Pooled Efficacy and Safety of Teclistamab in 217 Patients With Triple-Class Exposed Relapsed/Refractory Multiple Myeloma From 3 Registrational Clinical Studies

Thomas G Martin[1], María-Victoria Mateos[2], Niels WCJ van de Donk[3], Zhen Cai[4], Weijun Fu[5], Alfred L Garfall[6], Shinsuke Iida[7], Yoshiaki Kuroda[8], Ting Niu[9], Ajay K Nooka[10], Surbhi Sidana[11], Katherine Chastain[12], Margaret Doyle[13], Kazuko Nishikawa[14], Yang Song[15], Hiroshi Yamazaki[14], Jianmin Zhuo[16], Angeline Zhu[17], Juan Du[5], Tadao Ishida[18]

[1]University of California, San Francisco, San Francisco, CA, USA; [2]University Hospital of Salamanca/IBSAL/CIC/CIBERONC, Salamanca, Spain; [3]Amsterdam University Medical Center, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands; [4]First Affiliated Hospital, Zhejiang University College of Medicine, Hangzhou, Zhejiang, China; [5]Shanghai Changzheng Hospital, Naval Medical University, Shanghai, China; [6]Abramson Cancer Center, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA; [7]Nagoya City University Institute of Medical and Pharmaceutical Sciences, Nagoya, Japan; [8]National Hospital Organization Hiroshima-Nishi Medical Center, Otake, Hiroshima, Japan; [9]West China Hospital, Sichuan University, Chengdu, Sichuan, China; [10]Winship Cancer Institute, Emory University, Atlanta, GA, USA; [11]Stanford University School of Medicine, Stanford, CA, USA; [12]Janssen Research & Development, Raritan, NJ, USA; [13]Janssen Global Services, Dublin, Ireland; [14]Janssen Pharmaceutical K.K., Research & Development Division, Tokyo, Japan; [15]Janssen Research & Development, Beijing, China; [16]Janssen China Research & Development, Shanghai, China; [17]Janssen Asia Pacific Medical Affairs, Singapore; [18]Japanese Red Cross Medical Center, Tokyo, Japan

Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

Introduction

- Teclistamab is the first approved BCMA×CD3 BsAb for the treatment of patients with triple-class exposed RRMM, with weight-based dosing and the longest study follow-up of any BsAb in MM (30.4 months)[1-4]
- Teclistamab has demonstrated rapid, deep, and durable responses with a manageable safety profile in 3 clinical/cohorts: the pivotal MajesTEC-1 cohort, the China cohort of MajesTEC-1, and the Japan phase 1/2 (MMY1002) study[4-7]
- Here, we present pooled data of 217 patients treated with teclistamab at the RP2D

BCMA, B-cell maturation antigen; BsAb, bispecific antibody; MM, multiple myeloma; RP2D, recommended phase 2 dose; RRMM, relapsed/refractory multiple myeloma.

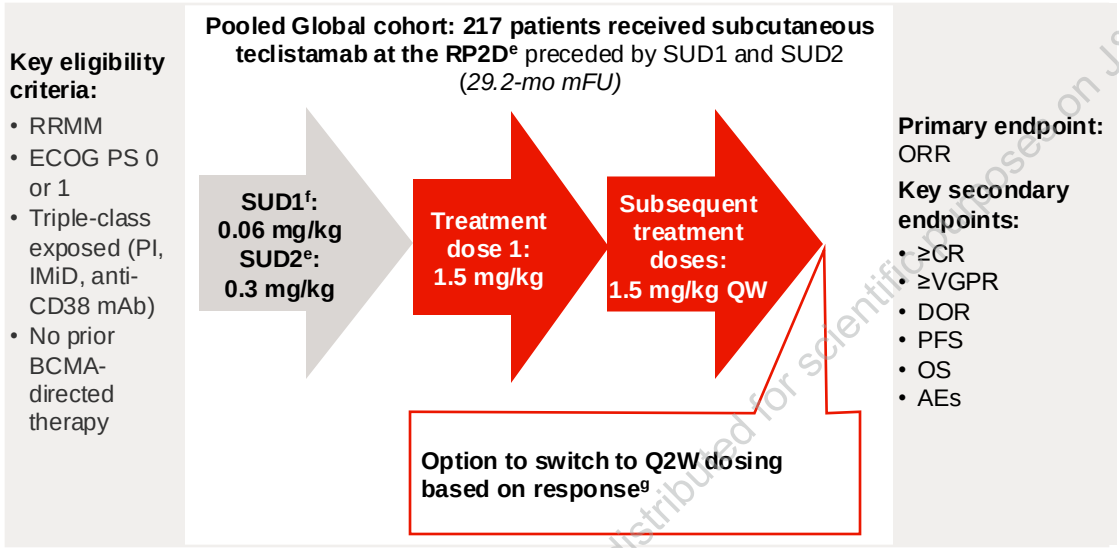
1. TECVAYLI® (teclistamab). Summary of product characteristics. Leiden, Netherlands: Janssen Biologics BV; 2022. 2. TECVAYLI® (teclistamab-cqyv). Prescribing information. Horsham, PA: Janssen Biotech, Inc; 2022. 3. Moreau P, et al. *New Engl J Med* 2022;387:495-505. 4. Garfall AL, et al. Presented at ASCO; May 31–June 4, 2024. Chicago, IL, USA & Virtual. Poster #7540 5. Cai Z, et al. Presented at EHA; June 13–16, 2024; Madrid, Spain. Abstract #PB2717. 6. Clinicaltrials.gov identifier, NCT04696809. 7. Iida S, et al. Presented at JSH; October 11–13, 2024; Kyoto, Japan.

Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

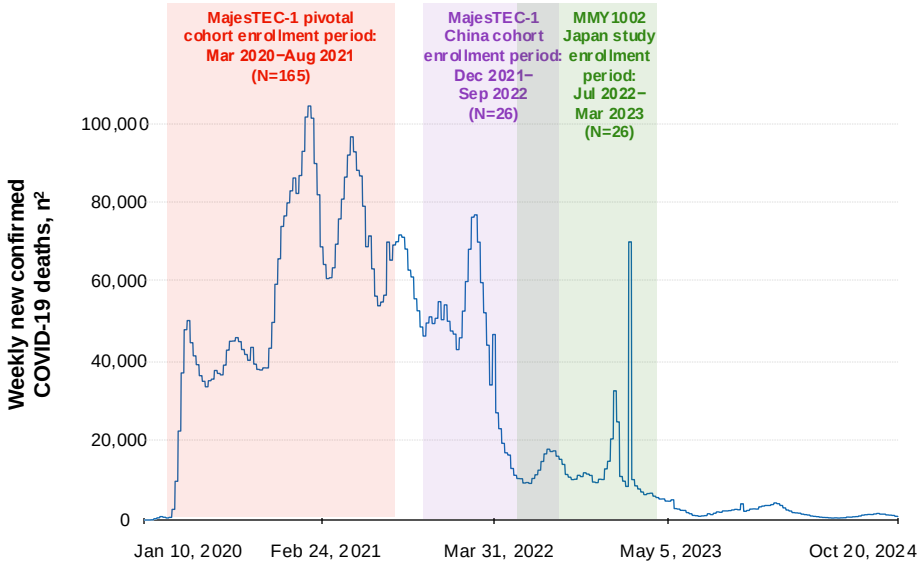
Methods

- Global cohort (N=217) includes: 165 patients from the pivotal MajesTEC-1 study,[a] 26 patients from the China cohort of MajesTEC-1,[b] and 26 patients from phase 2 of the Japan (MMY1002)[c] study were enrolled
- The Asian cohort[d] includes patients from the China cohort and Japan study
- The MajesTEC-1 study design was previously described[1]

Study design



Enrollment periods relative to COVID-19 pandemic



[a]mFU, 30.4 months (NCT03145181/NCT04557098). [b]mFU, 15.3 months. [c]mFU, 14.3 months (MMY1002; NCT04696809). [d]3 patients with Asian ethnicity in the pivotal MajesTEC-1 were not included in the Asian cohort analysis. [e]1.5 mg/kg subcutaneously QW. [f]2–4 days were allowed between SUD1, SUD2, and treatment dose 1. [g]Switch was permitted in the MajesTEC-1 study if patients achieved ≥PR after ≥4 cycles (phase 1) or ≥CR for ≥6 months (phase 2) and was permitted in the Japan (MMY1002) study if patients achieved ≥PR for ≥6 months.

