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Panel Interview of Oncology Practices with Emergent Experience of Teclistamab in the Real World: The Tec-Pioneer Study

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Background

Teclistamab was recently approved as the first-in-class B-cell maturation antigen (BCMA) x CD3 bispecific therapy with personalized weight-based dosing for relapsed or refractory multiple myeloma (MM). Given its novelty, there are immediate needs for data based on real-world (RW) practices to optimize operational processes and improve experiences while ensuring patient safety in the RW. The aims of this study were to describe how US clinicians with early RW experience with teclistamab (1) manage the step-up dosing (SUD) and transition of care (ToC) to and from referring sites; (2) monitor, manage, and prevent adverse events (AEs), i.e., cytokine release syndrome (CRS), infections, and immune effector cell-associated neurotoxicity syndrome (ICANS); and (3) perceive desired future care models for optimal patient care.

Methods

Between April and July 2023, 60-minute, 1-on-1 in-depth structured interviews were conducted virtually with hematologists and oncologists who had treated patients with teclistamab in a RW setting. Interviews elicited clinicians' current SUD and ToC processes in their practices, AE management, and perspectives on SUD model evolution. A subsequent 90-minute roundtable discussion was held in June 2023 to discuss interview findings.

Results

A total of 20 clinicians representing 19 practices across 14 states completed interviews: 84% (16/19 practices) treated >50 patients with MM monthly, 69% had treated >10 patients with teclistamab, and 90% were academic medical centers. Of these interviewees, 10 participated in the roundtable discussion, joined by 3 community clinicians without teclistamab experience. Among the 19 interviewed practices, 14 (74%) were administering SUD exclusively in inpatient settings. This was being done predominantly (86%; 12/14) in 1 continuous admission with a planned length of stay of 7 days, and with 71% (10/14) following a day 1-3-5 dosing schedule. Five practices reported using outpatient models (Figure 1). The sophistication of outpatient models varied and depended on multiple factors at the practice level, including prior outpatient cellular therapy experience, staffing/facility structure, patient volume, and outpatient monitoring capability.

Most (95%) of the interviewed practices initiated teclistamab for patients referred from community practices; 53% transferred at least 1 patient back to a referring practice to continue teclistamab. The time to transfer ranged from 2 weeks to 2 months to (1) ensure that patients were responding to and tolerating treatment prior to transfer and (2) recover any financial loss from inpatient SUD. Community clinicians preferred to resume care of their patients once patients were deemed clinically stable.

More than half (68%) of practices reported leveraging existing CAR-T protocols for AE monitoring and management. Patients were typically monitored for CRS every 4 hours for vital signs and daily for complete blood count, comprehensive metabolic panel, C-reactive protein, and ferritin. CRS prophylaxis with tocilizumab was reported by 11% of practices. 74% (14/19) of practices used tocilizumab for treatment of grade 2 or higher CRS. 94% (17/18) of reporting practices utilized intravenous immunoglobulin for primary infection prophylaxis, typically at a dose of 0.4 g/kg every 4-8 weeks to maintain an IgG level above 400 mg/dL. ICANS risk was considered low, and corticosteroids were the preferred treatment for ICANS. Payer reimbursement, treatment availability and lack of approved indications were noted as barriers for certain prophylactic treatments.

Clinicians indicated a desire to administer SUD in an outpatient setting for patient convenience and to reduce healthcare resource use. Comorbidities, tumor burden, and caregiver support were key patient-level factors to be considered for outpatient SUD. Remote patient monitoring was a potential solution to enhance the outpatient SUD administration.

Conclusions

The results indicated diverse RW administration and patient management strategies in practices with early familiarity with teclistamab, and consolidated practice-based experiences to help inform clinicians employing this innovative therapy. As patient care models evolve, outpatient or community-based SUD may become more common in the future. Ongoing evidence generation on RW treatment outcomes of various SUD models and AE management strategies is warranted.

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Figure 1. Summary of teclistamab step-up dosing models at the interviewed practices (N=19)

Inpatient models

Inpatient Models	Admission Pattern	Dosing Interval	Total Length of Stay	Hospital Unit
74% (14/19) gave SUD exclusively in an **inpatient** setting	**86**% (12/14) gave the entire SUD in **one** consecutive admission	**71**% (10/14) had a standard dose schedule of 2-day intervals (e.g., days **1, 3, and 5**)	The typical planned length of stay is **7** days	**92**% are admitted to a hematology/oncology or stem cell transplant unit vs 8% to general medical floor*

Outpatient models

Site	Dosing Schedule	Monitoring Processes
1	• Days 1, 3, 5	• 1-hour observation following each dose • Clinic appointments on days 2, 4, 6
2	• Every 3-4 days	• 48-hour observation following each dose
3	• Days 1, 3, 5	• Remote monitoring for 24 hours after dose 1 • Admitted 24 hours after initial step-up dose and remain inpatient for subsequent dosing
4	• Every 48-72 hours	• Continuous remote monitoring of vital signs • Daily clinic appointments
5	• Days 1, 3, 8	• Home monitoring of vital signs with nightly clinician phone calls • Daily clinic appointments

Criteria for Inpatient Admission

- Onset of any symptoms of CRS, e.g., any grade CRS
  - Exception of one site which would administer tocilizumab in an outpatient setting and admit for grade 2 or higher CRS or no response to tocilizumab
- Onset of any neurological symptoms, e.g., any grade ICANS

SUD: step-up dosing; ICANS: immune effector cell-associated neurotoxicity syndrome; CRS: cytokine release syndrome; CAR-T: chimeric antigen receptor T-cell therapy

*2 of 14 practices did not specify unit for admission

Figure 1