8009 **Poster Discussion Session**

CARTITUDE-1 final results: Phase 1b/2 study of ciltacabtagene autoleucel in heavily pretreated patients with relapsed/refractory multiple myeloma.

Yi Lin, Thomas G. Martin, Saad Zafar Usmani, Jesus G. Berdeja, Andrzej J. Jakubowiak, Mounzer E. Agha, Adam D. Cohen, Abhinav Deol, Myo Htut, Alexander M. Lesokhin, Nikhil C. Munshi, Elizabeth O'Donnell, Carolyn Chang Jackson, Tzu-min Yeh, Arnob Banerjee, Enrique Zudaire, Deepu Madduri, Christopher delCorral, Lida Bubuteishvili-Pacaud, Sundar Jagannath; Mayo Clinic, Rochester, MN; University of California, San Francisco, San Francisco, CA; Memorial Sloan Kettering Cancer Center, New York, NY; Sarah Cannon Research Institute, Nashville, TN; University of Chicago, Chicago, IL; UPMC Hillman Cancer Center, Pittsburgh, PA; Abramson Cancer Center, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA; Karmanos Cancer Institute, Wayne State University, Detroit, MI; City of Hope Comprehensive Cancer Center, Duarte, CA; Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA; Massachusetts General Hospital, Harvard Medical School, Boston, MA; Janssen Research & Development, Raritan, NJ; Janssen Research & Development, Spring House, PA; Legend Biotech USA Inc., Somerset, NJ; Mount Sinai Medical Center, New York, NY

Background: Heavily pretreated patients (pts) with relapsed/refractory multiple myeloma (RRMM) treated with standard of care therapy have median overall survival (OS) of ~12 months (mo). In the single-arm, phase 1b/2 CARTITUDE-1 study (NCT03548207), pts received a single infusion of ciltacabtagene autoleucel (cilta-cel), a CAR-T cell therapy targeting BCMA. At the final protocol-specified analysis (27.7-mo median follow-up [MFU]), overall response rate (ORR) was 98%, with 83% stringent complete response (CR); 27-mo rates of progression-free survival (PFS) and OS were 55% and 70%, respectively. Here, we report study closeout results. **Methods:** Eligible pts received ≥3 prior lines of therapy (LOT) or were double refractory to a proteasome inhibitor (PI) and immunomodulatory drug (IMiD); and had received prior PI, IMiD, and anti-CD38 antibody therapy. Primary endpoint was ORR and safety; secondary endpoints included PFS, OS, and minimal residual disease (MRD) negativity at 10^{-5}. **Results:** 97 pts received cilta-cel (median age 61 years [y]; median 6 prior LOT; 42% penta-drug refractory; 88% triple-class refractory; 99% refractory to last LOT). As of October 14, 2022, MFU was 33.4 mo (range, 1.5-45.2). Median (m) duration of response was 33.9 mo (95% CI, 25.5–not estimable [NE]). mPFS was 34.9 mo (95% CI, 25.2–NE), with an estimated 47.5% progression free and alive at 36 mo. mOS was not reached (NR), with an estimated 62.9% survival at 36 mo. Of 49 MRD-evaluable pts, 26 had MRD negativity sustained for ≥12 mo, of which 20 had sustained MRD-negative ≥CR. mPFS was NR in these subgroups (Table). 18 pts were MRD negative with ≥CR at 24 mo post infusion. No new safety signals and no new neurotoxicity events were reported since the 27.7-mo MFU. 6 new cases of second primary malignancy were reported, including 2 cases of basal cell carcinoma and 1 case each of myelodysplastic syndrome, B-cell lymphoma, melanoma, and prostate cancer. 5 additional deaths occurred (progressive disease [PD], n=3; pneumonia and sepsis, n=1 each [both unrelated to cilta-cel]), for a total of 35 (PD, n=17; unrelated to cilta-cel, n=12; related, n=6). **Conclusions:** Longer mPFS was observed after a single infusion of cilta-cel than any previously reported therapy in heavily pretreated pts with RRMM. Achieving CR and/or sustained MRD negativity was associated with prolonged PFS. Pts continue to be followed for safety and survival in the 15-y CARTINUE long-term study (NCT05201781; MMY4002). Clinical trial information: NCT03548207. Research Sponsor: Janssen Research & Development, LLC; Legend Biotech USA Inc.

PFS at ~3-y MFU.

Subgroup	n	mPFS (95% CI), mo	30-mo PFS rate	36-mo PFS rate
All pts	97	34.9 (25.2–NE)	54.2%	47.5%
≥CR	76	38.2 (34.9–NE)	66.8%	59.8%
6-mo sustained MRD negativity[a]	34	32.2 (25.1–NE)	68.6%	45.7%
12-mo sustained MRD negativity[a]	26	NR (NE–NE)	74.9%	NE
12-mo sustained MRD-negative CR[a]	20	NR (NE–NE)	78.5%	NE

[a]≥2 MRD-negative assessments, 6 or 12 mo apart, with no MRD-positive samples in that interval.