Real-world Burden of Disease, Treatment Patterns and Outcomes in Patients with Mantle Cell Lymphoma (MCL)

PF899

Alvaro Alencar,[1] Mei Xue,[2] Po-Ya Chuang,[3] Wesley Furnback,[3] Keri Yang,[2]

[1]University of Miami Sylvester Comprehensive Cancer Center, Miami, FL, USA; [2]BeOne Medicines Ltd., USA, San Carlos, CA, USA; [3]Real Chemistry, New York, NY, USA

CONCLUSIONS

- This real-world study showed Bruton tyrosine kinase inhibitors (BTKi) use increased across all lines of therapy in patients with MCL
- BTKi regimens were associated with the lowest healthcare resource utilization (HCRU), while chemotherapy-based regimens were with the highest HCRU
- Patients with MCL mostly received treatment that resulted in short time to next treatment (TTNT) and substantial HCRU, underscoring the unmet needs of patients with MCL and highlighting the need for novel agents to lower the disease burden in MCL

INTRODUCTION

- MCL is a rare, incurable B-cell malignancy with recent newer targeted therapies that have revolutionized treatment paradigms; however, real-world evidence characterizing the latest treatment patterns and outcomes is limited

OBJECTIVE

- This study aimed to examine the disease burden, treatment utilization patterns, and associated clinical and economic outcomes in real-world patients with MCL by year and line of therapy in the United States

METHODS

Data Source

- A retrospective, observational study was conducted using Symphony Integrated Dataverse (IDV®), a comprehensive, longitudinal, open-claims database, including medical, hospital, and pharmacy claims in the United States

Study Design

- Adult patients (≥18 years) diagnosed with MCL and initiating a first-line (1L), second-line (2L), or third-line or later (3L+) treatment regimen during the index period (Jan 2019 to Sep 2024)
- The date of the treatment regimen initiation was categorized as the index date
- Continuous enrollment in the database for 30 days prior to and 30 days after the index date was required

Study Cohorts and Treatment Groups

- Three non-mutually exclusive cohorts were developed based on the line of therapy at index. The cohorts included 1L, 2L, and 3L+
- Within each cohort, patients were further categorized into seven mutually exclusive groups based on their index treatment regimen:
  - Bendamustine-based chemotherapy (B-based)
  - Rituximab, cyclophosphamide, doxorubicin hydrochloride, vincristine, and prednisone (R-CHOP)
  - Rituximab monotherapy (R-mono)
  - Bruton tyrosine kinase inhibitor (BTKi)
  - Bortezomib-based
  - Venetoclax-based
  - Other chemotherapy regimens

Study Measures

- Sociodemographic and clinical characteristics were examined at baseline
- Treatment utilization patterns were examined by treatment regimen, line of therapy, and year of index
- Time to next treatment (TTNT) was calculated from the index date (treatment initiation) to the start of the next line of therapy for those who progressed to a next line of treatment
- Healthcare resource utilization (HCRU) included outpatient visits, inpatient services, and other medical or hospital services, which were measured during the treatment regimen and reported as per patient per month (PPPM)

RESULTS

Study Population

- A total of 7503 patients with MCL initiated 1L, and 4506 and 1383 patients initiated 2L and 3L+ treatment regimens, respectively (**Table 1**)
- The percentage of patients >65 years at baseline increased from 67.57% in 1L to 74.15% in 2L, and 80.04% in 3L+
- Patients were primarily male (1L: 70.49%; 2L: 71.73%; 3L+: 74.84%) and White/Non-Hispanic (1L: 62.84%; 2L: 65.71%; 3L+: 68.69%); Black/Non-Hispanic and Hispanic patients accounted for approximately 10% across all lines of therapy. Patients presented with significant burden of chronic conditions, with mean Charlson Comorbidity Index score 6.10 in 1L, 4.65 in 2L, and 4.98 in 3L+

