

Real-World Healthcare Resource Utilization and Costs Among Triple-Class-Exposed Relapsed/Refractory Multiple Myeloma Patients With and Without Extramedullary Disease in the United States

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Key Takeaway


Patients with EMD experienced greater HRU and associated costs compared to those without EMD; patients with EMD demonstrated higher hospitalization rates (64.8% vs 60.0%), more frequent hospitalizations (0.23 vs 0.16 PPPM), longer average lengths of stay (2.2 vs 1.6 days PPPM), and higher average all-cause costs (\$41,428 vs \$34,508 2024 USD PPPM), underscoring the need for more effective management strategies for this population

Conclusions

This real-world study demonstrates a higher economic burden, with greater HRU and costs, in TCE RRMM patients with EMD compared to those without EMD

Costs for patients with EMD were even higher upon disease progression, underscoring the need for more effective treatment options

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Disclosures

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Introduction

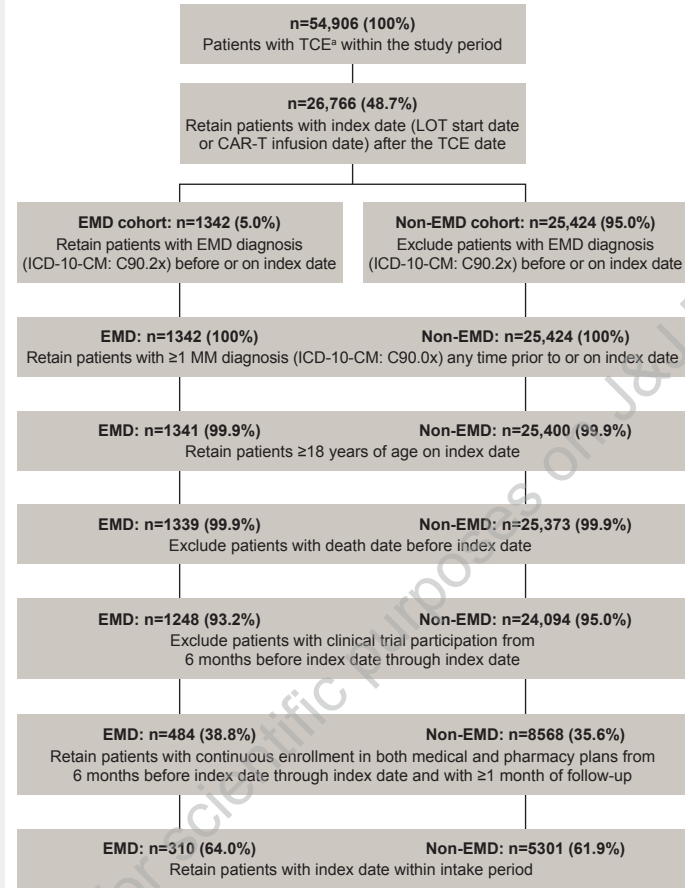
- Patients with relapsed/refractory multiple myeloma (RRMM) who are triple-class exposed (TCE) to ≥1 proteasome inhibitor, ≥1 immunomodulatory drug, and ≥1 anti-CD38 monoclonal antibody have poor outcomes with standard treatments¹⁻³
- Patients with TCE RRMM and extramedullary disease (EMD) have even worse prognoses compared to patients with TCE RRMM without EMD, highlighting an unmet need in the population of patients with TCE RRMM and EMD⁴
- To better address some of these needs, the pivotal phase 1/2 MonumenTAL-1 and phase 1/2 MajesTEC-1 trials have demonstrated the efficacy and safety of G protein-coupled receptor family C group 5 member D (GPRC5D)- and B-cell maturation antigen (BCMA)-targeted therapies talquetamab and teclistamab, respectively, in patients with TCE RRMM⁵⁻⁸
 - Furthermore, in the phase 1b-2 RedirecT-1 study, at a median follow-up of 20.3 months, patients with TCE RRMM and EMD received a combination of talquetamab and teclistamab, resulting in a response in 61% of patients with EMD⁹
- Real-world evidence on the burden of illness in this population of patients with TCE RRMM and EMD remains scarce
- Herein, we describe patient characteristics, healthcare resource utilization (HRU), and costs for patients with TCE RRMM with and without EMD who started a subsequent line of therapy (LOT)

Results

Patient characteristics

- Overall, 310 patients with EMD and 5301 patients without EMD were included in this study (Figure 2)

Figure 2: Patient selection criteria



TCE, triple-class exposure; LOT, line of therapy; CAR-T, chimeric antigen receptor T-cell therapy; EMD, extramedullary disease; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; MM, multiple myeloma; *Exposure to ≥1 proteasome inhibitor, ≥1 immunomodulatory drug, and ≥1 anti-CD38 monoclonal antibody.

