Antibiotic Prophylaxis in Patients with Cirrhosis and Upper Gastrointestinal Bleeding

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Clinical Question

Should antibiotic prophylaxis be used for hospitalized patients with cirrhosis and upper gastrointestinal bleeding?

Evidence-Based Answer

Antibiotics should be used for prophylaxis in hospitalized patients with cirrhosis and upper gastrointestinal bleeding. (Strength of Recommendation: A, based on consistent results from two meta-analyses and a cohort study.) Prophylaxis reduces all-cause mortality by 21%, as well as bacterial infections and rebleeding.

Evidence Summary

A 2011 meta-analysis of 12 randomized controlled trials involving 1,241 patients compared different types of antibiotic therapy vs. no intervention, placebo, or another antibiotic in adults with cirrhosis and upper gastrointestinal bleeding, regardless of etiology of cirrhosis or severity of disease.[1] Antibiotics were administered alone or in combination, orally or intravenously, and included cephalosporins (e.g., intravenous cefotaxime [Claforan], 2 g three times per day for seven days), quinolones (e.g., oral ciprofloxacin, 500 mg per day for seven days), aminoglycosides, amoxicillin/clavulanate (Augmentin), and vancomycin. Compared with no intervention or placebo, antibiotic prophylaxis reduced all-cause mortality (12 trials, N = 1,241; relative risk [RR] = 0.79; 95% confidence interval [CI], 0.63 to 0.98), mortality from bacterial infections (six trials, N = 715; RR = 0.43; 95% CI, 0.19 to 0.97), and bacterial infections (12 trials, N = 1,241; RR = 0.36; 95% CI, 0.27 to 0.49). No antibiotic regimen was superior to the others, and the authors recommended basing the antibiotic choice on local resistance profiles and treatment cost. The studies included in the meta-analysis did not report adverse effects.

A 2015 retrospective cohort study examined 235 patients with cirrhosis and acute peptic ulcer hemorrhage who were undergoing therapeutic upper endoscopy.[2] Prophylactic intravenous ceftriaxone was administered to 88 of these patients at a dosage of 1 g immediately after endoscopy, then every 12 hours until discharge. Compared with the control group, the antibiotic group had a lower risk of bacterial infections, including bacteremia, spontaneous bacterial peritonitis, pneumonia, and urinary tract infections (hazard ratio [HR] = 0.38; 95% CI, 0.18 to 0.79), and a lower risk of rebleeding (HR = 0.08; 95% CI, 0.03 to 0.27). A subgroup analysis found that patients with decompensated cirrhosis in the antibiotic group had a lower in-hospital mortality rate (HR = 0.40; 95% CI, 0.17 to 0.90), but cirrhotic patients overall did not (HR = 0.58; 95% CI, 0.29 to 1.2).

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