Study Calls Virtual Colonoscopy Most Cost-Effective Colon Cancer Screening Test

Atlanta 2007/04/23 -A new study says targeting smaller (5 mm or less) lesions does little to significantly reduce the incidence of colorectal cancer (CRC) and, in fact, results in extremely high financial costs and a large proportion of adverse events. Published in the June 1, 2007 issue of CANCER, a peer-reviewed journal of the American Cancer Society, a cost-benefit analysis study says the low malignancy rate among so-called diminutive polyps gives virtual colonoscopy with removal of lesions 6 mm or greater the best estimated value per life year gained and with fewer complications.

Effective screening through increased use of any of several available tests is the key to reducing deaths from colorectal cancer, the third most common cause of cancer death among both men and women in the United States. Despite the availability of effective screening tests, screening rates remain low and CRC-related deaths remain high.

Optical colonoscopy (OC) and flexible sigmoidscopy (FS) have been the primary screening tools for the last few decades but are associated with complications – from abdominal pain to life-threatening bowel perforation and bleeding. Virtual colonoscopy, or CT colonography (CTC), has arisen as a potentially effective CRC screening tool. Using x-rays and imaging software to develop two- and three-dimensional images of the gastrointestinal tract, it has fewer adverse effects and is better tolerated by patients. Recent studies using new methods have demonstrated that the test is very sensitive for CRC and could be an effective screening option for patients.

Previous cost-benefit analysis studies comparing OC and CTC (with OC referral for all polyps of any size) have estimated that OC is more cost effective. However, these studies ignore current CTC guidelines that recommend only reporting polyps greater than 5 mm. Dr. Perry Pickhardt, a radiologist from the University of Wisconsin, collaborated with Dr. Cesare Hassan, a gastroenterologist from Rome, and colleagues to conduct a cost-benefit analysis comparing CTC with and without a 6-mm polyp size threshold, OC and FS.

In this model of 100,000 persons over 50 years old, CTC with OC follow-up of polyps greater than 5 mm was the most cost-effective screening test. According to cost per life-year gained calculations, CTC with a 6-mm threshold for follow-up cost only $4,361 while OC cost $9,180 per life-year gained. CTC with no polyp size threshold cost $7,138, and FS cost $7,407 per life-year gained.

The incremental costs of working-up lesions smaller than 6 mm at CTC resulted in a significant $118,440 per additional life-year gained and accounted for more than half of all OC procedures. Moreover, working up these small, almost always benign polyps with OC caused considerable complications. The study found almost half of all OC-related complications were attributable to work-up of diminutive lesions. Furthermore, targeting these lesions did not improve screening efficacy, reducing CRC incidence by only 1.3 percent.

The authors say the data support “CTC with nonreporting of diminutive lesions” to be “the most cost-effective and safest screening option available.” “Providing additional effective yet distinct screening options like CTC could encourage more adults to undergo screening,” conclude the authors, and consequently “increase overall compliance with screening” for CRC.

Article: “Cost-Effectiveness of Colorectal Cancer Screening With Computed Tomography Colonography: The Impact of Not Reporting Diminutive Lesions,” Pickhardt PJ, Hassan C, Laghi A, Zullo A, Kim DH, Morini S, CANCER: Published Online: April 23, 2007 (DOI: 10.1002/cncr. 22668); Print Issue Date: June 1, 2007.

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