SunAct

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OncoVantage

Insights into global breakthroughs in cell-based therapies

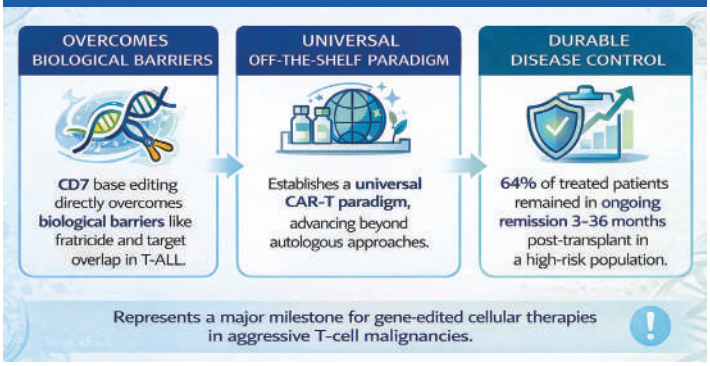
Base-Edited Anti-CD7 CAR-T (BE-CAR7) in Relapsed/Refractory T-ALL

A first-in-human Phase I study has evaluated the safety and feasibility of universal base-edited anti-CD7 CAR-T cells (BE-CAR7) in pediatric (≤16 years) and adult patients with relapsed or refractory T-cell acute lymphoblastic leukemia (T-ALL). BE-CAR7 T cells were engineered using base editing to generate triple knockouts of **TCRαβ, CD52, and CD7**, enabling fratricide resistance, allogeneic use, and compatibility with alemtuzumab-based lymphodepletion. Following lymphodepletion with fludarabine, cyclophosphamide, and alemtuzumab, **11 patients received BE-CAR7**. Patients achieving remission by day 28 proceeded to allogeneic hematopoietic stem-cell transplantation (allo-HSCT).

Clinical Implications

- **Feasibility and safety of base-edited, allogeneic CAR-T therapy** in T-ALL, a disease with historically limited treatment options.
- **100% morphologic remission at day 28**, with **82% (9/11)** attaining deep MRD-negative or near-negative remission sufficient for allo-HSCT.
- BE-CAR7 an effective **bridge-to-transplant strategy** in relapsed/refractory T-ALL.
- Toxicities were clinically manageable and consistent with intensive cellular therapy, including CRS (grades 1–4), transient rashes, cytopenias, and infections.

Base-Edited Anti-CD7 CAR-T (BE-CAR7): A New Milestone



Why It Matters

- T-ALL has lacked effective CAR-T options due to fratricide and target overlap; **CD7 base editing directly overcomes these biological barriers**.
- Establishes a **universal, off-the-shelf CAR-T paradigm**, advancing beyond autologous approaches.
- **64% of treated patients (7/11)** remained in ongoing remission **3–36 months post-transplant**, indicating durable disease control in a high-risk population.
- Critical insight into antigen escape, informing next-generation multi-target strategies.

Reference: Chiesa R, Georgiadis C, Rashed H, et al. *N Engl J Med.* 2026;394:152–165.

Anitocabtagene Autoleucel (Anito-cel): Key Clinical Trial Update

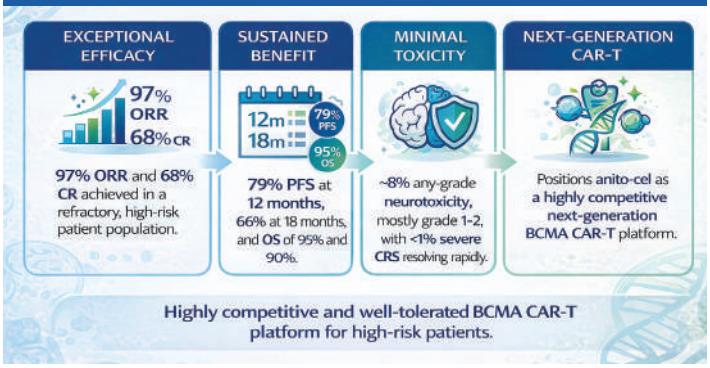
Anitocabtagene autoleucel (anito-cel) is an investigational **BCMA-directed CAR-T therapy** showing strong clinical promise in relapsed/refractory multiple myeloma. Updated Phase II **iMMagine-1** data presented at ASH 2025 reported a **97% overall response rate** and **68% complete response rate** in a heavily pretreated population.

Anito-cel demonstrated **durable progression-free and overall survival.** A key differentiator is the use of a **novel synthetic BCMA-binding protein**, rather than a conventional antibody-derived scFv, which may enable simpler manufacturing and reduced toxicity.

Clinical Implications

- **High and durable efficacy** in heavily pretreated relapsed/refractory multiple myeloma.

BCMA CAR-T



- Favorable safety profile may **expand eligibility** to patients less suitable for existing CAR-T therapies.
- Predictable hematologic toxicities support **standardized supportive care and potential outpatient management**.
- Phase III evaluation raises the possibility of **earlier-line use** if superiority or non-inferiority is established.

