

Canadian Association of General Surgeons, the American College of Surgeons, the Canadian Society of Colorectal Surgeons, and The American Society of Colorectal Surgeons: Evidence-Based Reviews in Surgery – Colorectal Surgery

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The term “evidence-based medicine” was first coined by Sackett and colleagues as “the conscientious, explicit and judicious use of the current best evidence in making decisions about the care of individual patients.”¹ The key to practicing evidence-based medicine is applying the best current knowledge to decisions regarding individual patients. Medical knowledge is continually and rapidly expanding and reading all of the medical literature is impossible for an individual clinician. To practice evidence-based medicine, clinicians must have the skills to read and interpret the medical literature so they can determine the validity, reliability, credibility, and utility of individual articles, *i.e.*, critical appraisal skills. In general, critical appraisal requires that the clinician have some knowledge of biostatistics, clinical epidemiology, decision analysis, and economics, in addition to clinical knowledge.

The Canadian Association of General Surgeons and the American College of Surgeons jointly sponsored a program entitled “Evidence-Based Reviews in Surgery (EBRS),” supported by an educational grant from Ethicon Inc., Ethicon Endo Surgery, Inc., and Ethicon Endo Surgery. The primary objective of this initiative is to help practicing surgeons improve their critical appraisal skills. Beginning in 2007, EBRS also included a module covering topics in colorectal surgery. Each academic year, six clinical articles are chosen for review and discussion. The articles are selected not only for their clinical relevance to colorectal surgery, but also to cover a spectrum of methodologic issues important to surgeons; for example, causation or risk factors for disease, natural history or prognosis of disease, quantifying disease (measurement issues), diagnostic

tests and the diagnosis of disease, and the effectiveness of treatment. Both methodologic and clinical reviews of the article are performed by experts in the relevant areas and posted on the EBRS-CRS website. In addition, a listserv discussion is held during which participants can discuss the monthly article. Members of the Canadian Association of General Surgeons (CAGS) and the American College of Surgeons (ACS) can access Evidence-Based Reviews in Surgery–Colorectal through the Canadian Association of General Surgeons website (www.cags-accg), the American College of Surgeons website (www.facs.org), the Canadian Society of Colon and Rectal Surgeons (CSRCS) website (www.cscr.ca), and The American Society of Colon and Rectal Surgeons (ASCRS) website (www.fascrs.org). All journal articles and reviews are available electronically through these websites. Surgeons who participate in the current (modules) packages can receive continuing medical education and/or maintenance of certification credits by completing an evaluation and a series of multiple-choice questions. For further information about EBRS-CRS, readers are directed to the CAGS, ACS, CSCRS, and ASCRS websites or they may contact the administrator, Marg McKenzie, at mmckenzie@mtsinai.on.ca

In addition to making the reviews available through the CAGS and the ACS websites, a condensed version of the reviews will be published in *Diseases of the Colon & Rectum*. We hope readers will find EBRS useful in improving their critical appraisal skills and in keeping abreast of new developments in general surgery. Comments about EBRS may be directed to Marg McKenzie at mmckenzie@mtsinai.on.ca.

REFERENCE

1. Evidence-Based Medicine Working Group. Evidence-based medicine. *JAMA* 1992;268:2420–5.

SELECTED ARTICLE

Desch CE, Benson III AB, Somerfield MR, *et al.* Colorectal cancer surveillance: 2005 update of an American Society of Clinical Oncology practice guideline. *J Clin Oncol* 2005;23: 8512–9.

PURPOSE: To update the 2000 American Society of Clinical Oncology (ASCO) guideline on colorectal cancer surveillance.

DATA SOURCES: Computerized literature searches of Medline and Cochrane Collaboration Library were performed from 1999 to June 2005

STUDY SELECTION: Results from three independently reported meta-analyses of randomized controlled trials that compared low-intensity and high-intensity programs of colorectal surveillance

DATA EXTRACTION: Studies were evaluated by a subset of the original Expert Panel who met in June 2004 and May 2005 to consider the evidence for the each of the following recommendations:

1. History and physical examination and risk assessment
2. Laboratory tests
3. Imaging procedures
4. Endoscopic surveillance techniques
5. Laboratory-derived prognostic and predictive factors

MAIN RESULTS: Panels recommendations:

1. CT scan of chest and abdomen every year for the first three years postoperatively, with CT scan of the pelvis for rectal cancer, especially in “high-risk” patients
2. Colonoscopy at three years postoperatively, and every five years thereafter
3. Flexible sigmoidoscopy every six months for the first five years in patients with rectal cancer who did not undergo radiation therapy
4. Physical evaluation every three to six months for the first three years, and every six months for the next four to five years
5. Carcinoembryonic antigen every three months for the first three years
6. No role for chest x-ray, complete blood cell count, or liver function test

CONCLUSION: An intense surveillance strategy will lead to survival benefits among patients treated surgically for Stage II and III colorectal cancer

COMMENTARY: This clinical practice guideline was developed by the American Society of Clinical Oncology (ASCO) to make recommendations regarding postoperative surveillance and follow-up of patients with Stage II to III colorectal cancer.

