

## Liquid Biopsies Show Potential in Detecting Early-Stage Hepatocellular Carcinoma in Patients With Hepatitis B Virus Infection

Liquid biopsies, based on a combination of cell-free DNA (cfDNA) and protein markers, show promise in identifying early-stage hepatocellular carcinoma (HCC) in high-risk patients with asymptomatic hepatitis B virus (HBV) infection, according to results of a study published online on March 11, 2019 ahead of print publication in *PNAS*.

Dr Chunfeng Qu and colleagues developed a liquid biopsy assay (HCCscreen) to identify HCC that works by detecting cfDNA mutations from the surface antigen of HBV using 2 mL of plasma. In a training cohort of patients with liver nodules and/or elevated serum  $\alpha$ -fetoprotein (AFP) levels, the assay divided patients with HCC (n=65) from patients without HCC (n=70) with a sensitivity and a specificity of 85% and 93%, respectively. When applied to patients with normal liver ultrasonography and serum AFP levels (N=331), the assay identified 24 positive cases of HCC. Follow-up at 6 to 8 months confirmed that 4 patients had developed HCC. No cases of HCC were diagnosed in the 307 patients who had negative findings. In this validation cohort, the assay showed 100% sensitivity, 94% specificity, and 17% positive predictive value. Each of the 4 tumors were detected at an early stage, when they were less than 3 cm in size.

The authors concluded that the use of liquid biopsies is a feasible approach to detecting early-stage HCC in this patient population.

## Postoperative Dysphagia Less Prevalent After Partial Fundoplication Than After Total Fundoplication

Partial fundoplication induces less postoperative dysphagia than does total fundoplication in patients with gastroesophageal reflux disease (GERD), according to results of a double-blind, randomized clinical trial published online on March 6, 2019 ahead of print publication in *JAMA Surgery*.

Dr Bengt S. Håkanson and colleagues randomized 456 patients to either a 270° posterior partial fundoplication (n=229) or a 360° Nissen total fundoplication (n=227). All procedures were performed at a single university-affiliated center between 2001 and 2006. Patients were followed for up to 5 years. Data were collected from 2001 to 2012 and analyzed from

2012 to 2018. The main outcome was esophageal acid exposure at 3 years postsurgery.

The majority of patients were male (58.8%; n=268), and the mean age was 49.0 years. At 3 years, the median esophageal acid exposure was reduced from 14.6% to 1.8% following partial fundoplication and from 16.0% to 2.5% following total fundoplication ( $P=.31$ ). Reflux symptoms were similarly equally and effectively controlled. Both groups had dysphagia at 6 weeks postsurgery, which then decreased toward normality. A small but statistically significant difference was noted in the mean scoring of dysphagia for liquids at 6 weeks (partial fundoplication, 1.6; total fundoplication, 1.9;  $P=.01$ ) and for solid food at 12 months (partial fundoplication, 1.3; total fundoplication, 1.9;  $P<.001$ ) and 24 months (partial fundoplication, 1.3; total fundoplication, 1.7;  $P=.001$ ). No major differences were noted between the groups regarding the abdominal pain, diarrhea, and indigestion domains of the Gastrointestinal Symptom Rating Scale, and quality of life remained normal over the 5-year follow-up.

The authors concluded that although both partial and total fundoplication could be recommended for the treatment of GERD, partial fundoplication might be superior by inducing less dysphagia.

## Proton Pump Inhibitor Use Increases Risk of Infection Among Patients With Cirrhosis

The use of proton pump inhibitors (PPIs) increases the risk of bacterial infection among patients with cirrhosis but does not affect prognosis following infection occurrence, according to results of a study published in the March 2019 issue of *Liver International*.

Dr Gitte Dam and colleagues compared the incidence and 90-day mortality of first-time infections between users and nonusers of PPIs using data from 3 trials of satavaptan treatment of ascites. Adjustments for differences in age, sex, cirrhosis etiology, severity of ascites, and other variables were made with standard and marginal structural Cox models.

Of the 1198 patients included in the trials, 524 (44%) used PPIs, and 645 (54%) used them at some point during follow-up. A total of 446 patients had an infection during follow-up. The rate of infections overall increased with PPI use, as did the rate of all specific types of infections excluding upper respiratory tract infections that originated from a virus. At 6 and 12 months, PPI users had an estimated cumulative risk of infections of 36.4% and 45.2%, respectively, vs 25.1% and 37.7%, respectively, for nonusers. The use of PPIs had no effect on mortality 90 days postinfection.