Conference Abstracts

Diagnosis, Survival, and Prognostic Factors in Acute Myeloid Leukemia in the United States: A Retrospective Cohort Study

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Keywords: AML, Prognostic Factors, Diagnostic Factors

https://doi.org/10.53876/001aa.129584

International Journal of Cancer Care and Delivery

Vol. 5, Issue Supplement 1, 2025

Background

Acute myeloid leukemia (AML) remains a malignancy with heterogeneous outcomes influenced by clinical and sociodemographic factors. Large-scale analyses evaluating the prognostic roles of demographic variables, socioeconomic status, treatment access, and temporal trends are critical for improving risk stratification and care equity.

Methods

In this retrospective cohort study, patients diagnosed with AML between the ages of 15 and 99 years were identified from the Surveillance, Epidemiology, and End Results (SEER) database from 2000 to 2021. Descriptives were compared using the Jonckheere-Terpstra and Cochran-Mantel-Haenszel tests. Overall survival (OS) was calculated by the Kaplan-Meier method. Univariate and multivariate Cox regression models were used to estimate hazard ratios (HRs) for prognostic factors and compare survival between patients diagnosed at different periods.

Results

The cohort (mean age, 64.95 years; 45.4% male) showed significantly improved survival in later diagnosis periods ($P<0.001$) and superior female survival ($P<0.001$). Univariate Cox identified the following as increased risks: not receiving chemotherapy (HR, 3.055; $P<0.001$), age (HR, 1.039/year; $P<0.001$), and cases in earlier decade (2005–2008; HR, 1.216; $P<0.001$). Multivariate Cox models showed independent associations for not receiving chemotherapy (HR, 2.007; $P<0.001$), increasing age (HR, 1.032/year; $P<0.001$), female sex (HR, 0.915; $P<0.001$), higher income (HR, 0.988/unit; $P<0.001$), race (HR, 1.078; $P<0.001$), and marital status (HR, 1.076; $P<0.001$).

Conclusions

The study identifies chemotherapy administration, advanced age, male sex, lower income, Black race, and divorced/single marital status as independent predictors of poorer AML survival, with temporal trends indicating improving outcomes in more recent years of diagnosis. These findings underscore the critical impact of socioeconomic disparities and biological factors on survival.