No Difference in High-Def Endoscopy Comparison

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A new high-definition, wide-angle videoendoscope did not detect significantly more colorectal adenomas or polyps, compared with a conventional colonoscope in a randomized study.

The study's researchers noted that although it seemed logical that a higher resolution endoscope would yield better results, the nonacademic, real-world setting for the study could explain the nonsuperiority of the high-definition scope.

Dr. Maria Pellise said she and her colleagues chose to increase the clinical relevance of their results by enrolling nonselected, consecutive adult patients referred to Hospital Clinic de Barcelona, a community hospital in Spain.

After exclusions, 310 patients were randomly assigned to colonoscopy with a wide-angle (170-degree), high-definition videoendoscope (Olympus prototype XCF H160AY2L, Olympus Europe, Hamburg, Germany). This prototype is now available commercially. Another 310 patients were randomized to a standard-angle (140-degree), standard-resolution videocolonoscope (Olympus Q160).

A team of seven full-time, board-certified gastroenterologists who spend at least 50% of their time doing endoscopy evaluated both groups.

The participants did not constitute a selected or high-risk population for colorectal cancer, unlike those in other studies. Only 25% were referred for screening or surveillance reasons, only 15% had a personal history of colorectal cancer (including adenoma), and mean age was less than 60 years.

Both devices detected a similar number and type of lesions. In fact, there were no significant differences between the two scopes in several different measures of efficacy, including overall number of adenomas and polyps, the ratio of flat or small adenomas, or the number of patients with high-risk lesions.

A total of 418 of the 518 lesions (81%) detected in the entire study population yielded pathology results. Findings included 272 adenomas (65%), 109 hyperplastic polyps (26%), and 37 inflammatory lesions (9%).

There were no differences between groups in degree of dysplasia or the morphology of adenomas, although there was a trend toward increased detection of small adenomas with the high-definition device. Overall, the majority of adenomas, 235 (86%), were low-grade dysplasia. The remaining 14% were high-grade dysplasia or carcinoma. Just more than half of adenomas were smaller than 5 mm, and 68% were sessile or pedunculated (doi:10.1053/j.gastro.2008.06.090).

A total of 82 patients in the high-definition group and 79 in the standard group had at least one adenoma detected. Also, 42 patients in the high-definition group and 39 in the standard group had at least one hyperplastic polyp detected.

The number of high-risk patients in each group did not differ significantly. The number of patients with three or more adenomas was 10 in the high-definition group versus 16 in the standard group. Also, a high-grade adenoma was found in 14 patients in the high-definition group and in 13 in the standard group.

Dr. Pellise and her colleagues also recorded the time to reach the cecum. The standard scope was slightly faster than the high-definition scope (mean 8.2 minutes versus 8.9 minutes), but the difference was not statistically significant.

The findings support those of two previous studies that found no difference in adenoma miss rates with a wide-angle prototype endoscope similar to the one used in the current study, the authors noted (Am. J. Gastroenterol. 2004;99:2138-42; Am. J. Gastroenterol. 2003;98:2000-5).

The study was underpowered to find differences between groups in adenoma detection less than 30%, a potential limitation. In addition, the researchers only employed chromoendoscopy to increase detection after a suspicious lesion was identified.

Nevertheless, there still may be advantages to the high-definition device. "The wide-angle facility has [been] demonstrated to shorten endoscopic time without decreasing the diagnostic efficiency ... and the high-definition screen provides a high-quality and clear image that is restful for the endoscopist's eyes."

One of the study coauthors is a research nurse supported by Olympus Medical Systems, Europe. The company also supplied the prototype high-definition system for the study. There were no other disclosures. ■