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NATIONWIDE TRENDS OF PALLIATIVE CARE INPUT AMONG HOSPITALIZED PATIENTS WITH ACUTE MYELOID LEUKEMIA AT ACADEMIC CENTERS

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INTRODUCTION

Early integration of palliative care (PC) has been shown to improve quality of life and symptom management in patients with acute myeloid leukemia (AML); however, there is a paucity of data regarding the nationwide trends of PC use among hospitalized patients with AML

AIM

To determine the patterns of usage and impact of PC input during hospitalization for patients with AML.

METHOD

- The data was extracted from the National Inpatient Sample Database from 2002–2019 using the relevant International Classification of Diseases (ICD) codes.
- Hospitalization from urban teaching centers was selected. Chi-square and Mann-Whitney U tests were used to compare categorical and continuous variables, respectively.
- A multivariate logistic regression model was constructed to assess for patient characteristics, comorbidities, hospital location, and hospitalization complications like cardiogenic shock (CS), clostridium difficile infection (CDI), death, pneumonia (PNA), septic shock (SS), and tumor lysis syndrome (TLS).

RESULTS

Variable (%)	Univariate Analysis			Multivariate analysis		
	AML with PC encounter	AML without PC encounter	P value	Odd's ratio	95% Confidence interval	P value
Age (Interquartile range) years	60 (47-70)	70 (60-79)	<0.01	-	-	-
Age< 50	6221 (2.8)	214031 (97.2)	<0.01	Reference	-	<0.01
Age≥ 50 ≥ 65	12896 (4.9)	248764 (95.1)		1.22	1.18-1.27	
Age> 65	33158 (11.3)	259188 (88.7)		1.88	1.81-1.94	
Female Gender				1.12	1.09-1.14	<0.01
Race			0.01			
White	37130 (7.4)	462367 (92.6)		Reference	-	
Black	5023 (7.1)	65512 (92.9)		1.05	1.01-1.09	0.02
Hispanic	3160 (5.2)	58048 (94.8)		0.86	0.82-0.90	<0.01
Asian/ Pacific Islander	1584 (6.3)	23589 (93.7)		0.81	0.76-0.86	
Other	1714 (6.0)	26885 (94.0)		0.71	0.67-0.76	
Geographic Region			<0.01			<0.01
South	16672 (6.0)	260443 (94.0)		Reference	-	
Midwest	13231 (7.3)	168975 (92.7)		1.18	1.14-1.21	
Northeast	12719 (7.0)	168644 (93.0)		1.09	1.06-1.12	
West	9654 (7.2)	123920 (92.8)		1.18	1.14-1.21	
Comorbidities						
Chronic Obstructive Pulmonary Disease	8894 (17.0)	86577 (12.0)	0.01	1.15	1.11-1.18	<0.01
History of myocardial infarction	3935 (7.5)	31239 (4.3)	<0.01	0.96	0.92-1.00	0.07
Congestive Heart Failure	10214 (19.5)	71949 (10.0)	0.04	1.19	1.16-1.23	<0.01
Chronic Kidney Disease	8298 (15.9)	51421 (7.1)	0.09	1.30	1.26-1.35	<0.01
Diabetes	2710 (5.2)	20895 (2.9)	<0.01	1.23	1.17-1.30	<0.01
Hypertension	26323 (50.4)	292154 (40.5)	<0.01	0.96	0.94-0.98	<0.01
Obesity	1970 (3.8)	21185 (2.9)	<0.01	0.96	0.90-1.02	0.19
In Hospital Complications						
Cardiogenic shock	713 (1.4)	2158 (0.3)	<0.01	1.43	1.27-1.60	<0.01
Clostridium Difficile Infection	775 (1.5)	4800 (0.7)	<0.01	1.33	1.21-1.48	<0.01
Do Not Resusitate status	27430 (52.5)	30625 (4.2)	<0.01	13.07	12.76-13.39	<0.01
Death	23762 (45.5)	51241 (7.1)	<0.01	6.79	6.60-6.98	<0.01
Pneumonia	8885 (17.0)	36170 (5.0)	<0.01	1.60	1.54-1.65	<0.01
Septic shock	7319 (14.0)	26604 (3.7)	<0.01	1.64	1.57-1.70	<0.01
Tumor Lysis Syndrome	3300 (6.4)	12711 (1.8)	<0.01	1.29	1.22-1.36	<0.01

Table 1: Summary of Univariate and Multivariate Analysis of hospitalizations for acute myeloid leukemia with and without palliative care (PC) input

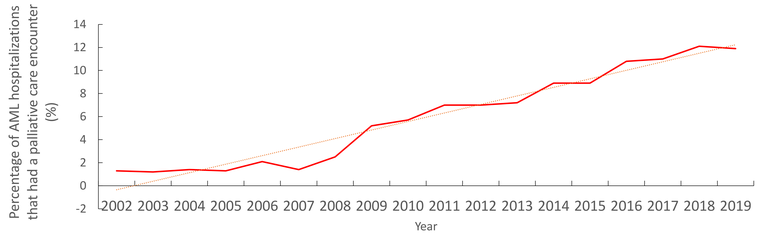


Figure 1: Annual trend of percentage of hospitalization for acute myeloid leukemia that had a palliative care encounter from 2002 to 2019.

A total of 52276 (6.8%) among 774259 were billed for PC encounters (PCE). The rate of PCE increased from 1.3% in 2002 to 11.9% in 2019 for all AML hospitalizations (p<0.01) (Figure 1). Elderly patients (>65 years) and females were more likely to receive a PCE (both p<0.01). Patients who received PCE also had higher rates of comorbidities like congestive heart failure, chronic kidney disease, and diabetes. Multivariate analysis revealed that Hispanics, Asians, and Pacific Islanders were less likely to receive PCE compared to Whites (Odds ratio [OR]: 0.81, confidence interval [CI], 0.76-0.86; p<0.01) (Table 1). Significant geographic variation also existed as patients admitted at centers in the Midwest, Northeast, and West were all more likely to receive PCE compared to patients admitted to centers in the South (all p<0.01). Patients who developed complications like CS, CDI, PNA, SS, and TLS were also significantly more likely to receive PCE (all p<0.01) (Table 1). Over 45% of the patients who had a PCE died during the hospital stay compared to 7.1% of patients who did not receive PCE (OR: 6.79, CI 6.60-6.98; p<0.01), indicating that most PCE are reserved for cases with severe morbidity (Table 1).

CONCLUSIONS

Though PC has been integrated in the care of AML patients at many academic centers, it remains an underutilized service and further studies are needed to elucidate the reason for the racial and geographic disparities that persist..

CONTACT INFORMATION

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