Real-World Evaluation of Treatment Pattern, Time to Next Treatment, Healthcare Resource Utilization, and Cost of Care in Follicular Lymphoma

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INTRODUCTION

- Follicular lymphoma (FL) is the most common indolent non-Hodgkin lymphoma, accounting for nearly one-quarter of all non-Hodgkin lymphoma cases[1]
- An estimated 20% of individuals with FL will experience disease progression within 24 months of first-line (1L) therapy[2,3] and be subject to less favorable clinical outcomes[4,5]

OBJECTIVE

- This study aimed to understand treatment utilization, treatment patterns, time to next treatment (TTNT), healthcare resource utilization (HCRU), and cost of care in FL in the United States

METHODS

Data Source

- Data was sourced from Optum® Clinformatics® Data Mart, a comprehensive, longitudinal, closed-claims database
- The study period was from December 1, 2018, to March 31, 2023, with an index period of January 1 to February 28, 2023

Cohorts

- Patients were categorized into mutually exclusive cohorts based on the following treatment regimens:
  - Bendamustine + rituximab (BR)
  - Rituximab monotherapy (R-mono)
  - Cyclophosphamide, doxorubicin, prednisone, rituximab + vincristine (R-CHOP)
  - Bendamustine + obinutuzumab (BO)
  - Lenalidomide + rituximab (LR)
  - Obinutuzumab monotherapy (O-mono)
  - Chimeric antigen receptor T-cell therapy (CAR-T)
  - Other treatment regimens

Study Measures

- Demographics, clinical characteristics, and treatment regimens were examined for each line of therapy cohort
- TTNT was measured for patients who had a subsequent treatment within the study period
- HCRU included outpatient visits and inpatient admissions, which were measured during the 365-day follow-up period
- Total cost of care included costs incurred from
  - Outpatients visits
  - Inpatient admissions
  - Emergency room visits
  - Pharmacy
  - Other/ancilliary services
- HCRU and costs are reported as per patient per month (PPPM)
- Costs were inflated to reflect USD 2023

RESULTS

Patients (Table 1)

- A total of 4525 patients initiated 1L treatment
- Number of patients who initiated second-, third-, and fourth-line (2L, 3L, and 4L) treatments were 1053, 304, and 97, respectively
- Median follow-up for 1L treatment was 487 days
- Median follow-up for 2L, 3L, and 4L treatments were 430 days, 357 days, and 276 days, respectively
- The mean age at index was similar across cohorts (range: 69.6 [1L] to 71.9 [4L] years)

Table 1. Baseline Demographics and Clinical Characteristics

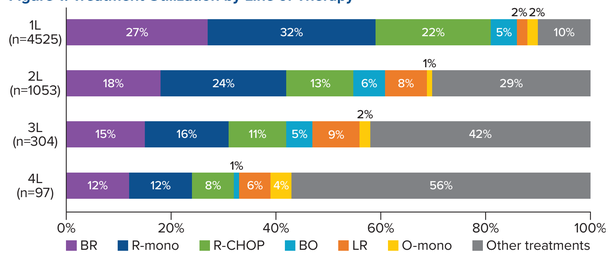
Characteristic	1L (n=4525)	2L (n=1053)	3L (n=304)	4L (n=97)
Sex, n (%)				
Male	2269 (50.1%)	559 (53.1%)	177 (58.2%)	63 (65.0%)
Female	2256 (49.9%)	494 (46.9%)	127 (41.8%)	34 (35.1%)
Age at index				
Mean (SD), years	69.6 (11.8)	70.9 (11.3)	70.5 (11.3)	71.9 (10.7)
Median (IQR), years	71 (64, 78)	73 (65, 79)	72 (64, 79)	73 (63, 80)
65+, n (%)	3342 (73.9%)	794 (75.4%)	227 (74.7%)	72 (74.2%)
Payer type, n (%)				
Medicare	3360 (74.3%)	795 (75.5%)	220 (72.4%)	72 (74.2%)
Commercial	1164 (25.7%)	258 (24.5%)	84 (27.6%)	25 (25.8%)
CCI				
Mean (SD)	7.52 (3.22)	7.27 (3.43)	7.63 (3.48)	7.54 (2.79)
Median (IQR)	8 (8, 9)	8 (8, 9)	8 (8, 9)	8 (8, 8)

Note: One patient within 1L had an unknown insurance status.
CCI, Charlson Comorbidity Index; IQR, interquartile range; SD, standard deviation.

