Impact of Socioeconomic and Racial Disparities on Treatment Access and Outcomes in Acute Myeloid Leukemia: A National Inpatient Analysis

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INTRODUCTION

- Acute myeloid leukemia (AML) is a life-threatening hematologic malignancy where early diagnosis and treatment are critical for survival.
- However, social determinants such as race, income, insurance, and region may affect access to optimal care.

AIM

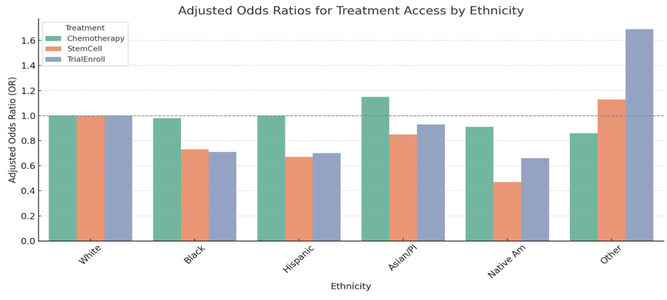
- This study aims to assess the effects of race, income, and insurance coverage on utilization of chemotherapy and HSCT, complications, and in-hospital outcomes in AML, utilizing data from the National Inpatient Sample (NIS) database.
- Understanding these disparities is crucial for developing targeted interventions to improve patient outcomes and to promote health equity in this patient population.

METHODS

- A retrospective cohort analysis was conducted using the 2016–2020 National Inpatient Sample.
- Adult AML hospitalizations were identified via ICD-10 codes and stratified by ethnicity, income, insurance, and region.
- Multivariable logistic regression evaluated associations between socioeconomic factors and outcomes, including chemotherapy, stem cell transplant, mortality, and complications

RESULTS

- Among 287,949 AML hospitalizations, African American (AA) and Hispanic patients were disproportionately represented in the lowest income quartile (45.6% and 33.0%, respectively) and had higher Medicaid coverage (30.0% and 40.0%, respectively).
- Compared with White patients, AA patients had lower odds of receiving a stem cell transplant (adjusted odds ratio [aOR], 0.73; 95% confidence interval [CI], 0.64–0.84; P<0.001) and clinical trial enrolment (aOR, 0.71; CI, 0.59–0.86; P<0.001) but higher odds of mortality (aOR, 1.15; CI, 1.05–1.27; P=0.005), relapse (aOR, 1.11; CI, 1.01–1.21; P=0.022), and bleeding (aOR, 1.25; CI, 1.11–1.40; P<0.001).
- Hispanic patients had reduced chemotherapy utilization (aOR, 1.00; CI, 0.92–1.08; P=0.94) and increased bleeding risk (aOR, 1.30; CI, 1.11–1.49; P<0.001). Asian/Pacific Islander patients showed higher chemotherapy access (aOR, 1.15; CI, 1.03–1.29; P=0.012) but increased relapse risk (aOR, 1.18; CI, 1.03–1.35; P=0.018).
- Patients in the lowest income quartile had significantly lower chemotherapy use (24.1% vs 30.2%, P<0.001) and higher relapse risk (aOR, 1.22; CI, 1.13–1.33; P<0.001). Medicaid and uninsured patients had the highest in-hospital mortality (11.5% and 12.0%, respectively) compared with Medicare patients (8.9%, P=0.001).
- Stem cell transplant rates were lowest in Native American (3.95%) and AA (6.14%) patients, significantly lower compared with White patients (7.18%, P<0.001).



Ethnicity	Mortality (%)	OR (CI)	P	Sepsis (%)	OR (CI)	P	Relapse (%)	OR (CI)	P	Bleeding (%)
White	8.78	Ref	–	14.3	Ref	–	13.4	Ref	–	4.87
Black	8.97	1.15 (1.05–1.27)	0.005	15.0	1.09 (1.00–1.18)	0.043	16.1	1.11 (1.01–1.21)	0.022	5.70
Hispanic	7.18	1.01 (0.85–1.19)	0.902	15.7	1.22 (1.11–1.34)	0.000	16.1	1.01 (0.89–1.14)	0.802	5.57
Asian/PI	9.08	1.14 (0.98–1.33)	0.084	17.1	1.28 (1.13–1.45)	0.000	17.3	1.18 (1.03–1.35)	0.018	4.89
Native Am	8.77	1.21 (0.74–1.96)	0.446	15.7	1.21 (0.85–1.72)	0.280	10.5	0.69 (0.38–1.25)	0.182	5.26
Other	9.70	1.23 (1.05–1.45)	0.008	13.8	0.99 (0.74–1.33)	0.932	20.8	1.51 (1.24–1.84)	0.000	5.45

CONCLUSIONS

- Socioeconomic and racial disparities significantly influence AML treatment and outcomes.
- Patients from minority racial groups and low socioeconomic backgrounds face barriers to curative therapy, contributing to poorer clinical outcomes.
- Prospective studies are needed to identify these barriers and develop strategies that ensure equitable access and improve care for all AML patients.

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