

Acid Suppression and Small Intestinal Bacterial Overgrowth

A study presented at this year's American College of Gastroenterology (ACG) meeting, recently held in San Diego, California, evaluated the use of acid suppression drugs on small intestinal bacterial overgrowth (SIBO). In a retrospective study, Walter Chan, MD, of Brigham and Women's Hospital and Harvard Medical School in Boston, Massachusetts, and associates examined medical records of adults who underwent lactulose breath testing at Brigham and Women's Hospital between September 2008 and April 2009. After excluding patients with abdominal surgeries, chronic pancreatitis, gastrointestinal dysmotility, anatomic abnormalities, inflammatory bowel disease, or immunosuppression, the researchers identified 108 eligible patients (81% female; median age, 46.5 years). The acid suppression arm (n=43) was comprised of patients who had taken an acid suppression drug for at least 2 months prior to the test, whereas the control patients (n=65) had no history of acid suppressive drug use. No differences were noted in baseline patient characteristics in terms of age, gender, or symptoms between the two groups. Symptomatic patients using acid suppression drugs experienced an increased rate of positive lactulose breath tests for SIBO compared to control patients (odds ratio [OR]=2.311; $P=.019$). In addition, more patients with SIBO in the acid suppression arm were mixed hydrogen-methane producers compared to control patients (OR=6.56; $P=.03$), possibly suggesting that acid suppression might encourage the growth of a variety of bacterial species. The researchers concluded that prolonged acid suppression might predispose otherwise healthy individuals to SIBO and that discontinuation of acid suppression should be considered, particularly if the patients have recurrent SIBO.

Combination Therapy for *Helicobacter pylori* Infection

Patrick Basu, MD, of Columbia University College of Physicians and Surgeons in New York, and colleagues evaluated the use of a 7- or 10-day course of combination therapy with levofloxacin, omeprazole, nitazoxanide (Alinia, Romark), and doxycycline (LOAD) or lansoprazole, amoxicillin, and clarithromycin (LAC) for 10 days in patients with treatment-naïve *Helicobacter pylori* infection (N=135). Prior to initiating therapy, patients underwent a total washout period of 6 weeks from any previous use

of antibiotics or proton pump inhibitors. The researchers found that *H. pylori* infection was eradicated in 95% of patients who took the 7-day LOAD course compared to 80.9% of patients who took the LAC course. In addition, the researchers noted that the 7-day course of LOAD was equally as effective as the 10-day course.

Diverticulosis and Screening for Colonic Polyps

Ali Nawras, MD, of Henry Ford Hospital in Detroit, Michigan, and associates conducted a study to determine whether asymptomatic patients with diverticular disease have an increased or decreased risk of developing colonic polyps. The study, which was presented at the recent ACG meeting, examined the records of 1,668 patients who had undergone full colonoscopy and had an average risk for colorectal cancer. This patient population consisted of 899 patients with diverticulosis and 769 patients without diverticulosis. The incidence rate of polyps was lower in diverticulosis patients (223 cases, 24% of total) than control patients (336 cases, 43%; $P<.001$). In addition, the researchers also analyzed the differences of the sizes and pathologies of the lesions. Among patients with diverticulosis, 109 (12%) had polyps less than 6 mm in size. Among patients in the control group, 140 (18%) had polyps of this size ($P<.001$). Polyps 6–10 mm were found in 77 (8.5%) patients with diverticulosis compared to 117 (15%) patients without diverticulosis ($P<.001$). Polyps greater than 1 cm in size were found in 36 (4%) diverticulosis patients compared to 75 (9.7%) patients without diverticulosis ($P<.001$). The diverticulosis group did not have any cancers; in contrast, 7 cancers were found in the control patients. Overall, patients with diverticulosis had a significantly lower rate of high-risk polyps than control patients (36 or 4.1% vs 76 or 6.8%; $P<.001$). The researchers concluded that patients diagnosed with diverticulosis may not require aggressive screening to detect colonic polyps due to the lower risk of developing these lesions, though larger, prospective studies are needed to confirm these results.

Vitamin Supplementation in Infants With Biliary Atresia

Interim analysis from the Biliary Atresia Research Consortium was presented at the 2009 Annual Meeting of the American Association for the Study of Liver Diseases (AASLD), held recently in Boston, Massachusetts.

