Conference Abstracts

Exploring Prognostic Nutritional Index (PNI) and Racial Disparities in DLBCL

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Background

DLBCL is the most common subtype of non-Hodgkin lymphoma (NHL), with a projected incidence of 32,443 new cases per year by 2025. Recent studies have indicated the potential significance of PNI in DLBCL outcomes, predominantly in the Asian population. However, the role of PNI in other ethnicities has been insufficiently studied. We performed a retrospective cohort study to examine the impact of PNI on racial disparities and outcomes in newly diagnosed DLBCL patients treated in a large academic medical center.

Methods

Data was collected for patients diagnosed with DLBCL between 2011 and 2021. A total of 234 patients were included for further analysis. The PNI was calculated using albumin and absolute lymphocyte count. The Cox proportional hazard model and Kaplan-Meier survival analysis were used to investigate the association between the variables of interest and patient survival. A multivariate Cox regression model was adjusted for clinical variables such as age, gender, and tumor stage.

Results

Among the 234 patients with DLBCL, 130 (54%) were male, and the median age at diagnosis was 65. The majority of patients had stage III or IV disease with ECOG of 0 or 1. 128 (55%) were Caucasian, 54 (22%) were Hispanic, 47 (20%) were African American (AA), and 8 (3%) were Asian. The PNI was available for 199 patients. These patients were stratified into two subgroups of high (n = 90) and low (n = 109) with PNI values using PNI = 44 as the threshold. Low-PNI patients were younger (mean age: 64 vs. 70; $p < 0.001$), had lower IPI scores (12.4% vs. 30.9%; $p = 0.0018$), and elevated LDH levels (36.5% vs. 54.4%, $p = 0.01$). After adjusting for age, sex, race, and IPI, relapse-free survival ($p = 0.08$) and progression-free survival (PFS) ($p = 0.0012$) were significantly lower in AA than in non-AA patients. However, no difference in overall survival ($p > 0.1$) was noted. Low PNI was associated with low overall survival ($p = 0.0015$), with similar PNI scores between AA and non-AA patients.

Conclusion

Our study demonstrated that low PNI was associated with low overall survival irrespective of racial subgroups. AA patients in our study experienced lower progression-free survival but similar overall survival compared to non-AA patients; however, multivariate analysis did not show an impact of PNI on survival. Lack of survival difference by race highlights the universal impact of PNI as a valuable prognostic tool for DLBCL outcomes, underscoring the critical role of nutrition and immune status in DLBCL.