

Polyp miss rates high for colonoscopies done after poor bowel preparation

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A new study reports that colonoscopies done with suboptimal bowel preparation are associated with relatively high adenoma (precancerous polyp) miss rates, suggesting that suboptimal bowel preparation substantially decreases colonoscopy effectiveness and may mandate an early follow-up examination. In this study, in the context of suboptimal bowel preparation, of all adenomas identified, 42 percent were discovered only during a repeat colonoscopy, which was necessitated by an inadequate preparation during the first colonoscopy. The study appears in the June issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

Colorectal cancer develops slowly, therefore screening for the disease is especially important. Colonoscopy screening allows for the detection and removal of [precancerous polyps](#) (small growths in the colon) during the same exam and before the polyps turn into cancer. One of the most important steps in colonoscopy is patient bowel preparation. Adequate preparation ensures that the colon is thoroughly cleaned before the exam so that the physician can clearly see the entire colon to look for abnormalities, such as [colon polyps](#), during the procedure. Cleansing the colon before a colonoscopy is called bowel preparation, or "prep." It involves taking medication that causes [diarrhea](#), emptying the colon. The medication is taken by mouth, and comes in liquid or tablet form. Patients also need to change what they eat during the day or two before the colonoscopy.

The effectiveness of any colorectal cancer screening program is critically dependent on adequate bowel preparation. Suboptimal bowel preparation is associated with a decreased ability to detect [adenomas](#). Additionally, poor preparation increases the total cost of colonoscopy by virtue of the need for repeat examinations at shorter than usual intervals. Suboptimal bowel preparation occurs in more than 20 percent of all colonoscopic examinations, yet guidelines do not specify the appropriate time interval in which to repeat the exam in this setting. Guidelines do specify recommended intervals between colonoscopies depending on colonoscopic and histologic findings presuming an optimal bowel preparation. Otherwise, it is left to the individual colonoscopist to decide how to adapt the recommended guidelines to cases with suboptimal bowel preparation.

"We aimed to identify factors associated with the decision to repeat the examination early after a colonoscopy done with suboptimal bowel preparation. We also aimed to quantify adenoma miss rates among those pairs of colonoscopies separated by an interval shorter than the time suggested by current guidelines, which assume an optimal bowel preparation," said study lead author Benjamin Lebwohl, MD, MS, Columbia University Medical Center, New York, N.Y. "Our findings of a miss rate of 42 percent for all adenomas and 27 percent for advanced adenomas suggest that suboptimal bowel preparation has a substantial harmful impact on the effectiveness of colonoscopy, and follow-up examination within one year should be considered. Because neoplastic findings on the initial colonoscopy were associated with a greater miss rate, a repeat examination within one year is indicated when an adenoma is found during a colonoscopy with suboptimal bowel preparation."

Methods

This retrospective analysis was conducted at Columbia University Medical Center, a tertiary-care institution in New York City. All

colonoscopy procedures performed since the implementation of an electronic database on March 21, 2006, until December 31, 2008, were reviewed. The end date allowed for a minimum follow-up observation period of one year to December 31, 2009.

The study objective was to identify factors associated with early repeat colonoscopy after initial examinations with suboptimal preparations and to measure adenoma miss rates in this context. Early repeat colonoscopy was defined as any colonoscopy that was performed within three years of the initial examination. Three years is the shortest interval recommended in the current guidelines for surveillance colonoscopy in patients with a completely excised advanced adenoma or multiple adenomas found on the initial examination. In turn, any colonoscopy repeated before three years represents an examination repeated earlier than suggested by guidelines. Sensitivity analyses also were performed by using a more stringent definition of an early repeat examination, which was one repeated within one year of the initial examination.

To quantify the yield of repeating the colonoscopy early in terms of adenoma detection, the researchers included all patients in whom the cecum was reached on both the initial and repeat examination and in whom bowel preparation quality was considered optimal on the repeat examination. Adenoma miss rates for repeated colonoscopies were calculated by dividing the total number of adenomas found on the second colonoscopy by the total number of adenomas found on the index colonoscopy plus the second colonoscopy.

Results

After exclusions, bowel preparation quality was recorded in 12,787 (90 percent) of patients who underwent colonoscopy during the study period. Of 12,787 colonoscopies, preparation quality was suboptimal (poor or fair) in 3,047 patients (24 percent). Among these 3,047 patients, repeat

examination was performed in less than three years in 505 (17 percent) patients (the proportion of patients with optimal preparation who underwent early repeat examination was less; 8 percent of patients). Factors associated with early repeat colonoscopy included lack of cecal intubation and finding a polyp. Among 216 repeat colonoscopies with optimal preparation, 198 adenomas were identified, of which 83 were seen only on the second examination; an adenoma miss rate of 42 percent. The advanced adenoma miss rate was 27 percent. For colonoscopies repeated in less than one year, the adenoma and advanced adenoma miss rates were 35 percent and 36 percent, respectively.

The researchers concluded that although a minority of patients undergo early repeat examination after colonoscopies done with suboptimal bowel preparation, the miss rates for colonoscopies done with suboptimal bowel preparation were high, suggesting that suboptimal bowel preparation substantially decreases colonoscopy effectiveness and may mandate an early follow-up examination. They also noted that there was wide variation between physicians with regard to the decision to repeat colonoscopies early in this setting. The researchers stated that to the best of their knowledge, there are no other studies that have determined adenoma miss rates secondary to suboptimal bowel preparation by using repeat [colonoscopy](#) data from the same patients.

Provided by American Society for Gastrointestinal Endoscopy

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