GASTRO-HEP News

By Christina Lesica

Sodium Levels as Predictors of Liver Transplantation Mortality

Two studies published in a recent issue of *Liver Transplantation* examined whether incorporating sodium levels into the Model for End-Stage Liver Disease (MELD) model is a valid approach to predicting outcomes for patients with severe liver disease.

In the first study, researchers in Italy and Austria retrospectively examined the records of 310 patients who underwent elective transjugular intrahepatic portosystemic shunt placement between 1999 and March 2005 at two European centers. The researchers tested an integrated MELD (iMELD) model with sodium levels and age on 451 patients with cirrhosis awaiting liver transplantation.

Multivariate analysis demonstrated that both sodium levels and age can accurately predict prognosis, independent of the MELD score. For predicting 12-month mortality, iMELD was better than the original MELD: the area under the receiver operating characteristic curve (auROC) increased by 13.4%, and the likelihood ratio statistic rose from 23.5 to 48.2. The validation sample of 451 patients with cirrhosis awaiting liver transplantation also confirmed the improved accuracy of iMELD in its increase of auROC (+8%) and likelihood ratio statistic (from 41.4 to 82.0). The authors concluded that sodium levels and age are objective, reliable, and readily available variables for prioritizing the transplantation waiting list.

In the second study, researchers in the United Kingdom assessed the effect of serum sodium concentration on the survival of 5,152 adults with chronic liver disease in the United Kingdom and Ireland who received a liver transplant between 1994 and 2005.

Compared with patients with normal serum sodium concentrations (135–145 meq/L, n=3,066), severely hyponatremic recipients (sodium <130 meq/L, n=541), had a higher risk-adjusted rate of mortality at 3 years (hazard ratio [HR], 1.28; 95% confidence interval [CI], 1.04–1.59; $P<.02$). However, the excess mortality was confined to the first 90 days (HR, 1.55; 95% CI, 1.18–2.04; $P<.002$), with no significant difference subsequently. This was consistent with hypernatremic recipients (sodium >145 meq/L, n=81), who had an even greater risk-adjusted rate of mortality compared with normonatremic recipients (overall: HR, 1.85; 95% CI, 1.25–2.73; $P<.002$; ≤90 days: HR, 2.29; 95% CI, 1.42–3.70; $P<.001$; >90 days: HR, 1.12; 95% CI, 0.55–2.29; $P=0.8$). In contrast, mildly hyponatremic recipients (sodium of 130–134 meq/L, n=1,127) had a similar risk-adjusted rate of mortality to patients with normal sodium concentrations at the same time points. The authors concluded that serum sodium concentration of liver transplant recipients is an independent predictor of death after liver transplantation, and that attempts to normalize sodium concentration are an important aspect of pretransplantation management.

Wireless Capsule Endoscopy in Children

The results of a study examining the diagnostic value, safety, tolerance, and applicability of wireless capsule endoscopy (CE) in children were published in a recent issue of the *American Journal of Gastroenterology.* Researchers at the University of Parma, Italy, investigated 87 pediatric patients consisting of 49 boys and 38 girls ranging from 1.5 years to 18 years in age with a suspected small-bowel disease (inflammatory bowel disease: 37%, polyps: 38%, obscure gastrointestinal bleeding: 24%, malabsorption: 1%).

A total of 77 patients were able to swallow the M2A capsule; in the other 10 patients (age range: 1.5–11 years, median age: 5.3 years), the capsule was endoscopically positioned. Of the 87 total patients, 80 evacuated the capsule naturally, whereas 1 patient required surgery. The capsule detected pathologic findings in 62 patients (71%), ileal lymphoid nodular hyperplasia in 4 patients (5%), and negative findings in 18 patients (21%). The capsule failed technically in 3 patients (3%). Small-bowel polyps were identified in 21 of 28 patients with known polyposis and in all 5 patients with suspected polyposis. Small-intestine lesions were found in 16 of 22 patients suffering from known inflammatory bowel disease (Crohn's colitis or indeterminate colitis). CE identified a possible small intestine–bleeding source in 13 of 21 patients with suspected obscure gastrointestinal bleeding. In 5 of 10 patients with suspected small-bowel inflammatory disease, CE detected ileum lesions indicative of Crohn's disease, which was then confirmed via diagnostic procedures and clinical history. A negative capsule study was presented by 1 patient with malabsorption.

