

INFECTIOUS COMPLICATIONS IN MANTLE CELL LYMPHOMA PATIENTS TREATED WITH CAR-T THERAPY: A REAL-WORLD TRINETX ANALYSIS

Anushree Venkatesh Murthy¹, Adithya Nagendran², Logesh Durairaj³, Nayanika Chowdary Tummala⁴, Love Kumar⁵, Madho Mal⁵

¹Rochester Regional Health, Unity Hospital, Rochester, NY; ²Rochester Regional Health Unity, Department of Internal Medicine, NY; ³NYMC at St. Mary’s General Hospital and Saint Clare’s Health, Denville, NJ; ⁴Charleston Area Medical Center (CAMC), Charleston, WV; ⁵Marshall University School of Medicine, Huntington, WV



INTRODUCTION

- **Efficacy:** Chimeric antigen receptor (CAR)-T cell therapy has significantly improved clinical outcomes for patients with relapsed or refractory mantle cell lymphoma (MCL).
- **Clinical Burden:** Infectious complications remain a primary source of morbidity following CAR-T cell infusion.
- **Knowledge Gap:** Real-world data comparing infection profiles in CAR-T–treated versus non–CAR-T–treated MCL patients remain limited.

AIM

To evaluate and compare the demographics, infection types, healthcare utilization, and arrival rates of MCL patients developing infections after CAR-T therapy versus non–CAR-T–treated MCL controls using a real-world global network.

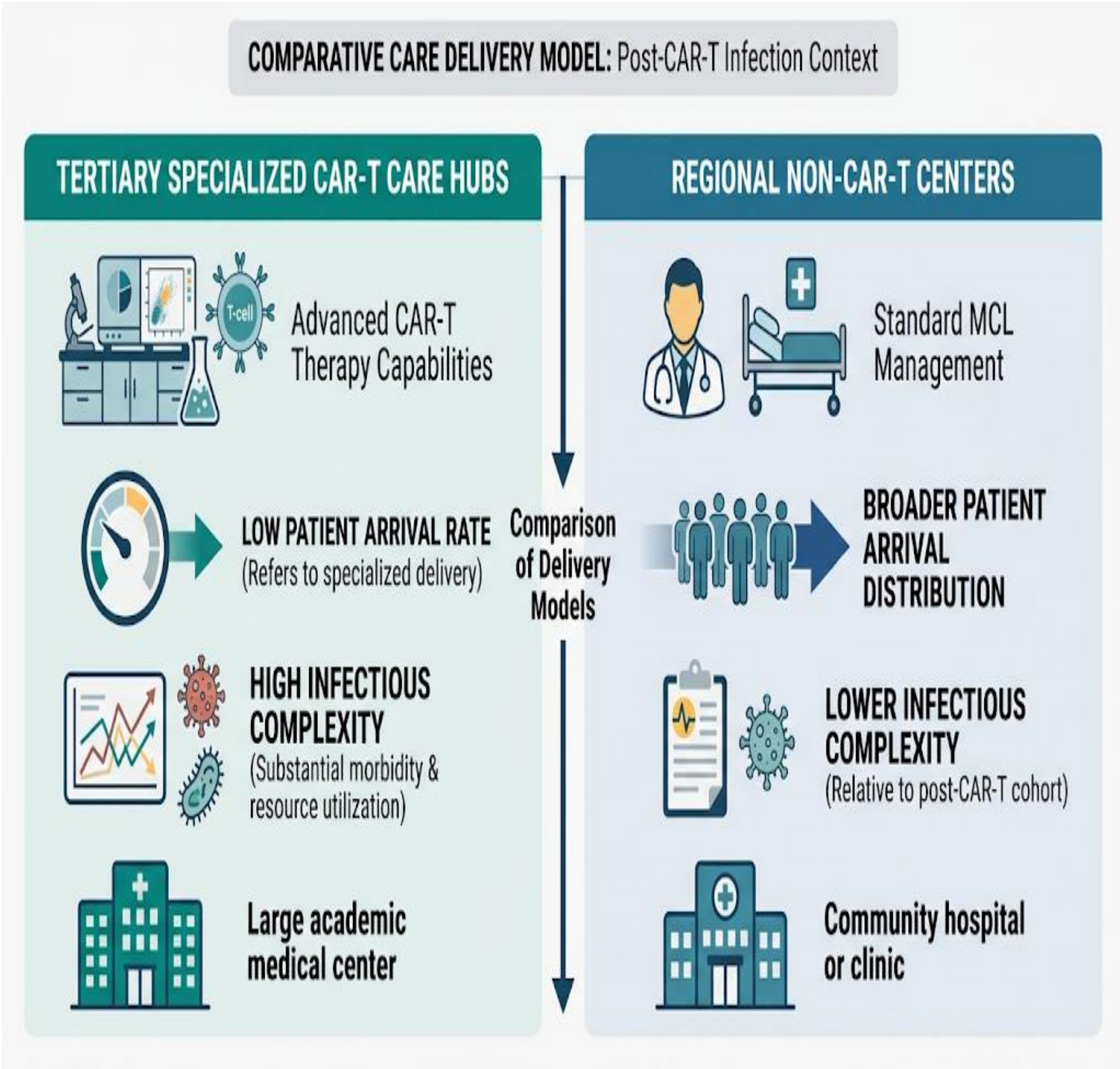
METHOD

- **Study Design:** Retrospective cohort study using the global TriNetX Collaborative Network.
- **Patient Cohorts:** Adult patients diagnosed with MCL and documented infectious diagnoses were stratified based on prior CAR-T cell exposure:
 - **CAR-T Cohort:** Patients developing infections following CAR-T therapy.
 - **Non–CAR-T Cohort:** MCL patients developing infections without prior CAR-T exposure.
- **Variables Evaluated:** Baseline demographics, specific pathogen types, healthcare utilization, and patient arrival rates across health organizations.

CONCLUSIONS

- **High-Risk Population:** MCL patients developing infections after CAR-T therapy represent a small but high-risk population with substantial infectious morbidity.
- **Healthcare Utilization:** Post-CAR-T infections drive high healthcare utilization despite lower overall patient arrival rates.
- **Clinical Strategy:** Findings emphasize the need for enhanced infection surveillance, targeted preventive strategies, and prompt early intervention.

RESULTS



Feature	CAR-T Cohort (n = 20)	Non–CAR-T Cohort (n = 202)	Key Takeaway
Participating Centers	10 Healthcare Organizations	38 Healthcare Organizations	CAR-T cases are concentrated in specialized tertiary centers.
Demographic Profile	Predominantly older, male	Standard real-world MCL distribution	Demographics align with high-risk MCL patient profiles.
Pathogen Spectrum	Bacterial, viral, and opportunistic pathogens	Bacterial, viral, and opportunistic pathogen	Broad infectious risk across both populations
Severe Complications	High burden of gram-negative sepsis & viral infections	Sepsis identified as a major complication	CAR-T cohort exhibits disproportionately severe morbidity
Healthcare Utilization	Substantial morbidity per patient	High baseline utilization	Post-CAR-T infections present a major clinical burden

ACKNOWLEDGEMENTS

Data provided by the TriNetX Global Collaborative Network

CONTACT INFORMATION

Anushree Venkatesh Murthy, MD, MRCP (UK)
Internal Medicine Resident
Rochester Regional Health, Unity Hospital, Rochester, NY
Email: anuadithya0291@gmail.com

REFERENCES

