



Commonwealth of Massachusetts
Board of Registration in Medicine
Quality and Patient Safety Division

**COLONOSCOPY
CONSIDERATIONS FOR THE ELDERLY PATIENT**

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The risks for serious complications from colonoscopy increase with patient age and the presence of comorbidities. An effective process for decision making and informed consent prior to scheduling the procedure allows for individualized discussion of risks and benefits. The unique needs of elderly patients should be taken into consideration before, during and after the procedure in order to optimize their safety.

Background

The Quality and Patient Safety Division (QPSD) has received a number of Safety and Quality Review (SQR) reports of patient events associated with complications from colonoscopies in elderly patients. This Advisory is issued to support health care facilities in the review and development of their protocols for colonoscopies, so as to assure that there is consideration of the needs of elderly patients who undergo these procedures. While some references are provided, this Advisory does not include a comprehensive review of the literature; nor is it intended to provide specific recommendations for evidence-based practice.

Publication of this Advisory does not constitute an endorsement by the Board of any studies or practices described in the Advisory and none should be inferred.

Overview

Colonoscopies are valuable tools for colorectal cancer (CRC) screening and diagnostic and therapeutic procedures for a variety of acute and chronic gastrointestinal (GI) conditions. As with all invasive procedures, colonoscopies carry the risk of significant complications including perforation, major bleeding, cardiovascular events, abdominal pain and even death. For the general population these risks are estimated at approximately 4 perforations and 25 serious complications per 10,000 procedures.¹ However, these risks from colonoscopies, both screening and diagnostic, increase significantly with patient age and comorbid conditions.² For example, studies have shown that patients 80-84 years may have a 75% higher risk for serious GI events following colonoscopy than patients 65-69 years.³

¹ U.S. Preventive Services Task Force Final Recommendation Statement Colorectal Cancer: Screening. 2008. Accessed 9/25/14 at

<http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/colorectal-cancer-screening>

² Arora, G. Risk of Perforation from a Colonoscopy in Adults: A large population-based study. *Gastrointest Endosc* 2009;69:654-64.

³ Warren JL, Klabunde CN, Mariotto AB, et al. Adverse events after outpatient colonoscopy in the Medicare population. *Ann Intern Med*. 2009;150(12):849-857.

Colon cancer is the third most common cancer in men and women, and the second leading cause of cancer death. Colonoscopy is the screening method preferred by most providers. The U.S. Preventive Services Task Force (USPSTF) and other national organizations recommend CRC screening beginning at age 50 for most patients and continuing through age 75 (or later per some recommendations). While universal adoption of CRC screening recommendations would save many lives, the increased risks for the elderly and patients with multiple chronic conditions merit a conservative approach when counseling about screening options. In addition, invasive interventions during colonoscopy, such as submucosal injections or biopsies, carry additional risks for complications.

Patient safety can be improved through proper patient selection and a detailed informed consent process including discussions about alternative screening or diagnostic methods and patient health care preferences. Patients should be assessed for chronic conditions such as diabetes and CHF prior to counseling about colonoscopy risks. In some situations, other diagnostic modalities such as CT or barium enema may provide adequate clinical information with lower risk for the patient. Individualized decision making processes should promote screening and diagnostic colonoscopies in those most likely to benefit, discourage it in those more likely to be harmed, and educate patients so that informed preferences guide their decisions.⁴

Cases Examples and Lessons Learned

An elderly patient on Plavix and with a family history of colon cancer has a gastrointestinal bleed following colonoscopy. Criteria for recommending colonoscopy should be considered in the context of the patient's age and comorbidities. Careful consideration must be given to the particular risks for patients taking antithrombotic or anticoagulant medications, with management of these patients guided by evidence-based protocols.

An elderly patient suffers a cecal perforation from over-inflation during a diagnostic colonoscopy. When the risks of complications are increased due to age and co-morbidities, alternative diagnostic modalities such as CT and barium enema may be options for diagnosis. If colonoscopy is performed, early termination should be considered when technical challenges are encountered.

An elderly, frail patient develops aspiration pneumonia, believed to be related to administration of Golytely in preparation for colonoscopy. Careful attention should be paid to the patient's ability to tolerate the oral preparation for colonoscopy, with swallowing evaluations ordered when appropriate. Gentler bowel preparations given more slowly and in divided doses should be considered for elderly, frail patients.

Areas for Health Care Facility Systems Review

The areas described below provide topics and references as support for internal discussion and review of health care facility protocols regarding colonoscopies.

1. Risks of complications in the elderly. The incidence rate of CRC increases with age. However, the risks of complications following colonoscopies also rise with both age and comorbid health conditions and should be considered when making recommendations for screening or diagnostic testing.

⁴ Lewis, CL. A Targeted Decision Aid for the Elderly to Decide Whether to Undergo Colorectal Cancer Screening: Development and results of an uncontrolled trial. BMC Medical Informatics and Decision Making 2010, 10:54.