Endoscopic Balloon Dilation for Anastomotic Strictures

Researchers from the Washington University School of Medicine in St. Louis, Mo., examined the safety and efficacy of endoscopic balloon dilation in treating gastrojejunal anastomotic strictures, a frequent postoperative complication of open and laparoscopic Roux-en-Y

gastric bypass surgeries. Results of the single center, retrospective study of 801 morbidly obese patients who underwent Roux-en-Y gastric bypass surgery between 1997 and 2005 at the Washington University School of Medicine were published in a recent issue of *Gastrointestinal Endoscopy*.

Of these patients, 43 (5.4%) developed anastomotic stricture (26 of 294 open surgeries [8.8%], 17 of 507 laparoscopic surgeries [3.4%], $P<.001$). Strictures were dilated to 15.5±0.4 mm. No perforations or clinically significant bleeding postdilation were detected, and 93% of the strictures were successfully managed after 1 or 2 endoscopies. Dilation to at least 15 mm did not impact patient weight loss at 1 year when compared with patients without a stricture (percentage excess weight loss: stricture group, 76%; no stricture group, 74%). The authors concluded that endoscopic balloon dilation is safe and efficacious for managing gastrojejunostomy strictures after Roux-en-Y gastric bypass and that dilation to at least 15 mm is safe and decreases the need for further endoscopic dilation.

Early Communication From Ongoing Safety Review of Omeprazole and Esomeprazole

The US Food and Drug Administration (FDA) issued an early communication regarding its ongoing review of new safety data for proton pump inhibitors omeprazole (Prilosec, AstraZeneca) and esomeprazole (Nexium, AstraZeneca). The new safety data came from two small long-term clinical studies in patients with severe gastroesophageal reflux disease (GERD). In both studies, patients were randomly assigned to GERD treatment for medical therapy (omeprazole or esomeprazole) or surgery.

The results from a 14-year study of omeprazole and analyses from an ongoing study of esomeprazole had raised concerns that long-term use of omeprazole or esomeprazole may have increased the risk of heart attacks, heart failure, and heart-related sudden death in patients receiving either one of the drugs compared to patients who received surgery.

After reviewing these and other data submitted by the company, the FDA's preliminary conclusion at this time, is that, collectively, these data do not suggest an increased risk of heart problems for patients taking omeprazole or esomeprazole. The FDA plans to complete its review within 3 months.

Biopsy Protocol in Barrett Esophagus

Led by Rebecca Harrison, MB ChB, University Hospitals of Leicester, United Kingdom, researchers in the United Kingdom, United States, Canada, and Jordan investigated the frequency of intestinal metaplasia in 125 consecutive patients with columnar-lined esophagus to determine the optimal biopsy protocol for the detection of intestinal metaplasia. Results of this retrospective, observational comparator study were published in a recent issue of the *American Journal of Gastroenterology*. The researchers examined biopsies from 296 endoscopies of Barrett esophagus segments with a mean length of 4 cm (range, 1–11 cm), which were performed at a single center over 4 years. Conventional hematoxylin and eosin (H&E) staining was used to process all of the biopsies. Alcian blue/periodic-acid Schiff staining was also used in a subset of biopsies (n=92).

The optimum number of biopsies to diagnose intestinal metaplasia was found to be 8 random biopsies for each endoscopy (mean, 67.9% endoscopies with intestinal metaplasia). In contrast, the yield was only 34.7% for intestinal metaplasia if only 4 pieces were biopsied. Taking more biopsies did not achieve any additional statistical significant detection unless more than 16 biopsies were taken (resulting in a 100% yield of intestinal metaplasia). The addition of alcian blue/periodic-acid Schiff staining had only a marginal benefit: only 5.4% of new intestinal metaplasia cases were detected. Performing repeat endoscopies did not increase the detection of intestinal metaplasia.

In Brief

Wireless esophageal pH monitoring is better tolerated and has a minor impact on daily habits compared with traditional monitoring, according to the results of a prospective study. Whether this translates into better diagnostic accuracy, however, remains to be evaluated in further studies. (*Dig Liver Dis*. 2007;39:720-724.)

Drug resistance was a strong predictor of efficacy across triple therapies for the eradication of *Helicobacter pylori* in adults, according to a recent meta-analysis. Resistance to either clarithromycin or metronidazole, but not both simultaneously, may be overcome by using quadruple therapies, especially those containing both clarithromycin and metronidazole. (*Aliment Pharmacol Ther.* 2007;26:343-357.)

Although a significant proportion of Crohn's disease patients on long-term infliximab treatment lose response and require an increase in dose and/or decrease in infusion interval, the majority of these patients regain response with dose intensification, according to a prospective study. Every-8-week maintenance infusions and concomitant immunomodulators did not alter the rate of infliximab dose intensification in this study. (*Inflamm Bowel Dis*. 2007;13:1093-1099.)