Fecal Occult Blood Testing Has Great Potential as a Screening Tool for Colorectal Cancer

In 2005, researchers from the Centers for Disease Control and Prevention, the National Cancer Institute, and the American Cancer Society (ACS) reported the disconcerting results of a national survey conducted between 1999 and 2000 of fecal occult blood testing (FOBT) by primary care physicians (Annals of Internal Medicine 2005;142:86-94). Contrary to guidelines, there was substantial use of single-sample, in-office testing reported and abnormal FOBT results were frequently followed by a repeat FOBT or by sigmoidoscopy rather than colonoscopy. A follow-up publication (Journal of General Internal Medicine 2010 Apr 10 [Epub ahead of print]) from the same organizations reported encouraging progress during the subsequent 7 years, but substantial room for improvement in guideline adherence remains.

Despite suboptimal implementation, stool testing remains an important option for colorectal cancer (CRC) screening, explains Robert Smith, PhD, director of Cancer Screening for the ACS and a co-author of both reports. In fact, FOBT “meets all the classic criteria for a good screening test,” says Dr. Smith. “But the tests themselves are highly vulnerable to quality assurance failures.”

“Inappropriate Use of In-Office FOBT

FOBT using 3 separate stool samples collected at home has been shown to be an effective strategy for reducing CRC incidence and mortality. Conversely, the authors wrote, “…in-office FOBT [of a sample collected during a digital rectal examination (DRE)] misses 95% of cases of advanced neoplasia, giving patients a false sense of reassurance.”

Disappointingly, 32.5% of primary care physicians participating in the 1999 through 2000 survey reported using only single-sample, in-office sample collection by DRE for the majority of their patients, and another 41.2% used both 3 samples collected at home, as recommended by ACS guidelines, as well as single-sample collection. Between 2006 and 2007, the corresponding results were 24.9% and 52.9%, respectively.

Inappropriate Use of In-Office FOBT

Low-Sensitivity Versus High-Sensitivity FOBT

The ACS guidelines recommend the use of high-sensitivity, guaiac-based or immunochemical FOBTs (also known as fecal immunochemical tests [FITs]). Between 2000 and 2001 and 2006 and 2007, the percentage of physicians using low-sensitivity, guaiac-based tests decreased

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“The 3 biggest challenges [to successful implementation of FOBT] are 1) getting primary care physicians to stop using in-office FOBT; 2) [primary care physicians] starting to use high-sensitivity, guaiac- or immunochemistry-based tests as opposed to the lower sensitivity tests; and 3) getting the public to adhere to annual FOBT testing.”

The researchers conducted a cross-sectional, national survey of 1134 primary care physicians who had reported ordering or performing FOBT in the 2006-2007 National Survey of Primary Care Physicians’ Recommendations and Practices for Cancer Screening. The main measures in this study were self-reported data regarding details of FOBT implementation and follow-up of patients with positive results.

A fecal occult blood test card is shown.
Credit: Beckman Coulter, Inc.
from 77.4% to 61.1%, with an increase in the use of high-sensitivity tests from 13.1% to 22.0%. In the earlier survey, 6.5% of physicians reported the use of other tests, a category that included FIT’s as well as nonrecommended options such as “throw-in-the-bowl” tests. By 2006 through 2007, 8.9% of physicians specifically reported the use of FIT’s.

Improving FOBT Adherence
No matter the technique, “stool testing is only going to be effective if it’s done annually,” Dr. Smith says.

One approach that can improve patient adherence to annual testing is to counsel patients during the visit in which FOBT is prescribed. Physicians, nurses, and other staff can all help patients understand the importance of at-home FOBT, and how to complete the test. “A casual recommendation for stool testing,” Dr. Smith explains, “is not nearly as effective as carefully explaining to the patient how important it is to undergo these tests and that there’s an expectation that these tests will be returned for processing.”

Another strategy for improving adherence is the use of reminder systems. The researchers noted that, “…patient and provider reminder systems have been shown to be effective in increasing adherence, but were reported by only a minority of physicians in our [2006-2007] survey.” Of those who administered at-home tests, 44.3% of 2006 through 2007 survey respondents and 29.7% of 2000 through 2001 survey respondents reported that they had mechanisms in place to remind patients to complete the test. Mechanisms reported in the 2006 through 2007 survey included chart reminders or other office system reminders (29.7%), telephone reminders (13.3%), and mail reminders (7.2%).

Diagnostic Workup After Positive FOBT Results
ACS guidelines specify the use of colonoscopy for the evaluation of patients with positive FOBT results. In the 2000 through 2001 and 2006 through 2007 surveys, 29.7% and 17.8% of physicians, respectively, recommended repeating the FOBT as the initial test after a positive result. Although adherence to annual testing provides sufficient program sensitivity, the sensitivity of a single FOBT is too low for a diagnostic test. If the FOBT is used in this context, a false-positive follow-up FOBT could prevent recognition of cancers suggested by an initial true-positive screening FOBT.

Need for Improvement
The results of these 2 surveys demonstrated some improvement took place during the intervening 7 years. However, the authors conclude that, “Although FOBT is an important option for colorectal cancer screening, our study suggests that its potential to save lives is not currently being realized because many physicians are continuing to use inappropriate implementation methods…Intensified efforts to inform physicians of recommended techniques and promote the use of tracking systems are needed.”

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