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Key Takeaway

In the real-world, teclistamab is effective in a wide range of patients with relapsed/refractory multiple myeloma (RRMM), including those who are older, more heavily pretreated, and with higher disease burden than patients in the MajesTEC-1 trial.

Conclusions

After a median follow-up of 17 months, patients with RRMM treated with teclistamab in the real-world demonstrated comparable outcomes to those in the MajesTEC-1 trial with an overall response rate (ORR) of 61.6% and during step-up dosing (SUD), a cytokine release syndrome (CRS) rate of 54.5% and immune effector cell-associated neurotoxicity syndrome (ICANS) rate of 13.0%.

Even among a heavily pre-treated RRMM population with heavy disease burden, teclistamab demonstrated an 18-month overall survival (OS) rate of 60%.

Based on the infection rates and use of prophylactic measures such as intravenous immunoglobulin (IVIG), this study also highlights the need for consistent long-term prophylactic management of infection among patients with RRMM treated with teclistamab.

Introduction

- In the MajesTEC-1 clinical trial, teclistamab demonstrated an ORR of 63%, a median duration of response (DOR) of 24.0 months, and a median progression-free survival (PFS) of 11.4 months (median follow-up 30.4 months), in adult patients with RRMM.¹
- Clinical trials usually have defined eligibility criteria which may exclude patients with comorbidities such as renal impairment or prior treatment exposures such as anti-B cell maturation (BCMA) therapies.^{2,3}
- In the real-world, patients with various clinical characteristics who may not have been eligible for the MajesTEC-1 clinical trial are treated with teclistamab.^{2,3}
- This study aimed to assess the characteristics, treatment patterns, and long-term outcomes of RRMM patients treated with teclistamab in the real-world setting at a large academic center in the US.

Methods

- This retrospective, observational study included patients ≥18 years old with RRMM treated with ≥1 dose of teclistamab at Memorial Sloan Kettering Cancer Center, a large academic center in the US, since the FDA approval date of October 25, 2022.
- Patients were assessed from the index date (date of teclistamab initiation) to death or the data cut off date (April 1, 2025), whichever came first.
- Patient characteristics and treatment history were recorded at index date. SUD schedule, safety, and effectiveness outcomes were recorded during the follow-up period.
- Descriptive statistics were used to summarize patient characteristics, treatment history, rates of CRS, ICANS and infections, and ORR. Kaplan Meier methods were used to analyze time to event outcomes.
- Effectiveness outcomes included:
 - OS (time from index date to death from any cause)
 - PFS (time from index date to disease progression [PD] or death from any cause)
 - DOR (time from first response to PD or death from any cause).
 - ORR (partial response or better, according to International Myeloma Working Group criteria)

Results

Patient demographic and clinical characteristics

- Of 123 patients included in the study, 29.3% of patients were <65 years old, 34.1% were ≥75 years old, 53.7% were female, and 19.5% were Black (Table 1).
- Teclistamab initiation ranged between November 29, 2022 and December 31, 2024, with 20.3% (n=25) of patients treated per US Prescribing Information.

