

Study compares narrow band imaging to chromoendoscopy for the detection of dysplasia in IBD patients

October 12 2011

A new study from Spain finds that narrow band imaging appears to be a less time-consuming and equally effective alternative to chromoendoscopy for the detection of dysplasia (abnormal growths) in patients with long-standing inflammatory bowel disease. However, this study demonstrated higher miss rates for detection of lesions by narrow band imaging as compared with chromoendoscopy, and the authors concluded that narrow band imaging cannot be recommended as the standard technique. The study appears in the October issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

Inflammatory bowel disease (IBD) is the general name for diseases that cause inflammation in the [small intestine](#) and colon, which include Crohn's disease and ulcerative colitis. IBD [patients](#) are at [high risk](#) for developing [dysplasia](#) and colorectal cancer. Chromoendoscopy (CE) is used for dysplasia surveillance in IBD patients. It is a special technique used in conjunction with endoscopy to improve visualization of the mucosa or lining of the intestine and can help the endoscopist find abnormalities that are present during the endoscopic examination which may be difficult to identify using only "white light" endoscopy. Chromoendoscopy is performed by spraying specialized nonpermanent stains or dyes on the lining of the intestine during the [endoscopic procedure](#).

Narrow band imaging (NBI) with endoscopy offers the potential for improved visualization and was developed to enhance certain mucosal or vascular characteristics so that abnormal growths are visualized better. It uses a special filter to illuminate tissue in the lining of the [intestines](#) with light at specific wavelengths, which enhances underlying [vasculature](#) and produces the greatest contrast between the vessels and surrounding [mucosa](#). This can help the endoscopist see the margins of an [abnormal growth](#) better and assist in determining which areas are the best to biopsy.

"In recent years, several studies have shown that chromoendoscopy is more accurate in detecting dysplasia in patients with long-standing [inflammatory bowel disease](#) than conventional endoscopy," said study lead author Maria Pellisé, MD, Gastroenterology Department, Institut de Malalties Digestives i Metabòliques, CIBERehd Hospital Clinic, Barcelona, Spain. "The aim of this study was to compare new-generation NBI systems with high-resolution imaging with CE for the early detection of colitis-associated dysplasia and cancer in patients with long-standing colonic IBD. We found that NBI is a useful technique for the detection of dysplasia in patients with long-standing IBD that offers several advantages including efficiency, ease of use, and agility. However, the relatively high rate of missed [lesions](#) with NBI prevents its recommendation as the new standard technique of use."

Methods

Consecutive patients with clinically inactive, long-standing ulcerative colitis involving at least the left colon or patients with colonic Crohn's disease affecting at least one third of the colon were recruited from the Outpatient Clinic of the Gastroenterology Department at Hospital Clinic, Barcelona, Spain. A total of 60 patients were included in the prospective, randomized, crossover study.

Each patient underwent high-resolution NBI colonoscopy and high-resolution indigo carmine CE with an interval of three to eight weeks between procedures. The order in which the examinations were performed was randomized (1:1). All colonoscopies were conducted by one of two experienced endoscopists who were blinded to the endoscopic and histological findings obtained during the first procedure. The morphology, size and location of any visible lesion were recorded. Any suspicious lesions detected during the examinations were sampled or immediately removed after detection. Biopsy samples were processed and stained by using standard methods and were subsequently evaluated by an experienced gastrointestinal pathologist.

Results

Chromoendoscopy identified 208 suspicious lesions and 12 dysplastic lesions, while NBI detected 136 suspicious lesions and 10 dysplastic lesions. Therefore, CE identified 50 percent more "suspicious" lesions, for a 20 percent incremental yield. The prevalence of dysplastic lesions among patients enrolled in the study was 21.7 percent. The percentage of missed neoplastic lesions was higher with NBI than with CE (31.8 percent vs. 13.6 percent), resulting in a miss rate risk difference of 18.2 percent. Mean withdrawal time of the endoscope for CE was significantly longer than that for NBI (26.87 minutes vs. 15.74 minutes).

The researchers concluded that NBI appears to be a less time-consuming and an equally effective alternative to CE for the detection of neoplasia, but with a higher miss rate, and so NBI cannot be recommended as the standard technique. As a consequence, they believe that CE should still be considered the technique of choice for detecting dysplasia in patients with long-standing IBD.

In an accompanying editorial, Charles N. Bernstein, MD, Department of Internal Medicine and IBD Clinical Research Centre, University of

Manitoba, Winnipeg, Manitoba, Canada, stated, "Pellise et al found a high rate of 22 percent of patients having dysplastic lesions, further promoting the value of color contrast endoscopy in searching for dysplasia, at least in the hands of an expert center prepared to biopsy up to 6 raised lesions per case. Contrary to the actual study conclusions, it seems to show a comparable merit of NBI to chromoendoscopy and a greater time efficiency. More studies of NBI in dysplasia surveillance in inflammatory bowel disease may clarify its role. However, even simpler than NBI might be white-light endoscopy with high-definition colonoscopes. For an incremental yield of finding dysplastic lesions, a study needs to be conducted to compare chromoendoscopy with white-light endoscopy with these newer generation and already widely used colonoscopes."

Provided by American Society for Gastrointestinal Endoscopy

Citation: Study compares narrow band imaging to chromoendoscopy for the detection of dysplasia in IBD patients (2011, October 12) retrieved 20 March 2024 from <https://medicalxpress.com/news/2011-10-narrow-band-imaging-chromoendoscopy-dysplasia.html>

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