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Outcomes of outpatient step-up dosing (SUD) of teclistamab and talquetamab in patients with relapsed/refractory multiple myeloma (RRMM): findings from a large network of community practices in the USA

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Key Takeaway

Outpatient SUD of Tec or Tal is feasible in community oncology practices and can be safely managed in heavily pre-treated patients with RRMM.

Conclusions

- All patients initiating Tec or Tal SUD in the OP setting successfully completed SUD.
- Most patients receiving OP SUD completed SUD without any hospitalization.
- The frequency and severity of CRS and ICANS were numerically comparable across the OP, IP and HY cohorts.

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Disclosures

Lisa Raff, Vanessa Mirsky, Joseph Abrams, Cathryn Barisonek, and Kimberly Melgarejo have no conflicts of interest to disclose. Felice Yang was a contracted employee of Johnson & Johnson at the time of this study. Saurabh Patel was an employee of Johnson & Johnson at the time of this study and may have owned shares/ stock options. Niodita Gupta-Werner, Xinke Zhang, Maithili Deshpande, and Tonya Le Blanc are employees of Johnson & Johnson and may own shares/stock options in Johnson & Johnson.

Introduction

- Teclistamab (Tec) and talquetamab (Tal) are two first-in-class bispecific T-cell engaging antibodies approved in the USA for the treatment of relapsed/refractory multiple myeloma (RRMM).[1,2]
- Per the US label, Tec and Tal should be initiated using step-up dosing (SUD) with recommended pre-treatment medications in an inpatient (IP) setting to mitigate the risk of cytokine release syndrome (CRS) and immune effector cell-associated neurotoxicity syndrome (ICANS).[1, 2]
- However, to reduce healthcare resource utilization (HCRU) and improve patient convenience, many institutions are implementing SUD initiation in outpatient (OP) and hybrid (HY) settings.
- The aim of this real-world study was to evaluate the outcomes of patients with RRMM initiating Tec or Tal with SUD in OP, HY, and IP settings at a large community oncology practice network.

Methods

Study design and data source

- This was a retrospective, observational study of patients with RRMM from the OneOncology practice network, a large network of community oncology practices in the US.
- Patients ≥18 years were included if they received Tec after October 25, 2022 or Tal after August 9, 2023, and data were abstracted until February 28, 2025.
- Anonymized data on clinical characteristics, treatment history, SUD patterns, adverse events, and HCRU were extracted from patient charts and electronic medical records.
  - Patients were treated per the US Prescribing Information for pre-treatment and prophylactic measures per physician discretion.

Data analysis

- Results were summarized descriptively by OP, IP, and HY cohort during the SUD period (SUD 1, SUD 2, SUD 3 [for Tal only] and first full treatment dose).
- The three cohorts were defined as:
  - OP: patients receiving all SUD doses in OP setting; treatment with acetaminophen or dexamethasone for grade 1 CRS (at physician discretion), or hospitalization for grade 2+ CRS
  - IP: patients receiving all SUD doses in an IP setting
  - HY: patients receiving SUD in an OP setting, followed by 48-hour IP observation

Results

Patient characteristics

- This study included 120 patients with RRMM **(Table 1)**.
  - OP: Tec=13, Tal=10; IP: Tec=42, Tal=12; HY: Tec=29, Tal=14.
- Patients in OP and HY cohorts were older and had a lower Eastern Cooperative Oncology Group status than those in IP cohort.

Table 1: Characteristics of Tec/Tal SUD patients in OP, IP, and HY settings

Characteristics, n (%)	OP = 23	IP = 54	HY = 43
Age, years			
≥18 and <65	6 (26)	14 (26)	15 (35)
≥65 and <75 years	6 (26)	23 (43)	11 (26)
≥75	11 (48)	17 (31)	17 (40)
Sex			
Female	14 (61)	20 (37)	19 (44)
Male	9 (39)	34 (63)	24 (56)
Race			
White	20 (87)	41 (76)	29 (67)
Black/African American	2 (9)	7 (13)	12 (28)
Asian	0 (0)	1 (2)	0 (0)
Other/Unknown	1 (4)	5 (9)	2 (5)
ECOG PS			
0-1	18 (78)	28 (52)	31 (72)
≥2	2 (9)	10 (18)	7 (16)
Unknown	3 (13)	16 (30)	5 (12)
High-risk cytogenetics*	6 (26)	18 (33)	12 (28)
Unknown	3 (13)	19 (35)	8 (19)
Caregiver status			
Yes	23 (100)	49 (91)	37 (86)
No	0 (0)	4 (7)	3 (7)
Unknown	0 (0)	1 (2)	3 (7)
R-ISS at index date			
Stage I	3 (13)	3 (6)	5 (12)
Stage II	3 (13)	12 (22)	4 (9)
Stage III	7 (30)	10 (19)	10 (23)
Unknown	10 (43)	29 (54)	24 (56)
Triple-class refractory	13 (57)	26 (48)	33 (77)
Penta-class exposed	16 (70)	43 (80)	35 (81)
Prior T-cell redirecting therapy	2 (9)	13 (24)	14 (33)

ECOG PS, Eastern Cooperative Oncology Group performance status. HY, hybrid. IP, inpatient. OP, outpatient. R-ISS, Revised International Staging System.
*High risk cytogenetics defined as (t(4; 14); t (14; 16); del17p).

