Impact of Age and Race on Survival Outcomes in Hairy Cell Leukemia: A SEER-Based Analysis (2000–2022)

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Introduction

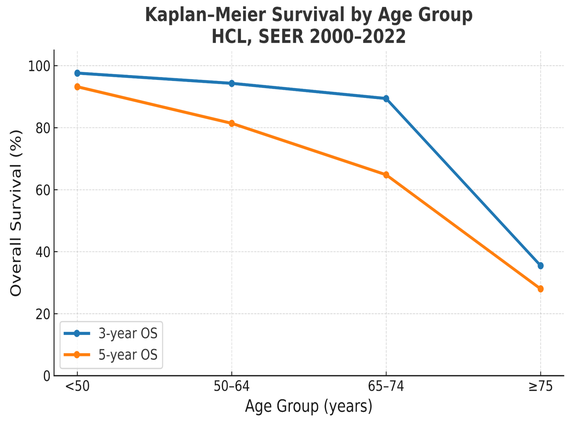
- Hairy Cell Leukemia (HCL) is a rare, indolent B-cell lymphoproliferative disorder characterized by favorable long-term outcomes with modern therapies. However, the impact of demographic factors such as age and race on survival outcomes remains incompletely characterized.
- We aimed to evaluate real-world trends in overall survival and cancer-specific mortality among patients with HCL using a large national cancer registry

Methods

- We conducted a retrospective cohort study utilizing the SEER 18 database (2000–2022).
- Patients diagnosed with HCL were included after excluding those with missing survival data. Kaplan-Meier analysis was used to estimate 3-year and 5-year overall survival (OS) stratified by age groups (<50, 50–64, 65–74, ≥75 years).
- Cancer-specific mortality differences by race were assessed using chi-square tests. Survival curves were compared using the log-rank test.
- Multivariable Cox proportional hazards regression was performed to evaluate independent predictors of survival, adjusting for age, sex, and race.

Results

- A total of 6,036 patients were included. The median age at diagnosis was 62 years, with a median follow-up of 95 months.
- Five-year OS rates were 93.2% (<50 years), 81.4% (50–64 years), 64.8% (65–74 years), and 28.0% (≥75 years). Three-year OS rates were 97.6% (<50 years),94.3% (50–64 years),89.4% (65–74 years), and 35.5 % % (≥75 years).
- Kaplan-Meier survival curves demonstrated clear separation across age groups, and the log-rank test confirmed significant differences (Chi-square = 21.36, p<0.001).
- Cancer-specific mortality varied significantly by race (p=0.0003): highest among American Indian/Alaska Native (31.8%), followed by Black (15.0%), Asian/Pacific Islander (11.4%), and White (11.2%) patients.
- In multivariable Cox analysis, increasing age remained independently associated with worse survival: HR 1.26 for 65–74 years (95% CI, 1.26–1.46; p<0.001) and HR 2.58 for ≥75 years (95% CI, 2.10–3.18; p<0.001) compared to <50 years. Black (HR 1.19, p=0.014) and Asian/Pacific Islander (HR 1.16, p=0.034) patients had higher mortality compared to White patients.
- Sex was not a significant predictor (p=0.096).



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