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POSTER ABSTRACTS

652.MULTIPLE MYELOMA: CLINICAL AND EPIDEMIOLOGICAL

A Real-World Comparison of Idecabtagene Vicleucel and Ciltacabtagene Autoleucel CAR-T Therapy: A Single Center Experience for Relapsed/ Refractory Multiple Myeloma

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Background
Chimeric antigen receptor modified T-cell therapy is a promising new treatment for patients with heavily pre-treated multiple myeloma (MM). BCMA (B-cell maturation antigen) directed therapies including idecabtagene vicleucel (Ide-Cel) and ciltacabtagene autoleucel (Cilta-Cel) are currently approved for use in patients with four prior lines of therapy. Both therapies have shown efficacy producing a high overall response rates and durable responses. Both are second-generation designs with identical
endodomain (CD3ζ - 4-1BB) to target BCMA on the target cells for patients with relapsed and refractory MM who have been triple-class exposed. The two distinct differences are ectodomain structure and recommended dose. In this single center retrospective study, we report our experience with the use of both CAR-T therapies in patients with heavily pre-treated MM.
Methods
Following institutional review board approval, we included all patients with MM who were treated with commercially approved BCMA directed CAR-T therapy. Demographic characteristics, molecular studies, treatment and response information were recorded and included in the study. Safety outcomes included the incidence and severity of adverse events (AEs). AEs were graded using National Cancer Institute Common Terminology Criteria for Adverse Events version 5.0 (NCI-CTCAE 5.0). Cytokine release syndrome (CRS) and immune effector associated neurotoxicity syndrome (ICANS) were graded as per the American Society for Transplantation and Cellular Therapy criteria. Efficacy outcomes included overall response rates (ORR), progression free survival (PFS), overall survival (OS), duration of response (DOR). Survival analysis was performed using the Kaplan-Meier method including PFS and Overall survival (OS). PFS was defined as time from initiation of treatment to progression of disease or death whichever occurred first. OS was defined as time from initiation of treatment to death. The IMW response criteria was utilized for response assessment.
Results
We identified 56 patients who were treated consecutively at Hackensack University Medical Center between 6/28/2021 and 7/3/2023. 53 patients had data available for evaluable responses and were included in our analysis. 35(66%) patients received Ide-cel, whereas 18(34%) patients received Cilta-Cel. For the entire cohort, 30(56.6%) were male, median age was 69.6 years median time from diagnosis to treatment was 8.1 years. Patients had received a median of 5 prior lines of therapy. 50(94.3%) patients were triple class refractory, all except one patient (98.1%) had a prior autologous stem cell transplant (ASCT). 27(60%) patients had high risk FISH defined
as those with t(4;14), t(14;16), 17p(-) or 1q(+), 24(60%) patients were ISS-2 or 3 at diagnosis.

Treatment was overall well tolerated, with only one therapy related mortality, 42(79.3%) patients experienced CRS, with only 1(1.9%) having grade 3 or higher CRS. 6(11.3%) patients experienced ICANS, with 2(3.8%) having grade 3 or higher ICANS. Baseline characteristics are summarized in table 1. Overall response rate for the entire cohort was 75.4%, with a median PFS of 11.9 months, median DOR of 13.2 months and mOS was not reached (NR). The median ORR for cilta-cel vs ide-cel was 94.4 % and 65.7% (p=0.01) respectively. The median PFS for cilta-cel vs ide-cel was NR vs 10.9 months (p=0.09) respectively (Figure 1), follow-up being very short for cilta-cel. Baseline characteristics, safety and efficacy data for the cohort and comparison between the two therapies are summarized in table 1.

Conclusions

In our single center experience, cilta-cel has shown superiority in terms of efficacy compared to ide-cel. Having said that, the authors do strongly recognize that longer manufacturing time for cilta-cel introduces a bias in favor of using ide-cel for patients with more aggressive/rapidly progressing disease, which may therefore result in inferior outcomes. The safety profile for both therapies is very similar and both offer promising results to patients with MM.

