Once spontaneous bacterial peritonitis develops, discontinue nonselective beta blockers permanently. A proposed practice change update

Mandorfer M, Bota S, Schwabl P, et al. Nonselective β blockers increase risk for hepatorenal syndrome and death in patients with cirrhosis and spontaneous bacterial peritonitis. Gastroenterology 2014; 146: 1680-90.

Nonselective beta blockers (NSBBs) are one of the most commonly used medications in cirrhotic patients and are recommended by current guidelines for the prevention initial variceal hemorrhage and rebleeding. NSBBs act in reducing portal pressure by lowering cardiac output and splanchnic vasoconstriction. However, beneficial effect of NSBB treatment for variceal bleeding were mostly in patients without ascites. Until now, NSBBs' use has not been contraindicated in cirrhotic patients with spontaneous bacterial peritonitis (SBP). Even NSBB treatment has been shown to reduce the risk of developing ascites and to prevent the development of SBP by decreasing intestinal permeability (1).

In the June 2014 issue of Gastroenterology, Mattias Mandorfer and colleagues (2) performed a retrospective study in a cohort of 607 patients with cirrhosis and ascites (No-NSBB n=362; NSBB n=245) who had their first paracentesis at the Medical University of Vienne from 2006 through 2011. The authors used Cox models to investigate the effects of NSBBs on SBP patients. Total patients' follow up was 660 person-years. A total of 182 patients developed SBP (No-NSBB n=96; NSBB n=86) and they were followed 147 person-years.

A total of 13 episodes of variceal bleeding were determined after the first SBP diagnosis and it was not statistically different between the NSBB and no-NSBB groups patients with SBP. NSBB use had 58% increased risk of mortality compared with the patients who were not on any NSBBs in patients with SBP. The duration of hospitalization was higher in the NSBB group after the first diagnosis of SBP. NSBB treatment had beneficial effect on transplant-free survival until development of SBP (p=0.027). However, if a patient developed SBP, transplant survival decreased in NSBB group patients (p=0.014). Hepatorenal syndrome was observed in 29 (18%) patients of patients within 90 days following initial SBP diagnosis. Hepatorenal syndrome development rate was higher in NSBB group (n=20; 24%) than no-NSBB group (n=9; 11%; p=0.027).

Bacterial infections predominantly occur in advanced cirrhosis. Analyses were adjusted for Child-Pugh score stage, at the first SBP diagnosis. There was a trend of a higher prevalence with female gender, higher bilirubin levels and Child-Pugh stage C among NSBB group patients.

The main limitation of this study was its retrospective design and that they did not consider the effect of recurrent SBP episodes in the groups. Higher mortality rate of the SBP group may have caused selection bias in the cohort. However, they evaluated both NSBB and no-NSBB control groups' results in patients with SBP and no-SBP groups to prevent this bias. Also the beneficial effect of transplant-free survival in the non-SBP group can serve as an internal validation for their proposal.

Maintaining the circulatory reserve is important during and after the acute phase of infection. The authors showed that circulatory reserve is critical in SBP patients with cirrhosis. The authors suggest that once SBP develops, any NSBBs should be withheld permanently to prevent worse outcomes including decreased transplant-free survival, increased risk of hepatorenal syndrome and increased hospitalization rates.

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