Conclusions: Perforated peptic ulcer disease is a common surgical emergency. Etiologic factors associated with perforation have been reported, including Helicobacter pylori infection and NSAID use. In the present study, smoking history is the predominant risk factor in patients with perforated peptic ulcer disease, among risk factors including Helicobacter pylori infection, NSAID use, and steroid use. This result is significant because Japan is known to have a higher rate of Helicobacter pylori infection, NSAID use, and steroid use. Well-known risk factors including NSAID and steroid use were less associated with perforation in this study. Smoking history is the risk factor most highly associated with perforation.

1072

Does Bacterial Overgrowth Affect Breath Alcohol Levels on DUI Testing?

Melia Kommers-Sarrett, MSc; Eugenia Liu, BS; Kathleen Shari Chua, BSE; Gillian Barlow, PhD; Nipponpo Pikichukoto, MD; Ali Rezaie, MD, MSc; Mark Pimentel, MD

Introduction: Breath alcohol concentration (BrAC) has long served as critical evidence in a driving under the influence (DUI). Recently a defense expert witness stated that hydrogen due to maladies such as small intestinal bacterial overgrowth (SIBO) could affect BrAC by interaction with its fuel cell. In addition, a recent legal case of "auto-brewery syndrome" highlighted the potential for gut bacteria to produce alcohol during fermentation. In this study, we assess the risk of detectable BrAC or hydrogen interfering with sensors due to bacterial overgrowth using DUI instruments.

Methods: In collaboration between the Los Angeles Police Department forensic division and a tertiary care medical center, patients referred for lactulose breath testing provided informed consent to participate. Breath samples were collected using Quanttron dual-bag gas collection system (Quintron Diagnostics, Milwaukee, WI) at baseline and every 15 minutes for up to 2 hours after 10g lactulose ingestion. Breath samples were analyzed for hydrogen and methane after correction for CO2 levels using a Quanttron BreathTracker™ gas chromatograph. Simultaneous to breath collection, subjects were asked to exhale into an Intoxymeter ECLIR II (Intoximeters, Inc, St Louis, MO). Results of breath hydrogen, methane, and alcohol were compared.

Results: Fifty subjects were recruited [29 F; mean±SD 44±18 yrs, range 18-83], most who were referred for symptoms including bloating, diarrhea, constipation and abdominal pain. Three of the patients elected to decline participation, of which two provided at least one BrAC collection with no BrAC detected. Of the remaining 47 subjects, 25 (53%) were hydrogen positive (range=1-176 ppm) and 11 had detectable methane (>3 ppm, range=0-107 ppm). Despite these breath test abnormalities, all but one patient in this study had no detectable BrAC (0.000/210L) at any point during breath testing. The single exception presented with a baseline BrAC of 0.000/210L and admitted to drinking heavily the night before. During the following 2 hours, the BrAC steadily declined to 0.000/210L.

Conclusion: This very important study refutes the claim that patients producing hydrogen in their breath produce a false positive BrAC result. Moreover, hydrogen does not create a chemical reaction capable of causing a voltage charge on the fuel cell to produce a positive BrAC reading. In addition, SIBO is not a common source of alcohol and is not likely to cause intoxication or positive DUI test.

1073

Coast to Coast Quality Indicators for Video Capsule Endoscopy

Jodie A. Barkin, MD; Chien-Huan Chen, MD, PhD; Jamie S. Barkin, MD, MACG; Christian Jackson, MD, FACG; Lauren B. Gerson, MD, MSc

Introduction: Video Capsule Endoscopy (VCE) allows for complete visualization of the small bowel. Prior meta-analyses suggest that bowel preparation prior to VCE enhances diagnostic yield and small bowel visualization. (Rokkas AJG 2009). The aim of this study was to create a validated scoring system to determine segmental preparation of the small bowel, and determine VCE study adequacy.

Method: Three gastroenterologists with extensive experience in VCE (>1000 prior VCE) prospectively reviewed 25 Given® VCE studies. All patients received 2L of Golytely® preparation prior to VCE. Clinical data was blinded. Prokinetic medications were not administered. Small bowel transit time (SBTT) from first duodenal to first cecal image was divided into 3 equal segments. Studies were read at 25-frames/sec. The subjective measurement for each segment was a modified Boston Bowel Preparation Scale where a score of 0=unprepared small bowel segment with mucosa not seen, 1=portion of mucosa of the small bowel segment are not well seen due to staining, residual debris, and/or opique liquid, 2=minor amount of residual staining, small fragments, debris, and/or opaque liquid, but mucosa of small bowel is seen well; and 3=entire mucosa of small bowel segment is seen with no residual staining, small amount of debris or opaque liquid. The objective measurement for each study was percent of time obscured for each segment. We defined any frame as obscured if any portion of the mucosa was unable to be visualized. We calculated mean ± standard deviation values (SD) for objective and subjective measures, and interobserver agreement using the kappa statistic between reviewers and correlation between objective and subjective measures.

Results: Both objective and subjective scores were significantly higher in the proximal compared to the mid and distal bowel segments (Table 1). There was no lack of agreement between raters for each segment score using the subjective measure. When objective measures based on percentage of mucosa obscured were used, there was moderate agreement for all segments (Table 2). There was no correlation between objective and subjective scores. The number of abnormal findings was too low to determine potential correlation between bowel preparation and diagnostic yield.

Conclusion: We propose that a novel scoring system for VCE be based on objective data using percentage of obscured mucosa per segment. Further studies are required to determine correlation with pathologic findings.