Table 1: Patient demographic and clinical characteristics

Characteristics	Patients (N=123)
Age	
At Tec initiation, median (IQR) years	71 (63, 77)
18-64 years, n (%)	36 (29.3)
65-69 years, n (%)	17 (13.8)
70-74 years, n (%)	28 (22.8)
≥75 years, n (%)	42 (34.1)
Gender, n (%)	
Female	66 (53.7)
Male	57 (46.3)
Race, n (%)	
White	85 (69.1)
Black	24 (19.5)
Asian	7 (5.7)
Other	4 (3.3)
Unknown	3 (2.4)
Cytogenetic risk, n (%)	
Standard	30 (24.4)
High ^a	53 (43.1)
Ultra high ^b	32 (26.0)
Unknown	8 (6.5)
ECOG PS, n (%)	
0	18 (14.6)
1	49 (39.8)
2	5 (4.1)
3	1 (0.8)
Unknown	50 (40.7)
ISS stage, n (%)	
Stage I	34 (27.6)
Stage II	28 (22.8)
Stage III	29 (23.6)
Unknown	32 (26.0)
R-ISS stage, n (%)	
Stage I	14 (11.4)
Stage II	46 (37.4)
Stage III	10 (8.1)
Unknown	53 (43.1)
Extramedullary disease, n (%)	
Yes	40 (32.5)
No	67 (54.5)
Unknown	16 (13.0)
Time from diagnosis to Tec initiation, median (IQR) years	6.2 (3.5, 8.9)
Prior LOTs, median (IQR)	5 (4, 8)
Prior BCMA-directed therapy, n (%)	44 (35.8)
CAR-T	24 (19.5)
Bispecifics	3 (2.4)
Antibody drug conjugates	16 (13.0)
Unknown	1 (0.8)
Prior stem cell transplant	76 (61.8)

