PA-008

Economic Value of Tocilizumab Prophylaxis to Prevent Cytokine Release Syndrome During Outpatient Teclistamab or Talquetamab Initiation for Relapsed/Refractory Multiple Myeloma

Amir Ali[1], Arveen Kaur[2], Felice Yang[2], Yi-Hsuan Liu[2], Joseph Goble[2], Xinke Zhang[2], Niodita Gupta-Werner[2], Tonya Le Blanc[2], Arielle G Bensimon[3], Ariel F Grajales-Cruz[4]

[1]University of Southern California Norris Comprehensive Cancer Hospital, Los Angeles, CA, USA; [2]Johnson & Johnson, Horsham, PA, USA; [3]Analysis Group, Inc., Boston, MA, USA; [4]Moffitt Cancer Center, Tampa, FL, USA

Key Takeaways

Outpatient (OP) administration of bispecific SUDs along with prophylactic use of toci is becoming more common in clinical practice; however, economic data remain limited

These findings support the economic feasibility of OP administration of SUDs of Tec and Tal when toci is used prophylactically

Conclusion

For patients initiating Tec or Tal for RRMM, an OP SUD approach with prophylactic toci, previously associated with fewer CRS events, demonstrated lower cost of care compared with the conventional IP SUD approach

Please scan QR code

https://www.congresshub.com/Oncology/IMS2025/Talquetamab/Ali

Poster

The QR code is intended to provide scientific information for individual reference, and the information should not be altered or reproduced in any way.

Acknowledgments

This study was sponsored by Johnson & Johnson. The authors gratefully acknowledge Saurabh Patel, MD, for his invaluable assistance in the development of the abstract for this poster. Medical writing and editorial support were provided by Jessica A Weaver, PhD, CMPP™, of Lumanity Communications Inc., and were funded by Johnson & Johnson.

Disclosures

NG-W is an employee and current equity holder of Johnson & Johnson.

Introduction

- Teclistamab (Tec) and talquetamab (Tal) are bispecific antibodies approved for triple-class–exposed relapsed/refractory multiple myeloma (RRMM) based on high overall response rates in the phase 1/2 MajesTEC-1 (TEC-1; ClinicalTrials.gov Identifiers: NCT03145181/NCT04557098) and the phase 1/2 MonumenTAL-1 (TAL-1; ClinicalTrials.gov Identifiers: NCT03399799/NCT04634552) trials, respectively[1-4]
- Due to the risk of cytokine release syndrome (CRS) at treatment initiation, step-up doses (SUDs) should be administered in the inpatient (IP) setting per the US Food and Drug Administration labels[5,6]
- However, several real-world studies have shown that outpatient (OP) administration of SUDs is feasible and can also reduce health care resource utilization (HCRU)[7-9]
- Furthermore, the prophylactic use of tocilizumab (toci), a monoclonal antibody, reduces the incidence and severity of CRS and may facilitate OP SUDs[10-14]
  - The phase 2 OP step-up administration of Tec (OPTec) study (ClinicalTrials.gov Identifier: NCT05972135) is evaluating the use of prophylactic toci, given prior to the first SUD, to reduce the incidence and severity of CRS. In this study, 1 patient (6.3%; n/N=1/16) experienced grade 1 CRS, and no patients experienced grade ≥2 CRS[15]
  - Recent guidelines have recommended the prophylactic use of toci with bispecific antibodies[16]
- This study aimed to assess the economic impact of adopting prophylactic toci to support OP administration of Tec or Tal from a US health care institution perspective

Methods

Study design

- An economic model was developed to calculate HCRU and institutional costs per patient for Tec and Tal during the SUD period under 2 alternative approaches for SUD administration:
  - OP administration with prophylactic toci before the first SUD (with additional prophylactic dexamethasone after each SUD for Tal)
    - In cases of grade ≥2 CRS, despite administration of prophylactic toci, the patient is hospitalized, receives the remaining SUDs in an IP setting, and is retreated with toci
  - IP administration without prophylactic toci (with toci only as reactive treatment for grade ≥2 CRS, including recurrent grade ≥2 CRS)
    - Patients receive all SUDs over the course of hospitalization, and IP SUD is assumed to require a 6-day hospitalization (1-3-5) for Tec and Tal weekly (QW) and 8-day hospitalization (1-3-5-7) for Tal biweekly (every 2 weeks; Q2W) based on the TEC-1 and TAL-1 trials[1-4]
- Risks of grade ≥2 CRS were based on data from the phase 2 OPTec study for Tec and a subanalysis of the TAL-1 trial for Tal under the OP approach, and data from the TEC-1 trial for Tec and the TAL-1 trial for Tal under the IP approach
- Toci was assumed to be administered as an 8 mg/kg dose (prophylactically or as treatment) for grade ≥2 CRS

