

REAL-WORLD COMPARISON OF AXI-CEL AND LISO-CEL IN RICHTER TRANSFORMATION

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INTRODUCTION

Richter transformation (RT) of chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) to diffuse large B-cell lymphoma (DLBCL) is associated with poor outcomes and limited treatment options. Anti-CD19 chimeric antigen receptor T-cell (CAR-T) therapy has shown promising activity in RT; however, comparative real-world data between CAR-T products remain limited.

AIM

To evaluate and compare the efficacy, safety, and resource utilization (hospice) of axicabtagene ciloleucel (axi-cel) versus lisocabtagene maraleucel (liso-cel) in adults with RT.

METHOD

- Study Design:** Retrospective cohort study utilizing the TriNetX Global Collaborative Network (January 1, 2018, to December 31, 2025).
- Cohorts:** Patients were identified via sequential ICD-10 diagnoses of CLL/SLL followed by DLBCL, who subsequently received axi-cel or liso-cel.
- Analysis:** 1:1 propensity score matching was performed for age, sex, race, prior chemotherapy, and prior BTK inhibitors/venetoclax. Time-to-event outcomes were evaluated using Kaplan-Meier analyses, log-rank testing, and hazard ratios (HRs).

CONCLUSIONS

In this real-world RT cohort, axi-cel and liso-cel demonstrated comparable survival outcomes, hospice utilization, and toxicity profiles. These findings provide comparative evidence supporting the clinical utility of both products in this high-risk disease setting.

RESULTS

After matching, 65 patients were included in each cohort (median age 66 years).

- Survival:** One-year mortality was 33.3% for axi-cel versus 30.0% for liso-cel (HR 0.89, 95% CI 0.47-1.69; p=0.58). Five-year mortality was 61.7% versus 47.8% (HR 0.85; p=0.40).
- Composite Outcomes:** Composite mortality/hospice utilization showed no significant difference at 1 year (26.6% vs 29.7%; p=0.09), 3 years (p=0.36), or 5 years (p=0.40).
- Toxicity:** Cytokine release syndrome (CRS) rates were similar at 30 days (36.7% vs 41.7%; p=0.76) and 90 days (p=0.21). Rates of neutropenia, thrombocytopenia, and anemia similarly showed no statistically significant differences at 30 or 90 days.

