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An evaluation of colonoscopy surveillance guidelines: are we actually adhering to the guidelines?

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Abstract

BACKGROUND: National guidelines put forth by the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Gastroenterology provide recommendations regarding colorectal cancer screening and follow-up surveillance. Practice patterns may differ from these guidelines. This study analyzes the concordance between a tertiary equal access system and national guidelines for colorectal cancer and polyp surveillance.

METHODS: We performed a retrospective database review of all patients at a single institution undergoing screening colonoscopy from 2010 to 2011. Patient demographics, indication for colonoscopy, pathologic findings, and follow-up recommendations documented by the provider were analyzed. Multivariate analysis was performed in an attempt to identify predictors of discordant recommendations.

RESULTS: One thousand four hundred twenty patients were identified (mean age, 54.3 ± 7.7 years, 48.6% women). The gastroenterology service performed the majority of colonoscopies (87.2%) compared with the surgery service (11.6%). The major indications were routine screening (84.4%) and a strong family history of colorectal cancer (12.2%). The adenoma detection rate for the entire cohort was 27.4%. Other pathologic conditions identified included hyperplastic polyps (16%), lymphoid aggregates (3.5%), and invasive adenocarcinoma (0.1%). Overall, follow-up recommendations correlated with established guidelines in 97% of cases. By multivariate analysis, only the final pathologic finding of lymphoid aggregates was associated with discordant recommendations (odds ratio [OR], 4.62; 95% confidence interval [CI], 1.64 to 12.99; $P = .004$). When comparing discordant recommendations between specialties, there was a statistically significant difference between gastroenterology (1.6%) and surgery (7.6%) ($P < .0001$) providers; surgeons trended toward recommending earlier follow-up examinations ($P = .37$).

CONCLUSIONS: Overall, surveillance recommendations correlated well with current national guidelines. Concordance rates were higher with gastroenterologists in this cohort. Alterations based on final pathologic examination and individual cases remain clinically important.
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In 2012, more than 140,000 individuals in the United States were diagnosed with colorectal cancer, making it the third most common cancer in both men and women.[1] Furthermore, about 5% of Americans alone will have colorectal cancer during the course of their lifetimes. Unfortunately, 36% of individuals diagnosed with colorectal cancer will die of their disease.[1] Yet, colon cancer is highly curable if detected in the early stages and, more importantly, can be prevented through endoscopic measures.[2] Colonoscopy allows for a full structural examination of the colon and rectum in a single session and has the potential for detection of colorectal polyps and cancers, which can be accompanied by biopsy or polypectomy.[2]

Current guidelines set forth by the US Multi-Society Task Force on Colorectal Cancer suggest that persons at average risk with 1 or 2 small adenomas (<1 cm) should have surveillance colonoscopy after 5 to 10 years.[3] In patients with 3 or more adenomas, regardless of size, a 3-year surveillance interval is recommended. Although the goal remains prevention, early detection of malignant lesions is also critically important because 5-year survival is 90% if the cancer is diagnosed while still localized (ie, confined to the wall of the bowel) but falls to 68% for regional disease and is only 10% if distant metastases are present.[3]

Annual endoscopic follow-up was common before the publication of the National Polyp Study, which showed that it was safe to defer the first follow-up colonoscopy for 3 years after the complete removal of adenomatous lesions.[4] This raised many issues regarding the cost and burden of postpolypectomy surveillance patterns at that time and eventually led to the current guidelines that stratify patients based on individual risk for future adenomas or recurrent disease and less so on specific timing. Despite these improvements, present-day adherence to guidelines remains widely variable. Factors ranging from knowledge deficits, subspecialty practice patterns, patient concerns, access issues, and financial incentives may all contribute to alterations in guideline adherence.[5] To our knowledge, no study has been performed that evaluates colonoscopy use between different specialties within an equal access system and the impact these factors may have on the ability to perform surveillance in patients according to the established guidelines. The purpose of this study was to analyze the concordance between colorectal cancer and polyp surveillance and national guidelines and to identify factors associated with a variation for recommended strategies within an equal access system.

Methods

This study was performed at a tertiary care referral center and was approved by our local institutional review board. We performed a retrospective database review of all patients at a single institution undergoing colonoscopy from 2010 to 2011. To assess the accuracy of the endoscopist's recommendation, they were compared with the recommendations of the US Multi-Society Task Force on Colorectal Cancer and the American Cancer Society guidelines as shown in Table 1.[3] Each recommendation was determined to be consistent, discordant, or noted for no documentation. Of the discordant recommendations, the patients were recommended for another colonoscopy too early (before the stated guidelines), too late (after the stated guidelines), or no documentation was found. The late category also included patients who were advised to return in 10 years when the guideline states to return within 5 to 10 years. Data was collected retrospectively using the software program ProVation (Wolters Kluwer, Amsterdam, Netherlands), and the military outpatient records system (AHLTA). This included information regarding patient demographics, indication for colonoscopy, endoscopist's specialty (Table 2), and pathologic findings (Table 3). All tubular adenomas, tubulovillous adenomas, and serrated sessile adenomas were combined to determine the adenoma detection rate. Colonoscopies were performed by 5 gastroenterologists, 1 family practice provider, and 6 general surgeons, 2 of whom were fellowship-trained colorectal surgeons. The family practice provider was included with the gastroenterologist group and the colorectal surgeons were combined with the general surgeons.

Categorical variables were compared using the chi-square or the Fisher exact test for nonparametric data and the *t* test or analysis of variance for parametric data when appropriate. In addition, multivariate analysis was performed in an attempt to identify independent predictors of discordant recommendations. Significance for all analyses was set at a *P* value of less than .05. All data analysis was performed using PASW Statistics, version 18.0.2 (SPSS, Inc, Chicago, IL).

Results

From May 2010 to May 2011, 1,420 patients underwent colonoscopy at our institution. The mean age of this cohort was 54.2 ± 7.1 years (range, 21 to 89 years), and 51.3% were men (Table 2). The gastroenterology service performed the overwhelming majority of colonoscopies, completing 88.3% of all colonoscopies compared with 11.7% performed by the general surgery service.

Routine screening was the most common indication (84.4%), and patients with a strong family history of colorectal cancer made up the majority of the remaining colonoscopies performed (12.2%) (Table 2). Overall, the adenoma detection rate was 27.4%. In addition, hyperplastic polyps were identified in 15.9% (n=225) of patients, lymphoid aggregates in 3.5% (n=50), and invasive adenocarcinoma in 0.1% (n = 2) (Table 3).

Recommendations were consistent with national guidelines in 97% of cases. On multivariate analysis, lymphoid aggregates were the only pathologic finding associated with discordant recommendations at a nearly 4-fold increased