- Among the OP, IP, and HY cohorts, 26%, 33%, and 28% had high-risk cytogenetics (t(4; 14); t (14; 16); del17p)), respectively.

Treatment history

- Among patients receiving Tec, the median number of prior lines of therapy (LOTs) was 4 in all settings. However, among patients receiving Tal, the median prior LOTs were 4, 5, and 6 in OP, IP and HY, respectively.

SUD characteristics

- All patients treated in an OP setting successfully completed SUD.
- The most frequent SUD schedule for Tec was 1-3-5 in OP (62%), and hybrid (38%), while 48% of IP patients had 1-4-7 SUD schedule.
- Most patients receiving Tal in an IP setting followed 1-4-7-10 dosing (58%), while 70% of OP and 71% of HY received other SUD schedules, typically a 1-4-8-10 schedule.

Adverse events during SUD

- The frequency of CRS and ICANS during the SUD period was numerically comparable between the three cohorts **(Table 2).**
- All CRS events were grade 1 or 2 across all cohorts.

Table 2: Adverse events during SUD of Tec/Tal in OP, IP, and HY settings

Adverse event, n (%)	OP = 23	IP = 54	HY = 43
CRS during SUD	14 (61)	27 (50)	27 (63)
CRS Grade*			
Grade 1	9 (39)	20 (37)	11 (26)
Grade 2	5 (22)	4 (7)	16 (37)
Unknown	0 (0)	3 (6)	0 (0)
Recurrent CRS (≥2 events)	0 (0)	4 (7)	11 (26)
Discontinuation of Tec/Tal due to CRS	0 (0)	0 (0)	0 (0)
ICANS during SUD	1 (4)	3 (6)	6 (14)
ICANS Grade			
Grade 1	0 (0)	1 (2)	4 (9)
Grade 2	1 (4)	1 (2)	1 (2)
Grade 3	0 (0)	0 (0)	0 (0)
Grade 4	0 (0)	1 (2)	0 (0)
Unknown	0 (0)	0 (0)	1 (2)
Recurrent ICANS (≥2 events)	0 (0)	0 (0)	2 (5)
Discontinuation of Tec/Tal due to ICANS	0 (0)	0 (0)	1 (2)
Concurrent CRS and ICANS	1 (4)	3 (6)	4 (9)

CRS, cytokine release syndrome. HY, hybrid. ICANS, immune effector cell-associated neurotoxicity syndrome. IP, inpatient. OP, outpatient. SUD, step-up dosing.
*No grade 3+ CRS events were observed
Note: Prophylactic tocilizumab was not utilized during SUD

- The highest grade of ICANS was 2 in the OP and HY cohorts, and 4 in the IP cohort.
- No patients discontinued treatment with Tec or Tal due to CRS and one patient from the HY cohort discontinued Tec due to ICANS of unknown grade **(Table 2)**.
- There were no recurrent CRS events in the OP setting, compared to 7% in IP and 26% in HY settings **(Table 2)**.
- Similarly, there were no recurrent ICANS in the OP or IP cohorts; 5% in the HY cohort.

HCRU during SUD

- Most patients (70%) in the OP cohort completed SUD without the need for hospitalization **(Table 3)**.
- Of the five patients in the OP cohort with grade 2 CRS requiring hospitalization, the median duration of hospital stay was 4 days.

Table 3: HCRU during SUD of Tec/Tal in OP, IP, and HY settings

HCRU	OP = 23	IP = 54	HY = 43
All-cause hospitalizations within 14 days of index date, n (%)	7 (30)	54 (100)	43 (100)
LOS for all-cause hospitalizations within 14 days of index date, median (IQR)	4 (2 – 6)	10 (9 – 11)*	2 (2 – 2)
CRS-related re-admissions, n (%)	1 (4)	1 (2)	0 (0)
CRS-related ER visits, n (%)	5 (22)	2 (4)	2 (5)

CRS, cytokine release syndrome. ER, emergency room. HCRU, healthcare resource utilization. HY, hybrid. IQR, interquartile range. LOS, Length of stay IP, inpatient. OP, outpatient. SUD, step-up dosing.
*Data available for 37 patients only.

Treatment of adverse events occurring during SUD

- Tocilizumab and steroids were utilized for the treatment of CRS and ICANS, respectively **(Table 4)**.

Table 4: Treatment of CRS and ICANS in OP, IP, and HY settings*

Characteristics, n (%)	OP = 23	IP = 54	HY = 43
Treatment for CRS			
Acetaminophen	2 (9)	4 (7)	6 (14)
Steroids	10 (43)	11 (20)	5 (12)
Tocilizumab	3 (13)	9 (17)	24 (56)
Treatment for ICANS			
Steroids	0 (0)	2 (4)	6 (14)
Levetiracetam	0 (0)	0 (0)	3 (7)

CRS, cytokine release syndrome. HY, hybrid. ICANS, immune effector cell-associated neurotoxicity syndrome. IP, inpatient. OP, outpatient.
*Treatment information reported as available. Data may be missing.

References

1. U.S. Food & Drug Administration (2022). Available at: https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-teclistamab-cqyv-relapsed-or-refractory-multiple-myeloma
2. U.S. Food & Drug Administration (2023). Available at: https://www.fda.gov/drugs/resources-information-approved-drugs/fda-grants-accelerated-approval-talquetamab-tgvs-relapsed-or-refractory-multiple-myeloma

Multiple Myeloma

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