ASCO is recognized for their evidence-based guidelines and recommendations. For this guideline, computerized literary searches of MEDLINE and Cochrane Database

were performed. The author’s description of the MESH headings used for the literature search included randomized controlled trials, meta-analysis, practice guidelines, system overviews, and reviews. They clearly describe the inclusion of two pooled analyses from colon cancer clinical trials and data from a recently published rectal cancer intergroup trial. They do not describe how or whether other articles were selected or how evidence was graded or combined. Furthermore, it appears that most recommendations were based on consensus opinion from the Expert Panel. For example, recommendations for CT of the chest are given the same weight as those for CT of the abdomen, despite the text stating that there is “less evidence for chest CT surveillance compared with liver imaging.” Finally, the authors do not discuss how their guideline (with the exception of liver imaging) concur or differ from those of other stakeholder organizations that have reported evidence-based guidelines or practice parameters.

These guideline recommendations are based on data from three high-quality meta-analyses, all of which report a 7% absolute improvement in five-year survival (*i.e.*, from 63–70%) among patients receiving an intensive *vs.* less intensive surveillance strategy. This survival advantage likely results from the increased detection of resectable metastatic deposits in the liver, lungs, or the pelvis, for patients with rectal cancer.

Despite being based on Level 1 evidence, to the recommendations have some limitations. First, the six randomized trials included in the three meta-analyses have limitations and, therefore, so do the meta-analyses themselves. For example, surveillance strategies in both the control and experimental arms of the randomized controlled trials varied greatly. In the intensive surveillance groups a wide array of blood tests, imaging studies, endoscopic procedures, and clinical assessments were applied in different combinations at different intervals and varied from trial to trial. Thus, it is not always possible to determine the relative contribution of each follow-up test. In one of the six studies, liver imaging was not performed at all; in another study, liver imaging was performed in both the control and experimental arms. For this reason one cannot determine that a specific test or tests are responsible for survival improvements. In addition, the original studies did not consistently report a preoperative workup that would meet today’s standard of care. It is likely that the consistent use of high-quality preoperative imaging of the lungs, abdomen, and pelvis in these randomized controlled trials would have detected metastatic deposits before colorectal surgery, making such patients ineligible for the trials, and mitigating the advantage of subsequent surveillance.

Another deficiency is the guideline’s lack of cost-effectiveness analysis, including the surveillance burden on patient’s quality of life. In addition to the burden of routine follow-up tests, patients will undergo additional tests to investigate an abnormal test. This can produce negative

psychologic effects, especially when the initial worrisome result was a false positive. Without consideration of cost or quality of life, it is difficult to judge the applicability of these aggressive practices to the broad range of patients with colorectal cancer. For example, it is implied that early diagnosis of recurrent disease is highly beneficial even when resective surgery is not an option, because patients can then get radiation or chemotherapy earlier than they might have otherwise. Because treatment of such patients is palliative, in general, it is difficult to make this assertion confidently without a meticulous analysis of cost and quality-of-life benefit.

Despite these concerns, the recommendations are reasonable with some caveats. The endoscopy recommendations differ from recent guidelines followed by most surgeons (most routinely assess the colon at one year after surgery).¹⁻³ In addition, pelvic CT is usually performed routinely in follow-up of rectal cancer regardless of whether the patient had a “high” or “low” risk tumor or received radiation. The recommendation for routine chest CT is also questionable. Other guidelines recommend that chest surveillance for colorectal cancer be done with a simple x-ray because, as the authors acknowledge, none of the six relevant randomized controlled trials on surveillance strategies included chest CT, or found an advantage for chest CT vs. x-ray on the initial staging workup. In addition, since the release of these guidelines, positron emission tomography is used more commonly. Although no Level I evidence currently supports or refutes the use of positron emission tomography, future guidelines may have to address this modality.

Because colorectal cancer remains the second most common cause of cancer-related mortality in Western societies, these recommendations are of considerable importance. The primary goal of surveillance should be to identify patients with resectable recurrences who are appropriate candidates for surgery. A surveillance strategy following colorectal cancer surgery must include tests capable of detecting lung, liver, or pelvic recurrent disease at

a time point when resection may still lead to cure. The main message of the ASCO guideline—that an intense surveillance strategy will lead to survival improvements in patients treated surgically for colorectal cancer—is appropriate.

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3. Brooks DD, Winawer SJ, Rex DK, *et al.* U.S. Multi-Society Task Force on Colorectal Cancer; American Cancer Society. Colonoscopy surveillance after polypectomy and colorectal cancer resection. *Am Fam Physician* 2008;77:995–1002.