RACIAL AND ETHNIC DIFFERENCES IN THE OUTCOMES OF ACUTE MYELOID LEUKEMIA AMONG ADOLESCENT AND YOUNG ADULT PATIENTS: INSIGHTS FROM THE SEER DATABASE

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Introduction

- Adolescent and young adult (AYA) patients (ages 15–39) who are diagnosed with Acute Myeloid Leukemia (AML) represent a distinct population due to their unique characteristics. With the ever-growing data on cytogenetics/molecular studies, more discoveries of underlying pathogenesis, including some hereditary susceptibility conditions, the outcomes of AML in this age group can vary significantly among patients of different ethnic backgrounds.
- Access to medical care and rate of response to conventional therapeutic options may also add to the difference in overall survival, and we therefore sought to evaluate the incidence and outcomes of AYA patients diagnosed with AML stratified by race and ethnicity through the large population-based data.

Methods

- We conducted a retrospective cohort analysis using the Surveillance, Epidemiology, and End Results (SEER) research plus database (22 Registries, 2000–2021).
- AYA patients aged 15–39 years diagnosed with AML were included. Age-adjusted incidence and mortality rates were calculated using SEER*Stat version 8.4.4. Survival analysis, including Kaplan-Meier estimates and Cox proportional hazards models, was performed using R version 4.5.1.

Results

- Among 11,553 identified AYA AML cases (50% male), the racial/ethnic composition was 47.5% White, 12.2% Black, 30.2% Hispanic, 9.3% Asian/Pacific Islander (API), and 0.7% American Indian/Alaska Native (AIAN).
- From 2000 to 2021, the overall age-adjusted incidence rose from 1.15 to 1.35 per 100,000 person-years.
- Mortality rate increased from 0.25 to 0.41 per 100,000. In multivariable analyses, Black patients exhibited the highest risk of death (aHR 1.25; 95% CI 1.14-1.37; p < 0.001) compared to White Patients.

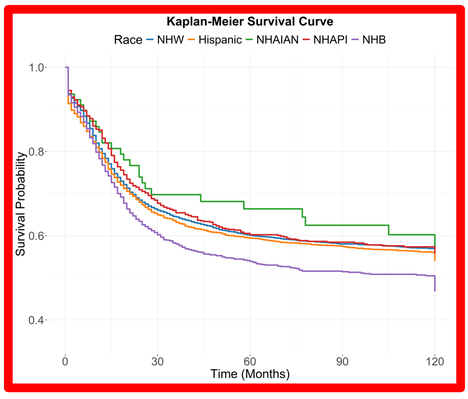
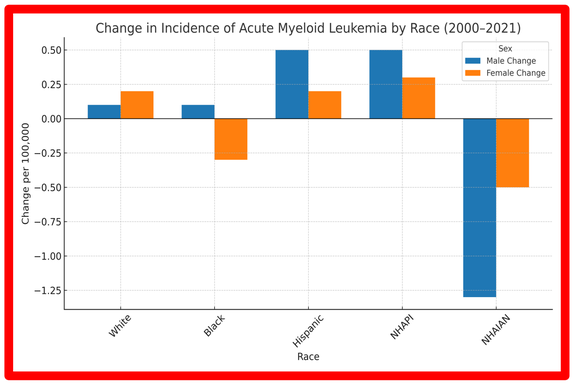
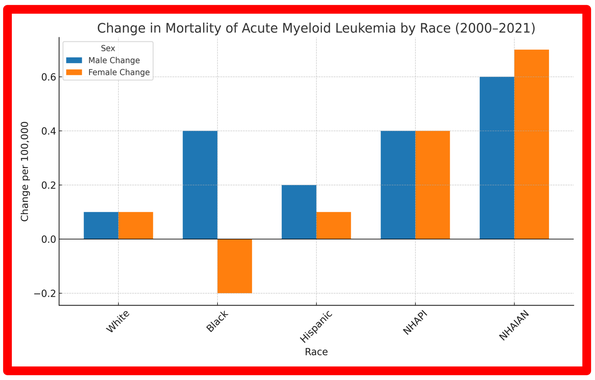


Figure 1: The Kaplan-Meier survival curve displays cumulative survival over time in AYA AML patients (log-rank p-value < 0.001)

Among the AML patients diagnosed in AYA age group, patients of black race had worse OS compared to white patients. More research is needed to determine the specific cause and ways to improve their outcomes.

Results





Discussion

Consistently worse survival in Black AYA patients

- SEER (2000–2021) and NCDB (2001–2011) confirm significantly higher mortality risk vs. Whites patients.[1]

Contributing factors to poorer outcomes

- **Access and insurance barriers:** Black patients are more likely to be uninsured or on Medicaid → delays in diagnosis, reduced access to transplant or optimal therapy.[1,2]
- **Treatment differences:** Historical data show Black patients are less likely to undergo intensive chemotherapy or bone marrow transplant, even when eligible.[3]
- **Biological factors:** Possible differences in AML biology or cytogenetic/molecular risk profiles may contribute, though evidence remains limited.[4]

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