# Expanded Institutional Experience with Prophylactic Tocilizumab for Outpatient Bispecific Antibody Administration in Community Oncology

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## ABSTRACT

Bispecific T-cell–engaging antibodies (BsAbs) have demonstrated significant clinical activity across multiple malignancies; however, cytokine release syndrome (CRS) and immune effector cell-associated neurotoxicity syndrome (ICANS) have historically required inpatient monitoring during step-up dosing, limiting community access. We retrospectively evaluated patients receiving BsAbs at Carolina Blood and Cancer Care Associates under a standardized outpatient protocol incorporating prophylactic tocilizumab (8 mg/kg IV; maximum 800 mg) administered 2–4 hours before each infusion and a minimum 6-hour observation period. Seven patients underwent eight treatment courses for multiple myeloma, follicular lymphoma, diffuse large B-cell lymphoma, and small cell lung cancer, totaling 77 treatment cycles administered entirely outpatient. No BsAb-related emergency department visits or hospitalizations were identified. These findings demonstrate the feasibility of an SOP-driven, prophylactic tocilizumab strategy for outpatient BsAb administration in community oncology and support further evaluation as an approach to expand access beyond tertiary academic centers.

## OBJECTIVE

Discuss the feasibility, safety, and clinical utilization of a standardized prophylactic tocilizumab protocol supporting outpatient BTCE administration across an expanded community oncology cohort.

## INTRODUCTION

Bispecific T-cell–engaging antibodies (BsAbs) induce clinically meaningful responses across B-cell non-Hodgkin lymphoma, multiple myeloma, and small cell lung cancer; however, cytokine release syndrome (CRS) and immune effector cell-associated neurotoxicity syndrome (ICANS) remain barriers to community-based administration.[1,4–8] Tocilizumab, an IL-6 receptor antagonist approved for CRS treatment, has demonstrated efficacy as prophylactic or preemptive therapy without compromising antitumor activity.[2,3] Building on our previously reported 4-patient outpatient experience with no grade ≥2 CRS, ICANS, or hospitalizations, we report an expanded cohort utilizing a standardized prophylactic tocilizumab protocol designed to facilitate safe outpatient BsAb administration and broaden access in community oncology.

## METHODS

- **Setting and Patients**

This retrospective case series included patients receiving ≥1 dose of a bispecific antibody (BsAb) under the prophylactic tocilizumab protocol at Carolina Blood and Cancer Care Associates from March 2023–May 2026. Outpatient eligibility required adequate performance status and organ function, caregiver support, and reasonable proximity for monitoring and follow-up.

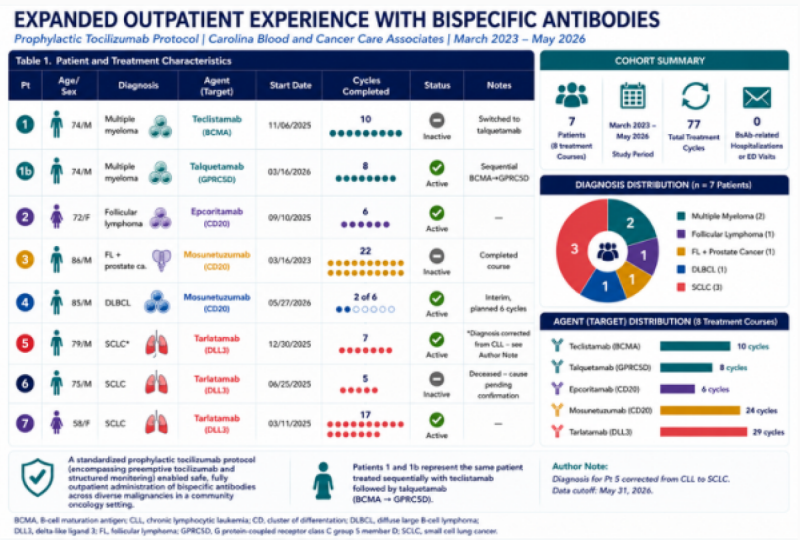
- **Prophylactic Tocilizumab Protocol**

Tocilizumab 8 mg/kg IV (maximum 800 mg) was administered 2–4 hours before each BsAb infusion. Patients underwent serial vital-sign monitoring and neurologic assessment using the Immune Effector Cell-Associated Encephalopathy (ICE) score for ≥6 hours post-infusion. CRS and ICANS were graded according to ASTCT consensus criteria.[1]

- **Data Collection and Outcomes**

Collected variables included demographics, diagnosis, BsAb agent, treatment initiation, cycles completed, and treatment status. Outcomes included feasibility of fully outpatient administration, BsAb-related emergency department visits or hospitalizations, CRS/ICANS, and clinical response.