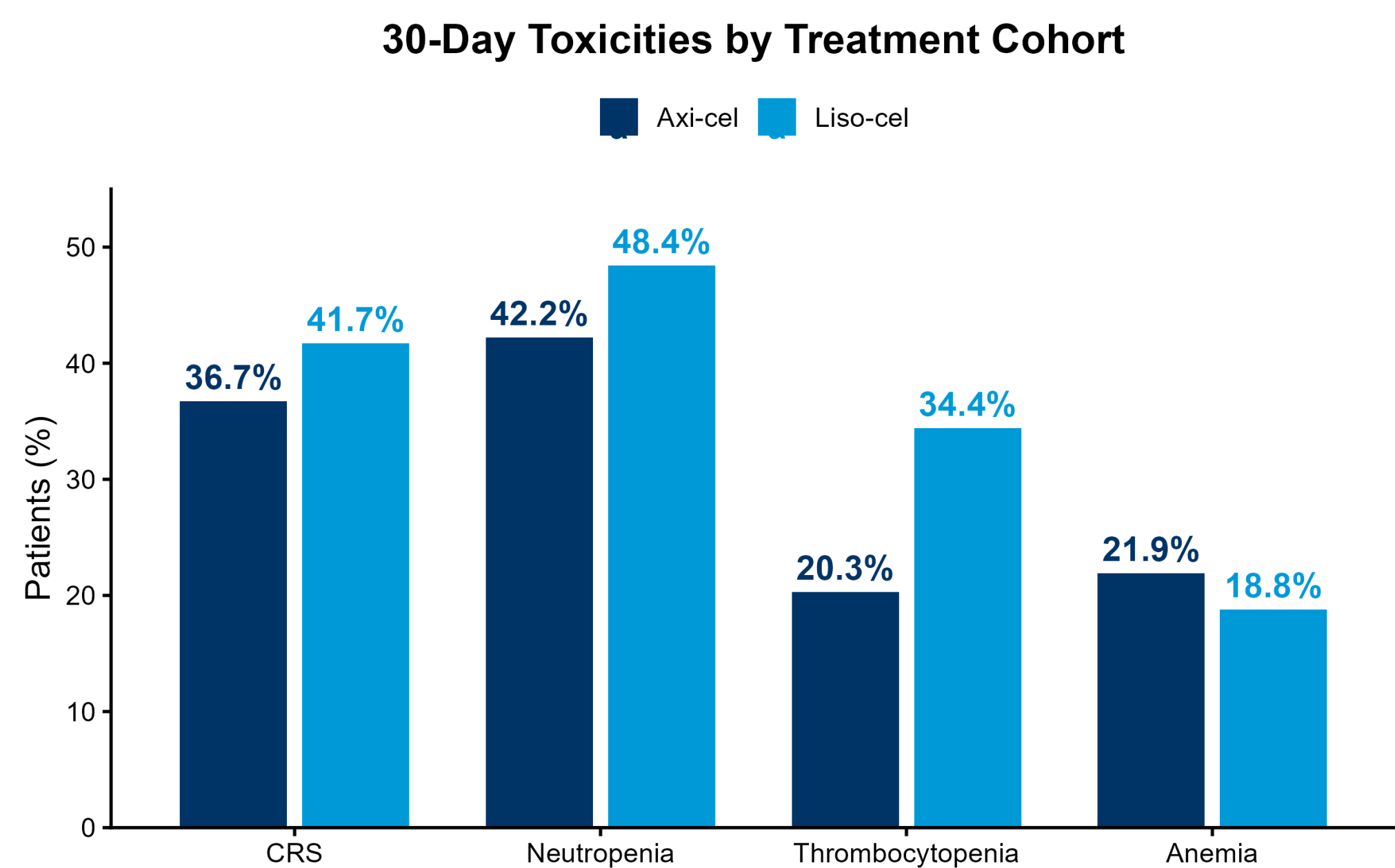


Figure 1. 30-day acute toxicity profiles by treatment cohort. Rates of cytokine release syndrome (CRS) and early cytopenias were consistent across both groups, demonstrating no statistically significant differences in acute toxicity between axi-cel and liso-cel initiation.

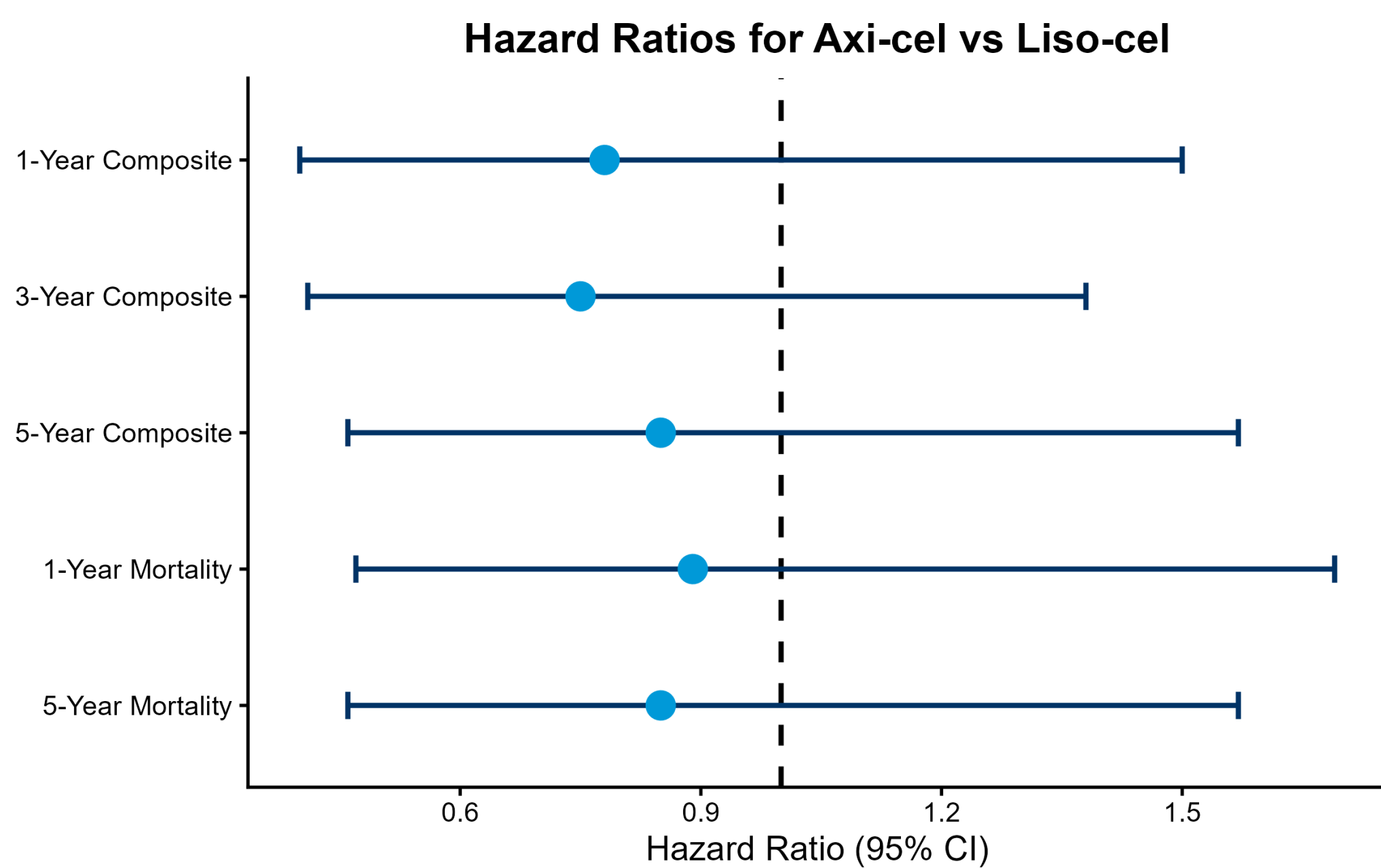


Figure 2. Adjusted hazard ratios for mortality and composite outcomes. Overall survival and composite mortality/hospice utilization remained comparable at 1, 3, and 5 years. Neither CAR-T product demonstrated a statistically significant long-term efficacy advantage over the other in this cohort.

LIMITATIONS

- As with any retrospective administrative database study, these findings are subject to potential confounding by indication and uncaptured differences in baseline illness severity.
- Furthermore, reliance on ICD-10 sequencing to define Richter transformation may not fully capture the clinical or molecular nuances of the disease.

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