Comparative Effectiveness and Safety of Salvage Chemotherapy *versus* Chimeric Antigen Receptor T-Cell Therapies in Relapsed/Refractory Diffuse Large B-Cell Lymphoma: A Bayesian Network Meta-Analysis

Viviana Cortiana MS[1], **Ghena Khasawneh** MD[2], Taha Kassim Dohadwala BS[3], Rithika Kodamanchili MD[4], Soumiya Nadar BS[4], Ahmed Hashim Azeez BS[4], Muskan Joshi BS[4], Gayathri P. Menon MD[4], Maduri Balasubramanian MD[4], M. Rafiqul Islam MD[5], Yan Leyfman MD[6]

[1]University of Bologna, Italy | [2]Baylor College of Medicine, USA | [3]David Tvildiani Medical University, Georgia | [4]Tbilisi State Medical University, Georgia | [5]Shaheed Suhrawardy Medical College, Bangladesh | [6]New York Presbyterian Hospital, USA

Introduction

- **Diffuse large B-cell lymphoma (DLBCL)** is the most common subtype of non-Hodgkin lymphoma. While R-CHOP cures many, a significant proportion relapses or are refractory after second-line treatment or ineligibility for autologous stem cell transplant.
- **CD19-directed CAR-T therapies** (axi-cel, tisa-cel, liso-cel) have demonstrated improved outcomes in relapsed/refractory (R/R) DLBCL.

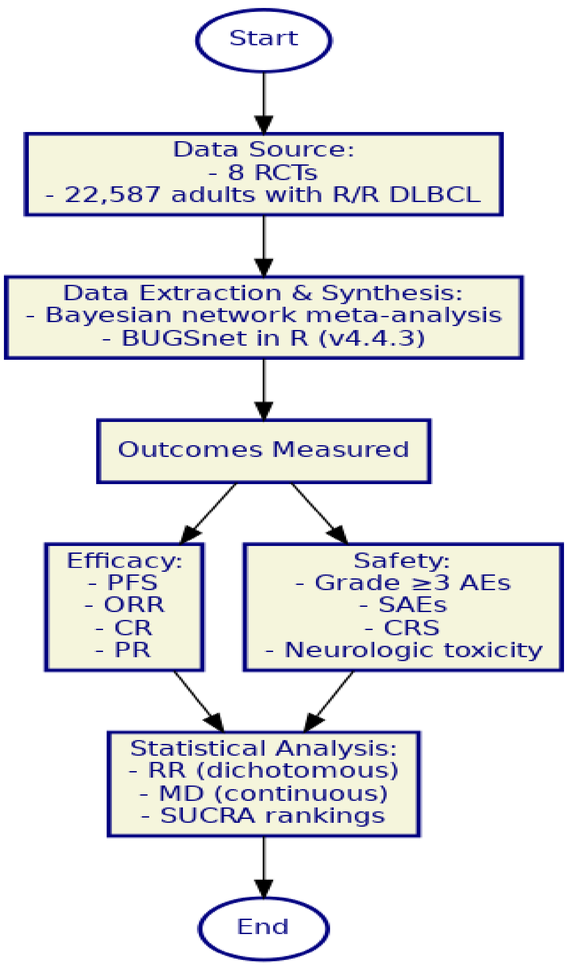
Aim

To compare the effectiveness and safety of salvage chemotherapy regimens versus CAR-T cell therapies in adults with relapsed/refractory diffuse large B-cell lymphoma (R/R DLBCL) using a Bayesian network meta-analysis.

Objectives

•To compare the efficacy of salvage chemotherapy and CAR-T therapies in R/R DLBCL, focusing on PFS, ORR, CR, and PR.
•To study safety by measuring grade ≥3 adverse events, SAEs, CRS, and neurologic toxicity.
•To rank treatments for efficacy and safety using SUCRA.
•To test if CAR-T offers better outcomes than chemotherapy and guide treatment choice.

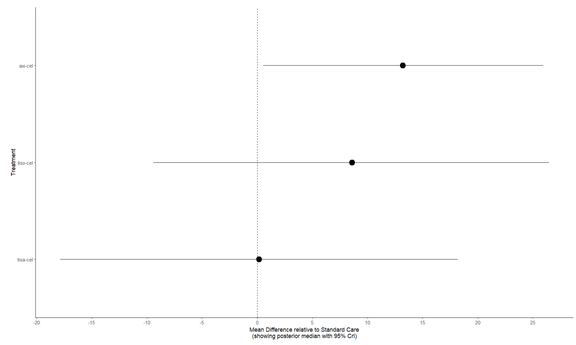
Methods



Results

Outcome	Details
Complete Response (CR)	**Top Performer:** Axi-cel **Statistic:** RR: 2.01 (95% CI: 1.66–2.47) **SUCRA:** 91.1
Progression-Free Survival (PFS)	**Top Performer:** Axi-cel **Statistic:** MD: 13.2 months (95% CI: 0.5–25.9) **SUCRA:** 87.8
Overall Response Rate (ORR)	**Top Performer:** Liso-cel **Statistic:** RR: 1.77 (95% CI: 1.43–2.27) **SUCRA:** 93.6
Serious Adverse Events (SAEs)	**Top Performer:** Tisa-cel **Statistic:** RR: 0.93 (95% CI: 0.85–1.01) **SUCRA:** 86.1
Cytokine Release Syndrome (CRS)	**Top Performer:** Liso-cel **Statistic:** RR: 0.40 (95% CI: 0.01–10.7) **SUCRA:** 72.5
Neurologic Toxicity	**Top Performer:** Tisa-cel **Statistic:** Lowest observed incidence **SUCRA:** —

Table: Efficacy and safety outcomes of CAR-T vs. salvage chemotherapy in R/R DLBCL.



- This plot illustrates the mean difference in PFS relative to standard care for three CAR-T therapies, axi-cel, liso-cel, and tisa-cel, based on posterior median estimates and 95% credible intervals.

Discussion

- CAR-T therapies demonstrate superior efficacy and safety compared to salvage chemotherapy in patients with R/R DLBCL
- Among available options, axi-cel achieves the highest rates of disease control but is associated with increased toxicity.
- Liso-cel and tisa-cel offer better safety profiles and may be preferable for older/comorbid patients.
- Findings support a **personalized treatment strategy** in R/R DLBCL.

Clinical Implications

- Reinforces CAR-T as standard of care in eligible R/R DLBCL patients
- Suggests tailoring choice based on toxicity profiles and patient-specific risks

Conclusion

- CD19-directed CAR-T therapies demonstrate superior efficacy compared to salvage chemotherapy in R/R DLBCL.
- Axi-cel shows the strongest disease control, while liso-cel and tisa-cel offer improved tolerability.
- Personalized therapy selection is critical.

Poster Presenter: Ghena Khasawneh (Ghena.Khasawneh@yahoo.com)
Director of Scholarly Research Activities: Viviana Cortiana (Vivycort02@gmail.com)

SOHO2025