Disclosures Biran: *Janssen:* Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding; *Amgen:* Membership on an entity's Board of Directors or advisory committees, Research Funding; *Karyopharm:* Membership on an entity's Board of Directors or advisory committees, Research Funding; *BMS:* Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding; *Merck:* Research Funding; *Sanofi:* Honoraria, Membership on an entity's Board of Directors or advisory committees; *Takeda:* Honoraria, Membership on an entity's Board of Directors or advisory committees; *Abbvie:* Honoraria; *Genomic Testing Cooperative:* Divested equity in a private or publicly-traded company in the past 24 months; *GSK:* Membership on an entity's Board of Directors or advisory committees; *Pfizer:* Membership on an entity's Board of Directors or advisory committees; *Boehringer Ingelheim:* Other: spouse of employee. **Siegel:** *Janssen:* Consultancy, Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau; *Takeda:* Consultancy, Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau; *Celgene:* Consultancy, Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau; *Amgen:* Consultancy, Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau; *Novartis:* Consultancy, Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau; *BMS:* Consultancy, Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau; *Celularity Scientific:* Consultancy, Membership on an entity's Board of Directors or advisory committees; *Karyopharm:* Consultancy, Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau. **Parmar:** *Sanofi:* Consultancy, Honoraria; *Cellectar Biosciences:* Consultancy, Honoraria.

Variable	All	Ide-cel	Cilta-cel	P-value
No of patients, N (%)	53	35 (66%)	18 (34%)	
Gender: Male	30 (56.6%)	18 (51.4%)	12 (66.7%)	0.28
Median age (years) (range)	69.6 (50.5-81.8)	70.6 (50.5-81.8)	67.7 (52.7-81.5)	0.1
Median prior lines of therapies (range)	5(4-12)	5 (4-12)	5 (4-12)	0.3
Median time from diagnosis to therapy in years (range)	8.1 (2.02-21.7)	8.3 (2-21.6)	7.5 (3.3-17.1)	0.25
High risk FISH (%)	27 (60%)	15 (55.6%)	12 (66.7%)	0.45
ISS stage 2 or 3 (%)	24 (60%)	13 (54.2%)	11 (68.8%)	0.35
Triple class refractory (%)	50 (94.3%)	33 (94.3%)	17 (94.4%)	0.98
Prior ASCT (%)	52 (98.1%)	34 (97.1%)	18 (100%)	0.84
CRS (any grade)	42 (79.3%)	30 (85.7%)	12 (66.7%)	0.1
CRS (Grade III or higher)	1 (1.9%)	1 (2.9%)	0 (0%)	0.36
ICANS (any grade)	6 (11.3%)	4 (11.4%)	2 (11.1%)	0.97
ICANS (Grade III or higher)	2 (3.8%)	1 (2.9%)	1 (5.6%)	0.6
ORR (%)	40 (75.4%)	23 (65.7%)	17 (94.4%)	0.01
VGPR or better (%)	30 (56.6%)	16 (45.7%)	14 (77.8%)	0.02
Median PFS in months (Interquartile range)	11.9	10.9 (4-19)	NR (NR-NR)	0.09
Median OS months (Interquartile range)	NR (NR-NR)	NR (NR-NR)	NR (NR-NR)	0.3
Median DOR in months (Interquartile range)	13.2 (10.9-NR)	13.2 (9.9-NR)	(NR-NR)	0.2

ISS= International Staging System; ASCT= Autologous Stem Cell Transplant; CRS= Cytokine Release Syndrome; ICANS= Immune effector cell-associated neurotoxicity syndrome; ORR= Overall Response Rate; VGPR= Very Good Partial Remission; PFS= Progression Free Survival; OS= Overall Survival; DOS= Duration of Response

Table 1. Baseline characteristics, demographics and efficacy of entire cohort and the CAR-T therapies used.

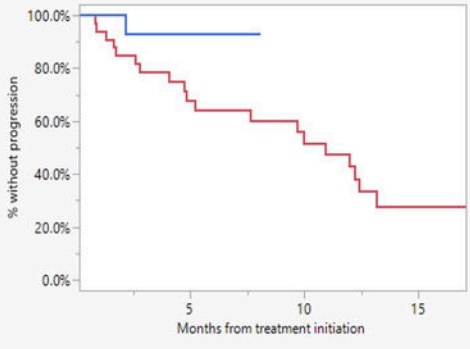

Figure 1. Progression free survival for Cilta-cel (blue)= NR Vs Ide-cel (red)= 10.9 mos

Figure 1

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