

Worse Functional Status at Time of Liver Transplant Waitlist Registration Is Associated with Significantly Greater Prevalence of Hepatic Encephalopathy, Ascites, and Spontaneous Bacterial Peritonitis

Patrick McCabe California Pacific Medical Center, Grishma Hirode, Benny Liu, Taft Bhuket, Robert Wong Alameda Health System, Highland Hospital
Corresponding Author Contact: mccabp@sutterhealth.org

Background: Poor functional status (FS) is associated with higher liver transplant (LT) waitlist mortality. Whether this higher risk of death is mediated by higher prevalence of cirrhosis complications is not clear. We aim to evaluate the impact of FS at time LT waitlist registration on odds of hepatic encephalopathy (HE), ascites, and spontaneous bacterial peritonitis (SBP) among adults listed for LT.

Methods: Using 2003-2018 United Network for Organ Sharing LT data, we retrospectively evaluated the impact of FS on prevalence of HE, ascites, and SBP among U.S. adults listed for LT using Karnofsky Performance Status categories (KPS-1: FS 80-100%, KPS-2: 60-70%, KPS-3: 40-50%, KPS-4: 10-30%). We further stratified patients by etiology: hepatitis C (HCV), nonalcoholic steatohepatitis (NASH), alcoholic liver disease (ALD), and combined HCV/ALD. Comparisons of HE, ascites, and SBP prevalence between groups utilized chi-squared methods and adjusted multivariate logistic regression.

Results: Among 101,249 adults listed for LT (70.1% male, 72.7% non-Hispanic white, 20.3% HCC) 38.2% were KPS-1, 35.6% KPS-2, 14.5% KPS-3, and 11.7% KPS-4. Patients with worse FS were more likely to have HE, ascites, and SBP at time of waitlist registration (HE: 82% (KPS-4) vs. 52% (KPS-1); ascites: 68% (KPS-1) vs. 93% (KPS-4); SBP: 4% (KPS-1) vs. 17% (KPS-4), $p < 0.001$ for all) (Figure). On multivariate regression, worse FS was associated with greater odds of HE (KPS-4 vs. KPS-1: OR 1.62, 95% CI 1.52-1.73, $p < 0.01$), ascites (KPS-4 vs. KPS-1: OR 1.41, 95% CI 1.29-1.54, $p < 0.01$), and SBP (KPS-4 vs. KPS-1: 2.12, 95% CI 1.93-2.33, $p < 0.01$). Compared to HCV patients, greater odds of HE and ascites were observed in NASH (ascites, OR 1.32, 95% CI 1.25-1.39, $p < 0.01$), ALD (ascites, OR 1.58, 95% CI 1.52-1.65, $p < 0.01$), and HCV/ALD (ascites, OR 1.40, 95% CI 1.32-1.49, $p < 0.01$). While ALD and HCV/ALD patients also had greater odds of SBP vs. HCV, NASH patients had lower odds of SBP (OR 0.92, 95% CI 0.85-0.99, $p = 0.03$). When stratified by etiology, similar trends were observed, with worse FS strongly associated with greater odds of HE, ascites, and SBP across all etiologies.

Conclusion: Worse FS is associated with higher odds of cirrhosis complications including ascites, HE, and SBP, which was observed across all liver disease etiologies. Disease-specific comparisons showed higher odds of ascites, HE, and SBP in HCV vs. other etiologies, with the exception of lower odds of SBP in NASH patients vs. HCV.

*To be presented at ACG 2019.

Prevalence of HE, Ascites, and SBP by KPS Categories

□ KPS 1 □ KPS 2 □ KPS 3 ■ KPS 4