^aHigh cytogenetic risk was defined as presence of markers in 1q+, del(17p), t(4,14), t(14,16) or t(14,20). ^bUltra high cytogenetic risk was defined as ≥2 high-risk cytogenetic abnormalities. BCMA, B-cell maturation antigen; CAR-T, chimeric antigen receptor T-cell; CI, confidence interval; ECOG PS, Eastern Cooperative Oncology Group performance status; IQR, interquartile range; ISS, International Staging System; LOT, line of therapy; R-ISS, Revised-International Staging System; Tec, teclistamab.

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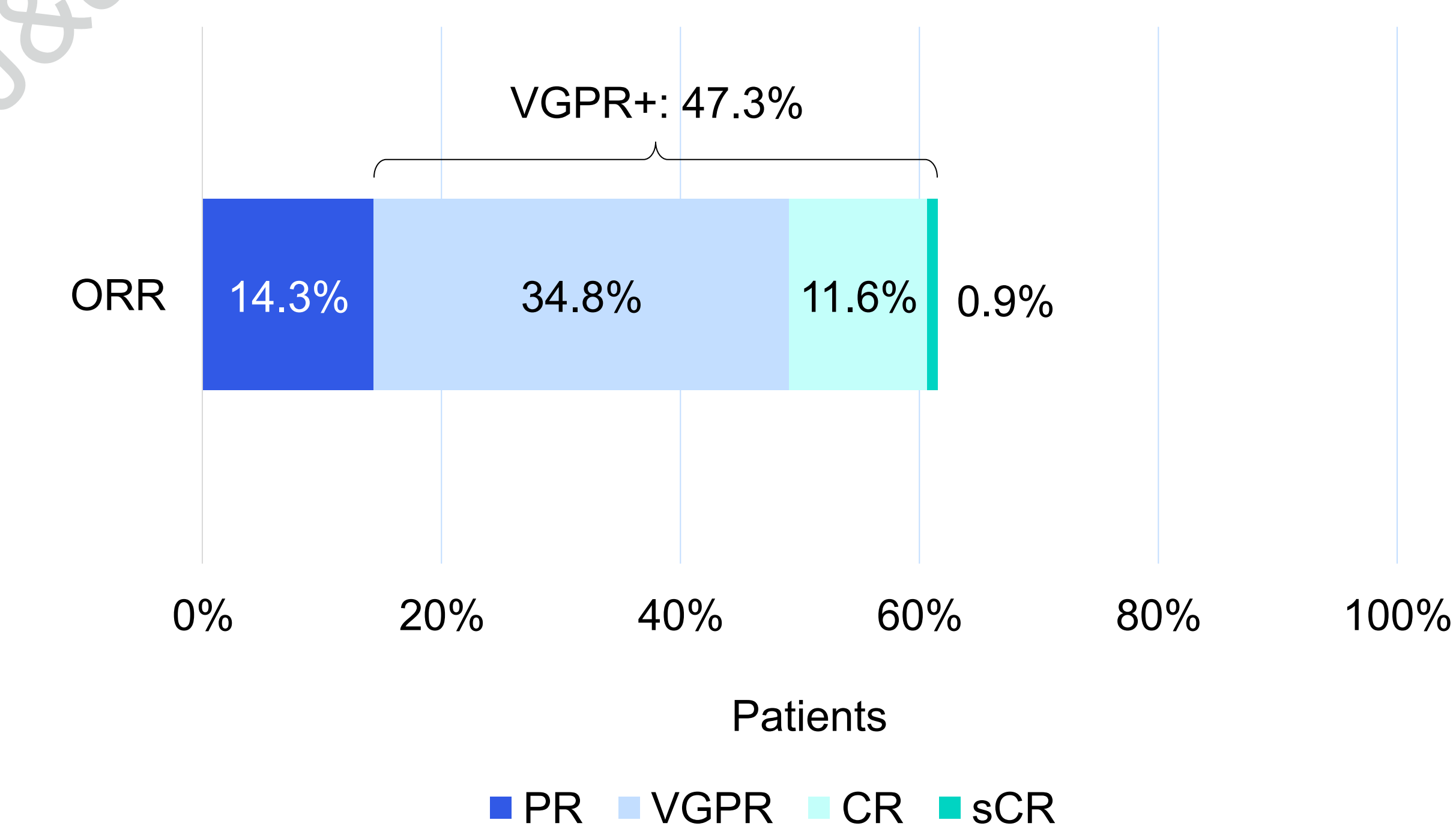
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- High-risk and ultra high-risk cytogenetic abnormalities were present in 43.1% and 26.0% of patients, respectively, and extramedullary disease was present in 32.5% of patients (Table 1).
- The median number of prior lines of therapy received by patients was 5 (IQR: 4, 8; Table 1).
- BCMA therapies had previously been received by 35.8% of patients, including 19.5% of patients who had been exposed to chimeric antigen receptor T-cell therapy.
- SUD was completed by 95.9% of patients (inpatient setting: 92.7%, outpatient: 4.1%, hybrid: 3.3%).

