PS2353

Real World Evaluation of Enterocolitis in Cilta-cel Treated Patients with Relapsed or Refractory Multiple Myeloma

Doris K. Hansen[a], Omar Castaneda Puglianini[a], Sabyasachi Ghosh[b], Saurabh P. Nagar[b], Kevin C. De Braganca[b], Victoria Alegria[b], Mukta Sharma[c], Matthew Perciavalle[d], Shuchita Kaila[b], Jessica Maitland[e], Bruno Emond[f], Zaina P. Qureshi[b], Murali Janakiram[g]

[a]Moffitt Cancer Center, Tampa, FL, USA; [b]Johnson & Johnson, Horsham, PA, USA; [c]Johnson & Johnson, Raritan, NJ, USA; [d]Legend Biotech USA Inc, Somerset, NJ, USA; [e]Analysis Group ULC, Toronto, ON, Canada; [f]Analysis Group ULC, Montreal, QC, Canada; [g]City of Hope National Medical Center, Duarte, CA, USA

Key Takeaway

New-onset EC following cilta-cel infusion was low (1.4%), with all patients demonstrating at least an improvement in symptoms and remaining alive and free of subsequent anti-myeloma therapy at the end of follow-up – these initial findings support the long-term benefit-risk profile of cilta-cel

Conclusions

In this real-world study of patients with RRMM treated with cilta-cel, the observed incidence of new-onset EC was low (1.4%) with all patients with EC remaining alive and free of subsequent therapy at the end of follow-up

Management strategies were individualized, including corticosteroids, TNF-α inhibitors, and JAK inhibitors, consistent with approaches reported in other contemporary real-world cohorts from academic centers, with all patients showing an improvement in EC symptoms

Longer follow-up and comprehensive assessments of patient-reported outcomes are needed to characterize the overall clinical impact of EC

Scan the QR code

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

Acknowledgements
This study was funded by Johnson & Johnson and Legend Biotech USA Inc. Analytical support was provided by A M Rahman and Alessio Palladino at Analysis Group ULC, under the direction of the authors in accordance with this project.

Disclosures
DKH reports research funding from Bristol-Myers Squibb, Johnson & Johnson, Karyopharm, Kite Pharma, and Adaptive Biotech; and has had a consulting or advisory role for Bristol Myers Squibb, Johnson & Johnson, Legend Biotech, Pfizer, Kite Pharma/Gilead Sciences, AstraZeneca, and Karyopharm. OCP has received honoraria for consultancy from Legend Biotech USA, Inc, Bristol Myers Squibb, and Johnson & Johnson. SG, SPN, KCD, VA, MS, SK, and ZPQ are employees and stockholders of Johnson & Johnson. MP is an employee of Legend Biotech, and owns stock/ stock options in Legend Biotech. BE and JM are employees of Analysis Group ULC, a consulting company that has provided paid consulting services to Johnson & Johnson, which funded the development and conduct of this study. MJ reports research funding from Legend Biotech, Fate Therapeutics, and Johnson & Johnson and honoraria from Legend Biotech and Johnson & Johnson.

Introduction

- Ciltacabtagene autoleucel (cilta-cel), a B-cell maturation antigen-directed chimeric antigen receptor T-cell therapy (CAR-T), is approved by the Food and Drug Administration for patients with relapsed/refractory multiple myeloma (RRMM) after ≥1 prior line of therapy[1,2], based on CARTITUDE-1 and CARTITUDE-4, which showed high response rates and prolonged overall survival
- The characterization of enterocolitis (EC) post-CAR-T infusion in clinical practice is evolving, with recent reports documenting immune effector cell-associated (IEC)-EC as a distinct but rare adverse event occurring in about 2% of cilta-cel patients[3]
- These observations underscore the need for improved understanding of current diagnosis and management of EC in the real-world setting

Objective

- To assess the incidence and management of EC among patients with RRMM treated with cilta-cel in clinical practice

Methods

Data source

- Electronic medical records (EMR) from Loopback Analytics (02/2017-06/2025) were used, supplemented with physician notes
- Data captured patients with commercial use of cilta-cel, with dose, timing, and route of administration consistent with the United States label

Study design and population

- A retrospective cohort study design was used
- Index date: cilta-cel infusion
- Baseline period: 12-month period prior to infusion
- Follow-up period: index date to the earliest of death or end of data availability
- **Figure 1** summarizes patient selection criteria

Study outcomes and statistical analysis

- New-onset EC post-infusion was defined as ≥2 diagnosis codes (International Classification of Diseases, 10th Revision, Clinical Modification: K52.1, K52.89, and K52.9) on distinct days within 30 days, confirmed in physician notes, and without any EC diagnoses in the baseline period
  - This study focused on EC, as the criteria for the diagnosis of IEC-EC may not have been consistently adopted
- Descriptive statistics were used to assess baseline characteristics and outcomes

