

EFFICACY AND SAFETY OF CILTACABTAGENE AUTOLEUCEL (CILTA-CEL) IN LENALIDOMIDE-REFRACTORY PATIENTS (PTS) WITH PROGRESSIVE MULTIPLE MYELOMA (MM) AFTER 1–3 PRIOR LINES OF THERAPY (LOT): CARTITUDE-2 UPDATED RESULTS

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Introduction: Cilta-cel is a chimeric antigen receptor (CAR) T-cell therapy expressing 2 B-cell maturation antigen-targeting, single-domain antibodies that has demonstrated early, deep, and durable responses in pts with MM who have received ≥ 3 LOT. Here we present updated results of the multicohort, open-label, phase 2 CARTITUDE-2 study (NCT04133636).

Material and Methods: A single cilta-cel infusion (target dose 0.75×10^6 CAR+ viable T cells/kg) was given 5–7 d after start of lymphodepletion (daily cyclophosphamide [300 mg/m^2] and fludarabine [30 mg/m^2] for 3 d). The primary endpoint was minimal residual disease (MRD) negativity at 10^{-5} . Secondary endpoints were overall response rate (ORR), duration of response (DOR), time and duration of MRD negativity, and AEs.

Results: As of the April 15, 2021, data cutoff (median follow-up 9.7 mo: range 3.3–13.4), 20 pts (65% male; median age 60 years) received cilta-cel. 95% of pts were refractory to last LOT; 40% were triple-class refractory. ORR was 95% (95% CI 75.1–99.9); 85% (95% CI 62.1–96.8) of pts had $\geq \text{CR}$, and 95% (95% CI 75.1–99.9) had $\geq \text{VGPR}$. Of MRD-evaluable pts ($n=13$), 92.3% (95% CI 64.0–99.8) were MRD-negative at 10^{-5} . Hematologic AEs were neutropenia (95%), thrombocytopenia (80%), anemia (75%), lymphopenia (65%) and leukopenia (55%). CRS occurred in 95% of pts (gr 3/4: 10%) but resolved within 7 d in 90% of pts. CAR T-cell neurotoxicity occurred in 4 pts (20%; all gr 1/2) and 3 pts (15%) had ICANS (all gr 1/2). One death occurred due to COVID-19 (treatment-related per the investigator).

Conclusions: At a longer median follow-up of 9.7 mo, a single cilta-cel infusion led to early and deep responses in lenalidomide-refractory pts with MM who had 1–3 prior LOT. ORR responses deepened over time, with 92% of MRD-evaluable pts achieving MRD 10^{-5} negativity. The safety profile was manageable.