Table 1. Baseline Characteristics

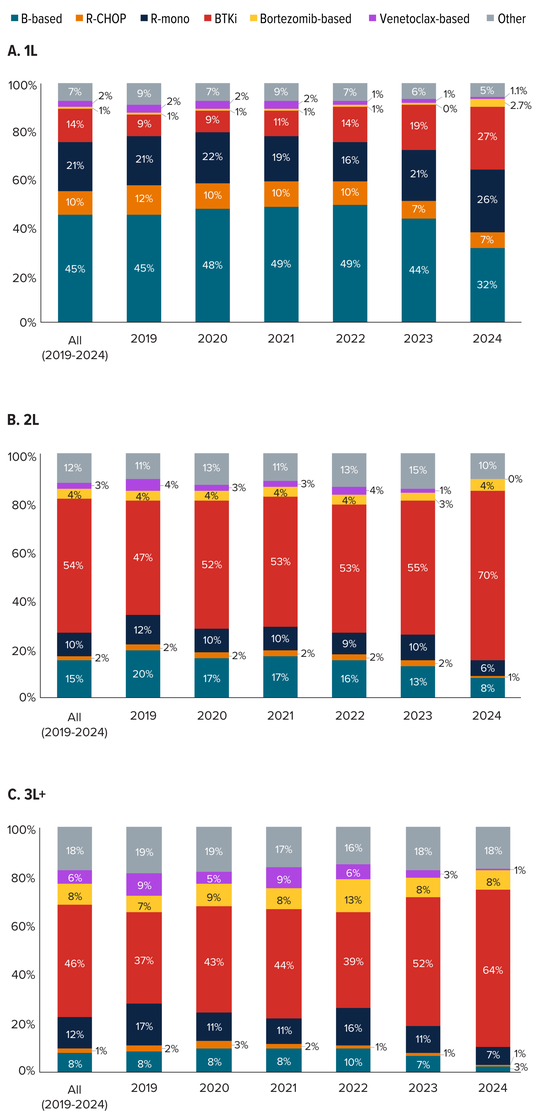
Characteristic	1L (n=7503)	2L (n=4506)	3L+ (n=1383)
Gender, n (%)			
Female	2214 (29.51)	1274 (28.27)	348 (25.16)
Male	5289 (70.49)	3232 (71.73)	1035 (74.84)
Age (At Index)			
Mean ± SD	67.62 (9.52)	69.55 (8.30)	70.50 (7.65)
Median (IQR)	70 (62, 75)	72 (64, 76)	73 (66, 76)
≥65, n (%)	5070 (67.57)	3341 (74.15)	1107 (80.04)
Race, n (%)			
White/Non-Hispanic	4715 (62.84)	2961 (65.71)	950 (68.69)
None-White/Non-Hispanic	474 (6.32)	301 (6.67)	86 (6.22)
Hispanic	400 (5.33)	224 (4.97)	77 (5.57)
Unknown	1914 (25.51)	1020 (22.64)	270 (19.52)
Payer type, n (%)			
Medicare	1328 (17.70)	729 (16.18)	279 (20.17)
Commercial	2256 (30.07)	976 (21.66)	304 (21.98)
Medicaid	140 (1.87)	51 (1.13)	16 (1.16)
Unknown/Missing	3779 (50.37)	2750 (61.03)	784 (56.69)
CCI			
Mean ± SD	6.10 (3.82)	4.65 (4.22)	4.98 (4.22)

1L, first-line; 2L, second-line; 3L+, third-line or later; CCI, Charlson Comorbidity Index; IQR, interquartile range; SD, standard deviation.

Treatment Patterns

- In the 1L setting, B-based regimens were the most utilized regimen, followed by R-mono and BTKi (**Figure 1A**). From 2019 to 2024, B-based regimen utilization dropped from 45.1% to 31.6% and BTKis increased from 8.9% to 26.6%
- In the 2L and 3L+ settings, BTKi regimens were the most utilized regimen (54.3% and 45.8%, respectively), followed by B-based regimens (15.4% and 8.2%, respectively) and R-mono (10.3% and 12.4%, respectively) (**Figures 1B** and **1C**)
- By 2024, BTKi regimens were utilized at over 69.8% in 2L and 64.3% in 3L+ setting (**Figure 1B** and **1C**)

Figure 1. Treatment Utilization Pattern

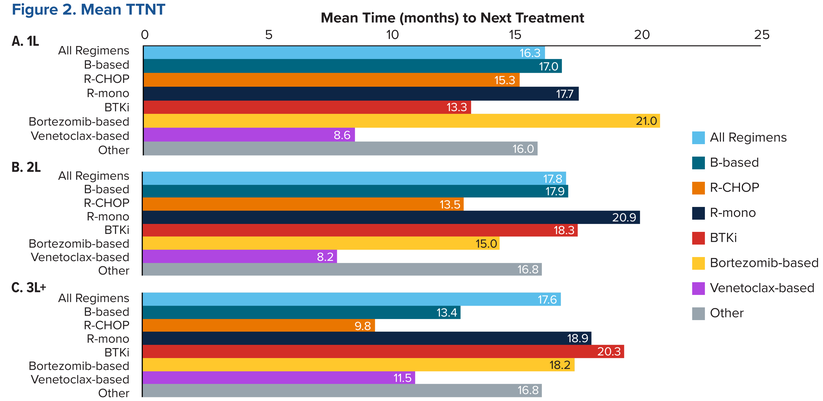


1L, first-line; 2L, second-line; 3L+, third-line or later; B-based, bendamustine-based chemotherapy; BTKi, Bruton tyrosine kinase inhibitor; R-CHOP, Rituximab, cyclophosphamide, doxorubicin hydrochloride, vincristine, and prednisone; R-mono, rituximab monotherapy.

