

Risk Factors for Mortality After Surgery in Patients With Cirrhosis

Researchers at the Mayo Clinic, Rochester, Minn., conducted a retrospective study to determine predictors of postoperative mortality. They examined 772 patients with cirrhosis who had undergone major surgery, including digestive (n=586), orthopedic (n=107), or cardiovascular (n=79) surgery between 1980 and 2004. To determine the relationship between risk factors and mortality, the researchers performed univariate and multivariable proportional hazards analyses.

Patients undergoing major surgery were found to have an increased mortality risk up to 90 days postoperatively. Multivariable analysis showed that only model-for-end-stage-liver-disease (MELD) score, American Society of Anesthesiologists (ASA) class, and age were significant predictors of postoperative mortality at 30 and 90 days, 1 year, and long term, regardless of the type of surgery.

The only independent predictor of the duration of hospitalization postoperatively was emergency surgery. In addition, 30-day mortality ranged from 5.7% (MELD score, <8) to over 50% (MELD score, >20). Throughout the 20-year postoperative period, the relationship between MELD score and mortality remained.

To calculate risk with MELD score, ASA class, and age, a risk calculator is available at <http://www.mayoclinic.org/meld/mayomodel9.html>.

Helicobacter pylori Infection and Gastric Malignancy

A prospective cohort study conducted by researchers at the National Yang-Ming University in Taiwan examined the impact of *Helicobacter pylori* infection on the development of gastric malignancies in 1,225 dyspeptic Taiwanese patients (mean age, 54 years) diagnosed with nonulcer dyspepsia, gastric ulcer, or duodenal ulcer at endoscopy. Of these subjects, 618 (50.4%) had *H. pylori* infection whereas 607 (49.6%) did not, as determined by histologic examination or urease testing. Patients were then followed by endoscopy at 1–3 year intervals.

During a mean follow-up of 6.3 years, gastric adenocarcinoma developed in 7 of the 618 *H. pylori*-positive patients, but in none of the 607 *H. pylori*-negative patients (1.1% vs 0.0%, $P=.015$). Gastric lymphoma (a MALToma) developed only in 1 patient, who was *H. pylori*-positive. Together, the rate of gastric malignancy development in *H. pylori*-positive patients was significantly higher than in *H. pylori*-negative patients (1.3% vs 0%, $P=.007$). Among *H. pylori*-positive subjects, the incidence of gastric malignancy was similar between those

who received eradication therapy and those who did not (1.4% vs 1.2%).

Multivariate analysis showed that intestinal metaplasia on baseline gastric biopsy was the only independent factor predicting subsequent development of gastric malignancy in *H. pylori*-positive subjects (odds ratio, 4.5; 95% confidence interval, 1.1–19.1).

New Noninvasive Liver Evaluation

Two studies found that the new magnetic resonance elastography (MRE) imaging technique is an accurate tool for noninvasive diagnosis of liver diseases. These findings were presented at the International Society for Magnetic Resonance in Medicine Annual Meeting.

MRE uses a modified form of magnetic resonance imaging (MRI) to measure the hardness of the liver. MRE takes pictures of waves passing through the liver, which are then processed to generate a quantitative image of tissue stiffness.

One study involved MRE examinations of 57 patients with chronic liver disease and 20 healthy controls. The researchers, led by Richard Ehman, MD, Mayo Clinic, investigated whether MRE could provide reliable and accurate diagnoses in patients with varying degrees of liver disease. They confirmed that MRE accurately detects fibrosis with high sensitivity and specificity and also found that steatosis did not interfere with the detection of fibrosis with MRE.

“Based on this research, we are now using MRE examinations in select patients to determine liver stiffness and assess the need for liver biopsies,” says Jayant Talwalkar, MD, an investigator from the Mayo Clinic.

The second study examined whether MRE could accurately measure portal hypertension in 35 patients with varying degrees of chronic liver disease and 12 healthy volunteers. The researchers studied MRE examinations of liver and spleen stiffness and found that a highly significant correlation exists between liver and spleen stiffness in patients with portal hypertension. However, they concluded that the validity of spleen stiffness as a noninvasive measure of portal venous pressure required further study.

