CD19-Directed CAR T-Cell Therapy in Patients with HIV-Associated Relapsed/Refractory Lymphoma: A Systematic Review

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BACKGROUND

- People living with HIV/AIDS (PLWHA) have a >100-fold increased risk of non-Hodgkin lymphoma (NHL).
- PLWHA were systematically excluded from pivotal trials that established CD19-directed CAR T-cell therapy.
- This creates an evidence gap for safety, efficacy, and HIV control after CAR T-cell therapy.

OBJECTIVE & METHODS

Objective

To evaluate the safety and efficacy of CAR-T cell therapy in PLWHA with relapsed/refractory (R/R) NHL.

Systematic review

- Published reports from Aug 2017–Apr 2026
- Sources: PubMed, ClinicalTrials.gov, and conference proceedings
- Case reports/series and AMC Study 113 interim analysis

STUDY POPULATION

27	26	1
PLWHA with R/R NHL	Received axi-cel	Received brexucel

ART continued throughout treatment

Lymphodepletion: fludarabine/cyclophosphamide, dose-adjusted for HIV and cytopenias

RESULTS

CASE REPORTS / SERIES

n = 6 | all DLBCL

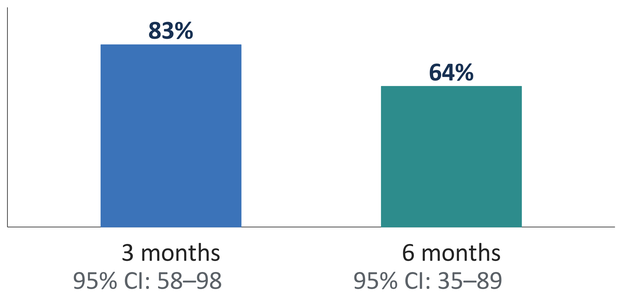
Mean age 54, 80% male,
Mean pre-CAR T CD4: 220 cells/µL
VL <100 copies/mL: all patients
CRS grade 1–2: 4 | ICANS grade 2–3: 4
CR: 3 | PR: 1 | PD: 2

AMC STUDY 113

n = 21 | 19 DLBCL, 1 FL, 1 MCL

Median age 55, 81% male
Median pre-CAR T CD4: 228 cells/µL
VL <100 copies/mL: 8/10 reported
CRS grade 1–2: 9 (69%)
ICANS grade 3–4: 3 (23%)

AMC-113 OVERALL SURVIVAL



OS at 3 & 6 months was comparable to HIV-negative historical controls

TOXICITY SIGNAL

AMC-113 vs HIV-negative historical counterparts

Outcome	PLWHA	Historical
CRS grade 1–2	69%	75.2%
ICANS grade 3–4	23%	43.5%

HIV viral control was maintained in all ART-adherent patients; CD4 counts recovered to near baseline after infusion.

KEY FINDINGS

- CAR T-cell manufacturing succeeded in all reported cases, including patients with detectable viral load at apheresis.
- Observed response, toxicity, and short-term survival were broadly comparable with historical HIV-negative populations.
- ART adherence preserved HIV viral control; CD4 counts recovered toward baseline after infusion.

CONCLUSION

CD19-directed CAR T-cell therapy appears feasible, safe, and potentially efficacious in PLWHA with R/R NHL.

CLINICAL IMPLICATION

HIV infection alone should not be viewed as an automatic barrier to referral for cellular therapy evaluation when otherwise clinically appropriate.

Ongoing prospective trials, including AMC-112 (NCT05077527), are needed to define long-term safety and efficacy.

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