Palliative Care and Resource Utilization at the End of Life in Advanced Liver Disease

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Background

- Literature describing end-of-life (EOL) care processes and outcomes in patients with advanced liver disease is sorely lacking.
- Persistence of organ shortages for transplant and high morbidity of cirrhosis make understanding palliative care and EOL resource utilization patterns essential.

Aim

- To characterize the frequency and predictors of palliative care and resource utilization patterns in patients with advanced liver disease.

Methods

- We utilized the Nationwide Inpatient Sample (NIS), 2009-2013.
- Patients with decompensated cirrhosis were identified by validated ICD-9 CM codes; only age≥18, LOS≥3 days, deceased patients included.
- Multivariate logistic and simple linear regression were performed to determine predictors of palliative care and total cost, respectively.

Results

Table 1: Demographics, Hospital Characteristics, and Utilization Trends of Patients Receiving and Not Receiving Palliative Care

	Received Palliative Care	Did Not Receive Palliative Care	p-value
# Patients (N)	17,358 (29.1%)	42,329 (70.9%)	N/A
Age (years)	59.5 (0.232)	59.7 (0.169)	0.6489
Female (%)	6,506 (37.2%)	15,774 (37.5%)	0.7878
Male (%)	10,849 (62.8%)	26,555 (63.5%)	0.7878
Race			
Caucasian	11,962 (28.3%)	27,491 (69.1%)	
African American	1,578 (24.4%)	4,868 (75.6%)	
Hispanic	2,495 (26.5%)	6,936 (73.3%)	
Asian	396 (29.7%)	917 (69.5%)	
Native American	335 (44.4%)	417 (54.8%)	
Other	592 (27.6%)	1,557 (72.5%)	0.282
Hospital bed size			
Small	1,154 (22.3%)	4,039 (78.6%)	
Medium	3,512 (26.8%)	9,619 (72.3%)	
Large	12,692 (30.6%)	28,489 (69.1%)	**<0.01**
Hospital region			
Northeast	2,762 (23.4%)	9,054 (76.6%)	
Midwest	3,509 (30.7%)	7,889 (69.3%)	
South	5,535 (25.7%)	16,010 (74.3%)	
West	5,551 (37.2%)	9,369 (62.8%)	**<0.01**
HCC (%)	1,663 (37.5%)	2,775 (62.5%)	**<0.01**
OLT Candidate (%)	332 (26.4%)	923 (73.6%)	**<0.01**
LOS (days)	12.61 (0.266)	14.57 (0.239)	**<0.01**
Total costs ($)	44,352 (1,512)	48,760 (1,320)	**<0.01**
Ventilation (%)	8,442 (48.6%)	24,798 (58.6%)	**<0.01**
Hemodialysis (%)	2,443 (14.1%)	6,823 (16.2%)	**<0.01**
Transfusion (%)	7,073 (40.7%)	18,949 (44.8%)	**<0.01**

Table 2: Significant Predictors of Palliative Care During Terminal Hospitalization

	Odds Ratio (CI)	p-value
African American	0.74 (0.62-0.88)	<0.01
Hispanic	0.79 (0.68-0.93)	<0.01
Asian	0.73 (0.54-0.99)	0.04
Large bed size	1.48 (1.17-1.88)	<0.01
West Coast	2.40 (1.84-3.12)	<0.01
HCC	1.45 (1.24-1.70)	<0.01
OLT Candidate	0.66 (0.48-0.92)	<0.01

Table 3: Significant Predictors of Total Cost During Terminal Hospitalization

	β-coefficient-$ (CI)	p-value
Palliative Care	-8,670 (-11,288, -6,052)	<0.01
Large Bed Size	10,990 (6,705, 15,274)	<0.01
West Coast	20,612 (14,600, 26,624)	<0.01
OLT candidate	102,995 (75,445, 130,445)	<0.01

Conclusions

- Racial/ethnic and geographic disparities exist for palliative care in patients with advanced cirrhosis.
- Palliative care is associated with lower overall costs, while OLT candidates and recipients incur higher costs at the end of life.
- Further research is needed to explore barriers to palliative care receipt in this ill population.