

Flexible Sigmoidoscopy Versus Fecal Occult Blood Testing for Colorectal Cancer Screening in Asymptomatic Individuals

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Objective

To assess the effectiveness of colorectal cancer screening using flexible sigmoidoscopy compared to fecal occult blood testing.

Type of Review

A systematic review of randomized, controlled trials (RCTs). Meta-analysis was undertaken where possible.

Relevance for Nursing

Colorectal cancer is considered a global health problem, particularly in industrialized countries. Early diagnosis is associated with a good prognosis. Screening is commonly undertaken using flexible sigmoidoscopy, colonoscopy, or fecal occult blood testing. Colonoscopy is considered the gold standard in colorectal screening, but it has not been tested in RCTs. Flexible sigmoidoscopy and fecal occult blood testing have benefits and limitations; therefore, determining which is the most effective screening method is important. Nurses need to be aware of the best available evidence regarding screening methods for colorectal cancer because nurses are often involved in the process.

Characteristics of the Evidence

Nine RCTs containing a total of 744,386 participants were included in the review. Participants in colorectal screening trials were asymptomatic, aged 18 years or older, and included men and women. Interventions were flexible sigmoidoscopy or fecal occult blood testing, and

they could be compared to each other or to no screening. The only requirements outlined were that fecal occult blood testing had to be repeated annually or bi-annually, and they could be guaiac-based (rehydrated or not) or immunologic tests. Trials containing rigid endoscopes were not considered eligible for inclusion. The primary outcome of interest was mortality from colorectal cancer. Secondary outcomes included incidence of colorectal cancer, all-cause mortality, attendance rates, adverse effects, colorectal cancer staging, and use of endoscopy workup. The risk of bias across studies was considered low. One RCT had a high risk of bias because of inadequate randomization. Blinding was not possible, and all studies reported intention-to-treat analyses. The reporting of adverse effects was described as incomplete. Length of follow-up varied significantly between studies, ranging from a median of 6 years to 19.5 years.

Summary of Key Evidence

Five trials examined flexible sigmoidoscopy versus no screening. Colorectal cancer mortality was significantly lower in those receiving the intervention compared to no screening (risk ratio [RR] = 0.72; 95% confidence interval [CI] [0.65, 0.79]; random effects model). Colorectal cancer incidence was significantly reduced in intervention groups (RR =

0.82; 95% CI [0.73, 0.9]; random effects model); however, substantial heterogeneity was present. No difference was found in all-cause mortality between groups.

Four trials observed fecal occult blood testing versus no screening. Colorectal cancer mortality was significantly lower in those receiving the intervention compared to no screening (RR = 0.86; 95% CI [0.8, 0.92]; random effects model). No difference was found in colorectal cancer incidence or all-cause mortality between groups.

The reviewers also undertook an indirect comparison of the two interventions using a Bayesian approach, which demonstrated a RR of 0.72 (95% credible interval [0.72, 1.01]) for flexible sigmoidoscopy compared to fecal occult blood testing.

In terms of adverse effects, a major complication was reported in 0.08% of participants receiving flexible sigmoidoscopy, and 0.03% of participants receiving fecal occult testing suffered a major complication after follow-up. Caution was advised when interpreting these results.

Best Practice Recommendations

Screening using flexible sigmoidoscopy or fecal occult blood testing was shown to reduce colorectal mortality. Caution is advised when interpreting these results. Four of the included studies could be considered at a high risk of bias,

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