

Utilization of Endoscopic Retrograde Cholangiopancreatography (ERCP) in a Nationwide Cohort of Patients Admitted With Acute Biliary Pancreatitis With Cholangitis

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INTRODUCTION

Acute pancreatitis (AP) is the most common gastrointestinal cause of hospital admissions in the United States, with biliary pancreatitis being the most common cause of acute pancreatitis. Acute Cholangitis is a bacterial infection of the biliary system and is most commonly caused by a complete or partial obstruction of the biliary tree by gall stones. One of the most important prognostic factors for acute cholangitis is the timing of biliary drainage. ACG guidelines for acute pancreatitis recommend that patients with AP and concurrent acute cholangitis should undergo ERCP within 24 h of admission. We aimed to estimate the impact of ERCP on hospitalization outcomes in this patient population.

METHODS AND MATERIALS

We collected data from the Healthcare Cost and Utilization Project- (HCUP) Nationwide Readmission Database- 2018. Patients admitted with acute biliary pancreatitis with concurrent cholangitis were identified and discharge weights were applied. Median and IQR were used to describe Continuous variables, and proportions were used with categorical variables. Comparison between groups was performed by Mann Whitney test for continuous variables and the Chi-Square test for Categorical variables.

RESULTS

We identified 3,981 index hospitalizations with acute biliary pancreatitis with cholangitis, 71.4% of whom received ERCP. Patient received ERCP had significantly lower mortality (3.3% vs. 7.1%, $P < 0.001$) compared to those who didn't but performing ERCP was associated with increased length of stays (6; IQR: 4-9 vs. 5; IQR: 3-8 $P < 0.001$) and higher total costs of hospitalization (\$68,904; IQR: \$44,876 - \$109,459 vs. \$50,667; IQR: \$28,694- \$101,917, $P < 0.001$). Only 65.2% of ERCPs were performed within 24 hours of admission. Those who received ERCP within 24 hours had decreased LOS (5; IQR: 3-8 vs. 7; IQR: 5-11, $P < 0.001$), lower hospitalization costs (\$63,263; IQR: \$41,180-\$102,942 vs. \$76,958; IQR: \$48,808-\$128,660, $P < 0.001$) and lower 90-day readmission rates (15.1% vs. 19.9%, $P = 0.006$) compared to those who received ERCP after 24 hours of admission.

Table 1.

	ERCP performed		
	No	Yes	P-value
	N= 1,137	N= 2,844	
Median Age (IQR)	71 (59- 81)	72 (61-81)	0.452
Sex (%)			
Male	544 (47.8)	1,453 (51.1)	0.064
Female	593 (52.2)	1391 (48.9)	
Hypertension (%)	471 (41.4)	1,357 (47.7)	<0.001
Diabetes mellitus (%)	356 (31.3)	927 (32.6)	0.433
Dyslipidemia (%)	466 (41)	1,311 (46.1)	0.004
Obesity (%)	270 (23.7)	640 (22.5)	0.399
COPD (%)	134 (11.8)	288 (10.1)	0.124
Acute kidney failure (%)	342 (30.1)	865 (30.4)	0.835
CKD (%)	188 (16.5)	546 (19.2)	0.051
Heart failure (%)	225 (19.8)	424 (14.9)	<0.001
Cirrhosis (%)	33 (2.9)	115 (4)	0.086
ICU admission (%)	20 (1.8)	36 (1.3)	0.232
Bed size of the hospital (%)			
Small	195 (17.2)	319 (11.2)	<0.001
Medium	357 (31.4)	764 (26.9)	
Large	585 (51.5)	1,761 (61.9)	
Insurance (%)			
Medicare	711 (62.5)	1901 (66.8)	0.002
Medicaid	91 (8)	243 (8.5)	
Private insurance	267 (23.5)	558 (19.6)	
Self-pay	30 (2.6)	85 (3)	
Other	8 (0.7)	4 (0.1)	
No charge	30 (2.6)	54 (1.9)	
90-day readmission (%)	155 (18.7)	359 (16.9)	0.261

DISCUSSION

Performing ERCP was associated with lower inpatient mortality in patients admitted with acute biliary pancreatitis with cholangitis and performing the ERCP within 24 hours of admission was associated with decreased length of stays, hospitalization costs, and 90-day readmission rates.

CONCLUSIONS

Our study supports ACG guidelines and urges clinicians to adhere to the recommendations to improve outcomes