Statistical analysis

- The 2 alternative approaches for SUD administration were compared for each bispecific regimen: Tec, Tal QW, and Tal Q2W
- Costs of Tec, Tal, and toci acquisition; OP administration; and IP stays were estimated in 2025 US dollars using trial data, drug labels, public databases, and literature
  - Drug acquisition costs for Tec, Tal, and toci were calculated for an 85 kg patient based on Wholesale Acquisition Cost (no discount was assumed) and the weight-based dosing schedule of each drug
  - Branded formulation pricing of toci was used in the main analysis
- Premedication and prophylactic dexamethasone costs were not included due to their minimal impact on overall costs
- A sensitivity analysis was conducted using the price of tocilizumab-aazg, a biosimilar toci

Results

- Total per-patient costs for the IP versus OP approaches were estimated as follows (**Table 1**): $28,158 versus $19,316 for Tec, resulting in a cost difference of –$8841; $27,469 versus $18,924 for Tal QW, resulting in a cost difference of –$8545; and $54,718 versus $42,097 for Tal Q2W, resulting in a cost difference of –$12,621
  - The cost differences were predominantly attributable to the reduction in IP days with the OP approach

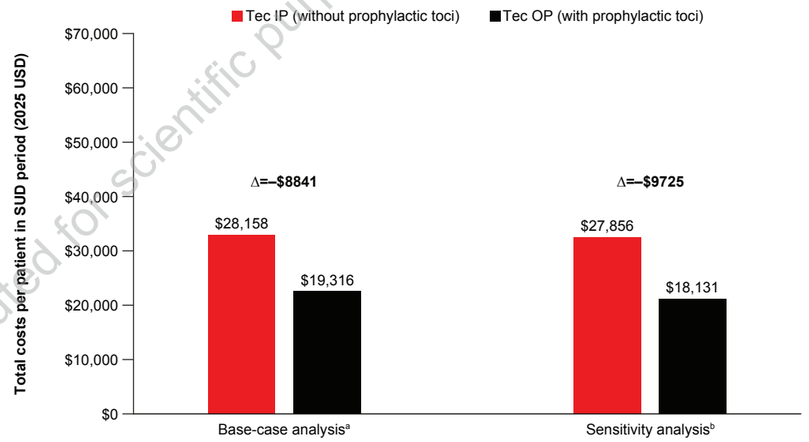
Table 1: HCRU and costs by SUD setting

Outcomes	Tec		Tal QW		Tal Q2W	
	IP	OP with prophylactic toci	IP[a]	OP with prophylactic toci	IP	OP with prophylactic toci
HCRU during the SUD period[b]						
Number of grade ≥2 CRS events, mean	0.3	0	0.2	0	0.2	0
Number of IP days, mean	6.0	0	6.0	0	8.0	0
Number of OP administrations, mean	0	3.0	0	3.0	0	4.0
Costs per patient, mean, 2025 USD						
Total costs during the SUD period[b,c]	28,158	19,316	27,469	18,924	54,718	42,097
Drug acquisition costs for SUDs	14,545	14,545	14,152	14,152	37,259	37,259
Drug acquisition costs for toci prophylaxis	0	4515	0	4515	0	4515
Drug acquisition costs for toci treatment of grade ≥2 CRS	1149	0	852	0	841	0
IP administration costs for SUDs	12,464	0	12,464	0	16,619	0
OP administration costs for SUDs	0	199	0	199	0	265
OP administration costs for toci prophylaxis	0	58	0	58	0	58

HCRU, health care resource utilization; SUD, step-up dose; Tec, teclistamab; Tal, talquetamab; QW, weekly; Q2W, biweekly (every 2 weeks); IP, inpatient; OP, outpatient; toci, tocilizumab; CRS, cytokine release syndrome; USD, US dollars.
[a]In cohort D of TAL-1, some patients received IP SUD with prophylactic toci, and all patients received post-treatment dexamethasone administered as an 8 mg/kg dose.
[b]The SUD period was 1 week for Tec and Tal QW and 2 weeks for Tal Q2W. IP SUD assumed to require a 6-day hospitalization (1-3-5) for Tec and Tal QW and 8-day hospitalization (1-3-5-7) for Tal Q2W, based on the TEC-1 and TAL-1 trials.
[c]Acquisition and administration costs may not sum to total costs during the SUD period due to rounding.

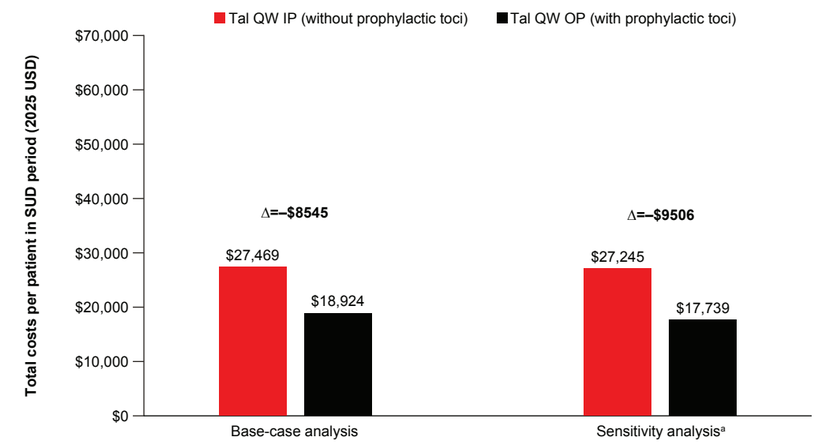
- Sensitivity analyses using biosimilar toci pricing demonstrated even greater cost savings for the OP approach, with differences of –$9725 for Tec, –$9506 for Tal QW, and –$13,586 for Tal Q2W, as shown in **Figures 1** to **3**

