Colorectal Cancer Screening: Colonoscopy and its Alternatives

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Colonoscopy and its Alternatives

• Rationale for screening
  – Assessing risk
• Colonoscopy, the gold standard
• Alternative screening modalities
  – Flexible sigmoidoscopy
  – Stool-based testing
• What regimens are not recommended?
Rationale for screening

• The goal of any screening program is reduction of mortality through **early detection** and **prevention**

• Selection of appropriate patients for screening based on individual risk factors
Risk Assessment

• Average risk
  – Age ≥50
  – No prior history of adenoma or sessile serrated polyp
  – No prior history of colorectal cancer
  – No prior history of inflammatory bowel disease
  – No family history of colorectal cancer
Risk Assessment

• Increased risk
  – Personal history of adenoma or sessile serrated polyps
  – Personal history of colorectal cancer
  – Personal history of inflammatory bowel disease
Risk Assessment

• High risk
  – Hereditary nonpolyposis colon cancer (HNPCC)/Lynch syndrome
  – Polyposis syndromes
    • Familial adenomatous polyposis (FAP)
    • Attenuated FAP
    • Peutz-Jeghers syndrome
    • Juvenile polyposis
  – Cowden syndrome
  – Li Fraumeni syndrome
## Risk Assessment

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**Notes:**
- Hereditary nonpolyposis colon cancer (HNPCC)/Lynch syndrome
- Polyposis syndromes (e.g. FAP, attenuated FAP, juvenile polyposis)
- Cowden syndrome
- Li Fraumeni syndrome
Colonoscopy, the **Gold Standard**

- Ability to detect, diagnose, treat, and prevent colon polyps and colon cancer
- Improved sensitivity over other methods
- Treat at time of screening, polypectomy
- Decreases mortality of colorectal cancer
  - VA Health Care Study
    - RR 0.43 (95%CI: 0.30-0.63)
  - Nurses Health Study and Health Professionals Follow Up Study
    - 68% reduction in mortality
Barriers to colonoscopy

- Bowel preparation
- Access to care
  - May be improving with ACA
- Associated risks
  - Perforation or bleeding
Alternative screening regimens

- **Flexible sigmoidoscopy**
  - Visualize the distal aspects of the colon
  - With or without intervention
  - Decreases mortality of colorectal cancer
  - **VA Health Care study**
    - RR 0.66 (95%CI: 0.54-0.82)
  - **Nurses Health Study and Health Professionals Follow Up Study**
    - RR 0.56 (95%CI: 0.20-1.60)
Alternative screening regimens

• Fecal-based testing
  – Guaiac-based (FOBT)
    • Detects peroxidase activity
    • 4 major RCTs (12-18 years follow-up)
    • Overall reduction in colorectal cancer mortality 13-21%
    • Cochrane review (2008) RR 0.84 (95%CI:0.78-0.92)
  – Fecal immunochemical testing (FIT)
    • Employs antibodies to blood components
Barriers to alternative screening regimens

• Fecal-based testing drawbacks
  – Poor compliance (38-60% in studies)
  – False-positives due to dietary agents
  – Natural aversion to stool sampling
  – Referral for colonoscopy for abnormal results

• Flexible sigmoidoscopy drawbacks
  – Relies on detection of distal lesions
  – Less optimal preparation
  – Variation in sedation
  – Referral for colonoscopy for abnormal results
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The jury is still out. . .

- CT colonography
  - Potential to decrease mortality if viewed as an ‘acceptable’ alternative by patients
  - Increased cumulative radiation exposure
  - Unavailable in varying parts of the country
  - Continued requirement for bowel prep
  - Not recommended for routine screening by USPSTF
The jury is still out. . .

- Fecal DNA testing
  - Has potential to be highly specific
  - Such tests are evolving, one standard test is not widely employed
  - Likely high monetary cost per test
  - Not recommended for routine screening by USPSTF
Colonoscopy remains the gold standard method of screening for colorectal cancer in average, increased, and high-risk populations.

Alternative regimens including flexible sigmoidoscopy, fecal-based testing.

Patients may ask about CT colonography or fecal DNA testing which are not part of current recommendations.
Summary

• Efforts to prevent colorectal cancer deaths should maximize the screening of individuals by any appropriate method
• Requires shared decision making between patients and providers, as patient acceptance and adherence to particular screening methods is variable
Questions?