

## CLINICAL UPDATE

## Colorectal cancer screening: you can't be positive about a negative result

Lieberman DA, Weiss DG. One-time screening for colorectal cancer with combined fecal occult-blood testing and examination of the distal colon. *N Engl J Med* 2001;345:555-60.

**Background:** It has been shown in several randomized trials that annual or biannual screening of asymptomatic men and women (usually over age 50) for colorectal cancer using fecal occult-blood testing reduces subsequent rates of death from this cancer.<sup>1,2</sup> It is also believed, although the evidence is less clear-cut, that rectal and colonic polyps precede the development of cancer by several years and that removal of the polyps reduces the incidence of colon cancer. Routine sigmoidoscopy has been proposed as an alternative to fecal occult-blood testing.<sup>1</sup>

**Question:** Which screening test should be used to detect asymptomatic malignant and pre-malignant lesions in the large bowel: fecal occult blood testing alone or fecal occult blood testing followed by sigmoidoscopy in those with guaiac-negative stools? (All patients with a positive result from either test would undergo full gastrointestinal tract investigation, usually beginning with colonoscopy.)

**Design:** This study is part of a larger study for which more than 17 000 patients were recruited from 13 Veterans Affairs medical centres in the United States. Exclusion criteria included age less than 50, symptoms of disease in the lower gastrointestinal tract, a marked change in bowel habits, lower abdominal pain that would normally require a medical examination, a history of colon disease, sigmoidoscopy within the previous 10 years and a need for special precautions in performing colonoscopy.

Of the 3196 subjects who met the enrolment criteria, 2885 collected 2 stool samples on each of 3 consecutive days for fecal occult-blood testing and underwent colonoscopy. Almost all (96.8%) were men. Of the 2885 sub-

jects, 1791 (62.1%) had no neoplastic lesions, 788 (27.3%) had tubular adenomas less than 10 mm in diameter, 233 (8.1%) had larger tubular adenomas or villous adenomas, and the remaining 73 (2.5%) had high-grade dysplasia or cancer.

The sensitivity of the fecal occult-blood test alone in detecting advanced neoplastic lesions (larger tubular adenomas, villous adenomas, high-grade dysplasia or frank carcinoma) was 23.9%. The test was slightly more sensitive (35.6%) in detecting high-grade dysplasia or carcinoma. These results are comparable with previous findings.<sup>3,4</sup>

This study also allowed the investigators to compare the results of a surrogate sigmoidoscopy (colonoscopy to the end of the sigmoid colon) with those of a full colonoscopy. Had the examination terminated at the end of the sigmoid colon, 70.3% of the subjects with advanced neoplasia would have been identified.

When combined, the fecal occult blood test and sigmoidoscopy detected 76% of the malignant and pre-malignant lesions in the large bowel and missed 24%.

**Commentary:** This study shows that fecal occult-blood testing combined with endoscopic examination limited to the rectum and sigmoid colon in patients who have at least 1 positive stool sample detected 76% of all worrisome lesions. The authors offered several important caveats. The results apply almost entirely to men. Importantly, the sample was highly selective, with more than 84% of the initial recruits being excluded. Thus, it may not be representative of patients seen in office practice. As well, the "sigmoidoscopy" was done with a colonoscope — rigid sigmoidoscopy would likely be less sensitive than flexible sigmoidoscopy — and the colonoscopies were done by highly skilled physicians, a situation unlikely to be duplicated if mass screening is adopted.

Lastly, it should be remembered that serious bleeding or perforation is a

complication of both sigmoidoscopy and colonoscopy and that colonoscopy requires extensive bowel preparation and some sedation, is costly and may not be widely available outside of major centres. Most men undergoing the procedure (89% in this study) have no significant lesions.

**Practice implications:** This is a dilemma for practitioners. The standard practice, and one recommended by the Canadian Task Force on Preventive Health Care,<sup>1</sup> is to do an annual fecal occult blood test on men and women 50 years of age and older. However, this test will miss about 76% of pre-malignant and malignant lesions of the large bowel. Adding sigmoidoscopy to the annual exam for patients who have a negative fecal occult blood test increases sensitivity, but still 24% of serious lesions are overlooked. Should one now recommend colonoscopy for all men 50 and older? Will women, who have a lower incidence of colon cancer achieve the same benefit? We've asked these questions before.<sup>5-7</sup> For the moment, individual practitioners can use existing guidelines<sup>1</sup> but they will have to make their own decisions ... as usual. — *John Hoey and Eric Wooltorton, CMAJ*

## References

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