- Key baseline demographic and clinical characteristics are summarized in Table 1
 - The median age was 62.0 years for patients with EMD and 65.0 years for patients without EMD
 - Among patients with EMD and patients without EMD, 43.5% and 44.5% were female, 43.9% and 50.2% were White, 23.9% and 22.6% were Black or African American, and 14.8% and 11.3% were Hispanic or Latino, respectively
 - The most common insurance types on the index date were commercial (46.8% among patients with EMD and 37.0% among patients without EMD) and Medicare (30.0% and 40.1%, respectively)
 - The median Quan-Charlson Comorbidity Index score was 3.0 for patients with EMD and 2.0 for patients without EMD
 - Both cohorts had a median of 2.0 prior LOTs before the index date
 - The median duration of follow-up was 10.0 months for patients with EMD and 12.7 months for patients without EMD

References

1. Wang PF, et al. *Leuk Lymphoma*. 2023;64(2):398-406. 2. Gandhi UH, et al. *Leukemia*. 2019;33(9):2266-2275. 3. Mateos MV, et al. *Leukemia*. 2022;36(5):1371-1376. 4. Moreau P, et al. *Blood*. 2023;142(suppl 1):4698. 5. Chari A, et al. *Lancet Haematol*. 2025;12(4):e269-e281. 6. Rasche L, et al. *J Clin Oncol*. 2025;43(suppl 16):7528. 7. Moreau P, et al. *N Engl J Med*. 2022;387(6):495-505. 8. Garfall AL, et al. *J Clin Oncol*. 2024;42(suppl 16):7540. 9. Cohen YC, et al. *N Engl J Med*. 2025;392(2):138-149.

Methods

Study design and patient population

- This real-world, retrospective, observational study identified adult patients with RRMM who initiated a subsequent LOT (index LOT) after becoming TCE using Komodo's Healthcare Map, a US claims dataset (Figure 1)
- Patients were followed from the index LOT start date (index date), which occurred between January 1, 2020, and August 31, 2023
 - For index LOTs containing chimeric antigen receptor T-cell (CAR-T) therapies, the LOT start date may have been the start of bridging therapy while the patient was waiting for a CAR-T infusion; thus, the index date was the CAR-T infusion date instead of the LOT start date
- Follow-up continued until the earliest of the following dates: end of insurance enrollment, clinical trial participation, last claim, death, or the end of the study period on August 31, 2024
- Patients who had an index date within the intake period between January 1, 2020, and August 31, 2023, and ≥1 month of follow-up were included in the analysis
- Patients were classified into 2 cohorts based on EMD status: patients with or without an EMD diagnosis (ICD-10-CM: C90.2x) before or on the index date were categorized as EMD or non-EMD patients, respectively

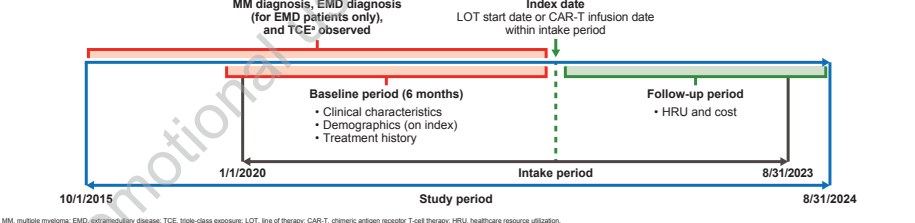
Table 1: Demographic and clinical characteristics

Characteristic	EMD (n=310)	Non-EMD (n=5301)
Age at index, years		
Mean (SD)	62.2 (11.1)	65.7 (10.7)
Median	62.0	65.0
Sex, n (%)		
Male	170 (54.8)	2826 (53.3)
Female	135 (43.5)	2361 (44.5)
Unknown	5 (1.6)	114 (2.2)
Race/ethnicity, n (%)		
White	136 (43.9)	2661 (50.2)
Black or African American	74 (23.9)	1197 (22.6)
Hispanic or Latino	46 (14.8)	601 (11.3)
Asian or Pacific Islander	6 (1.9)	167 (3.2)
Other/unknown	48 (15.5)	675 (12.7)
Insurance type, n (%)		
Commercial	145 (46.8)	1963 (37.0)
Medicare	93 (30.0)	2127 (40.1)
Medicaid and Medicare	21 (6.8)	318 (6.0)
Medicaid	39 (12.6)	581 (11.0)
Commercial and Medicare	12 (3.9)	301 (5.7)
Other/unknown	0	11 (0.2)
QCCI score, mean (SD)		
Mean (SD)	3.9 (3.3)	3.2 (3.1)
Median	3.0	2.0
Number of prior LOTs before index date		
Mean (SD)	2.7 (1.2)	2.6 (1.2)
Median	2.0	2.0
1-2	158 (51.0)	2746 (51.8)
3-4	129 (41.6)	2186 (41.2)
≥5	23 (7.4)	369 (7.0)