According to Benjamin Shneider, MD, of the Children's Hospital Pittsburgh in Pennsylvania, and associates in various centers, the study population consisted of 57 infants enrolled in a prospective, multicenter, placebo-controlled trial. The infants were administered corticosteroid therapy following hepatoporoenterostomy (HPE) for biliary atresia (BA) and then given commercially available infant multivitamin preparations (eg, ADEKs/AquADEKs; 2 mL daily) along with vitamin K (2.5 mg TIW). At 1, 3, and 6 months after HPE, the researchers monitored serum fat-soluble vitamin (FSV), retinol binding protein, bilirubin, bile salt, and lipid levels. Additional FSV supplementation was required at some point to treat FSV deficiency in 40 of 57 infants with more than a 6-month follow-up after HPE. Total serum bilirubin and bile salt levels inversely correlated with the absolute levels of the various vitamins. FSV deficiencies were more frequent in infants with a total bilirubin level of at least 2 mg/dL at all time points. Based upon receiver operator characteristic analysis, optimal cut-off values to predict any FSV deficiency were estimated to be 3.6 ± 0.1 mg/dL for total bilirubin and 131 ± 88 μ mol/L for total bile salts. The authors concluded that current multivitamin supplements for infants with BA are inadequate and that deficiency monitoring and alternative methods of supplementation are needed.

Gender Differences and Graft Loss After Liver Transplantation for Hepatitis C

Also presented at the recent AASLD meeting were results from a study led by Jennifer Lai, MD, of the University of California in San Francisco that was designed to assess gender differences in post-liver transplant outcomes in hepatitis C virus (HCV) patients. The study examined all patients who underwent liver transplant for HCV-related liver disease in 4 experienced liver transplant centers from March 2002 through December 2007 who survived more than 30 days after transplantation. In total, 839 patients (195 women and 644 men) were evaluated, with a median follow-up of 3.1 years (range, 0.1–6.9 years). The female and male groups differed in terms of median age (55.9 vs 53.7 years), percentage of living donor transplants (17% vs 9%), median glomerular filtration rate at transplantation (55 vs 75 mL/min/1.73 m²), percentage of hepatocellular carcinoma (33% vs 46%), median warm ischemia time (40 min vs 41 min), recipient-donor-sex mismatch (49% vs 34%), donor body mass index (24.4 vs 25.9), and percentage of at least 1 episode of acute rejection (32% vs 24%). Women experienced more graft loss than men (from all causes: 29.2% vs 24.1% as well as from recurrent HCV: 12.3% vs 8.5%). There was also

a trend toward decreased survival at 3 years for women, as compared to men (72.6% vs 77.6%; $P=.08$ log rank). After adjusting for significant differences in baseline characteristics and liver transplant-related differences between the two groups, female gender was found to be an independent predictor of graft loss, both overall and due to recurrent HCV. Factors that were not significantly associated with either outcome included cold ischemia time, treated acute rejection, and positive donor HCV antibody status. The 3-year cumulative risk of advanced disease was also higher for women: 39.0% (95% confidence interval [CI], 29.6–50.1) compared to 31.1% for men (95% CI, 26.4–36.5; $P=.36$ log rank). The researchers noted that further studies are needed to evaluate modifiable donor factors and post-transplant therapeutics that impact outcomes.

Epidemic of Sexually Transmitted Acute Hepatitis C in Men With HIV

Daniel Fierer, MD, of the Mount Sinai School of Medicine in New York, and colleagues conducted a study to analyze the risk factors for acquisition, treatment response, and fibrosis progression in an outbreak in New York City of acute HCV infection in HIV-infected men who have sex with men (MSM). The researchers defined acute HCV infection as the presence of newly detected HCV antibodies with either newly elevated alanine aminotransferase (ALT) levels, a greater-than-1-log fluctuation in HCV viral load, or high clinical suspicion. In total, the study included 51 HIV-infected MSM with 53 episodes of acute HCV infection and a median age of 40 years and median CD4 count of 471 cells/ μ L. In an analysis of the 21 HCV-infected patients matched with uninfected control patients, factors significantly associated with new HCV infection were unprotected receptive anal and oral sex. In contrast, current and previous injection drug use were not significant factors of infection. Pegylated interferon and ribavirin treatment, started within 6 months of diagnosis, was completed in 16 patients with genotype 1 HCV infection, and 12 (75%) achieved sustained viral response (SVR) compared to the usual 15–30% SVR rate in genotype 1 HCV infection. Thirty patients underwent liver biopsy (median, 4.4 months after first ALT elevation); 21 had stage 2 fibrosis (Scheuer, scale 0–4), 2 had stage 3 (77% \geq stage 2), 5 had stage 1, and 2 had stage 0 (24% < stage 2). Fibrosis was shown to increase with time-to-biopsy (linear regression, $P=.04$). Based upon these findings, the authors recommended routine screening for acute HCV for all MSM with HIV, using the simple and inexpensive algorithm of ALT measurement every 3 months and HCV antibody measurement every 6–12 months.