- The risk for perforation with colonoscopy has been shown to increase about 1% per year of age.⁵
- A Charlson score of ≥ 2 has been shown to have an odds ratio of 1.5 for perforation relative to healthy patients. Comorbid conditions include diabetes, stroke, CHF, COPD and atrial fibrillation.
- Patients with more comorbid conditions have greater risks than their peers. Screening colonoscopies can be beneficial even up to 84 years in patients without comorbidities. Conversely, the expected benefits can be uncertain for patients with ≥ 3 comorbid conditions as young as 67–69 years.⁶
- CRC in general develops slowly and the benefits from screening require at least 7 years to appear.⁷

2. Variable recommendations for CRC screening in the elderly. CRC recommendations by different professional organizations tend to be more focused on the time of initiation and the frequency of follow up than on discussions about when to stop screening.

- The USPSTF states that CRC screening is indicated for the general population from ages 50 to 75. Between ages 75 to 85 the balance between risks and benefits is too small to make a recommendation for screening, and over 85 the evidence is clear that the risks outweigh any benefits.⁸
- The American Cancer Society⁹, American College of Gastroenterology¹⁰ and others do not make recommendations about ending CRC screening due to age or disability.
- The American College of Physicians recommends that CRC screening should stop at age 75 or when a patient has less than 10 years of life expectancy.¹¹
- CRC screening and follow up guidelines should be followed consistently. Studies of different Medicare populations have shown that some have high rates of inappropriately early screening colonoscopies¹² while others have suffered from a lack of adequate follow up colonoscopies in patients with known adenomatous polyps.¹³
- Older patients who have previously undergone CRC screening are not at increased age-related risk for the development of new adenomas or CRC,¹⁴ and therefore may have less need for further invasive testing.

3. Alternatives. While colonoscopy is the gold standard for colon cancer screening, there are a number of diagnostic alternatives including sigmoidoscopy, CT colonography, barium enema, fecal immunochemical testing (FIT), fecal DNA testing and Hemoccult testing. All of these tests have potential

⁵ Arora, op. cit.

⁶ Gross, CP. Assessing the Impact of Screening Colonoscopy on Mortality in the Medicare Population. *J Gen Intern Med*, 2011. 26(12):1441-9.

⁷ USPSTF, op. cit.

⁸ USPSTF, op. cit.

⁹ American Cancer Society recommendations for colorectal cancer early detection. Accessed 9/23/14 at <http://www.cancer.org/cancer/colonandrectumcancer/moreinformation/colonandrectumcancerearlydetection/colorectal-cancer-early-detection-acsc-recommendations>

¹⁰ Rex, DA. American College of Gastroenterology Guidelines for Colorectal Cancer Screening 2008. *Am J Gastroent* 2009; 104:739-750.

¹¹ Qaseem, A. Screening for Colorectal Cancer: A guidance statement from the American College of Physicians. *Ann Intern Med* 2013; 156:378-386.

¹² Sheffield, KM. Potentially Inappropriate Screening Colonoscopy in Medicare Patients. *JAMA Intern Med* 2013; 173(7):542-50.

¹³ Cooper, GS. Use of Colonoscopy for Polyp Surveillance in Medicare Beneficiaries. *Cancer* 2013; 119:1800-7.

¹⁴ Day, LW. Colorectal Cancer Screening and Surveillance in the Elderly Patient. *Am J Gastroent* 2011; 106:1197-1206.

roles in CRC screening and diagnostic evaluations, and the appropriateness of alternative methods should be discussed with patients. While a review of the strengths and weaknesses of each alternative is beyond the scope of this advisory, some specific issues include:

- CT colonography: requires significant patient and radiologist time, increases patient radiation exposure, and has variable insurance coverage.
- Fecal DNA testing: has the potential to serve as highly specific, low risk test but is still in development and currently there are not any widely used commercial tests.

4. Informed decision making. An effective process for decision making and informed consent will allow for the provider and patient (and family if appropriate) to discuss the risks and benefits of a screening or diagnostic colonoscopy and possible alternative methods. A well-informed patient can then allow his or her values and preferences to shift the decision-making balance accordingly.¹⁵

- The provider should discuss, and clearly document, the treatment goals and plans with the patient and should understand the patient's preferences and expectations.
- Assessment for depression and cognitive function screening should be considered in the pre-operative assessment. Nearly 30 % of elderly patients near the end of life were found to lack decision-making capacity in one study,¹⁶ an important factor to consider with diagnostic procedures.
- Use of decision aids has been shown to increase patient and family knowledge, reduce decisional conflict, and improve the level of active participation in decision-making.¹⁷ To be effective, decision aids must be of high quality, health practitioners must be skilled in shared decision making and willing to use the aids in their practices, and effective systems for delivering decision support need to be in place.¹⁸

5. Pre-procedure assessment. Optimal pre-procedure assessment will ensure a safer experience for the elderly patient referred for colonoscopy.

