

# EARLY CHOLECYSTECTOMY IMPROVES CLINICAL OUTCOMES IN ACUTE BILIARY PANCREATITIS PATIENTS ACROSS ALL AGE GROUPS: A MULTICENTER RETROSPECTIVE STUDY



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## BACKGROUND

- Cholecystectomy is recommended early in patients with acute biliary pancreatitis (ABP) to prevent recurrence.
- Elderly patients have higher incidence of the disease and are at risk of worse outcomes; however, this cohort has not been studied adequately.

## AIM

- To study the outcomes of patients who undergo early cholecystectomy versus those who do not

## METHODS

- A retrospective cohort study utilizing TriNetX (Cambridge, MA), “a global federated health research network”
- Adults (≥18 years) with ABP were identified using appropriate ICD-10 CM codes and divided into two groups, younger (<70 years) and older (≥70 years) patients
- Within each group, cohort of patients who had early cholecystectomy (within 2 weeks) and those who did not compared
- The primary outcomes were 90-day mortality and 90-day re-hospitalization
- Propensity score matching (1:1) was performed to match for demographic characteristics and common morbidities

## Baseline Characteristics Of Patients With Acute Biliary Pancreatitis.

Demographics	Mean (± SD)		Number of patients (%)		P-value
	Early Chole	No early chole	Early Chole	No early chole	
Age (years)	54.9 (±19.2)	61.4 (±18.5)	13,624 (100)	16,516 (100)	<0.001
Female			8,580 (62.9)	9,090 (55.0)	<0.001
Race	White		10,192 (74.8)	11,987 (72.6)	<0.001
	Black		1,349 (9.9)	1,822 (11.0)	0.001
Diabetes mellitus			2,452 (18.0)	3,397 (20.6)	<0.001
Obesity			3,998 (28.6)	2,850 (17.3)	<0.001
Chronic kidney disease			1,062 (7.8)	1,790 (10.8)	<0.001
Ischemic heart disease			1,642 (12.1)	2,477 (15.0)	<0.001
Heart failure			864 (6.3)	1,543 (9.3)	<0.001
Chronic pulmonary disease			2,072 (15.2)	2,557 (15.5)	0.51
Liver cirrhosis			209 (1.5)	671 (4.1)	<0.001
Necrotizing pancreatitis			86 (0.7)	186 (1.6)	<0.001

SD standard deviation, N number of patients

## Clinical Outcomes in Younger (<70 years) Patients with Acute Biliary Pancreatitis

Outcomes	Early Cholecystectomy	No early Cholecystectomy	Odds ratio	95% CI
30-day mortality	0.12% (10)	1.12% (92)	0.11	0.06-0.21
90-day mortality	0.33% (27)	2.1% (173)	0.15	0.10-0.23
30-day readmission	15.88% (1,302)	28.30% (2,320)	0.48	0.44-0.52
90-day readmission	18.5% (1,530)	34.24% (2,831)	0.44	0.41-0.47
Acute kidney injury	1.56% (128)	3.67% (301)	0.41	0.34-0.51
Necrotizing pancreatitis	0.75% (62)	1.66% (136)	0.45	0.33-0.61
Acute cholangitis <sup>§</sup>	9.12% (748)	15.07% (1,236)	0.57	0.51-0.62
ERCP <sup>†</sup>	4.06% (353)	7.83% (712)	0.50	(0.44-0.57)
Endoscopic sphincterotomy <sup>¶</sup>	2.78% (230)	6.12% (506)	0.44	0.37-0.51
Biliary leak/perforation	0.13% (11)	0.12% (10)	1.10	0.46-2.59

§ Within 90 days of acute pancreatitis, † all ERCP within a month of acute pancreatitis, ¶ within a week of acute pancreatitis. ERCP Endoscopic retrograde cholangiopancreatography, CI confidence interval

## RESULTS

- 30,062 adult (9,728 elderly) patients with ABP were identified of whom 13,574 (45%) underwent early cholecystectomy
- 49% younger (<70) underwent early cholecystectomy, while 36% of the elderly patients underwent early cholecystectomy
- After propensity score matching, both younger (odds ratio, OR 0.16, p<0.001) and older (OR 0.26, p<0.001) patients who underwent early cholecystectomy had lower 90-day mortality.
- 90-day rehospitalization was lower in both cohorts who underwent early cholecystectomy (p<.001)
- Patients in the early cholecystectomy group were at lower risk of acute cholangitis (OR 0.60, p<0.001)

## DISCUSSION

- Early cholecystectomy reduces short-term mortality and hospital readmission in both younger and older patients with acute biliary pancreatitis
- Our findings emphasize the importance of performing cholecystectomy during the same hospitalization for acute biliary pancreatitis in all patients, including older adults