## RESULTS




- **Patient Characteristics**

Seven patients (5 male, 2 female; median age 75 years [range, 58–86]) received 8 bispecific antibody (BsAb) treatment courses. Diagnoses included multiple myeloma (n=1; sequential teclistamab→talquetamab), follicular lymphoma (n=2), diffuse large B-cell lymphoma (n=1), and small cell lung cancer (n=3). Across the cohort, 77 treatment cycles were administered (range, 2–22 per course), all in the outpatient setting.

- **Treatment Status and Utilization**

At data cutoff, 5 of 8 courses remained active. Three were inactive: teclistamab was transitioned to talquetamab after 10 cycles, one patient completed 22 cycles of mosunetuzumab, and one patient died after 5 cycles of tarlatamab. Talquetamab was ongoing at cycle 8, and one mosunetuzumab course was at cycle 2 of 6 planned cycles.

- **Safety and Feasibility**

All 8 BsAb courses were initiated and administered entirely outpatient using a standardized prophylactic tocilizumab protocol. No step-up inpatient admissions, BsAb-related hospitalizations, or emergency department visits were identified, supporting the feasibility of outpatient BsAb administration in a community oncology setting.
(Per-patient CRS/ICANS grading, toxicity-management details, and confirmation of cause of death remain pending author review - check author not below.)

- **Clinical Response**

Clinical activity was observed across disease groups and was generally consistent with outcomes reported in pivotal trials, including EPCORE NHL-1, mosunetuzumab studies, MajesTEC-1, MonumenTAL-1, and DeLLphi-301.[4–9] Durable disease control was observed in patients with follicular lymphoma and DLBCL, with disease-modifying activity noted in multiple myeloma and SCLC.

## DISCUSSION

This expanded case series builds on our NCODA Spring 2026 experience and further supports prophylactic tocilizumab for fully outpatient bispecific antibody (BsAb) administration. Across 8 treatment courses, 5 agents, and 4 malignancies, all therapy was delivered outpatient without BsAb-related hospitalization or emergency department utilization. Experience across BCMA-, GPRC5D-, CD20-, and DLL3-directed agents suggests a standardized prophylaxis and monitoring pathway may be adaptable across BsAb classes.

**Prophylactic Tocilizumab as an Enabler of Rural and Community-Based Access**

Inpatient step-up monitoring can create substantial travel, lodging, work, and caregiver burdens, particularly for rural patients. Prophylactic tocilizumab with structured outpatient monitoring may reduce reliance on hospitalization and expand access to BsAb therapy closer to home while maintaining appropriate safety surveillance.

**Toward a Scalable National Model**

Community implementation may be supported by standardized tocilizumab protocols, trained staff, ICE-based neurologic assessment, defined observation and escalation criteria, and tertiary-care partnerships. Our experience extends our previously described five-phase implementation roadmap and provides a potential framework for broader community adoption.

**Health Equity and the Case for Care Closer to Home**

Community-based BsAb administration may reduce geographic and logistical barriers to novel immunotherapies. Our experience demonstrates the feasibility of fully outpatient administration across multiple BsAb targets using existing community oncology infrastructure and standardized safety protocols.

**Limitations**

Limitations include the single-center, retrospective design, small cohort, lack of a comparator group, and non-centralized response assessments. Prospective multicenter studies are needed to validate safety, scalability, economic impact, and potential effects on equitable access.

## CONCLUSION

Expanded institutional experience continues to support prophylactic tocilizumab as a feasible strategy for enabling safe, fully outpatient bispecific antibody administration across a broadening range of malignancies and agent classes in community oncology. These data reinforce the potential for community-based practices to serve as viable sites for delivering advanced bispecific immunotherapy, particularly for rural and underserved populations for whom travel to tertiary centers represents a substantial barrier to care.

## REFERENCES AND DISCLOSURES

Please scan the QR code to view all references and disclosures

**CE CODE: 8PY44V**

**AUTHOR NOTE: Methods section currently describes CRS/ICANS grading procedures consistent with the practice's SOP and the Spring 2026 poster; the Results section below does not yet report per-patient toxicity grades for this expanded cohort because that data was not included in the dataset provided for this draft. Please supply grading data (or confirm "no CRS/ICANS ≥ grade 2 observed" applies to the full cohort) so Results/Discussion can cite specific, verifiable figures rather than carried-forward language.**