Offering Patients Colorectal Cancer Screening

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Despite the decade that has passed since colorectal cancer screening first proved to reduce mortality from the disease (1), its acceptance has been low both in the United States (2) and abroad (3). In most areas of the United States, less than half of the population is in compliance with recommended colorectal cancer screening guidelines, and the compliance rates may be even lower in other parts of the world. Finding ways to improve this situation is an important public health effort.

In this issue of the Journal, Segnan et al. (4) present the results of a well-conducted randomized trial of five different methods of offering two different colorectal screening tests—flexible sigmoidoscopy and a fecal occult blood test (FOBT)—to an average-risk population in Italy. The five screening arms comprised 1) a mailed FOBT kit, 2) an FOBT offered in the clinic, 3) a one-time flexible sigmoidoscopy, 4) a one-time flexible sigmoidoscopy followed 2 years later by an FOBT, and 5) the subject’s choice of a flexible sigmoidoscopy or an FOBT. The trial was designed to allow estimation of the participation rates with respect to the screening test offered and the method of offering, as well as comparisons of the rates at which clinically relevant neoplasms were detected. The novel aspects of this study include comparing the offer of an explicit choice between screening tests (i.e., screening arm 5) with recommendations of a specific test (i.e., screening arms 1, 2, and 3) as well as with the option of doing both tests (i.e., screening arm 4). Equally novel is the comparison of two methods of distributing the FOBT kits: by direct mail or during a clinic visit. This innovative study design is useful for understanding, from a practical point of view, whether such strategies make a difference in the acceptance of screening by those at average risk of the disease.

With regard to acceptance of screening, the authors’ main finding is that mailed FOBT kits elicited the highest acceptance rate compared with all four of the offers of screening in a clinic setting. A related finding in the United States—that direct mailing of FOBT kits on a population basis led to increased screening rates (5)—complements this result. Together these results suggest that a relatively efficient way to increase participation in colorectal cancer screening may be to use exclusively mailed invitations, with the option of including an FOBT kit in the mailing. This method lends itself to a variety of organizational structures within a health care system, because the offers can be clinic-based or come from a public health agency with equal ease. The other strategies studies by Segnan et al. (4) had about equal acceptance rates. This finding implies that those given a choice between the two screening test methods did not accept screening at a higher rate than those not given a choice and provides grist for behavioral theoreticians; they may want to examine their models to see which, if any, would predict this result, one that is somewhat surprising to the naive observer.

It is reassuring to see that the patterns of participation by age and sex are similar to findings in the United States (3) and elsewhere in Europe [e.g., (6)]. Although the health care systems and, presumably, attitudes regarding health behavior such as screening differ among these geographical areas, the effect of age and sex remain fairly predictable. This consistency among different areas should make cross-cultural generalization of these findings easier.

Segnan et al. (4) report considerable variation by study site in the differential participation between an FOBT and sigmoidoscopy, in that subjects from the larger study centers preferred sigmoidoscopy slightly more than an FOBT, whereas subjects from the smaller study center strongly preferred an FOBT over sigmoidoscopy. Additional study of this phenomenon would be useful. For example, were the practitioners in the larger centers more in favor of endoscopy and vice versa? Or was subject preference a function of the characteristics of their respective populations (e.g., more men in the larger centers)?

The clinical findings reported by Segnan et al. (4) are less informative than the acceptance results, mainly because they are very similar to findings from other studies that have compared endoscopic and fecal occult blood screening tests [e.g., (7)]. Moreover, an FOBT has little chance of finding polyps as well as can direct visualization by endoscopy, because the FOBT only detects blood in the stool and most polyps do not bleed.

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Some weaknesses of the trial should be noted. It would have been preferable if the authors had used an FOBT technology more representative of what is used in practice, both for subject acceptance as well as for clinical findings. To justify use of immunochemical testing over guaiac-based testing, the authors cited references regarding two immunochemical tests that were evaluated using samples of three different stools from each subject. However, the immunochemical test actually used in the study took only a single sample from a single stool for each subject; the authors did not give any literature references to support its equivalence to these cited immunochemical tests. This difference would not only affect the subjects' acceptance of the test, in that subjects would find it less burdensome, but would also affect the sensitivity and specificity of the test.

It is also unclear how useful the combined arm (screening arm 4) results are, especially because it appears that only participation in the sigmoidoscopy examination was counted toward the acceptance rate or the clinical findings. Moreover, given that the FOBT was done 2 years after the sigmoidoscopy and therefore probably played only a small role in the subjects' choice, accepting the combined arm was tantamount to accepting sigmoidoscopy. It is curious that the investigators did not offer the FOBT at the same time as the sigmoidoscopy; it could be argued that the combination of the two screening tests yields something closer to a full examination of the colon. The clinical results of these combined tests would also be a valuable adjunct to this interesting study.

Irrespective of these minor shortcomings, the study is a valuable look at some alternatives for promoting colorectal cancer screening in clinic populations. It demonstrates that an FOBT by mail is the most acceptable to participants and that flexible sigmoidoscopy will find more clinically significant lesions.

**REFERENCES**