Effectiveness

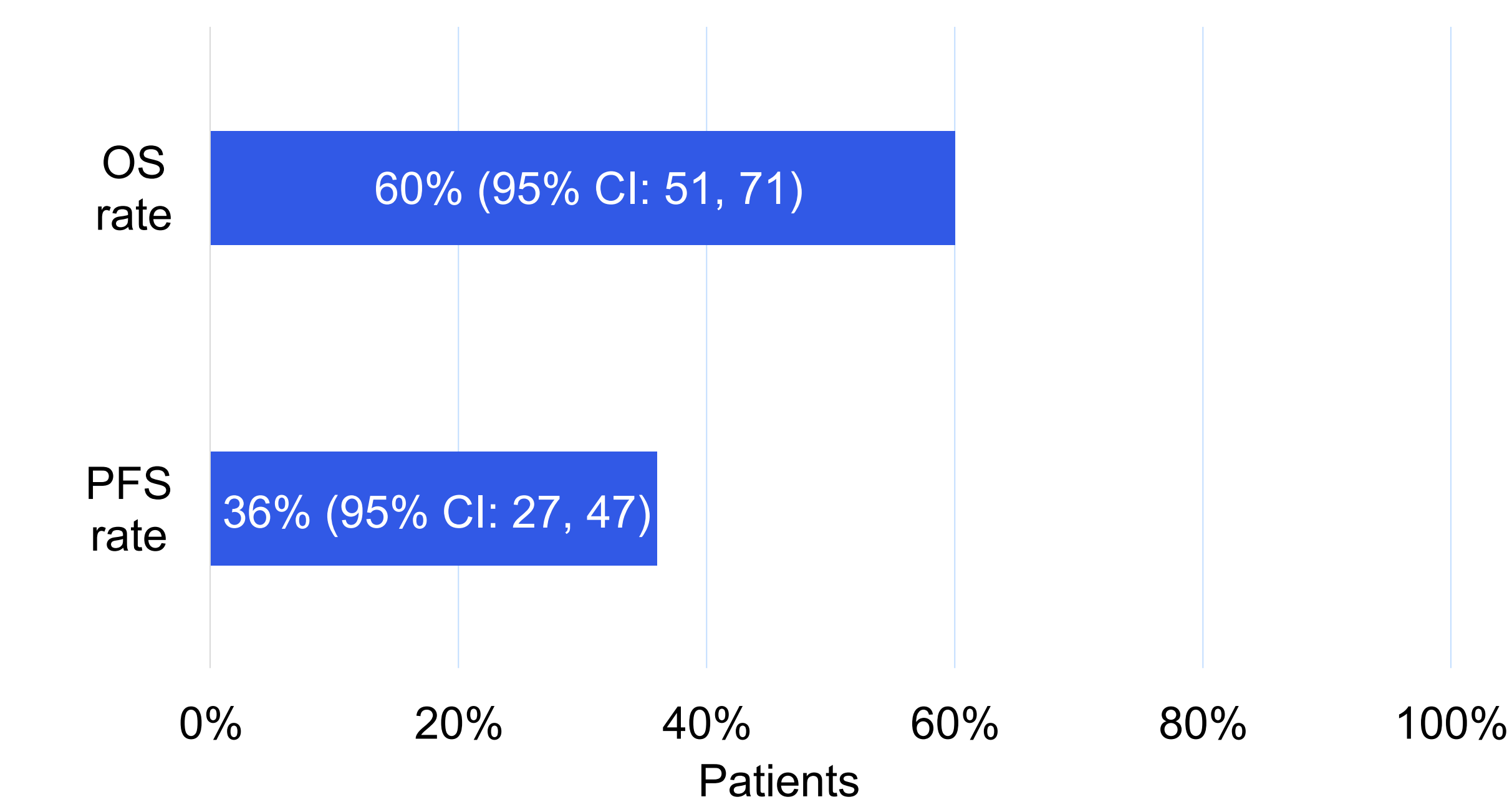
- After a median follow-up of 17 months (95% confidence interval [CI]: 14, 20), ORR was 61.6% among 112 response-evaluable patients, with 47.3% of patients demonstrating a very good partial response or better (Figure 1).
- At 18 months, 59% (95% CI: 46, 75) of patients were still in response. Median DOR was not reached.
- In the real-world, bone marrow biopsies may not be conducted often, so the rates of complete response (CR) and stringent CR may have been underreported in this study.
- Survival outcomes at 18 months are summarized in Figure 2.

Figure 1: Best response rates



VGPR+ includes patients with VGPR, CR and sCR. CR, complete response; ORR, overall response rate; PR, partial response; sCR, stringent complete response; VGPR, very good partial response.

