

A Comparison in Characteristics and Inpatient Outcomes of Patients Hospitalized with Benign Calculous vs. Non-calculous Cholangitis, Insights from a Nationwide Inpatient Sample from 2010-2017

Yi Jiang, MD¹, Salil Chowdhury, BSc¹, Brandon Rodgers, BSc¹, Binghong Xu, MD², Sushil Ahlawat, MD³

- 1- Rutgers New Jersey Medical School, Internal Medicine
- 2- Saint Barnabas Medical Center, Center for Asian Health
- 3- Rutgers New Jersey Medical School, Internal Medicine, Division of Gastroenterology & Hepatology

Introduction

Cholangitis is a complex hepatobiliary syndrome that imposes an impressive hospital burden in the US. Prior studies have suggested higher readmission rates in benign non-calculous cholangitis (BNCC) compared to benign calculous cholangitis (BCC). The aim of this study was to compare outcomes in BNCC and BCC.

Methods

The NIS database was used to identify hospitalized adult patients with cholangitis from 2010 to 2017 using ICD codes. Patients with malignancy of the gallbladder, bile duct, ampulla, duodenum or pancreas were excluded. Primary outcomes included mortality, length of stay (LOS), and total hospitalization charges. Secondary outcomes were acute renal failure, acute respiratory failure and septic shock.

Results

A total of weighted 91,619 patients with BCC and 87,167 patients with BNCC were identified. Both groups are predominantly Caucasian patients with Medicare insurance, treated in large urban teaching hospitals. Compared to the BNCC group, patients with BCC were significantly older with an average age of 66.8 ($p < 0.0001$), more likely to be female ($p < 0.0001$) and less likely to be privately insured ($p < 0.0001$). Also, patients with BCC had greater prevalence of cholecystitis, acute pancreatitis, biliary obstruction and septicemia, and less HBV, HCV or HIV infection. For biliary procedures, BCC patients underwent higher rates of ERCP, biliary/pancreatic stenting and dilation, and open biliary procedures, but lower rates of percutaneous biliary procedures compared to the BNCC group. Lastly, patients with BCC had greater prevalence of acute respiratory failure, septic shock, and higher hospital costs and LOS, but a lower mortality rate ($p < 0.0001$) after adjusting for confounders.

Conclusion

In our retrospective study from 2010 to 2017, BCC was associated with a lower mortality rate compared to BNCC despite longer LOS, higher hospitalization charges and more adverse outcomes. Higher biliary procedure rates in the BCC group may explain the mortality benefit in this patient group. Further prospective studies are needed to better evaluate the effectiveness of biliary procedures in both patient groups.