

Outcomes of ERCP in Patients With Inflammatory Bowel Disease: A Nationwide study

Markos Kalligeros, MD¹, Paul T. Kröner, MD², Francis A Farraye, MD, MSc³, Athanasios Desalermos, MD⁴



¹Department of Medicine, Warren Alpert Medical School of Brown University, Providence, RI, USA, ² Division of Gastroenterology and Hepatology, Mayo Clinic, Jacksonville, FL, USA, ³ Inflammatory Bowel Disease Center, Mayo Clinic, Jacksonville, FL, USA, ⁴ University of Massachusetts Medical School,, Worcester, MA, USA

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Background

Endoscopic retrograde cholangiopancreatography (ERCP) has become a commonly utilized procedure for both diagnostic and therapeutic purposes. There is a paucity of data for patients with inflammatory bowel disease (IBD) who undergo ERCP. The aim of this study is to examine potential complications, costs and inpatient outcomes of patients with IBD undergoing ERCP.

Methods

For this retrospective-cohort study we utilized the National Inpatient Sample database for the years 2018-2019. We compared potential indications, outcomes, ERCP-related procedures, and resource utilization in patients who underwent ERCP and had a diagnosis of IBD to that of patients who underwent ERCP without a diagnosis of IBD. We utilized a multivariate regression model that accounted for several potential confounders.

Results

We identified 318,590 ERCP procedures. Among them, 3,625 ERCP procedures were performed in patients with an associated diagnosis of IBD. Patients with IBD who underwent ERCP had higher odds of acute kidney injury (aOR 1.27; 95% CI: 1.01-1.60) and sepsis (aOR 1.33; 95% CI: 1.07-1.67) compared to patients without IBD (Table 1). However, inpatient mortality and other complications were not statistically different between the two groups. Patients with IBD were also less likely to undergo biliary sphincterotomy (aOR 0.75; 95% CI: 0.62- 0.88) but there were no other differences in performance of ERCP-related therapeutic interventions between the two groups. Adjusted costs and charges were not statistically different between the two groups.

	IBD combined aOR (95% CI)	Crohn's aOR (95% CI)	Ulcerative Colitis aOR (95% CI)
ERCP related procedures			
Bile duct stenting	1.16 (0.98-1.36)	1.19 (0.96-1.48)	1.30 (1.04-1.63)
Pancreatic duct Stenting	1.25 (0.99-1.58)	1.26 (0.94-1.70)	1.11 (0.81-1.52)
Biliary Sphincterotomy	0.75 (0.62-0.88)	0.71 (0.57-0.89)	0.76 (0.60-0.95)
Pancreatic Sphincterotomy	1.88 (0.28-12.7)	Not enough data	3.10 (0.44-22.08)
Biliary ductal dilation	1.25 (0.95-1.65)	1.53 (1.09-2.15)	1.34 (0.93-1.92)
Pancreatic duct dilation	1.34 (0.50-3.63)	1.76 (0.56-5.56)	1.13 (0.28-4.56)
Ampullectomy	1.23 (0.17-9.13)	Not enough data	2.01 (0.27-14.77)
Complications			
Mortality	0.99 (0.49-2.02)	0.67 (0.21-2.11)	1.01 (0.41-2.46)
Shock	1.24 (0.85-1.79)	1.12 (0.66-1.88)	1.48 (0.96-2.29)
Acute kidney injury	1.27 (1.01-1.60)	1.30 (0.96-1.75)	1.38 (1.02-1.85)
Sepsis	1.33 (1.07-1.67)	1.25 (0.94-1.68)	1.69 (1.28-2.23)
Multiorgan failure	1.24 (0.99-1.54)	1.17 (0.87-1.56)	1.37 (1.04-1.81)
Post ERCP pancreatitis	0.99 (0.80-1.24)	1.09 (0.82-1.44)	0.76 (0.55-1.04)
Bile duct perforation	1.73 (0.65-4.64)	3.04 (1.13-8.16)	0.72 (0.10-5.18)
Post-procedural bleeding	1.03 (0.87-1.31)	Not enough data	Not enough data

aOR: Adjusted odds ratio; CI: Confidence interval; ERCP: endoscopic retrograde cholangiopancreatography

Table 1. Odds of complications and ERCP-related procedures in patients who underwent ERCP comparing patients with and without IBD

Conclusion

The use of ERCP in patients with IBD was examined. Patients who underwent ERCP with and without a diagnosis of IBD did not display differences in inpatient mortality or in ERCP-related complications. However, patients with IBD did display higher odds and rates of non-PSC cholangitis, as well as higher rates of obstructive choledocholithiasis when compared to patients without IBD. This study provides basic data on the inpatient ERCP outcomes in patients with and without IBD. Future prospective studies are needed to clearly establish the association and causality between IBD disease activity and patient outcomes. In addition, this data should be compared to that of outpatient ERCP in patients with IBD.