Limitations

- EMR data, combined with shorter follow-up for some patients, provide a partial view of the patient journey and may not capture all clinical information, including over-the-counter medications, out-of-network care, and other events that could influence the observed incidence of EC
- Misclassification may occur due to coding inaccuracies and variability in documentation

Figure 1: Patient selection criteria

Inclusion criteria (N=423)
- Adult patients receiving cilta-cel after 1-3 prior LOT (04/05/2024 - 06/30/2025) or ≥4 prior LOT (02/28/2022 – 06/30/2025), consistent with the approved indication (date of infusion defined as the index date)
- ≥2 diagnoses for MM on distinct dates, including ≥1 pre-infusion
- ≥12 months of data availability pre-infusion
- Evidence of lymphodepleting chemotherapy

Exclusion criteria (N=78)
- Clinical trial participation during the cilta-cel LOT
- Diagnosis of amyloidosis pre-infusion
- Evidence of previous CAR-T infusion

All eligible patients (N=345)

CAR-T: chimeric antigen receptor T-cell therapy; LOT: line of therapy.

Results

Study population and patient characteristics

- Overall, 345 patients treated with cilta-cel were identified, of whom 5 developed new-onset EC **(Table 1)**

Table 1: Patient characteristics

	Overall N = 345	New-onset EC[a] N = 5
Follow-up (months), median (range)	11.9 (0.03 – 35.5)	9.7 (4.3 – 22.1)
Age (years), median (range)	66 (37 – 83)	65 (51 – 68)
Female, n (%)	153 (44.3)	1 (20.0)
Race, n (%)		
White	226 (65.5)	3 (60.0)
Black	28 (8.1)	0 (0.0)
Asian	19 (5.5)	0 (0.0)
Other	72 (20.9)	2 (40.0)
Payer type, n (%)		
Medicare	189 (54.8)	2 (40.0)
Commercial	108 (31.3)	2 (40.0)
Managed care	22 (6.4)	0 (0.0)
Medicaid	19 (5.5)	1 (20.0)
Other or unknown	7 (2.0)	0 (0.0)
Quan-CCI, median (range)	2.0 (2.0 – 15.0)	4.0 (2.0 – 8.0)
ECOG status assessment, n (%)	275 (79.7)	4 (80.0)
0	97 (35.3)	1 (25.0)
1	154 (56.0)	3 (75.0)
≥2	24 (8.7)	0 (0.0)
Cytogenetic risk assessment, n (%)	161 (46.7)	4 (80.0)
High-risk cytogenetic abnormalities[b]	90 (55.9)	3 (75.0)
Extramedullary disease status assessment, n (%)	212 (61.4)	4 (80.0)
Extramedullary disease	68 (32.1)	1 (25.0)
Infusion setting assessed, n (%)	290 (84.1)	5 (100.0)
Inpatient	204 (70.3)	3 (60.0)
Outpatient	86 (29.7)	2 (40.0)

CCI: Charlson Comorbidity Index; ECOG: Eastern Cooperative Oncology Group; EC: enterocolitis; ICD-10-CM: International Classification of Diseases, Tenth Revision, Clinical Modification.
[a]ICD-10-CM diagnosis codes used to identify EC included K52.1, K52.89, and K52.9.
[b]High-risk was defined as evidence of del(17p) in sorted plasma cells ≥20%, TP53 mutation, biallelic del(1p32) or any two of the following abnormalities together: t(4;14) or t(14;16) or t(14;20), 1q (gain or amplification), monoallelic del(1p32).

EC clinical characteristics and management (Table 2)

- Median (range) time to EC onset was 130 (38 – 238) days following infusion
- One patient had EC of grade 1 and 4 patients had unknown grade at onset
- EC-related management strategies included corticosteroids (100%), tumor necrosis factor (TNF)-α inhibitors (60%), and Janus kinase (JAK) inhibitors (20%), as detailed by patient charts
- All 5 patients had an improvement in EC within a median (range) of 46 (5 – 83) days following EC onset, 60% had full resolution within median (range) of 50 (17 – 85) days following EC onset
- Infectious etiologies of diarrhea between infusion and the onset of EC were identified in 2 patients (40%) based on structured EMR data

Cilta-cel response and outcomes (Table 2)

- Over a median (range) follow-up of 9.7 (4.3 – 22.1) months:
  - All 5 patients achieved at least partial response (PR) to cilta-cel, with 60% achieving complete response (CR)
  - All patients were alive and treatment-free at the end of follow-up

