

Analysis of Clinical Outcomes and Length of Stay Among Patients with Systemic Lupus Erythematosus Undergoing Endoscopic Retrograde Cholangiopancreatography: A Nationwide Inpatient Sample Analysis

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Background

Systemic Lupus Erythematosus (SLE) is a chronic disease that is characterized by a high inflammatory state and is associated with biliary and pancreatic disease. The literature is deficient on the associations of ERCP related outcomes and complications in SLE patients. This study aims to evaluate the effects of SLE on clinical outcomes and in-patient mortality in patients undergoing ERCP.

Method

The NIS database was used to identify hospitalized patients who had an ERCP study from 2012-2014 using ICD-9 codes and split into those with and without SLE. Primary outcomes were mortality, hospital charges, and length of stay (LOS). Secondary outcomes were ERCP related complications. Chi squared tests for categorical data and independent T test for continuous data were used to compare the outcomes between the two groups. Multivariate analysis was performed to adjust for confounding variables.

Results

There was 83,900 ERCP hospitalizations from 2012-2014, of which 420 patients had SLE. In patients with SLE who had an ERCP, 92.9% were female and the average age was 53.1. The average LOS was 7.7 days, mortality rate was 2.4%, and total hospital charges was \$71,758. There was no statistical significance in the primary outcomes. Of the secondary outcomes, in SLE patients, there were statistically significant less strictures (20.2% vs 24.9%, OR 0.87, 95% CI 0.68-1.11) and higher fistula formation rates (1.2% vs 0.2%, OR 7.60, 95% CI 3.05-18.9).

Conclusion

With SLE patients being in a high inflammatory state, it was hypothesized that SLE would be associated with higher rates of complications and worse outcomes. However, in this study, the primary outcomes were not found to be statistically significant, but an increased risk of fistula formation was significant. It is possible that many SLE patients do not present with an acute flare and are likely immunosuppressed which can have a protective effect on the results.

	ERCP Without Lupus N=83,480	ERCP With Lupus N=420	P-Value	95% CI
Mean Age (years)	60.0 (18.0 SD)	53.1 (14.5 SD)	<0.05	5.08-8.68
Sex			<0.05	
Female	46,430 (55.6%)	390 (92.9%)		
Male	37,040 (44.4%)	30 (7.1%)		
Race			<0.05	
White	52,425 (66.2%)	175 (45.5%)		
Black	9,235 (11.7%)	115 (45.2%)		
Hispanic	11,200 (14.1%)	65 (16.9%)		
Asian or Pacific Islander	2,960 (3.7%)	20 (5.2%)		
Native American	450 (0.6%)	10 (2.6%)		
Others	2,975 (3.8%)	0 (0.0%)		
Primary Payer			<0.05	
Medicare	39,405 (47.3%)	190 (45.2%)		
Medicaid	12,085 (14.5%)	90 (21.4%)		
Private Insurance	24,035 (28.8%)	125 (29.8%)		
Self-pay	4,610 (5.5%)	5 (1.2%)		
Others	3,180 (3.8%)	10 (2.4%)		
Length of Stay in Days	7.9 (10.1 SD)	7.7 (7.2 SD)	0.62	-0.72- 1.21
Total charges	\$77,593 (107,794 SD)	\$71,758 (78,559 SD)	.271	-69,296 – 80,966
Charlson Comorbidity Index	3.3 (2.7 SD)	3.3 (1.8 SD)	0.96	-0.26- 0.27

SD- Standard Deviation, CI- Confidence Interval, ERCP- Endoscopic Retrograde Cholangiopancreatography

Table 2: Clinical Outcomes in ERCP Patients With and Without Lupus

	ERCP Without Lupus N=83,480	ERCP With Lupus N=420	P-Value	Adjusted Odds Ratio (95% CI)
GI bleed	875 (1.0%)	0 (0.0%)	.11	0.11 (.01-1.80)
Perforation	210 (0.3%)	0 (0.0%)	0.59	0.47 (0.03-7.56)
Abscess	90 (0.1%)	0 (0.0%)	0.96	1.08 (0.07- 17.47)
Pancreatitis	24,000 (28.7%)	135 (32.1%)	0.13	1.26 (1.02-1.55)
Stricture	20,805 (24.9%)	85 (20.2%)	<0.05	0.87 (0.68-1.11)
Fistula	165 (0.2%)	5 (1.2%)	<0.05	7.60 (3.05-18.9)
Sepsis	11,250 (13.5%)	55 (13.1%)	0.82	1.22 (0.91-1.63)
In-Patient Mortality	1,920 (2.3%)	10 (2.4%)	0.91	1.43 (0.76-2.68)

CI- Confidence Interval, ERCP- Endoscopic Retrograde Cholangiopancreatography