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Media Contact: Anne Brownsey
(630) 570-5635
abrownsey@asge.org

American Society for Gastrointestinal Endoscopy
1520 Kensington Road, Suite 202
Oak Brook, IL 60523

P (630) 573-0600
F (630) 573-0691
www.asge.org
www.screen4coloncancer.org

STUDIES EXAMINE A NOVEL WATER METHOD FOR UNSEDATED COLONOSCOPY; LENGTH OF TIME BETWEEN BOWEL PREP AND COLONOSCOPY PREDICTS BOWEL PREP QUALITY

GIE: Gastrointestinal Endoscopy special issue: Colonoscopy for colorectal neoplasia

OAK BROOK, Ill. – March 2, 2009 – In recognition of National Colorectal Cancer Awareness Month during March, *GIE: Gastrointestinal Endoscopy* has put out a special issue on colonoscopy for colorectal neoplasia. Studies of note regarding colonoscopy appear in both the monthly March issue and the special issue. A study appearing in the March issue from researchers in California focuses on the impact of a novel water method on scheduled unседated colonoscopy in U.S. veterans. Researchers in Texas looked at how the time interval between the completion of the last dose of bowel preparation and the start of colonoscopy predicts the quality of the bowel preparation in a study appearing in the special issue. *GIE: Gastrointestinal Endoscopy* is the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

Endoscopy is a procedure that uses an endoscope -- a thin, flexible tube with a light and a lens on the end to look into the esophagus, stomach, duodenum, small intestine, colon, or rectum, in order to diagnose or treat a condition. There are many types of endoscopy, including colonoscopy, sigmoidoscopy, gastroscopy, enteroscopy, and esophogogastroduodenoscopy (EGD). Colonoscopy is frequently used to screen for colorectal cancer, which most typically develops from polyps (growths in the colon).

March Issue: “Impact of a novel water method on scheduled unседated colonoscopy in U.S. veterans”

During a colonoscopy, the colon must be distended (expanded) in order to pass the colonoscope through the full length of the colon to the cecum (the cul-de-sac lying below the terminal ileum forming the first part of the large intestine or colon). The advancement of the scope into the cecum is termed cecal intubation and is mandatory for colonoscopy to be effective. Air is the usual medium to distend the bowel. However, air insertion can lengthen the colon (much like an accordion) and result in discomfort that may prevent cecal intubation, particularly in the unседated patient.

The authors of this study used warm water, rather than air, to distend the colon based on their prior experience with this technique. They previously found that when water was infused into the colon instead of air during colonoscope insertion, approximately 50 percent of the colon exams could be completed without sedation. Based on this background information, researchers in California hypothesized that the novel water method would enhance cecal intubation and increase the proportion of patients willing to have another colonoscopy with no sedation.

An unsedated colonoscopy program was instituted in 2002 at the Veterans Affairs Sepulveda Ambulatory Care Center in California. From June 2005 to May 2006, the air method was used for colonoscopy. From June 2006 to October 2007 the water method was used. With the latter method, the air pump was disabled and “warm to touch” tap water in lieu of air was used. Sixty-two veterans were examined using the air method and 63 veterans were examined using the water method. The cecal intubation rate with the air method was 76 percent, while the water method was 97 percent. The proportion of patients who reported a willingness to repeat an unsedated colonoscopy was significantly higher with the water method at 90 percent compared with 69 percent for the air method.

This was a single center, observational, nonrandomized study in a small elderly male population. Despite these limitations, researchers note that the positive findings of enhanced cecal intubation rates, increased patient reported willingness to have another colonoscopy and improved cleanliness of the colon are sufficiently provocative to warrant calling for their confirmation by a randomized controlled trial with patients in the U.S. for unsedated colonoscopy.