Figure 2: OS and PFS rates at 18 months

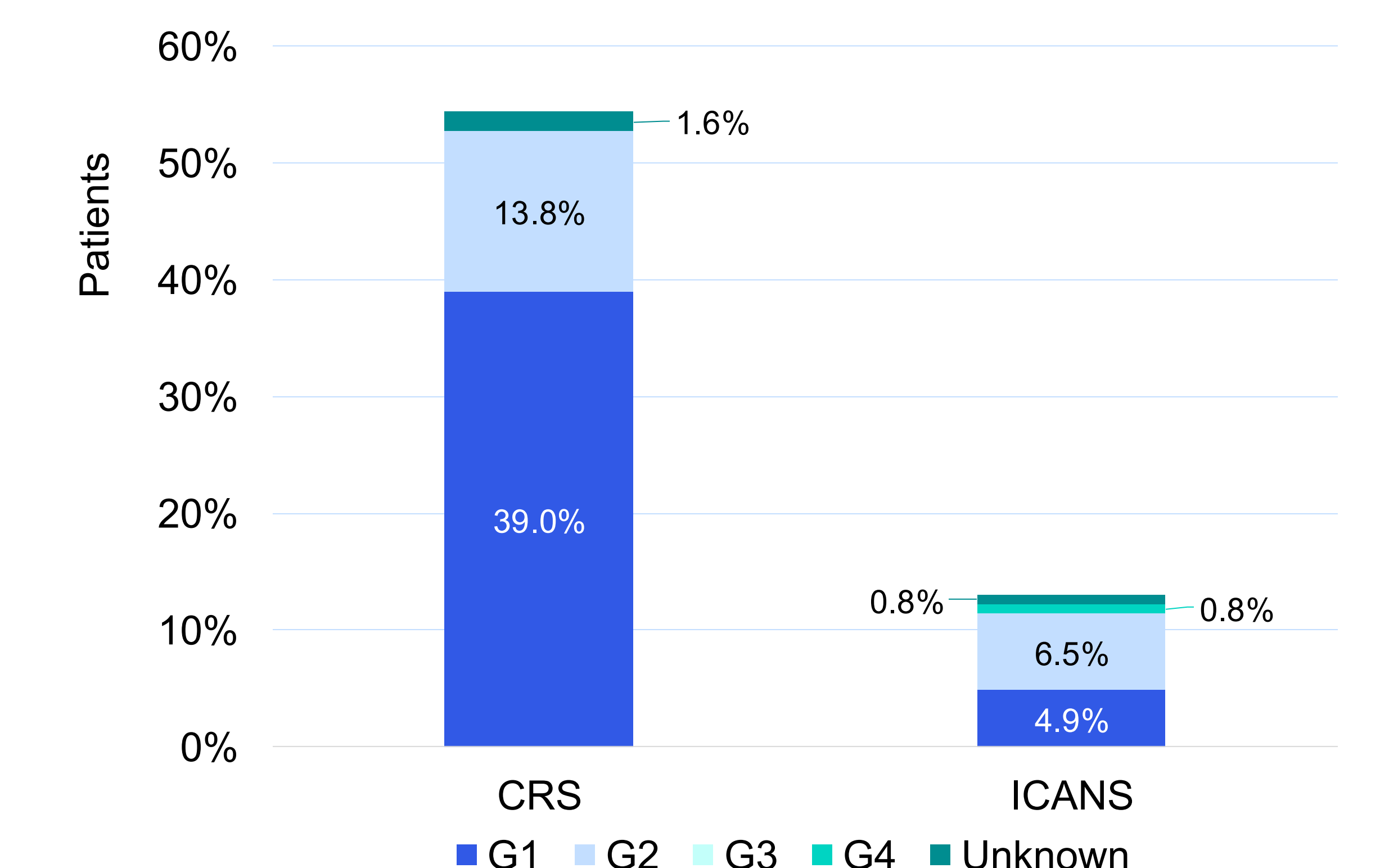


CI, confidence interval; OS, overall survival; PFS, progression-free survival.

