By Kay Downer

IL-28B Genotype and Early Viral Kinetic Response in Interferon-Free Hepatitis C Virus Therapy

As reported in the April issue of *Gastroenterology*, Chu and colleagues conducted a double-blind, dose-escalation study to evaluate the relationship between interleukin-28B (*IL-28B*) genotype and viral kinetic (VK) response in hepatitis C virus (HCV)-infected patients receiving interferon-free therapy. The study population consisted of patients infected with chronic HCV genotype 1 who were naïve to interferon therapy or had not responded to prior peginterferon and ribavirin therapy. Patients received up to 13 days of treatment with the nucleoside polymerase inhibitor mericitabine (RG7128; 500 mg or 1,000 mg twice daily) plus the HCV protease inhibitor danoprevir (100 mg or 200 mg every 8 hours, or 600 mg or 900 mg twice daily) or placebo. VK response was analyzed only in patients who received 13 days of therapy and were genotyped for *IL-28B*.

Among the 83 patients who underwent *IL-28B* genotyping, 33% had genotype CC, 54% had genotype CT, and 13% had genotype TT. The researchers found robust initial viral-load reductions in each of these genotypes; however, by Day 7, patients with genotype CC experienced a greater mean reduction in serum HCV RNA level than patients with genotype CT or TT. At Day 14 (the end of interferon-free therapy), this trend continued, with patients with genotype CC having a slightly greater mean reduction in serum HCV RNA level (5.01 $\log_{10}$ IU/mL) than patients with genotype CT or TT (4.59 $\log_{10}$ IU/mL). The researchers concluded that *IL-28B* genotype appears to affect early VK response in HCV patients receiving interferon-free therapy.

Rescue Therapy for Patients Who Failed First-Line Treatment for Helicobacter pylori Infection

Proton pump inhibitors (PPIs) are the standard first-line therapy for treatment of *Helicobacter pylori* infection, but this treatment is not effective for all patients. To evaluate the efficacy of combination regimens as rescue therapies, Goh and coauthors tested a dual regimen consisting of the PPI rabeprazole (20 mg three times daily) plus amoxicillin (1 g three times daily) and a triple regimen consisting of rabeprazole (20 mg twice daily), levofloxacin (500 mg twice daily), and amoxicillin (1 g twice daily). This study was published in the May issue of *Alimentary Pharmacology & Therapeutics*.

A total of 149 patients with *H. pylori* infection who failed PPI therapy were enrolled in this study. Patients received 2 weeks of dual therapy (the first rescue therapy); those patients who did not respond adequately to the first rescue therapy then received an additional 2 weeks of triple therapy (the second rescue therapy). In intent-to-treat analyses, eradication of *H. pylori* was achieved in 107 of the 149 patients treated with the first rescue therapy (71.8%; 95% confidence interval [CI], 64.6–79.0) and in 28 of 31 patients treated with the second rescue therapy (90.3%; 95% CI, 74.2–98.0). The cumulative *H. pylori* eradication rate for both therapies was 90.6% (135 of 149 patients; 95% CI, 84.7–94.8). The authors concluded that patients who failed PPI monotherapy could be effectively treated with rescue therapy consisting of a PPI plus amoxicillin followed by triple therapy with a PPI plus amoxicillin and levofloxacin, if needed.

Meta-Analysis Finds Association Between Body Mass Index and Risk of Colon Cancer

To determine whether patients with an increased body mass index (BMI) have a higher risk of colorectal adenoma, Ben and colleagues performed a meta-analysis of 36 independent studies. Including a total of 29,860 incident cases of colorectal adenoma, this meta-analysis examined the relationship between BMI and adenoma risk and assessed whether this relationship was affected by the study design, features of the polyps, patients' sex, and/or potential confounders (such as alcohol use, nonsteroidal anti-inflammatory drug use, smoking, and exercise). Results of this meta-analysis were published in the April issue of *Gastroenterology*.

By calculating summary relative risks using a random-effects model, the authors determined that an increase in BMI of 5 kg/m^2 increased an individual's risk of colorectal adenoma (summary relative risk=1.19; 95% CI, 1.13–1.26). This association was independent of study design; the subject's race, geographic location, or sex; adenoma progression; or confounders. This meta-analysis also found that increased BMI was more strongly associated with risk of colon adenomas than rectal adenomas.

