Impact of Atrial Fibrillation on Outcomes in Patients Hospitalized for Acute Cholangitis: A Propensity Score Matched Analysis

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Background

Atrial fibrillation (AF) is the most common cardiac arrhythmia worldwide with an estimated 33.5 million individuals with AF globally. AF is known to be associated with gastrointestinal and liver diseases. Prior studies have also shown an association between cholestasis and cardiac abnormalities possibly due to the presence of receptors mediating bile acid signaling in cardiovascular tissue. This study aims to analyze the impact of AF on outcomes in patients admitted with acute cholangitis (AC).

Methods

Inpatient diagnoses of AC with and without AF were identified from the 2001-2014 National Inpatient Sample using the ICD-9 codes. Cases of AC with AF were propensity score matched 1:2 with controls across clinical covariates. Multivariable regression was used to examine charges, length of stay, mortality, and complications.

Results

Among a total of 448,204 admissions for AC, 44,702 had concomitant AF. AC cases were more likely to be older (80 vs 65, P<0.001), male (55% vs 50%, P<0.001), and white (72% vs 59%, P<0.001). After matching, AC with AF was associated with higher costs (25%, P<0.001), mortality (aOR: 1.66, P<0.001), and LOS (aIRR: 1.21, P<0.001), but lower rates of routine disposition (aOR: 0.64, P<0.001). AC with AF cases were associated with higher complication rates of gastrointestinal hemorrhage (aOR: 1.38, P=0.001), blood transfusion (aOR: 2.02, P<0.001), intestinal infection (aOR: 1.48, P=0.001), septicemia (1.29, P<0.001), acute renal failure (aOR: 1.24, P<0.001), enteral and parenteral nutrition (aOR: 1.46, P<0.001), pneumonia (aOR: 1.34, P=0.001), and mechanical ventilation (aOR: 1.91, P<0.001). There was no difference in incidence rates of thromboembolism.

Conclusions

Cases with concomitant AC and AF have higher mortality rates, LOS, total charges, and adverse complication rates than AC without AF. This indicates that AF is a poor prognostic factor in AC and clinicians should exercise heightened vigilance when treating patients with concomitant disease.