

# No 'Learning Effect' in Colonoscopy Comparison

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SAN DIEGO — A year-long study surprised investigators when results showed that increased detection of some adenomas using high-definition white light colonoscopy did not produce a "learning effect" leading to increased detection using standard-definition white light colonoscopy.

At least one previous study has suggested that getting accustomed to using high-definition colonoscopy with or without narrow-band imaging to identify previously unseen adenomas produced a cross-over learning effect that helped endoscopists recognize similar lesions using standard-definition colonoscopy, thus increasing adenoma detection with both technologies (*Gut* 2008;57:59-64).

In the current comparison, however, the adenoma detection rate for standard-definition white light colonoscopy did not increase significantly over the course

of the study and remained significantly lower than detection with high-definition equipment, Dr. Anna M. Buchner reported at the annual meeting of the American College of Gastroenterology. "There wasn't as much learning effect as we thought," Dr. Kenneth R. DeVault, a coinvestigator in the study, said at a press briefing.

They conducted a "natural experiment" from October 2006 to March 2007 at their institution, the Mayo Clinic in Jacksonville, Fla., when the clinic wanted to upgrade to high-definition equipment but lacked the funds to replace all their colonoscopes at once, Dr. DeVault said.

They put new high-definition white light colonoscopes in three rooms for routine colonoscopies and randomized patients and physicians to one of these rooms or one of three rooms with standard-definition equipment.

High-definition white light colonoscopy used for 1,204 patients showed significantly better detection rates for all

polyps (42%), hyperplastic polyps (20%), and adenomas (29%), compared with detection rates using standard-definition white light colonoscopy in 1,226 patients (38% for all polyps, 17% for hyperplastic polyps, and 24% for adenomas), reported Dr. Buchner, who



**Detection of adenomas remained significantly lower with the standard-definition equipment.**

DR. BUCHNER

is now with the University of Pennsylvania, Radnor.

Small or moderate-sized adenomas were more likely to be detected by high-definition colonoscopy than with standard-definition imaging: Detection rates for adenomas sized 0-5 mm were ap-

proximately 21% with high-definition colonoscopy and 17% with standard-definition equipment. Detection rates for adenomas sized 6-9 mm were approximately 8% with high-definition colonoscopy and 6% with standard-definition technology. High-definition colonoscopy also was more likely to detect polyps on the left side of the colon, she added.

For adenomas larger than 10 mm, however, detection rates were similar with the two techniques. Over the course of the study, detection of polyps overall increased, but adenoma detection did not.

The general characteristics of the patients and of the procedures done using standard-definition colonoscopy did not change significantly between the 6 months prior to introduction of high-definition colonoscopy in some procedure rooms and the ensuing study period, Dr. Buchner noted.

The investigators reported having no conflicts related to this study. ■

## Early Data Look Good for Rear-View Colonoscopy

SAN DIEGO — Preliminary data from two studies suggest that the Third Eye Retroscope may improve polyp detection during colonoscopy by 15%-20%.

The Third Eye Retroscope is a disposable device inserted through the instrument channel of a conventional colonoscope after intubation to the cecum. The tip of the Retroscope bends 180 degrees so that the camera and an integrated light source can be directed back toward the tip of the colonoscope.

During the withdrawal phase of colonoscopy, a split-screen display gives the colonoscopist both a conventional camera view and a continuous retrograde view from the Retroscope camera.

The device can help find lesions located on the proximal aspect of flexures or haustral folds, Dr. Daniel C. DeMarco said at the annual meeting of the American College of Gastroenterology.

In a nonrandomized study with no control group, 17 physicians at nine U.S. institutions each examined 20 patients (total of 340 patients) by colonoscopy plus the Third Eye Retroscope and were asked to judge whether each lesion they found could have been detected by the colonoscope alone or was only seen because they were using the Third Eye.