Special Issue: “Duration of the interval between the completion of bowel preparation and the start of colonoscopy predicts bowel-preparation quality”

Recent studies suggest that colonoscopies done in the morning have better quality bowel preparations than those done in the afternoon; furthermore, preparations taken partially on the day of the exam are more effective than those taken entirely the day prior to the test. The right colon is particularly susceptible to inadequate cleansing. Effective bowel preparation is important for doctors to be able to clearly see the colon to look for abnormalities. Inadequate bowel preparation results in decreased rates of cecal intubation, increased rates of missing important lesions, increased patient discomfort and may result in cancellation or repetition of the colonoscopy.

Researchers at the Dallas Veteran’s Affairs Medical Center noted an unacceptably high rate of inadequate bowel preparations and initiated a study to explore how to improve that rate. The primary aim of the study was to determine how the duration of the interval between the end of the preparation and the start of the colonoscopy affects preparation quality.

Between July and October 2007, 378 outpatients between the ages of 18 and 85 (96 percent men, mean age 62.2 years) were scheduled for elective colonoscopy. All patients were instructed to avoid iron supplements starting seven days before the colonoscopy. Two days before the procedure, patients were told to start a low-fiber diet. On the day before the procedure, patients were advised to drink only clear liquids and to avoid all solid foods. Study patients received one of three bowel preparations based on their ability to tolerate previous bowel preparations and on the presence of renal insufficiency and other comorbidities. The preparations used were polyethelene glycol electrolyte-based (PEG) and sodium phosphate (SP) solution (71 percent), oral PEG and magnesium citrate (23 percent), or SP alone (6 percent). The time of the final bowel preparation dose and the start time of the colonoscopy were recorded.

The physicians graded the overall quality of the preparation according to a scale developed by 10 experienced endoscopists at their center. The bowel preparation quality scale permitted a score of 4-unsatisfactory, 3-poor, 2-fair, 1-good, and 0-excellent. In the group as a whole, 52 percent had an excellent or good bowel preparation, 34 percent had a fair preparation, and 14 percent had a preparation rated poor or unsatisfactory. There was no difference between the three preparation varieties.

Patients with excellent or good bowel preparations (score 0-1) had a significantly shorter interval between the last preparation dose and the start of the colonoscopy (13.6 hours) when compared to patients with

unsatisfactory to fair bowel preparations (14.35 hours). The researchers estimated that for every additional hour that the patient waits between the last preparation and the colonoscopy, the chance of having a good or excellent rating decreases by almost 10 percent.

In conclusion, researchers found that it is the duration of the interval between the completion of bowel preparation and the start of colonoscopy that is a major determinant of bowel preparation quality and a better determinant than the time of day when the colonoscopy is performed. Colonoscopy should begin a minimum of 14 hours following the last dose of bowel preparation to minimize the risk of an unsatisfactory preparation. In light of the findings, they adopted a split-dose bowel preparation regimen in their unit. In a split-dose regimen, the patient takes a portion of the bowel preparation solution the evening prior to the procedure with the second dose taken the day of the colonoscopy. The second dose minimizes the interval between preparation and colonoscopy, and this technique has been shown to result in superior bowel preparation by other investigators.

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About the American Society for Gastrointestinal Endoscopy

Founded in 1941, the mission of the American Society for Gastrointestinal Endoscopy is to be the leader in advancing patient care and digestive health by promoting excellence in gastrointestinal endoscopy. ASGE, with nearly 11,000 members worldwide, promotes the highest standards for endoscopic training and practice, fosters endoscopic research, recognizes distinguished contributions to endoscopy, and is the foremost resource for endoscopic education. Visit www.asge.org and www.screen4coloncancer.org for more information and to find a qualified doctor in your area.

About Endoscopy

Endoscopy is performed by specially-trained physicians called endoscopists using the most current technology to diagnose and treat diseases of the gastrointestinal tract. Using flexible, thin tubes called endoscopes, endoscopists are able to access the human digestive tract without incisions via natural orifices. Endoscopes are designed with high-intensity lighting and fitted with precision devices that allow viewing and treatment of the gastrointestinal system.