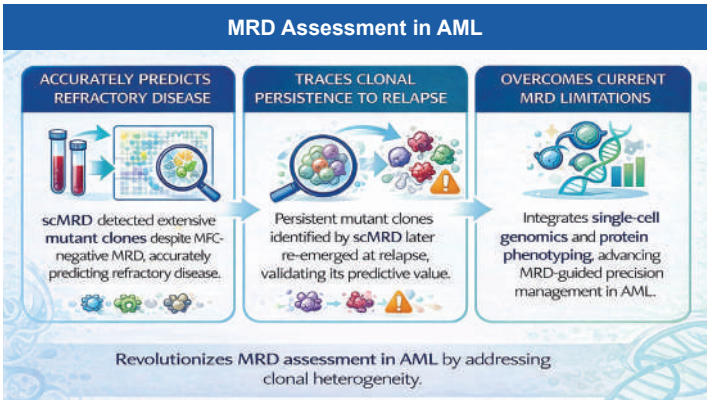
Why It Matters

- Exceptional efficacy with **97% ORR and 68% CR** in a refractory population.
- Sustained benefit with **PFS of 79% at 12 months and 66% at 18 months**, and **OS of 95% and 90%**, respectively.
- Minimal neurotoxicity.
- Positions anito-cel as a **highly competitive next-generation BCMA CAR-T platform**.

Reference: Patel K. Phase 2 registrational study of anitocabtagene autoleucel for the treatment of patients with relapsed and/or refractory multiple myeloma: Updated results from iMMagine—1. MD Anderson Cancer Center, Houston, TX, United States. ClinicalTrials.gov Identifier: NCT05396885

Clinical Translation of Single-Cell MRD (scMRD) in AML

A prospective real-world study evaluated the prognostic utility of a **single-cell measurable residual disease (scMRD) assay** in **21 AML patients** treated with standard induction chemotherapy or HMA + venetoclax. Using a single cell multiomics platform with enrichment for $CD34^+$/$CD117^+$ cells, **66,515 cells** were profiled and directly compared with conventional MRD methods (flow cytometry and bulk NGS).



Clinical Implications

- Detects **residual leukemic clones missed by standard MFC**, particularly in HMA + Ven-treated patients.
- Enables **clonal-level resolution**, distinguishing leukemia from clonal hematopoiesis or regenerating marrow.
- Provides **early and actionable relapse prediction**, even when conventional MRD assays are discordant.
- Rapid turnaround (<1 week) supports feasibility in routine clinical workflows.

Why It Matters

- In a representative HMA + Ven case, scMRD detected extensive mutant clones despite MFC-negative MRD, **accurately predicting refractory disease**.
- Persistent mutant clones identified by scMRD later re-emerged at relapse, validating its **predictive value**.
- Advanced MRD-guided precision management in AML.

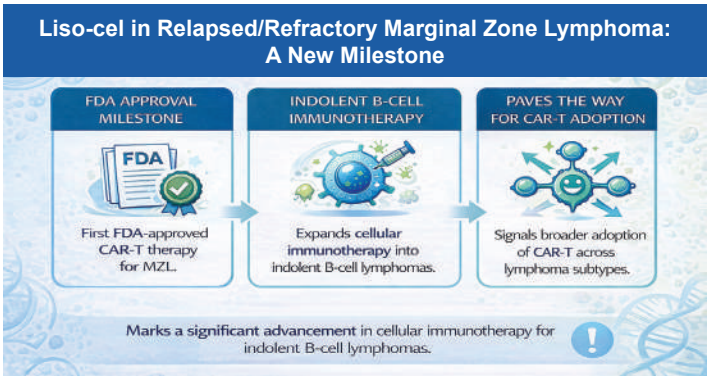
Reference: Micin K, Madarang E, Nong T, Affer M. *Blood.* 2025;146(Suppl 1):280.

FDA Approval of Liso-cel in Relapsed/Refractory Marginal Zone Lymphoma

The FDA approved **lisocabtagene maraleucel (liso-cel; Breyanzi)** for adults with relapsed or refractory marginal zone lymphoma (MZL) after at least two prior systemic therapies, based on the Phase II **TRANSCEND FL** trial.

Clinical Implications

- Provides a new option for **heavily pretreated R/R MZL** patients.
- Demonstrates high activity with **ORR 84.4%** and **CR 55.8%**.
- Durable responses with median duration not reached, supporting long-term disease control.



Reference: https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-lisocabtagene-maraleucel-relapsed-or-refractory-marginal-zone-lymphoma. December 4, 2025.

At SunAct, we remain dedicated to tracking and sharing global advances that continue to redefine the landscape of cellular therapy and oncology. Stay tuned for our next edition as we uncover more breakthroughs and emerging trends shaping the future of cancer research.