Outpatient CAR-T Therapy for Relapsed/Refractory B-Cell Lymphoma: A Single-Center Experience

Aditi Saha, MD; Sally Jones, MD; Rick L. Foust, MD; Elizabeth C. Sewell, BSN; Lucy O. Baily, MSN; Ibrahim Muhsen, MD; Firas Baidoun, MD; Lauren K. Shea, MD; AmitKumar Mehta, MD
University of Alabama at Birmingham, Birmingham, AL, USA

Background

CAR-T therapy has traditionally required inpatient monitoring because of cytokine release syndrome (CRS) and immune effector cell–associated neurotoxicity syndrome (ICANS).

- Emerging evidence supports outpatient administration when prophylaxis, education, and structured monitoring are available.
- Real-world outcomes of outpatient CAR-T therapy for lymphoma remain limited.

Objective

- To describe the feasibility, safety, healthcare utilization, and early efficacy of outpatient CAR-T therapy at UAB.

Methods

- This is a single-center retrospective study including 27 adults with relapsed/refractory B-cell lymphoma who received CAR T-cell therapy between November 2024–June 2025 at UAB.

Outpatient Care Model

Selection
Stay within 1 hour of UAB

Prophylaxis
Dexamethasone daily × 3 days

Monitoring
Self-monitoring of vital signs
Daily APP evaluation through day 10

Access
24/7 extended-care clinic

Escalation
Rapid admission for toxicity or infection

Results

77.8% avoided hospitalization within 30 days, with no grade ≥3 CRS and an ORR of 88.9%

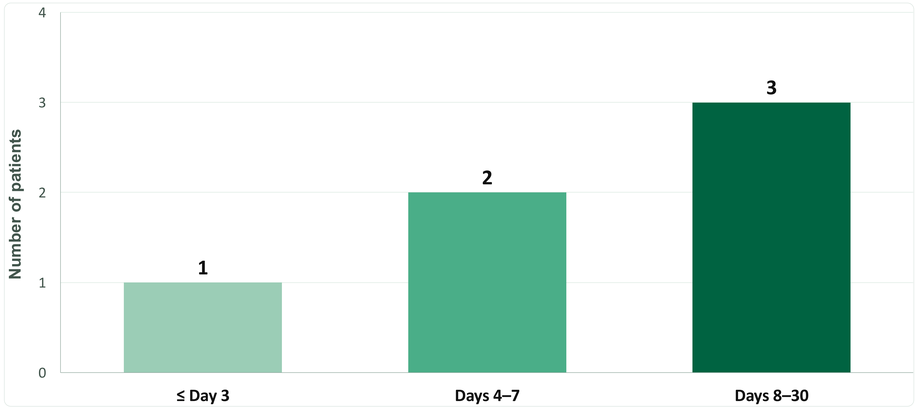
Table 1: Baseline patient, disease, and treatment characteristics

Characteristic	Result (N=27)
Demographics	
Median age, years (range)	**71 (40–90)**
Female	**15 (55.6%)**
Caucasian	**24 (88.9%)**
ECOG performance status 0–1	**20 (74.1%)**
Histology Diffuse large B-cell lymphoma Follicular lymphoma CLL Primary Mediastinal B cell lymphoma Transformed LBCL	 **19 (70.4%)** **2 (7.4%)** **1 (3.7%)** **1 (3.7%)** **4 (14.8%)**
Treatment	
Median number prior lines of therapy (range)	**1 (1-3)**
Lisocabtagene maraleucel Axicabtagene ciloleucel	**26 (96.3%)** **1 (3.7%)**
Bridging therapy	**11 (40.7%)**
Median visits in first 2 weeks	**11 (3–12)**

Table 2: Adverse Events

Characteristic	Result (N=27)
Adverse Event	
Any-grade CRS	**11 (40.7%)**
Grade ≥3 CRS	**0%**
Any-grade ICANS	**6 (22.2%)**
Grade ≥3 ICANS	**3 (11.1%)**
Outpatient tocilizumab	**11 (40.7%)**
Outpatient dexamethasone	**9 (33.3%)**
Total infection event Early infection (≤30 days)	**7 (25.9%)** **5 (18.5%)**
Any grade cytopenia	**27 (100%)**
Febrile neutropenia	**8 (29.6%)**

Figure 1. Timing of hospitalization among patients admitted within 30 days (n=6)



Five of six admissions were for CRS/ICANS. Median hospital stay was 6 days (range, 1–36); one patient required ICU care for septic shock.

Results

Table 3: Reason for admission

Characteristic	Result (N=27)
Early admission within 30 days	**6 (22.2%)**
Reason for admission CRS and ICANS both Only ICANS Sepsis	 **3** **2** **1**
Late admission >30 days	**3 (11.1%)**
Reason for late admission Disease progression Sepsis HLH	 **1** **1** **1**
Median duration of hospitalization	**6 days (range, 1-36)**
ICU admission	**1 (due to sepsis)**

- Median duration of CRS 3 days (range, 1-4 days)
- Median duration of ICANS 6 days (range, 1-16 days)
- 8 grade 1-2 CRS and 1 grade 1 ICANS were successfully managed as outpatient with tocilizumab and dexamethasone.

Conclusions

- Outpatient CAR-T with dexamethasone prophylaxis and structured monitoring was feasible in selected patients.
- 77.8% avoided hospitalization within 30 days; no grade ≥3 CRS occurred. Grade ≥3 ICANS occurred in 11.1%,
- ORR was 88.9% comparable to pivotal trials and
- Patient proximity, education on self monitoring, daily evaluation, and 24/7 urgent access are core components of this model.
- Prospective validation in larger, more diverse cohorts is needed before broader implementation.

Contact Information

Aditi Saha, MD; aditisaha@uabmc.edu