Clinical Practice Assessment

Fecal Occult Blood Testing (FOBT) for Colorectal Cancer (CRC) Screening

Clinical Question:
In patients undergoing CRC screening, is immune fecal occult blood (iFOB) testing, compared to guaiac-based tests, associated with better patient-oriented outcomes?

Bottom Line:
In terms of the patient-oriented outcome, death from colorectal cancer, there is no direct evidence that one test is better than the other. In terms of the disease-oriented outcome, detection of clinically significant colorectal neoplasia, the iFOB test is clearly superior due to a higher return rate and possibly higher positivity rate. Use of iFOB, compared to guaiac-based tests such as Hemoccult II Sensa (HIIS), will increase patient adherence with screening and increase the total number of adenomas and cancers detected.

Synopsis:
The USPSTF (1) has given CRC screening an “A” recommendation, and includes FOBT as one of the screening options on the basis of several randomized controlled trials showing that screening with the guaiac-based Hemoccult II (HII) decreases death from colorectal cancer. There are no comparable trials using iFOB. On the basis of increased sensitivity, Hemoccult II Sensa (HIIS) has supplanted HII.

Two recent systematic reviews (1, 2) reported that test characteristics (sensitivity and specificity for colorectal cancer and advanced adenomas) were variable and overlapping for HIIS and various iFOBs such that neither test type was obviously superior. The USPSTF decision analysis (1) estimated that screening with either HIIS or iFOB provided similar life-years gained as colonoscopy, even though the individual test characteristics were substantially better for colonoscopy. This finding was due partially to the fact that FOBT is recommended annually compared with every 10 years for colonoscopy.

Two randomized, controlled studies have compared the “population-effectiveness” (especially patient adherence) of guaiac-based versus iFOB tests (3, 4). Both studies concluded that iFOB was more effective due to a higher return rate for iFOB in both studies and higher positivity rate for iFOB in the one study that reported on this outcome (3).

A Dutch study (3) randomly assigned 20,623 eligible adults to receive either the guaiac-based HII (without dietary restrictions, n=10,301) or an iFOB (OC-Sensor, n=10,322). The return rate was significantly greater for the iFOB (59.6%) compared to HII (46.9%). Of returned tests, the positivity rate was significantly higher for the iFOB (5.5%) compared to the HII (2.4%). These differences translated into significantly higher detection rates for advanced adenomas and cancer for iFOB (145 advanced adenomas and cancer) than for HII (57 advanced adenomas and cancers).
An American study (4) randomly assigned 404 patients to be mailed either HII test cards (the guaiac-based test) (n=202) or the OC-auto test (the iFOB test). HII test subjects were asked to follow the usual dietary restrictions associated with screening. There were no comparable dietary restrictions for the iFOB recipients. Return rate was significantly higher for iFOB (61.4%) than for HII (50.5%).

Sources:

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