - Visual exam and digital exam
  - Anoscopy and sigmoidoscopy

Other Common Anal Problems

- Pruritus Ani
- Anal Fissure

Anal Fissure

- Tear in anal mucosa
- Severe pain with defecation
- Diagnosis
  - Anoscopy
- Treatment

Hemorrhoids

- Treatment
  - High-fiber diet
  - Stool softeners
  - Hot sitz baths
  - Topical Agents
  - Ligation
  - Infrared ablation
  - Surgery

Other Common Anal Problems

- Pruritus Ani
  - Severe itching around anus
  - Worse with anxiety
  - Many causes
    - Fissure, Fistula, Hemorrhoid, Dermatitis
    - Diabetes, STDs, Premalignant lesions
    - Parasites, Functional
  - Diagnosis – rule out causes above
  - Treatment
    - Improve anal hygiene
    - Treat constipation and diarrhea
    - 0.25% hydrocortisone cream

Anal Fissure

- Warm Sitz Baths
- Anesthetic Ointments
- Soften Stool
- Sclerotherapy
- Topical nitrates or CCBs

Treatment

- Botulinum toxin injection
- Surgery
  - Disrupting to internal sphincter
    - 30% have problem controlling flatus
    - 20% with minor fecal incontinence

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