A NATIONAL INPATIENT SAMPLE ANALYSIS OF PARALYTIC ILEUS AND ERCP COMPLICATIONS

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Introduction

- Paralytic ileus is often seen in critically ill, hospitalized patients.
- Patients with pancreaticobiliary diseases require endoscopic retrograde cholangio-pancreatography (ERCP) for treatment.
- ERCP can lead to multiple post-procedural complications, which can worsen the morbidity and mortality of patients.
- The associations between paralytic ileus and post-ERCP complications have not been explored previously.

Methods

- National Inpatient Sample database was used to identify hospitalized patients over 18 years old who had ERCP procedure between 2007–2017.
- Patients were divided into those with and without paralytic ileus by ICD9/10 codes (not including obstruction) matched by age, gender, race, and Elixhauser comorbidity index.
- Primary outcomes were mortality, length of stay, payor status, and total charges.
- Secondary outcomes were rates of post-ERCP pancreatitis, cholangitis, cholecystitis, infection, hemorrhage, and perforation.
- Chi-squared tests compared categorical data, independent t-tests for continuous data, and multivariate analyses assessed secondary outcomes.

Results

	Not PI N=43,859 (%)	Paralytic Ileus N=43,643 (%)
Age(yrs)-NS	63.0±17.5	63.0±17.4
18-27	1685 (3.8)	1666 (3.8)
28-37	2792 (6.4)	2780 (6.4)
38-47	4354 (9.9)	4312 (9.9)
48-57	6537 (14.9)	6501 (14.9)
58-67	8839 (20.2)	8828 (20.2)
68-77	9569 (21.8)	9499 (21.8)
78-87	7754 (17.7)	7735 (17.7)
>=88	2328 (5.3)	2323 (5.3)
Gender-NS		
Male	23090 (52.6)	22994 (52.7)
Female	20768 (47.4)	20649 (47.3)
Race-NS		
White	31600 (72.0)	31433 (72.0)
Black	4230 (9.6)	4221 (9.7)
Hispanic	4678 (10.7)	4662 (10.7)
A/Pac.Isd.	1862 (4.2)	1864 (4.3)
Na. Amer.	296 (0.7)	288 (0.7)
Other	1193 (2.7)	1175 (2.7)
ECI–NS	9.4±10.4	10.0±11.1

PI = Paralytic Ileus
A/Pac.Isd. = Asian or Pacific Islander
Na. Amer. = Native American
ECI = Elixhauser Comorbidity Index
LOS = Length of Stay
NS = Not Significant

Mortality–p<0.001		
Alive	42837 (97.7)	41611 (95.4)
Deceased	1002 (2.3)	2013 (4.6)
LOS (days)–p<0.001	7.3±8.1	14.2±14.0
Payor–p<0.001		
Medicare	22804 (52.0)	22850 (52.5)
Medicaid	4643 (10.6)	3996 (9.2)
Private	12920 (29.5)	13307 (30.5)
Self-pay	2056 (4.7)	1869 (4.3)
No charge	249 (0.6)	289 (0.7)
Other	1155 (2.6)	1254 (2.9)
Total Charges–p<0.001	$74,208.1	$138,178.0

Table 1. Demographic information for patients who undergo Endoscopic Retrograde Cholangiopancreatography (ERCP) with and without Paralytic Ileus

ERCP Complication	Odds Ratio (95% CI)	P-Value
Pancreatitis	5.6 (4.6-6.7)	<0.001
Perforation	14.6 (9.3-23.0)	<0.001
Cholangitis	15.3 (11.9-19.6)	<0.001
Cholecystitis	7.4 (4.3-12.6)	<0.001
Infection	10.4 (8.9-12.2)	<0.001
Hemorrhage	15.2 (9.0-25.8)	<0.001
Mortality	2.1 (1.9-2.2)	<0.001

Table 2. Outcomes of Patients who underwent Endoscopic Retrograde Cholangiopancreatography (ERCP) with Paralytic Ileus, CI = Confidence Intervals

Results

- Of the 87,502 patients who met the inclusion criteria, 43,859 had paralytic ileus.
- There were no differences in age or race between the two groups, but those with paralytic ileus had an increased length of stay, higher total charges, mostly had Medicaid or Medicare, and greater mortality compared to the control group.
- The data was also significant (p< 0.001) for an increased odds ratio for post-ERCP pancreatitis (OR 5.6), perforation (OR 14.6), cholangitis (OR 15.3), cholecystitis (OR 7.4), infection (OR 10.4), hemorrhage (OR 15.2), and mortality (OR 2.1).

Discussion

- Paralytic ileus is commonly seen in hospitalized patients with up to 6% mortality.
- Ileus is usually caused by dysregulation of sympathetic and parasympathetic control in the gut or secondary to medications, metabolic derangements, and surgical interventions.
- Their clinical status puts them at higher risks for multiple post-procedural complications.
- Therefore, patients with paralytic ileus should be medically optimized before undergoing ERCP.

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