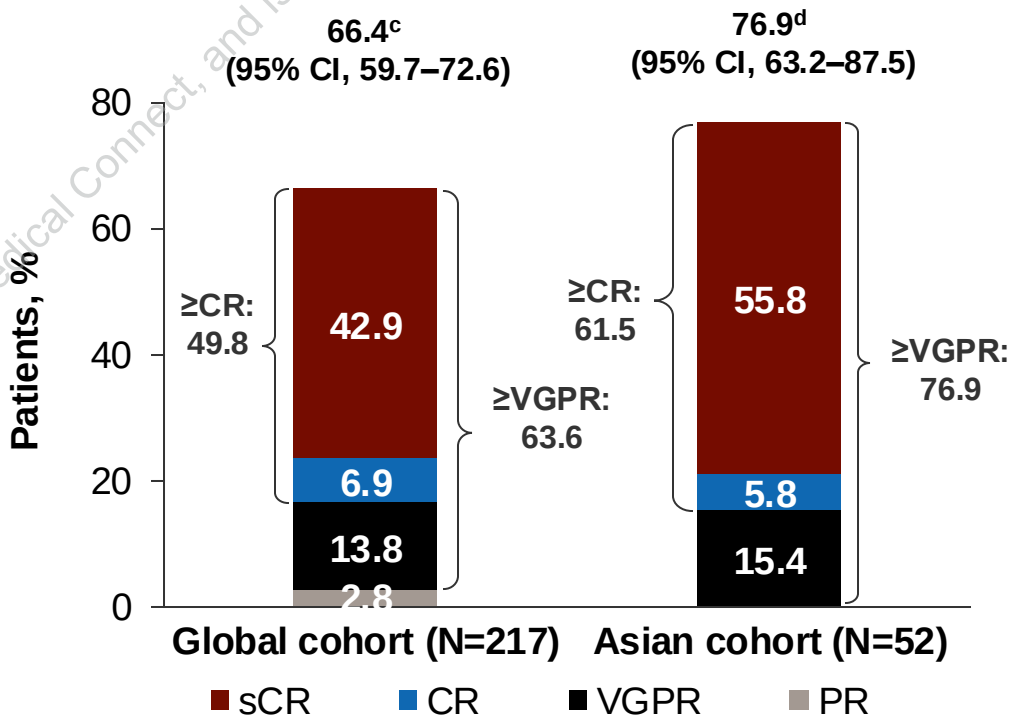
AE, adverse event; BCMA, B-cell maturation antigen; CR, complete response; DOR, duration of response; EGOG PS, Eastern Cooperative Oncology Group performance status; IMiD, immunomodulatory drug; mAb, monoclonal antibody; mFU, median follow-up; ORR, overall response rate; OS, overall survival; PFS, progression-free survival; PI, proteasome inhibitor; PR, partial response; Q2W, every other week; QW, weekly; RP2D, recommended phase 2 dose; RRMM, relapsed/refractory multiple myeloma; SUD, step-up dose; VGPR, very good partial response.

1. Moreau P, et al. *New Engl J Med* 2022;387:495-505. 2. Mathieu E, et al. Coronavirus pandemic (COVID-19). Accessed November 4, 2024. Available at: https://ourworldindata.org/coronavirus.

Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

Efficacy

- Baseline characteristics were generally similar between cohorts
  - The Asian cohort had lower average body weight, a higher percentage of patients with high-risk disease features, and a lower percentage of patients with triple- or penta-drug refractory status
- ORR[a,b] was high and responses were deep across the Global and Asian cohorts, a trend for improved outcomes was observed in the Asian cohort vs the Global cohort (≥VGPR, 76.9% vs 63.6% respectively)
  - 88 patients (65, 10, and 13 in the pivotal cohort, China cohort, and Japan study, respectively) in the Global cohort switched to less frequent dosing per study protocol



[a]Response assessed by independent review committee in the MajesTEC-1 study. [b]Response in the Japan study was assessed using a computerized algorithm. [c]mFU, 29.2 months. [d]mFU, 14.9 months
CR, complete response; ORR, overall response rate; PR, partial response; sCR, stringent complete response; VGPR, very good partial response.

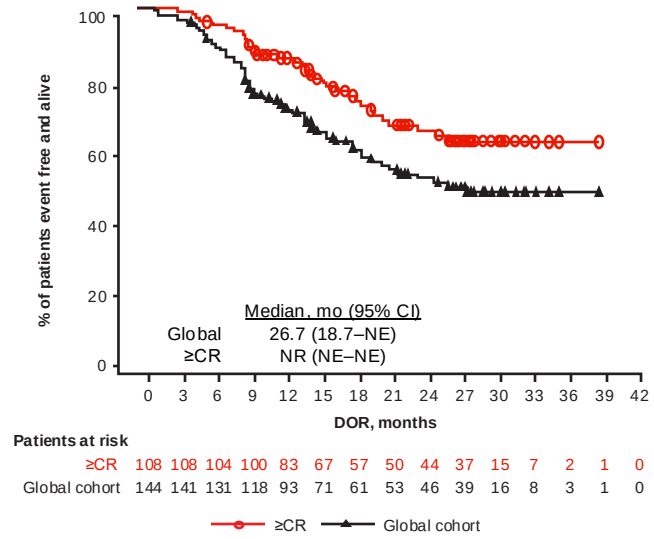
Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

