

Outcomes and Toxicity of CAR T-Cell Therapy in Patients With Renal Impairment: A Propensity Score-Matched Analysis in Relapsed/Refractory Multiple Myeloma

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BACKGROUND

- Pivotal trials of idecabtagene vicleucel (ide-cel) and ciltacabtagene autoleucel (cilta-cel) excluded patients with creatinine clearance <30 mL/min, leaving limited evidence on CAR-T outcomes in myeloma patients with renal impairment.
- We evaluated whether baseline eGFR impacts overall survival (OS), time to next treatment (TTNT), and safety following CAR-T therapy in relapsed/refractory multiple myeloma (RRMM).

OBJECTIVES

- Compare OS at 1, 2, and 3 years across eGFR strata after CAR-T therapy
- Evaluate TTNT at 1 year across eGFR strata
- Assess safety profile including CRS, ICANS, AKI, cytopenias, infections, and hypogammaglobulinemia by eGFR category

METHODS

- Retrospective propensity score-matched cohort study using **TriNetX** (accessed April 2026)
- Adults with RRMM receiving ide-cel or cilta-cel stratified by eGFR: **<30, 30–60, and >60 mL/min/1.73 m²**
- Pairwise 1:1 propensity score matching: eGFR <30 vs >60 (n=270/arm); eGFR 30–60 vs >60 (n=901/arm)
- Covariates balanced: age, sex, race, comorbidities, high-risk cytogenetics, prior transplant, and myeloma therapies
- Primary endpoint:** OS at 1, 2, 3 years; TTNT at 1 year
- Safety:** CRS, ICANS, AKI at 1 month; cytopenias, infections, hypogammaglobulinemia at 1, 3, 6 months

RESULTS



CONCLUSIONS

- Baseline renal impairment did **not adversely impact OS, TTNT, or CRS/ICANS** following CAR-T therapy
- Lower eGFR was associated with **higher rates of AKI, anemia, and thrombocytopenia in a graded fashion**
- Renal impairment alone **should not preclude CAR-T therapy**, though closer hematologic and renal monitoring is warranted