Percutaneous Imaging-guided Radiofrequency Ablation Techniques

Percutaneous imaging-guided radiofrequency ablation (RFA) of hepatocellular carcinoma is a safe and effective technique, with benefits such as reduced postprocedural pain and length of hospital stay, according to researchers from Changi General Hospital in Singapore, who presented their findings at the American Roentgen Ray

Society's annual meeting. This study compared the efficacy of the percutaneous approach of RFA with the open surgery approach.

The study showed that the percutaneous approach is better tolerated by patients, with significantly less postprocedural pain. The average pain score was 0.1 for patients who underwent the percutaneous technique compared with 1.4 for patients who had ablation performed by open laparotomy. Patients treated by the percutaneous method also had a much shorter stay in the hospital. The average length of stay in hospital was 2 days for patients who underwent the percutaneous method compared with 10 days for patients who underwent open RFA.

"Our study further revealed an interesting finding in that the approaches used for ablation do not affect the effectiveness of the ablation treatment," said Hui Seong Teh, MD, lead author of the study.

Single-operator Duodenoscope-assisted Cholangiopancreatography System

The SpyGlass™ Direct Visualization System (Boston Scientific Corporation) for single-operator duodenoscope-assisted cholangiopancreatography (SODAC) was recently introduced, offering an alternative to endoscopic retrograde cholangiopancreatography and peroral cholangiopancreatography systems. The system enables a single physician to examine the bile-duct quadrants and perform a therapeutic intervention in the same procedure.

The procedure utilizes a miniature 6,000-pixel fiberoptic probe attached to the head of a camera. The probe is inserted through a single-use access and delivery catheter that can be steered in four directions to enter and examine the treatment area. The catheter attaches directly to a standard duodenoscope, which eliminates the need for a second physician operator.

Yang K. Chen, MD, Division of Gastroenterology and Hepatology, University of Colorado at Denver and Health Sciences Center, led a study evaluating the clinical utility and safety of the system for diagnostic and therapeutic endoscopic procedures in bile ducts, which was performed at the University of Colorado Health Sciences Center in Denver and the Beth Israel Deaconess Medical Center in Boston, Mass. Thirty-five patients underwent procedures with the new system. Results published in a

recent issue of *Gastrointestinal Endoscopy* demonstrated that the system was clinically feasible and provided adequate samples for histologic diagnosis and successfully guided stone therapy. The procedures were also deemed safe and well tolerated.

In addition, a preclinical study described in another issue of *Gastrointestinal Endoscopy* evaluated access and biopsy in the four simulated biliary-duct quadrants with the new and conventional approaches. Results showed that success rates for access in all quadrants were significantly higher with the new system than with conventional cholangioscopy approach. In addition, higher success rates were attained using the system to access biopsy targets and to obtain simulated biopsies in all 48 biopsy targets.

In Brief

Results from a randomized, double-blind, placebo-controlled, crossover trial suggest that the significant stimulatory impact of serotonin 5-hydroxytryptamine agonists on several salivary protective factors, as well as esophageal epidermal growth factor secretion, may have esophagoprotective implications in patients with gastroesophageal reflux disease. (*Clin Gastroenterol Hepatol.* 2007;5:430-438.)

Adding vitamin C to 1-week omeprazole-amoxicillin-clarithromycin triple therapy can reduce the dosage of clarithromycin but preserve the high eradication efficacy for clarithromycin-susceptible *H. pylori* infection, according to a prospective study. (*Hepatogastroenterology.* 2007;54:320-324.)

Omega-3 fatty acids are safe and may be effective for maintenance of remission in Crohn's disease when used in enteric coated capsules. However, there are not sufficient data to recommend the routine use of omega-3 for the maintenance of remission in Crohn's disease. The small number of patients in the included studies warrants further larger randomized controlled trials. (*Cochrane Database Syst Rev.* 2007;18:CD006320.)