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Patient Preferences for use of CAR-T Therapy as an Early Line Treatment in Multiple Myeloma

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Objectives

To evaluate the influence of key treatment-related attributes on patient preferences for early-line MM therapies

Key Takeaways

Survival metrics, then safety characteristics around CRS, had the largest impact on patient preferences, suggesting that treatments with the most survival benefit will be preferred by patients; but that shared decision making on early-line treatment should include conversations balancing efficacy and safety characteristics.

Conclusion

Patients' treatment preferences were predominantly influenced by survival metrics in 2L treatment for relapsed myeloma, suggesting a potential preference for CAR-T-like therapies given the demonstrated PFS benefit in as early as 2L+ patients in CARTITUDE-4. However, the safety profiles associated with CAR-T should be clearly communicated, as the associated risks may influence preferences.

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Disclosures

KD, DD, TL, SH, SL, TB, ZQ, and YZ are paid employees of Johnson & Johnson; MP is employed by and owns stock in Legend Biotech USA Inc.; KK, JC, EB, and RH are employees of Oracle Life Sciences, which provided consulting and research services to Janssen Scientific Affairs for this study.

Introduction

- MM is genetically complex and heterogeneous; treatment algorithms are well-defined like other neoplasms; MM is an incurable hematological malignancy requiring efficacious therapies for patients to achieve long-term survival[1]
  - These characteristics of MM create challenges to selecting appropriate regimen sequencing that meet individual patient needs
- Cilta-cel, a BCMA-targeted chimeric antigen receptor T-cell (CAR-T) therapy, has shown depth of response and durability in MM and is approved for patients as early as 2nd line (2L)[2]
- Data from CARTITUDE-4 showed meaningful clinical and health-related quality of life benefits with the use of cilta-cel over current options for patients in earlier lines[3]
- Aligning treatment decisions with patient preferences contributes to better outcomes for patients;[4] yet, data are limited on patient preferences for the use of CAR-T, like cilta-cel, in early treatment lines[5]

Methods

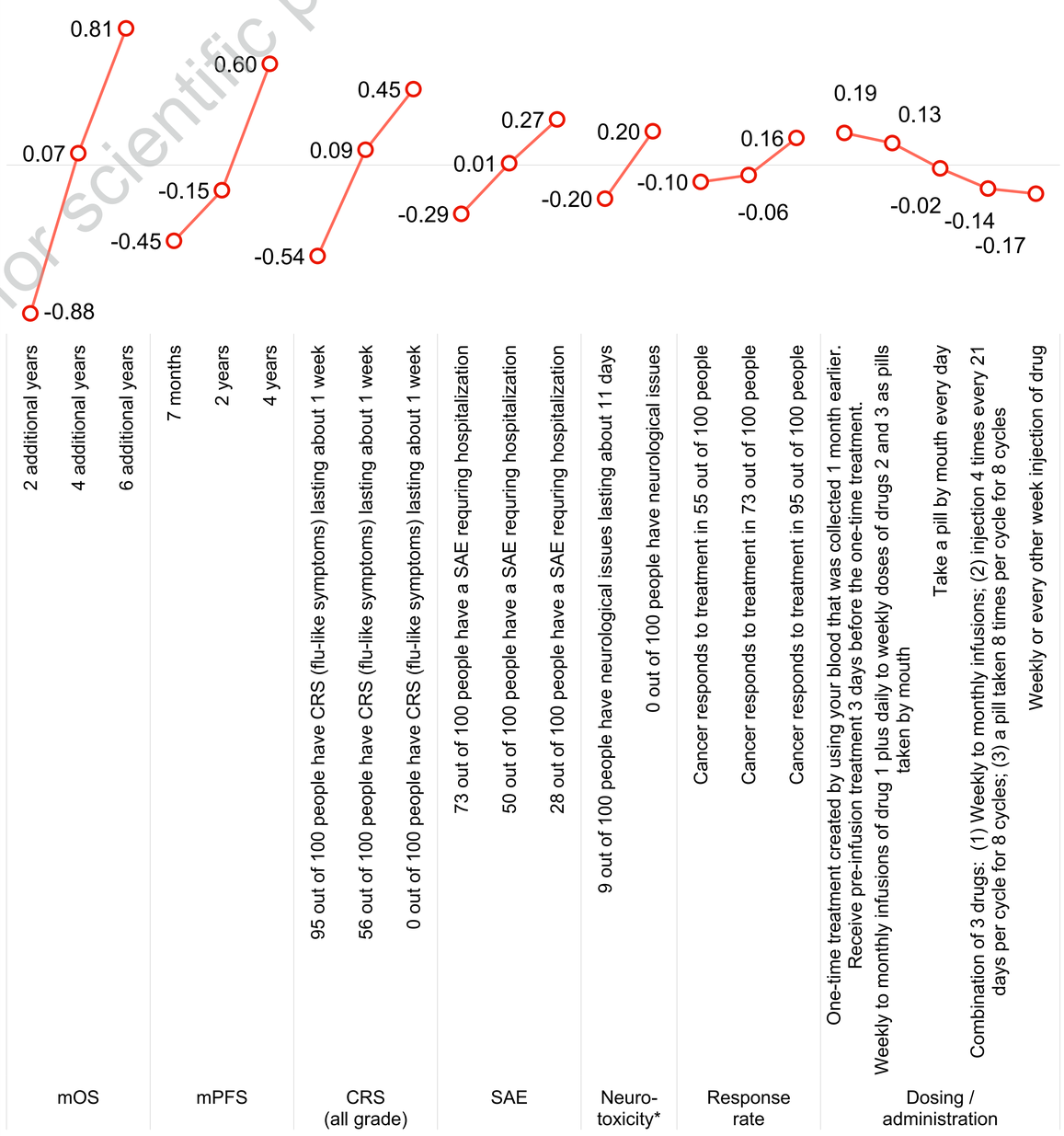
- A convenience sample of patients from the US were recruited from an online research panel, overseen by SAGO Health,[6] to participate in a cross-sectional, web-based survey between December 2023-March 2024
- Patients were eligible to complete the survey if they (1) had relapsed or refractory MM, (2) were ≥50 years of age, (3) completed ≥ 1 line of therapy post-MM diagnosis
- To evaluate preferences for CAR-T therapy in earlier lines of MM treatment, a Discrete Choice Experiment (DCE) was included in the survey; patients completed 12 choice tasks where they selected between 2 hypothetical 2L treatment profiles that varied on 7 treatment attributes (**Figure 1**) to indicate which was preferred
- Choice tasks were hypothetical, though attributes and levels included in the DCE were selected based on targeted literature review, clinical data, expert opinion, and insights gathered from patient focus groups to simulate real clinical decisions
- Preference weights for attribute levels in the DCE were estimated using Hierarchical Bayesian modeling