- The American College of Surgeons National Surgical Quality Improvement Program (NSQIP) and American Geriatrics Society collaborated to create best practices guidelines around preoperative assessment of the geriatric surgical patient.¹⁹
- **Open access endoscopy** occurs when endoscopic procedures are performed at the request of referring practitioners without a prior clinic consultation.²⁰ Consideration should be given to whether this practice assures that elderly patients are fully informed of risks of colonoscopy and provided appropriate preoperative assessment. Enhanced coordination of care between referring physicians and endoscopists may be required.

¹⁵ Walter LC. Cancer screening in elderly patients: a framework for individualized decision making. *JAMA* 2001; 285(21):2750-2756.

¹⁶ Ibid.

¹⁷ Lewis, CL. A Targeted Decision Aid for the Elderly to Decide Whether to Undergo Colorectal Cancer Screening: Development and results of an uncontrolled trial. *BMC Medical Informatics and Decision Making* 2010, 10:54.

¹⁸ Stacey, D. Decision Aids for People Facing Health Treatment or Screening Decisions (Review). *The Cochrane Library* 2014; Issue 1. Accessed 10/25/14 at

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001431.pub4/abstract>

¹⁹ Chow WB. Optimal Preoperative Assessment of the Geriatric Surgical Patient: A best practices guideline from the American College of Surgeons national surgical quality improvement program and the American Geriatrics Society. *J Am Coll Surg* 2012; 215:453-66.

²⁰ American Society for Gastrointestinal Endoscopy. Open Access Endoscopy. *Gastrointestinal Endoscopy* 2002; 56(6):793-5.

6. Bowel preparation. A significant proportion of elderly patients presenting for colonoscopy have inadequate bowel preparations, leading to decreased rates of cecal intubation and polyp detection, longer procedure time, and increased costs and risk of repeated testing.²¹

- American Society for Gastrointestinal Endoscopy (ASGE) recommends split dosing of polyethylene glycol-based preparation in the elderly.²² Sodium phosphate and magnesium-based cathartics can cause electrolyte shifts.
- Frail elderly patients often have poor mobility and may have incontinence issues. Verbal and written patient education about bowel preps may improve results and reduce complications.

7. Procedural and post-procedure care. The elderly patient's medical history and risk factors should influence the location where the procedure is performed and the type of sedation used.

- Consideration should be given to whether a patient's risk factors warrant having the procedure performed in a hospital setting.
- Careful determination of a patient's ASA status, with selection of appropriate sedation can help minimize potential anesthesia related complications.
- Post-operative care procedures should assure the patient's safety, with precautions to prevent patient falls, such as providing a chair for the patient to sit while getting dressed and assisting the patient with ambulation during the discharge process.
- Providers should be assured that the patient fully understands the discharge instructions and involve a member of the patient's family or another caregiver in the discharge planning, when indicated. Caregiver support may be needed during the initial post discharge period for patients living alone.

8. Credentialing/Privileging. Endoscopist competence is critical to patient risk reduction and successful diagnostic and therapeutic colonoscopies. A number of quality indicators have been developed by different professional organizations and are used by facilities and regulatory bodies.²³ Robust credentialing processes should include both process and outcome measures.

- There is evidence that endoscopists with low procedure volume have increased risk for bleeding and perforation following colonoscopy.²⁴ Some references regarding training and competency are listed at the end of the advisory.
- Complications that occur post –procedure (e.g. delayed bleeding, infection) should be reported immediately by providers to the facility where the procedure was performed. Accountability for reporting complications should be clear and expectations for reporting incorporated into the medical staff credentialing and privileging processes.

Conclusion

The risks for serious complications from colonoscopy increase with patient age and the presence of comorbidities. An informed decision making process can promote screening and diagnostic colonoscopies in those most likely to benefit and discourage it in those more likely to be harmed.

²¹ Rosenfeld, G. The Impact of Patient Education on the Quality of Inpatient Bowel Preparation for Colonoscopy. *Can J Gastroenterol*, 2010. 24(9):544-48.

²² American Society for Gastrointestinal Endoscopy Standards of Practice Committee. Modifications in Endoscopic Practice for the Elderly. *Gastrointestinal Endoscopy*, 2013; 78(1):1-7.

²³ Rex, DK. Quality Indicators for Colonoscopy. ASGE/ACG Taskforce on Quality in Endoscopy. *Am J Gastroenterol* 2006; 101:873-85.

²⁴ Fisher, DA. American Society for Gastrointestinal Endoscopy Guideline: Complications of colonoscopy. *Gastroint Endo* 2011; 74(4):745-52.

Perioperative protocols that consider the risks associated with treating elderly patients and robust discharge planning processes can help assure patient safety.

References and Guidelines

American Society for Gastrointestinal Endoscopy Standards of Practice Committee. Modifications in Endoscopic Practice for the Elderly. *Gastrointestinal Endoscopy*, 2013; 78(1):1-7.

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