Of the 209 polyps found, the investigators estimated that 182 could have been detected with a conventional colonoscope and that the Third Eye yielded an additional 27—a 15% increase in the detection rate. Of the 116 adenomas found, they es-

timated that 100 would have been seen by conventional colonoscopy and 16 (16%) would have been seen only by the Third Eye, said Dr. DeMarco of Baylor University Medical Center, Dallas.

In a separate poster, A.M. Leufkens, Ph.D., and associates reported preliminary data from an ongoing prospective study that randomizes patients to get two exams by the same colonoscopist during the same period of sedation—either a standard colonoscopy followed by one with the Third Eye, or an exam with the Third Eye first, followed by regular colonoscopy.

Data on 126 of a planned 410 subjects show that endoscopists missed 2.6 times more polyps using the colonoscope alone than they did with the Third Eye as an adjunct to the colonoscope, reported Dr. Leufkens of University Medical Center, Utrecht, the Netherlands.

In 63 patients who had regular colonoscopy first, 55 polyps were found on the first exam; the second exam with the Third Eye yielded 18 additional polyps for an "additional detection rate" of 32.7%. In 63 patients who were examined first with the Third Eye, 56 polyps were found initially; the second exam by colonoscopy alone yielded 7 more polyps for an additional detection rate of 12.5%. Both studies were funded by the company that makes the Third Eye Retroscope, Avantis Medical Systems. One of Dr. Leufkens' associates is on the company's advisory board. ■



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DR. DEMARCO

## Chromocolonoscopy Can't Beat White Light in High Definition

SAN DIEGO — High-definition chromocolonoscopy did not significantly increase detection of adenomas, compared with high-definition white light colonoscopy, in a randomized, multicenter study of 660 patients.

In average-risk patients aged 50 years or older undergoing first-time screening colonoscopy, at least one adenoma was seen in 55.5% of 321 patients using chromocolonoscopy and in 48.4% of 339 patients using white light colonoscopy. The 7.1 percentage point increase in the detection rate did not reach statistical significance (*P* value, 0.07), Dr. Charles J. Kahi and his associates

reported at the annual meeting of the American College of Gastroenterology.

Chromocolonoscopy detected an average of 1.3 adenomas per patient, and white light colonoscopy detected an average of 1.1 adenomas per patient, a difference that again was not statistically significant (*P* value, 0.07), said Dr. Kahi of Indiana University, Bloomington.

There was a modest, statistically significant increase in detection of small (less than 5 mm) or flat adenomas and detection of non-neoplastic lesions using chromocolonoscopy. High-definition chromocolonoscopy detected an average of 0.6 flat adenomas per patient, 0.8 small adenomas per patient, and 1.8 non-neoplastic lesions per patient, compared with 0.4 flat adenomas, 0.7 small adenomas, and 1.0 non-neoplastic lesions per patient with high-definition

white light colonoscopy (*P* values, 0.01, 0.03, and less than 0.0001, respectively).

The two techniques did not differ significantly in detection of advanced adenomas (0.06 per patient with chromocolonoscopy and 0.04 per patient with white-light colonoscopy) or detection of advanced adenomas smaller than 10 mm in size (0.02 per patient with chromocolonoscopy and 0.01 per patient with white light colonoscopy).

Overall, these findings do not support the routine use of high-definition chromocolonoscopy for colorectal cancer screening in average-risk patients, Dr. Kahi said.

In general, flat and depressed colon neoplasms are easy to miss on colonoscopy, he noted, but awareness is increasing that they are precursors for colorectal cancer in Western populations. Flat or depressed lesions are more difficult to visualize than polypoid lesions with conventional colonoscopy and are more likely to contain high-grade dysplasia or invasive carcinoma.

The mean procedure time was significantly longer in the chromocolonoscopy group (31 minutes) compared with the white light colonoscopy group (22 minutes), and the mean dose of the sedative propofol was significantly higher in the chromocolonoscopy group (345 mg) than with white light (297 mg).

Dr. Kahi reported having no conflicts of interest related to this study. ■



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DR. KAHİ