Results

Preferences for CAR-T in Early-line Therapy (Figure 1)

- Evidenced by a larger absolute difference between the most and least preferred attribute level, patients' preferences for 2L treatment in MM were most influenced, on average, by:
  - Increasing median OS from 2 additional years to 6 additional years (|-0.88 – 0.81| = 1.69)
  - Increasing median PFS from 7 months to 4 years (|-0.45 – 0.60| = 1.05)
  - Decreasing the risk of all grade CRS events from 95% to 0% (|-0.54 – 0.45|) = 0.99
  - Decreasing Serious AEs from 73% to 28% (|-0.29 – 0.27| = 0.56)
- On average, response rate, dosing / administration, and risk of CAR-T-associated grade 3/4 neurotoxicity had the least influence on treatment preferences, relative to the other attributes assessed
- While not the most influential factor, patients preferred a one-time infusion over other modes of administration (e.g., weekly or every other day injection)

Figure 1. Attribute preference weights for treatment characteristics influencing patients' treatment preferences



Abbreviations: AE, adverse event; CRS, cytokine release syndrome; PFS, progression-free survival; OS, overall survival
Note: Preference weights should not be interpreted by themselves. Instead, the magnitude of change within one attribute should be compared to change within another attribute; All preference weights of levels within an attribute sum to 0.
*CAR-T-associated (grade 3/4) neurotoxicity

Sample Characteristics (Table 1)

- The survey was administered to 127 patients with MM who reside in the US
- The mean age was 67 years; most patients were female (54%), White (61%) and on active MM treatment (96%)
- The majority had received 2 lines of therapy (45%), mean time since MM diagnosis was 71 months, and nearly 10% received CAR-T

Table 1. Patient characteristics

Characteristic		Statistic
Age (in years; Mean ± SD)		66.7 ± 4.8
Gender n (%)	Male	54 (42.5%)
	Female	69 (54.3%)
	Other	4 (3.1%)
Race/Ethnicity n (%)	Black or African American	43 (33.9%)
	Hispanic / Latino / Latina / Latinx	3 (2.4%)
	White	78 (61.4%)
	Other or prefer not to say	4 (3.1%)
Census Region n (%)	Northeast	25 (19.7%)
	Midwest	24 (18.9%)
	South	45 (35.4%)
	West	33 (26.0%)
Household Income n (%)	Less than $100,000 per year	51 (40.2%)
	$100,000 to $124,999	40 (31.5%)
	$125,000 or more*	36 (28.3%)
Months Since Diagnosis; Mean ± SD		70.5 ± 82.7
Age at Diagnosis; Mean ± SD		60.5 ± 8.0
Currently Undergoing Treatment [Yes; n (%)]		122 (96.1%)
Received CAR-T Therapy for MM [Yes; n (%)]		12 (9.4%)
Line of Therapy Received for MM n (%)	1 line	3 (2.4%)
	2 lines	57 (44.9%)
	3 lines	46 (36.2%)
	4+ lines	21 (16.5%)

MM=multiple myeloma
*Includes those who preferred not to say

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