DOR and PFS

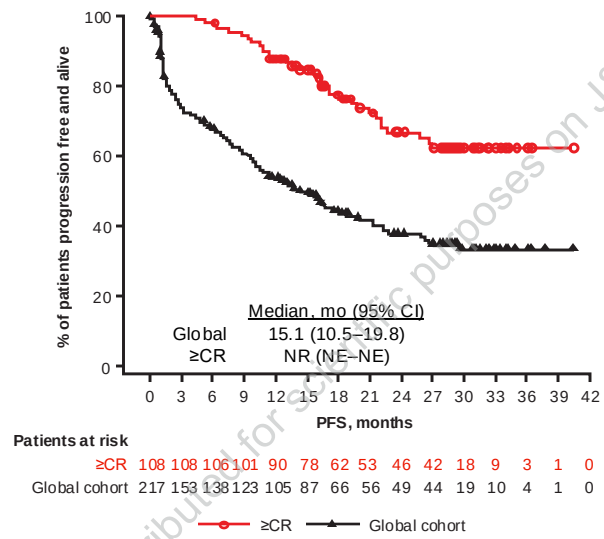
- DOR and PFS were improved in patients who achieved a ≥CR in both the Global and Asian cohorts

Global cohort

A

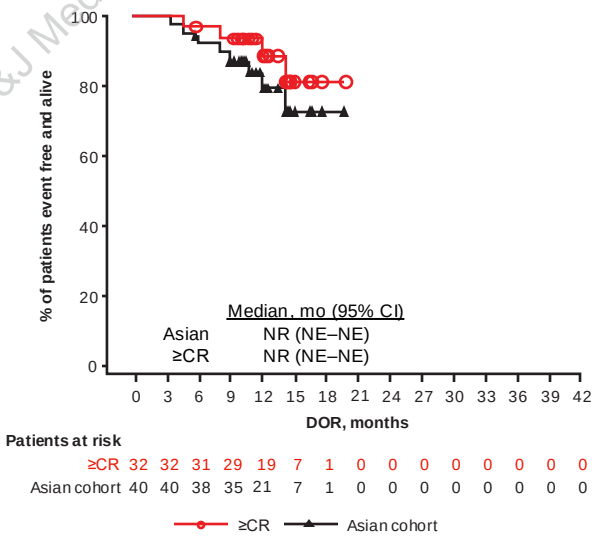


B

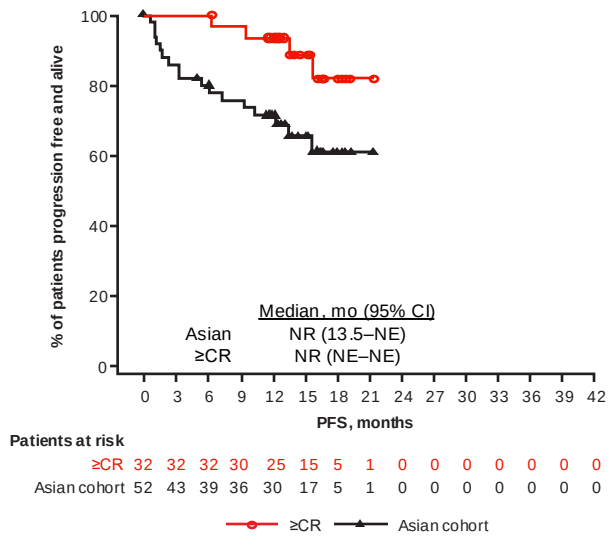


Asian cohort

C



D



Response assessed by independent review committee in the China cohort of the MajesTEC-1 study. Response in the Japan study was assessed using a computerized algorithm.
CR, complete response; DOR, duration of response; NE, not estimable; NR, not reached; PFS, progression-free survival.

Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

DOR, PFS, and OS in the Global and Asian Cohorts

- Estimated 15-month DOR, PFS, and OS were comparable in the Global and Asian cohorts
- PFS was longer in patients who received ≤3 prior LOT in the Global cohort

	Global cohort (N=217)	Asian cohort (N=52)
mFU, mo	29.2	14.9
DOR[a], %		
Median DOR	26.7	NR
Estimated 15-mo DOR	66.0	73.0
Median DOR in ≤3 prior LOT[b]	26.7	NR
Median DOR in >3 prior LOT[c]	25.6	NR
PFS, %		
Median PFS	15.1	NR
Estimated 15-mo PFS	50.3	65.5
Median PFS in ≤3 prior LOT[d]	22.2	NR
Median PFS in >3 prior LOT[e]	10.8	NR
OS, %		
Median OS	26.3	NR
Estimated 15-mo OS	62.0	74.9
Median OS in ≤3 prior LOT[d]	NR	NR
Median OS in >3 prior LOT[e]	21.9	NR