Time to Next Treatment

- In MCL patients, mean TTNT was 16.3 months in 1L, 17.8 in 2L, and 17.6 in 3L+
- In 2L, the mean TTNT ranged from 8.2 months (venetoclax-based) to 20.9 months (R-mono) (**Figure 2B**). In the 3L+, mean TTNT ranged from 9.8 months (R-CHOP) to 20.3 months (BTKi) (**Figure 2C**)

Figure 2. Mean TTNT

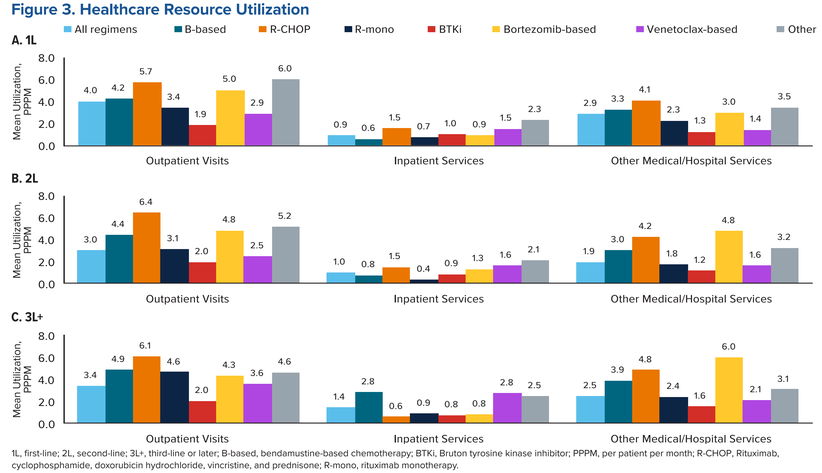


1L, first-line; 2L, second-line; 3L+, third-line or later; B-based, bendamustine-based chemotherapy; BTKi, Bruton tyrosine kinase inhibitor; R-CHOP, Rituximab, cyclophosphamide, doxorubicin hydrochloride, vincristine, and prednisone; R-mono, rituximab monotherapy; TTNT, time to next treatment.

Healthcare Resource Utilization

- Outpatient visits PPPM while on treatment were lowest for BTKis across all lines of therapy compared to all other included regimens (**Figure 3**). Outpatient visits PPPM during treatment were highest for other chemotherapy regimens in 1L, and R-CHOP in 2L and 3L+
- Inpatient services PPPM were highest during other chemotherapy regimens in 1L and 2L, and B-based regimens in 3L+. BTKis were the only regimen to report ≤1 inpatient service utilization during treatment across all lines of therapy
- Other medical/hospital services PPPM was highest for R-CHOP in 1L and bortezomib-based regimens in 2L and 3L+. BTKis were the only regimen to report ≤2 other medical/hospital services PPPM during treatment across all lines of therapy

Figure 3. Healthcare Resource Utilization



1L, first-line; 2L, second-line; 3L+, third-line or later; B-based, bendamustine-based chemotherapy; BTKi, Bruton tyrosine kinase inhibitor; PPPM, per patient per month; R-CHOP, Rituximab, cyclophosphamide, doxorubicin hydrochloride, vincristine, and prednisone; R-mono, rituximab monotherapy.

DISCUSSION

- This real-world study suggests that while patients with MCL generally received guideline-concordant treatment, unmet clinical needs remain, evidenced by relatively short TTNT and substantial HCRU
- While this study included a diverse cross-section of patients with MCL in the United States, study limitations were inherent to the use of open claims databases in an observational study design
- With the limitations of real-world claims dataset, there may be potential inconsistencies in data documentation and coding. Regimens such as R-mono may partially reflect maintenance therapy with rituximab

DISCLOSURES

AA: Funding from Incyte and Loxo Oncology/Lilly; honoraria from Dr Reddy; advisory board fees from ADC Therapeutics, BeiGene, AbbVie, Lilly, Genentech, Amgen, Incyte. **ME**: Employment and equity holder in BeOne. **PC**: Employment in Real Chemistry. **WF**: Employment and equity holder in Real Chemistry. **KY**: Employment and equity holder in BeOne.

ACKNOWLEDGMENTS

This study was funded by BeOne Medicines Ltd.

Presented at EHA 2025; June 12-15, 2025; Milan, Italy