

Outcomes and complications of hospitalized cirrhosis patients with *H. pylori* infection

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Introduction

- Helicobacter pylori* infection is a frequent cause of chronic gastritis, peptic ulcer disease, and gastric cancer. The estimated worldwide prevalence of *H. pylori* infection is approximately fifty percent.
- In patients with cirrhosis, *H. pylori* infection is associated with an increased risk of portal vein thrombosis, hepatocellular carcinoma, and hepatic encephalopathy.
- This study aims to evaluate the impact of *H. pylori* on cirrhosis complications and inpatient outcomes in the United States population.

Methods

- We queried the National Inpatient Sample (NIS) database from 2016 to 2019 for hospitalizations with a primary diagnosis of cirrhosis.
- We assessed demographics, in-hospital mortality, and complications of cirrhosis in patients with *H. pylori* and compared them to cirrhosis patients without *H. pylori*.
- We adjusted outcomes for potential confounders using multivariable logistic regression analysis.

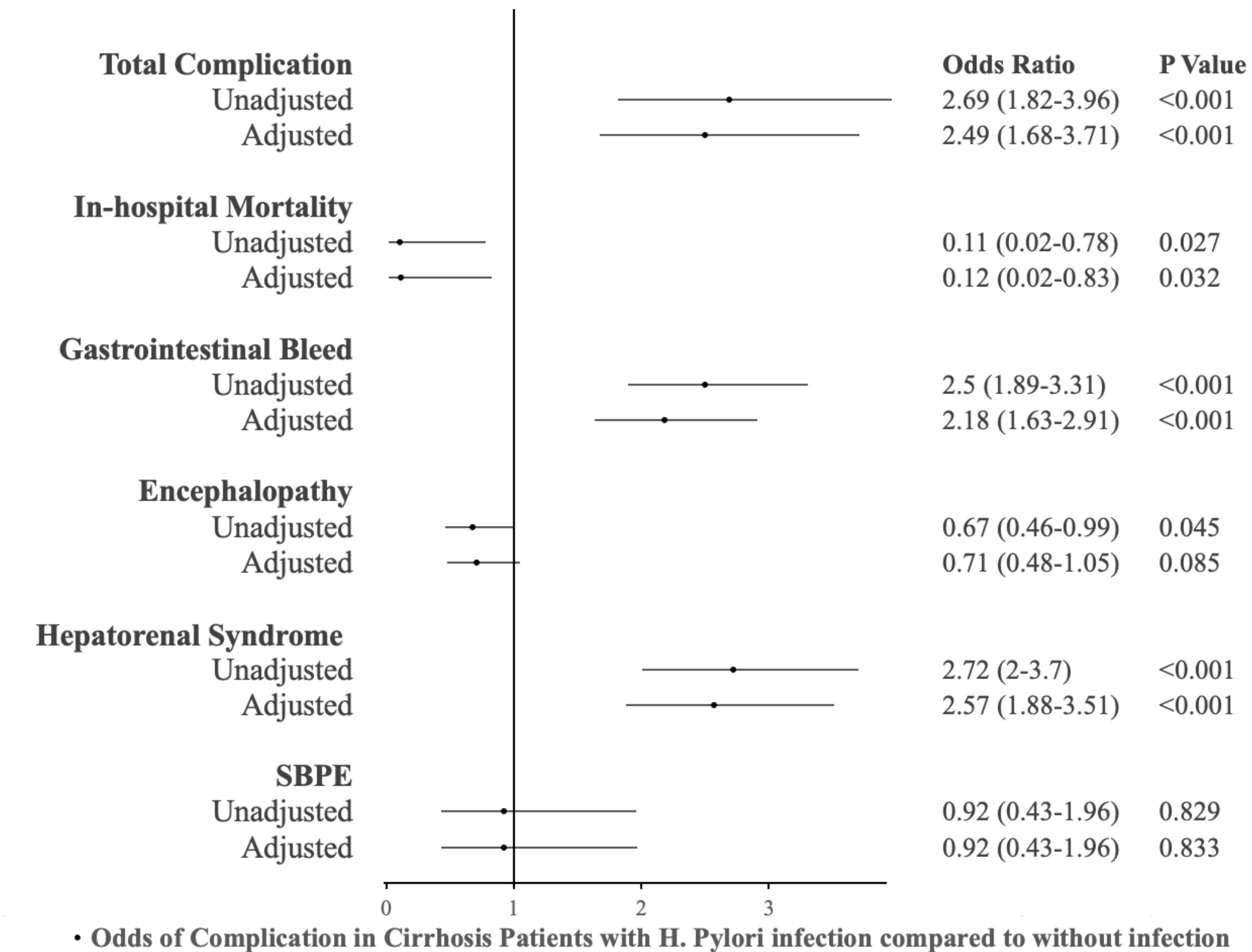


Figure 1: Unadjusted and adjusted odds ratios* for overall complications, in-hospital mortality, gastrointestinal bleed, encephalopathy, hepatorenal syndrome and spontaneous bacterial peritonitis (SBPE).

Adjusted for age, race, female, hypertension, diabetes, hyperlipidemia, heart failure, CKD stage 3 or greater, alcohol use disorder, coronary artery disease.

Results

- Of 416,410 patients with cirrhosis, 990 (0.2%) had a concurrent diagnosis of *H. pylori* infection. Cirrhosis patients with *H. pylori* were more likely to be younger (54.25 vs. 57.18 years, $p=0.01$), of Hispanic race (36.4% vs. 18.6%, $p<0.1$), and of Black race (20.2% vs. 8.1%, $p<0.1$). Additionally, those with *H. pylori* were more likely to be in the bottom quartile of median household income (48.17% vs. 34.66%, $p<0.01$).
- H. pylori* exposed patients had lower in-hospital mortality (0.51% vs 4.44%, $p=0.007$), but longer mean length of stay (6.97 days vs 5.75, $p=0.002$), and no difference in mean cost of care (\$18,106.18 vs \$16,543.49, $p=0.16$).
- H. pylori*-exposed patients had a higher overall rate of cirrhosis-related complications (84.85% vs. 67.59%, $p<0.001$), gastrointestinal bleed (48.48% vs. 27.34%, $p<0.001$), and hepatorenal syndrome (70.71% vs. 46.99%, $p<0.001$) which persisted on multivariable analysis.
- Rates of hepatic encephalopathy were initially higher in *H. pylori*-non-exposed patients (21.57% vs. 15.66%, $p=0.04$), which was corrected after adjusting potential confounders in multivariable analysis (Figure 1)

Conclusions

- H. pylori* infection was associated with a higher length of stay in hospitalized cirrhotic patients but lower mortality. *H. pylori* exposed patients had increased overall complications driven by gastrointestinal bleeding and hepatorenal syndrome.
- The lower mortality rate of *H. pylori* infection may partly be due to antibiotic use.
- Given the limitations of this retrospective cohort study, *H. pylori* as the causative factor for cirrhosis complications cannot be inferred with complete certainty.
- Further studies are warranted to help elucidate the associations between *H. pylori* and cirrhosis complications. Eradicative therapy for *H. pylori* may be beneficial in select patients with Cirrhosis.