HRU and costs

- Patients with EMD had higher all-cause HRU compared to patients without EMD
 - A higher proportion of patients with EMD compared to patients without EMD had ≥1 hospitalization (64.8% vs 60.0%)
 - The mean number of hospitalizations per patient per month (PPPM) was greater for patients with EMD compared to patients without EMD (0.23 vs 0.16)
 - The mean length of stay was also longer for patients with EMD compared to patients without EMD (2.2 vs 1.6 days PPPM)
- Patients with EMD also incurred higher costs compared to patients without EMD
 - Mean all-cause costs (2024 USD PPPM) were \$41,428 and \$34,508 for patients with EMD and patients without EMD, respectively (Figure 3)
 - These costs were driven by pharmacy claims for any drugs (\$12,116 and \$11,496), inpatient costs (\$13,082 and \$7947), and outpatient costs (\$15,560 and \$14,668) for patients with EMD and patients without EMD, respectively
 - Mean MM-related costs (2024 USD PPPM) were \$39,658 and \$32,848 for patients with EMD and patients without EMD, respectively (Figure 4)
 - These costs were driven by medical and pharmacy claims associated with MM drugs (\$26,951 and \$23,423), remaining inpatient costs (\$5182 and \$4921), and remaining outpatient costs (\$5182 and \$4210) for patients with EMD and patients without EMD, respectively

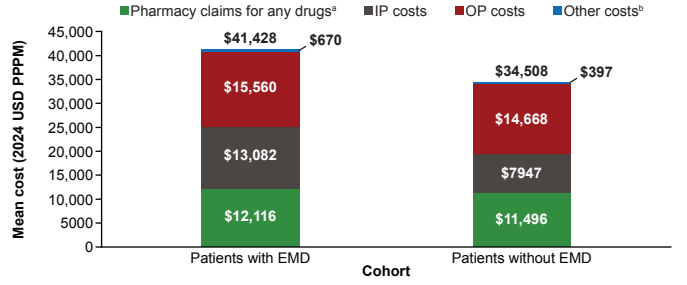
Figure 1: Study design



Data analysis

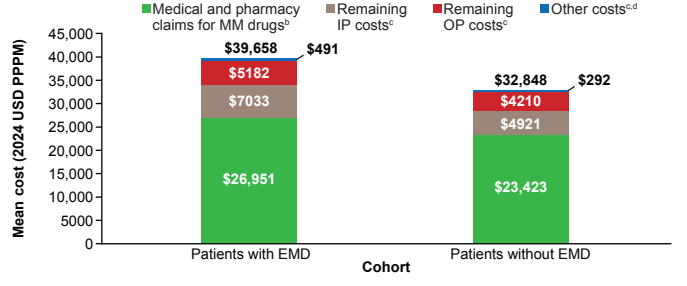
- Descriptive statistics were employed to analyze baseline patient characteristics and HRU and costs from index date to the end of follow-up
- Costs were Komodo-estimated allowed amounts, adjusted for inflation to 2024 US dollars (USD)
 - All-cause HRU and costs were associated with any condition, whereas multiple myeloma (MM)-related HRU and costs were among encounters where ≥1 claim associated with the encounter had an MM diagnosis (ICD-10-CM: C90.0x)
- The non-EMD cohort served as a descriptive benchmark for the EMD cohort

Figure 3: All-cause healthcare costs in the follow-up period



IP, inpatient; OP, outpatient; USD, US dollars; PPPM, per patient per month; EMD, extramedullary disease; MM, multiple myeloma. ^aCosts based on pharmacy claims, including those for MM drugs and non-MM drugs. ^bOther costs included skilled nursing facility and emergency room costs.

Figure 4: MM-related healthcare costs in the follow-up period

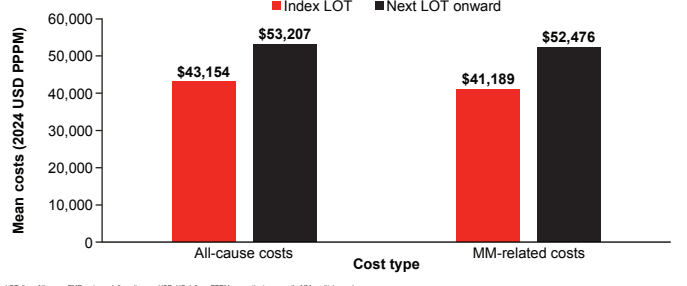


MM, multiple myeloma; IP, inpatient; OP, outpatient; USD, US dollars; PPPM, per patient per month; EMD, extramedullary disease. ^aMM-related healthcare costs may not sum to total costs in the follow-up period due to rounding. ^bCosts based on medical and pharmacy claims for MM drugs and their administration claims for non-MM drugs were not included. ^cExcluding medical claims for MM drug administration. ^dOther costs included skilled nursing facility and emergency room costs.

Index LOT versus next LOT onward

- Among 121 patients with EMD and another LOT observed after the index LOT, mean all-cause costs (2024 USD PPPM) were \$43,154 during the index LOT and increased to \$53,207 from the start of the next LOT to the end of follow-up (Figure 5)
 - Notably, for these patients, mean MM-related costs (PPPM) increased from \$41,189 to \$52,476

Figure 5: Costs of index LOT versus next LOT onward among patients with EMD



Limitations

- This study used administrative claims data, which may contain coding errors or omissions as the data were intended for billing purposes
- LOTs were based on an in-house LOT algorithm, which may have factors that differ from other LOT rules reported in the literature
- Data were primarily from insured populations in the United States and may not be generalizable to other populations

Multiple Myeloma

