Cost-Effectiveness of Colonoscopy in Screening for Colorectal Cancer

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Précis: Colonoscopy is favored for colorectal cancer screening

Introduction
Colorectal cancer is the second leading cause of death in North America. There is evidence that the rate of mortality from colorectal cancer can be reduced by screening asymptomatic persons at average risk, beginning at the age of 50 years (N Engl J Med 1993 May 13;328(19):1365-71). The Preventive Services Task Force has endorsed screening with the use of a fecal occult-blood test or sigmoidoscopy (Preventive Services Task Force. 2nd ed. Baltimore: Williams & Wilkins, 1996:89-103). Colonoscopy is generally reserved for patients with positive results of screening tests or those with a higher-than-average risk of colorectal cancer. A multidisciplinary panel of experts has recommended that screening with colonoscopy be considered for persons at average risk (Gastroenterology 1997 Feb;112(2):594-642). In this study, researchers compared the cost-effectiveness of the three modalities used in primary screening for colorectal cancer: fecal occult blood testing, flexible sigmoidoscopy, and colonoscopy.

Method
A computer-modeled Markov process was used to evaluate a hypothetical population of 100,000 persons 50 years of age underwent annual fecal occult blood testing, sigmoidoscopy every 5 years, or colonoscopy every 10 years.

Results
- Fecal occult blood testing prevented fewer colorectal cancers (16%), compared with either flexible sigmoidoscopy (34%) or colonoscopy (75%).
- Based on the number of life-years saved, colonoscopy was far less costly than the other two screening methods.

Discussion
In this study, colonoscopy was a cost-effective method of primary screening for colorectal cancer. The basic principle underlying colorectal cancer screening programs is that removal of precancerous adenomatous polyps prevents the development of most colorectal cancers. In addition, identification of colorectal cancer at an early stage allows for cure of most patients, which may ultimately reduce the cost of cancer care.