[a]Global cohort, n=144 and Asian cohort, n=40. [b]Global cohort, n=44 and Asian cohort, n=12. [c]Global cohort, n=100 and Asian cohort, n=28. [d]Global cohort, n=57 and Asian cohort, n=14. [e]Global cohort, n=160 and Asian cohort, n=38.
DOR, duration of response; LOT, line of therapy; mFU, median follow-up; NE, not estimable; NR, not reached; OS, overall survival; PFS, progression-free survival; ITT, intention to treat.

Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

Safety

- In the Global cohort, the most frequent TEAEs were CRS, cytopenias, and infections
  - Discontinuations occurred in 9/217 (4.1%) patients, 5/9 (2.3%) due to infections
  - Grade 5 COVID-19 occurred in 8.3% of patients (all from the pivotal cohort which enrolled during the first peak of the COVID-19 pandemic)
- In the Asian cohort, which enrolled after the pivotal MajesTEC-1 cohort, there was increased use of Ig; 91.3% of patients with hypogammaglobulinemia received ≥1 dose of IV or SC Ig
  - No discontinuations due to infections; and only 1 grade 5 infection (pneumonia in the setting of on-going COVID-19 in the China cohort)

Most common[a] TEAE, n (%)	Global cohort (N=217)		Asian cohort (N=52)	
	Any Grade	Grade 3/4	Any Grade	Grade 3/4
CRS	165 (76.0)	1 (0.5)	46 (88.5)	0
Infection	175 (80.6)	115 (53.0)	45 (86.5)[b]	24 (46.2)[c]
COVID-19	68 (31.3)	49 (22.6)	20 (38.5)	14 (26.9)
Neutropenia	162 (74.7)	147 (67.7)	44 (84.6)	39 (75.0)
Lymphopenia	94 (43.3)	88 (40.6)	34 (65.4)	31 (59.6)
Anemia	121 (55.8)	82 (37.8)	30 (57.7)	20 (38.5)
Leukopenia	58 (26.7)	32 (14.7)	25 (48.1)	17 (32.7)
Thrombocytopenia	86 (39.6)	46 (21.2)	17 (32.7)	8 (15.4)
Hypogammaglobulinemia	64 (29.5)	4 (1.8)	28 (53.8)	1 (1.9)
Hypokalemia	45 (20.7)	17 (7.8)	20 (38.5)	9 (17.3)
Hypoalbuminemia	24 (11.1)	1 (0.5)	20 (38.5)	0
Diarrhea	75 (34.6)	9 (4.1)	18 (34.6)	3 (5.8)

[a]Any-grade TEAEs occurring in ≥30% of patients in at least one cohort. [b]Any-grade infection occurred in 96.2% in China cohort (73.1% due to COVID-19) and 69.2% in Japan cohort. [c]Grade 3/4 infection occurred in 69.2% in China cohort (53.8% due to COVID-19) and 11.5% in Japan cohort.
CRS, cytokine release syndrome; Ig, immunoglobulin; IV, intravenous; SC, subcutaneous; TEAE, treatment-emergent adverse event.

Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

Conclusions

- ORR was **66.4%** with **49.8%** of patients achieving ≥CR; median DOR and PFS were **26.7** months and **15.1** months, respectively, in the Global cohort, and median DOR was not reached in those achieving ≥CR
- Infection management improved with increased use of Ig over time, aligned with IMWG guidelines[1]
- More than 14,000 patients worldwide have been treated with teclistamab. Increased physician understanding and experience further supports physician confidence and optimal patient management and outcomes in clinical practice

In the largest, globally represented, clinical cohort to date (N=217), teclistamab as a weight-based dosing regimen has demonstrated clinically meaningful benefits across a diverse range of patients, encompassing various weight categories and racial backgrounds. With a median follow-up of 29.2 months, teclistamab induced deep and durable responses with a manageable safety profile in patients with TCE RRMM, with <5% of patients discontinuing due to AEs

AE, adverse event; CR, complete response; DOR, duration of response; Ig, immunoglobulin; IMWG, International Myeloma Working Group; ORR, overall response rate; PFS, progression-free survival; RRMM, relapsed/refractory multiple myeloma; TCE, triple-class exposed.

1. Raje NS, et al. *Lancet Haematol* 2022;9:e143-61.

Presented by TG Martin at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA