

Colorectal Cancer Mortality and Biennial Screening with Fecal Occult Blood Tests

Faivre J, Dancourt V, LeJeune C, et al. Reduction in colorectal cancer mortality by fecal occult blood screening in a French controlled study. *Gastroenterology* 2004;126:1674–80.

Study Overview

Objective. To determine if screening for colorectal cancer with fecal occult blood test (FOBT) reduces colorectal cancer mortality.

Design. Nonrandomized controlled trial.

Setting and participants. Small geographic districts in Burgundy, France, were allocated to FOBT screening or no screening. Persons in intervention districts were contacted and invited to participate. Residents from similar-sized districts served as controls. Participants were eligible if they were born between 1914 and 1943.

Intervention. The initial screening invitation for participants occurred over 2 separate rounds over a 2-year period. Subsequent screening invitation rounds occurred every 2 years over a 10-year period. For each screening round, participants were sent an informational letter and a 4-page brochure. Those who had not seen their provider or had seen their provider but not completed a FOBT within the first 4 months of a screening round were mailed test kits. FOBT kits were distributed free of charge. All completed FOBTs were processed without rehydration, and individuals with positive tests were invited to consult with their provider, who referred them for colonoscopy.

Main outcome measure. The main outcome was colorectal cancer mortality. Colorectal cancer diagnosis was obtained through standardized forms completed by study providers and gastroenterologists. This information was further collaborated by searching the Burgundy Cancer Registry. Cause of death was obtained from death certificates and questionnaires sent to study providers. Outcomes were collected for 11 years after study enrollment.

Main results. 45,642 individuals were invited to participate, and 45,557 individuals were used as controls. Both groups were similar with respect to age and gender. Of the total number of FOBT screening tests offered over the course of

the study, 55% were completed. 70% of invited participants completed at least 1 screening over the 10-year period, and 38% completed 5 or 6 screenings. Two percent of individuals in the first screening round had a positive test, and on average, 1.4% had positive tests on subsequent rounds. 87% of individuals with a positive test underwent a diagnostic procedure. The average positive predictive value of FOBT was 12% for colorectal cancer, 17% for large adenomas, and 11% for small adenomas. 29% of colorectal cancers identified within the FOBT screening group were classified as stage I versus 24% of colorectal cancers identified in the control group. In the FOBT screening group, 21% of newly diagnosed colorectal cancers were classified as stage IV compared with 27% in the control group. The incident rate of colorectal cancer was 1.47 in the FOBT screening group and 1.46 in the control group (incident ratio, 1.01 [95% confidence interval (CI), 0.91–1.12]). The mortality rate from colorectal cancer was 0.53 in the FOBT screening group and 0.64 in the control group (mortality ratio, 0.84 [95% CI, 0.71–0.99]). Overall, disease-specific survival was significantly better in the FOBT screening group compared with the control group.

Conclusion. Biennial screening for colorectal cancer using FOBT can reduce colorectal cancer mortality.

Commentary

Colorectal cancer is a leading cause of cancer mortality in the Western world. Despite advances in treatment options, mortality remains high for individuals diagnosed with late-stage disease [1]. Because it is believed that most colorectal cancers derive from adenomatous polyps, the early detection and removal of polyps is a cornerstone for an effective screening strategy. One screening strategy that has been demonstrated as effective is FOBT [2,3]. This nonrandomized study by Faivre et al was designed to determine the effectiveness of FOBT in reducing colorectal cancer mortality in a general population setting. The study design also incorporated the use of nonrehydrated samples; this reduced the rate of positive tests but was more similar to a typical practice setting.

A major limitation of this study was the lack of a ran-

domized control group. Thus, some unmeasured confounders may have influenced the results of the study. However, this is of little concern for 2 reasons. First, other studies, which employed a randomized design, have demonstrated a survival advantage to colorectal cancer screening with FOBT [2–4]. Second, a major aim of the current study was to assess the FOBT intervention in a setting that was similar to general practice, which the authors were able to accomplish. While lack of randomization is a limitation, these results only strengthen current recommendations regarding colorectal cancer screening with FOBTs.

Applications for Clinical Practice

These results suggest that biennial screening with FOBTs can reduce colorectal cancer mortality and supports the adoption of population-based screening initiatives.

—Review by Harvey J. Murff, MD, MPH

References

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