Spontaneous Bacterial Peritonitis and Proton Pump Inhibitor Use

Goel and colleagues conducted a retrospective case-control study to evaluate whether PPI use is associated with spontaneous bacterial peritonitis (SBP) in cirrhotic patients with

ascites. The researchers identified 65 hospitalized cirrhotic patients with paracentesis-confirmed SBP and 65 control patients (hospitalized cirrhotic patients without SBP) from a single tertiary-care center from 2006 to 2009. The results of the study were published in the April issue of *Clinical Gastroenterology and Hepatology*.

The researchers found a significantly higher incidence of PPI use within the past 7 days among patients with SBP compared to control patients (71% vs 42%; *P*<.001). Sixty-eight percent of SBP patients did not have a documented indication for PPI use. According to multivariable logistic regression analysis, the likelihood of SBP was almost 70% lower in patients with no PPI use in the previous 90 days compared to patients with PPI use in the previous 7 days (odds ratio, 0.29; *P*=.005). Patients with PPI use 8–90 days prior to hospitalization had a 79% lower likelihood of developing SBP than patients with PPI use within 7 days prior to hospitalization. No significant difference was seen between patients with no PPI use in the previous 90 days and patients with PPI use in the previous 8–90 days (*P*=.58). The researchers concluded that PPI use is associated with SBP in cirrhotic patients and that prospective, randomized, controlled studies are needed to further examine this relationship.

Can Hepatitis B Immunoglobulin Reduce Vertical Transmission of Hepatitis B Virus Infection?

Despite immunization, children whose mothers are hepatitis B e antigen (HBeAg)-positive remain at risk of hepatitis B virus (HBV) infection. To see whether administration of hepatitis B immunoglobulin (HBIG) could prevent infection in children of HBV-infected mothers, Chen and coauthors analyzed data from 2,356 children whose mothers were positive for hepatitis B surface antigen (HBsAg), 583 of whom were also HBeAg-positive, indicating the presence of replicating HBV.

In this study, which was published in the April issue of *Gastroenterology*, HBIG was administered to all children whose mothers were HBeAg-positive plus 723 of the 1,773 children whose mothers were HBeAg-negative. Serology testing was then performed between 2007 and 2009, when children were between the ages of 6 months and 10 years, to determine which children were infected with HBV.

The proportion of children who tested positive for antibodies against hepatitis B core protein was significantly higher among children of HBeAg-positive mothers compared to children of HBeAg-negative mothers (16.76% vs 1.58%; *P*<.0001); rates of HBsAg positivity were also significantly higher in children of HBeAg-positive mothers compared to children of HBeAg-negative mothers (9.26% vs 0.29%; *P*<.001). Among children whose mothers were HBeAg-negative, administration of HBIG did not appear to alter HBV infection rates. The proportion of children in this group who had antibodies against the hepatitis B core protein was similar among those who received HBIG and those who did not (0.99% vs 1.88%; *P*=.19); testing for HBsAg showed a similar pattern (0.14% vs 0.29%; *P*=.65). The authors concluded that screening pregnant women for HBsAg and HBeAg might help to reduce the rate of mother-to-child transmission of HBV, as these women could then be given antiviral therapy during the third trimester of pregnancy to reduce their viral load prior to delivery.

Proton Pump Inhibitor Therapy Following Endoscopic Treatment of Bleeding Ulcers

In a study published in the April issue of *Alimentary Pharmacology & Therapeutics*, Chen and coworkers assessed whether high-dose PPI therapy is better than standard-dose PPI therapy following endoscopic treatment of bleeding ulcers. In this study, 201 patients underwent endoscopic hemostasis of bleeding peptic ulcers (consisting of epinephrine injection and heater probe thermocoagulation), after which the patients were randomized to receive 1 of 2 PPI regimens: high-dose PPI therapy (80 mg bolus followed by a pantoprazole infusion at a rate of 8 mg/h) or standard-dose PPI therapy (pantoprazole 40 mg bolus daily). All patients were transitioned to an oral regimen (40 mg pantoprazole daily) 72 hours after the procedure and remained on this regimen for 27 days.

A comparison of the 2 treatment groups found no difference in mean units of blood transfused, length of hospitalization, need for surgical or radiologic intervention, and mortality within 30 days. The rate of bleeding within 30 days was also similar between groups (6.2% of the high-dose group vs 5.2% of the standard-dose group; *P*=.77). Independent risk factors for rebleeding included end-stage renal disease (hazard ratio=37.15; 95% CI, 6.76–204.14), hematemesis (hazard ratio=10.07; 95% CI, 2.07–49.01), and chronic obstructive pulmonary disease (hazard ratio=9.12; 95% CI, 1.66–50.00). In contrast, *H. pylori* infection was associated with a lower risk of rebleeding (hazard ratio=0.20; 95% CI, 0.04–0.94).