Figure 1: Base-case and sensitivity analyses of Tec SUD settings for biosimilar product use



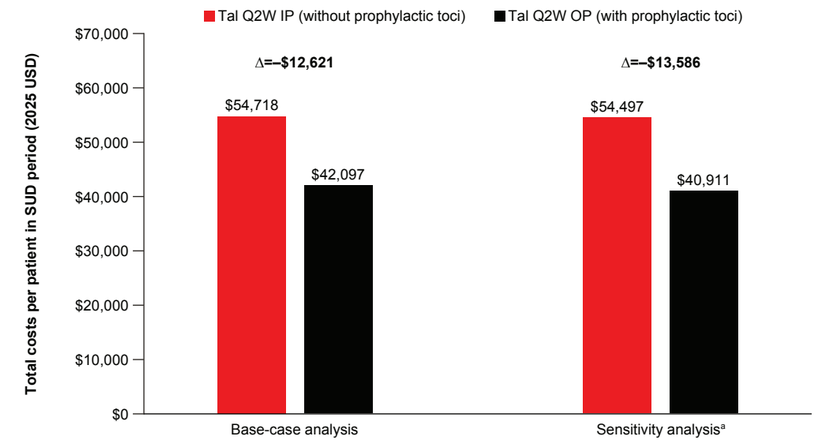
Tec, teclistamab; SUD, step-up dose; IP, inpatient; toci, tocilizumab; OP, outpatient; USD, US dollars.
[a]Cost savings of the base-case analysis may differ by $1 due to rounding.
[b]The sensitivity analysis was conducted under the assumption of biosimilar pricing, including for the administration of reactive toci.

Figure 2: Base-case and sensitivity analyses of Tal QW SUD settings for biosimilar product use



Tal, talquetamab; QW, weekly; SUD, step-up dose; IP, inpatient; toci, tocilizumab; OP, outpatient; USD, US dollars.
[a]The sensitivity analysis was conducted under the assumption of biosimilar pricing, including for the administration of reactive toci.

Figure 3: Base-case and sensitivity analyses of Tal Q2W SUD settings for biosimilar product use



Tal, talquetamab; Q2W, biweekly (every 2 weeks); SUD, step-up dose; IP, inpatient; toci, tocilizumab; OP, outpatient; USD, US dollars.
[a]The sensitivity analysis was conducted under the assumption of biosimilar pricing, including for the administration of reactive toci.

References

1. Usmani SZ, et al. *Lancet*. 2021;398(10301):665-674. 2. Chari A, et al. *N Engl J Med*. 2022;387(24):2232-2244. 3. Rasche L, et al. *J Clin Oncol*. 2025;43(16 suppl):7528. 4. Schinke CD, et al. *J Clin Oncol*. 2023;41(16 suppl):8036. 5. TECVAYLI® (teclistamab-cqyv) injection, for subcutaneous use [package insert]. Janssen Biotech, Inc.; 2024. 6. TALVEY™ (talquetamab-tgvs) injection, for subcutaneous use [package insert]. Janssen Biotech, Inc.; 2023. 7. Scott SA, et al. *Clin Lymphoma Myeloma Leuk*. 2025;25(9):656-660. 8. Sandahl TB, et al. *JCO Oncol Pract*. 2025;21(5):702-709. 9. Soefje S, et al. Presented at: 30th European Hematology Association (EHA) Congress; June 12-15, 2025; Milan, Italy. Poster PS1764. 10. Korst CLBM, et al. *Hemasphere*. 2024;8(7):e132. 11. van de Donk NWCJ, et al. Presented at: American Society of Clinical Oncology (ASCO) Annual Meeting; May 31-June 4, 2024; Chicago, IL, USA. 12. Martin T, et al. *Cancer*. 2023;129(13):2035-2046. 13. Moreau P, et al. *N Engl J Med*. 2022;387(6):495-505. 14. Rifkin RM, et al. Presented at: American Society of Clinical Oncology (ASCO) Annual Meeting; May 31-June 4, 2024; Chicago, IL, USA. Poster 7528. 15. Rifkin R, et al. Presented at: 66th American Society of Hematology (ASH) Annual Meeting and Exposition; December 7-10, 2024; San Diego, CA, USA. Poster MON-4753. 16. Rodriguez-Otero P, et al. *Lancet Oncol*. 2024;25(5):e205-e216.

Multiple Myeloma

Presented by N Gupta-Werner at the 22nd International Myeloma Society (IMS) Annual Meeting; September 17-20, 2025; Toronto, ON, Canada