Table 2: EC clinical characteristics and cilta-cel outcomes

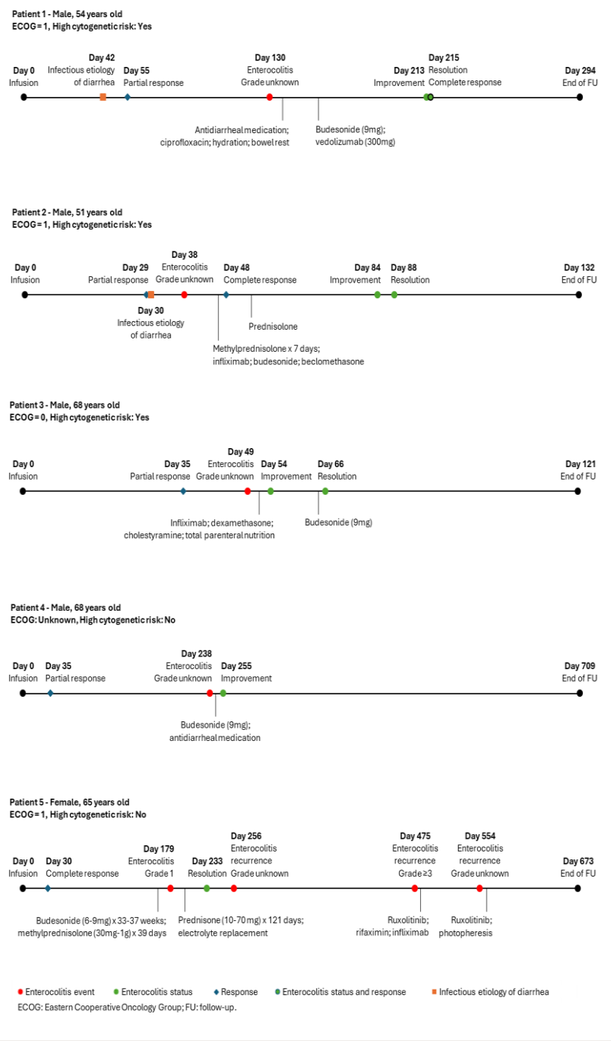
	New-onset EC N = 5
Time to EC onset (days), median (range)	130 (38 – 238)
Grade at EC onset, n (%)	
Grade 1	1 (20.0)
Unknown	4 (80.0)
Management strategies, n (%)	
Corticosteroids	5 (100.0)
TNF-α inhibitors	3 (60.0)
JAK inhibitors	1 (20.0)
Symptom improvement, n (%)	5 (100.0)
Time to improvement (days), median (range)	46 (5 – 83)
Symptom resolution, n (%)	3 (60.0)
Time to resolution (days), median (range)	50 (17 – 85)
Best response to cilta-cel, n (%)	
Partial response	2 (40.0)
Complete response	3 (60.0)
Initiation of subsequent line of therapy, n (%)	0 (0.0)
Death, n (%)	0 (0.0)

EC: enterocolitis; JAK: Janus kinase; TNF: tumor necrosis factor.

Patient-level post-infusion clinical course (Figure 2)

- ***Patient 1*** developed EC on day 130 post-infusion, improved on day 213, and resolved on day 215. Post-infusion infectious etiologies of diarrhea identified prior to EC onset included cytomegaloviral disease. Best response to cilta-cel was CR on day 215
- ***Patient 2*** developed EC on day 38 post-infusion, improved on day 84, and resolved on day 88. Post-infusion infectious etiologies of diarrhea identified prior to EC onset included enterocolitis due to Clostridium difficile, and acute gastroenteropathy due to Norwalk agent. Best response to cilta-cel was CR on day 48
- ***Patient 3*** developed EC on day 49 post-infusion, improved on day 54, and resolved on day 66. Best response to cilta-cel was PR on day 35
- ***Patient 4*** developed EC on day 238 post-infusion and improved on day 255. Best response to cilta-cel was PR on day 35
- ***Patient 5*** developed grade 1 EC on day 179 post-infusion, which resolved on day 233. EC recurrences occurred on days 256, 475 (grade ≥3), and 554 post-infusion. Best response to cilta-cel was CR on day 30

Figure 2: Patient-level post-infusion clinical course in patients with new-onset EC



ECOG: Eastern Cooperative Oncology Group; FU: follow-up.

References
1. Berdeja JG, et al. Lancet. 2021;398(10297):314-324.
2. Johnson & Johnson Innovative Medicine. CARVYKTI (ciltacabtagene autoleucel). Prescribing information. 2024.
3. Fortuna G Get al. Blood Cancer J. 2026;14:180.

Multiple Myeloma