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Association Between Major Depressive Disorder and Hospitalization Outcomes in Patients With Lymphoid and Hematopoietic Malignancies: A Population-Based Study

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INTRODUCTION

Patients diagnosed with lymphoid and hematopoietic malignancies commonly experience significant psychological distress, including major depressive disorder. Understanding the impact of major depressive disorder on hospitalization outcomes, such as mortality rates and length of hospital stay, in this population is crucial for optimizing care strategies.

METHOD

Data were obtained from the Nationwide Inpatient Sample (NIS) 2021 database using appropriate ICD-10 codes. A survey analysis was conducted to estimate the total counts of adult patients admitted with a principal diagnosis of lymphoid and hematopoietic malignancies and a secondary diagnosis of major depressive disorder in 2021. Mortality rate proportions were compared using a Pearson chi-squared test within the subgroup based on the presence of major depressive disorder. Additionally, a multivariate linear regression analysis was performed within the subgroup to assess the impact of major depressive disorder on length of stay, adjusting for demographic characteristics like age, gender, and income quartile as well as hospital characteristics and patient health indices.

RESULTS

The analysis revealed an estimated total count of 102,930 cases of lymphoid and hematopoietic malignancies and 11,505 cases of major depressive disorder in the population. Among the patients admitted with a principal diagnosis of lymphoid and hematopoietic malignancies, 88.82% did not exhibit major depressive disorder, while 11.18% did. Mortality rates during hospitalization were 7.08% among patients with lymphoid and hematopoietic malignancies without major depressive disorder and 4.7% among those with major depressive disorder, showing a statistically significant association (Pearson $\chi^2 = 5901.9603$; $P < 0.001$). This association remains significant even after adjusting for several covariates including age, gender, race, income quartile, Charlson Comorbidity Index, hospital location, hospital region, teaching status, and hospital bed size (coefficient, −0.0242; $P = 0.000$; 95% CI, −.0338 to −.0146). Furthermore, major depressive disorder was associated with an increase in length of stay by approximately 0.87 days (coefficient, 0.871; $P = 0.016$; 95% CI, 0.164-1.579) after adjusting for other variables.

Category	Outcome	Value	Statistical Significance
Total Cases	Lymphoid and hematopoietic malignancies	102,930	
	Major depressive disorder	11,505	
Demographic Characteristics	Without major depressive disorder	88.82%	
	With major depressive disorder	11.18%	
Mortality Rates	Without major depressive disorder	7.08%	Pearson χ^2 = 5901.9603; P < 0.001
	With major depressive disorder	4.7%	
Adjusted Mortality Rates	Coefficient	-0.0242	P = 0.000; 95% CI, –0.0338 to –0.0146
Length of Stay	Increase in length of stay (days)	+0.87	Coefficient = 0.871; P = 0.016; 95% CI, 0.164-1.579
Covariates Adjusted For	Age, gender, race, income quartile, Charlson Comorbidity Index, hospital location, hospital region, teaching status, and hospital bed size		

CONCLUSIONS

This study provides evidence of a significant association between major depressive disorder and both mortality rates and length of hospital stay among patients with lymphoid and hematopoietic malignancies.