Outcomes of Pyogenic Liver Abscess (PLA) on Mortality and Hospitalization Cost Amongst Patients With and Without Cirrhosis: 4-year retrospective study using National Inpatient Sample (2016 – 2019)

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Introduction

Liver abscesses are the most common type of intra-abdominal abscess. Risk factors for developing pyogenic liver abscess include diabetes mellitus and chronic hepatobiliary disease. Limited data is available comparing the clinical outcomes in cirrhotic patients who develop pyogenic liver abscess.

Methods and Materials

Using National Inpatient Sample databases from 2016 to 2019 (3), we identified patients presenting with pyogenic liver abscess. The population were then divided based on the presence and absence of cirrhosis using appropriate ICD-10-CM/PCS codes. STATA 17.0 software (4) was used for the analysis. Pearson's Chi-Square test was used to analyze categorical variables, whereas the student t-test was used to analyze continuous variables. Univariate and multivariate logistic regression was used to adjust for potential confounders. The primary outcome was in hospital mortality due to pyogenic liver abscess in patients with cirrhosis vs without cirrhosis. Trends in terms of health care utilization and mortality were analyzed from 2016 to 2019.

	PLA With Cirrhosis, N (%)	PLA Without Cirrhosis, N (%)	P value
TOTAL	1770(8.92)	18060(91.07)	
	DEMOGRAPHICS		
MEAN AGE (YEARS)	60.93±14.23	61.30±15.59	
GENDER (FEMALE) (%)	724 (40.9)	7404 (41)	0.976
	COMORBIDITIES		
VARICES WITH OUT BLEED	142(8.1)	361(0.2)	<0.001
VARICES WITH BLEED	3.5 (0.2)	0(0)	0.041
ASCITES	1255(70.9)	18(0.1)	<0.001
SPONTANEOUS BACTERIAL PERITONITIS	140(7.9)	36(0.2)	<0.001
LIVER DISEASE	770(43.5)	2167(12)	<0.001
COAGULOPATHY	404(22.8)	1300(7.2)	<0.001
LIVER TRANSPLANT	14(0.8)	150(90.8)	0.973
ANEMIA	228(12.9)	1427(7.9)	0.001
PULMONARY CIRCULATION DISORDERS	94(5.3)	470(2.6)	0.002
PERIPHERAL VASCULAR DISORDERS	119(6.7)	794(4.4)	0.048
	ETHNICITY		0.27
CAUCASIAN (%)	1177(66.5)	11829(65.5)	
NON-CAUCASIAN (%)	591(33.7)	6231(34.3)	
	CHARLSON CO-MORBIDITY INDEX		<0.001
0-2	653(36.9)	13419(74.3)	
3 OR >3	1113(62.9)	4623(25.6)	
	PRIMARY OUTCOME		
	Odds Ratio	95% Confidence Interval	P value
MORTALITY (%)	1.673	0.213-13.088	0.624
	SECONDARY OUTCOMES		
	Mean	Standard Deviation	P value
LENGTH OF STAY (DAYS)	9.47±8.17	7.18±6.08	<0.001
TOTAL CHARGE (US$)	26845	18347	<0.001

Table 1: Inpatient outcome comparison of cirrhotic patients presenting with pyogenic liver abscess

Results

Amongst total of 19 830 patients admitted with pyogenic liver abscess, 1770 patients had cirrhosis and 18 060 patients did not have cirrhosis. Male gender and white ethnicity were predominant in both populations. The mean length of stay was 9.47±8.17 days in the cirrhotic group, 7.18±6.08 days in the non-cirrhotic group which was statistically significant. The mean total hospitalization charges in cirrhotic group were $26 845, in the non-cirrhotic group were $18 347 which was statistically significant. However, there was no statistical difference in the in-hospital mortality in both the groups. On comparing the data from 2016 to 2019, there seems to be a trend in decreasing mortality in both the groups, but the trend of health care utilization remains similar.

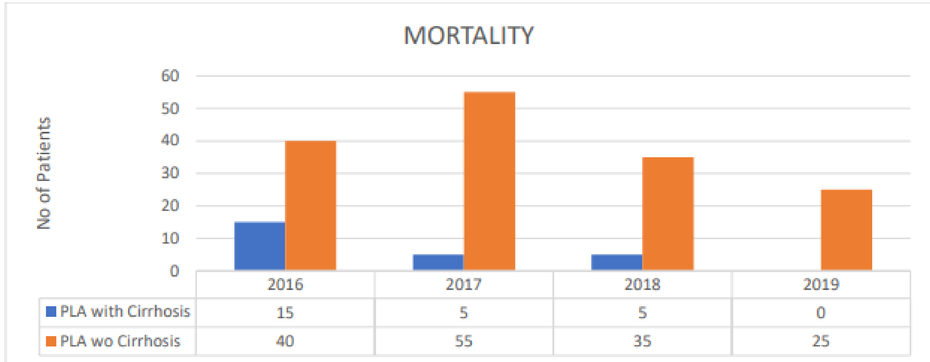

Figure 1: Top: Mortality from 2016 to 2019 (p-value:0.624). Bottom left: Mean Length of stay (p-value:<0.001). Bottom right: Mean Total hospitalization charges, (p-value:<0.001).

Conclusion

Patients with pyogenic liver abscess and cirrhosis, had a higher resource utilization across the years. The mortality seems to be decreasing in the recent years. No difference was seen in mortality when compared to non-cirrhotic group.

References

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