Safety

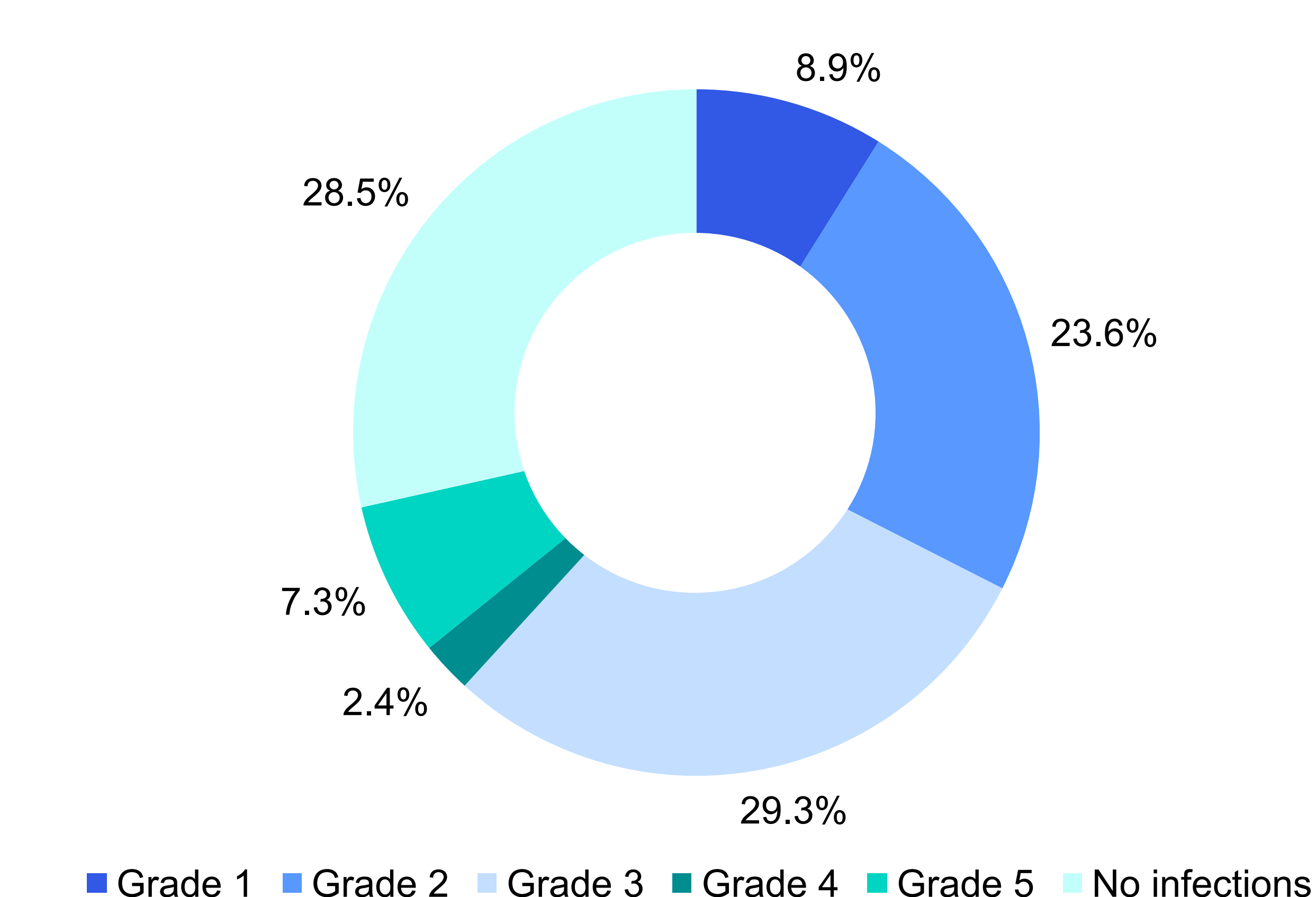
- During SUD, CRS and ICANS occurred in 54.5% and 13.0% of patients, respectively (Figure 3).
- No ICANS event occurred post SUD while CRS occurred in 1.6% of patients (grade 1 only).
- Infections at any time during teclistamab treatment occurred in 71.5% of patients, with grade 3 and 4 events occurring in 29.3% and 2.4% of patients, respectively (Figure 4).
 - Grade 5 events occurred in 7.3% of patients and included pneumonia, sepsis, COVID-19, bacteremia, and extended-spectrum beta-lactamase *Enterococcus faecium* urinary tract infection with septic shock.
- Among 121 patients, ≥1 dose of IVIG was administered to 6.6% as primary prophylaxis for infection and to 44.6% to treat hypogammaglobulinemia and/or infection.

Figure 3: Severity of CRS and ICANS during SUD



Post SUD was defined as the period after the first full dose of teclistamab. CRS, cytokine release syndrome; G, grade; ICANS, immune effector cell-associated neurotoxicity syndrome; SUD, step-up dosing.

Figure 4: Highest grade of infections at any time during treatment



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