Treatment Patterns (Figure 1)

- R-mono was the most utilized treatment in 1L, 2L, and 3L followed by BR and R-CHOP
- In 4L, BR and R-mono were the most commonly used therapies followed by R-CHOP
- O-mono use increased by line of therapy
- Other treatments increased with each line of therapy, from 10% in 1L to 56% in 4L)

Figure 1. Treatment Utilization by Line of Therapy

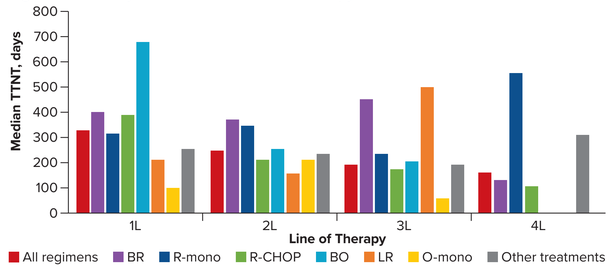


BO, bendamustine + obinutuzumab; BR, bendamustine + rituximab; LR, lenalidomide + rituximab; O-mono, obinutuzumab monotherapy; R-CHOP, cyclophosphamide, doxorubicin, prednisone, rituximab + vincristine; R-mono, rituximab monotherapy.

TTNT (Figure 2)

- The median TTNT across all regimens decreased by line of therapy
- BO demonstrated the longest TTNT in 1L (median TTNT=679 days)
- BR (median TTNT=367 days) followed by R-mono (median TTNT=348 days) demonstrated the longest TTNT in 2L
- LR (median TTNT=499 days) followed by BR (median TTNT=448 days) demonstrated the longest TTNT in 3L
- R-mono demonstrated the longest TTNT in 4L (median TTNT=553 days)

Figure 2. TTNT by Treatment and Line of Therapy



BO, bendamustine + obinutuzumab; BR, bendamustine + rituximab; LR, lenalidomide + rituximab; O-mono, obinutuzumab monotherapy; R-CHOP, cyclophosphamide, doxorubicin, prednisone, rituximab + vincristine; R-mono, rituximab monotherapy.

HCRU and Cost of Care (Table 2)

- Inpatient admissions and outpatient visits increased with the line of therapy
  - Mean (SD) inpatient admissions ranged from 0.1 (0.3) in 1L to 0.3 (0.4) in 4L
  - Mean (SD) outpatient visits were 5.3 (3.2) in 1L, 5.8 (3.7) in 2L, 6.3 (4.0) in 3L, and 6.1 (3.3) in 4L
  - R-mono had the lowest while R-CHOP had the highest mean outpatient visits across lines of therapy
- The mean total cost of care ranged from $40,538 to $74,466, increasing by line of therapy

CONCLUSIONS

- This real-world study showed that TTNT decreased while costs and HCRU increased with each subsequent line of treatment, indicating a high disease burden in patients with FL, particularly for those with refractory/relapsed FL
- These findings suggest the need for better treatment options for patients with FL, especially in 3L and 4L

- The mean total cost of care was consistently lowest in R-mono ($31,704 to $36,197), while CAR-T had the highest total cost ($501,493 to $522,378)

Table 2. Mean (SD) HCRU and Cost of Care, PPPM, by Line of Therapy

	1L (n=4525)	2L (n=1053)	3L (n=304)	4L (n=97)
HCRU, mean (SD) PPPM				
Inpatient admissions	0.1 (0.32)	0.14 (0.38)	0.28 (0.56)	0.27 (0.44)
Outpatient visits	5.32 (3.16)	5.77 (3.73)	6.29 (3.95)	6.05 (3.32)
Emergency room visits	0.17 (0.46)	0.18 (0.45)	0.36 (0.85)	0.37 (0.64)
Other ancillary services	0.71 (1.38)	0.84 (2.17)	1.06 (2.93)	0.71 (2.09)
Costs[a], USD, mean (SD) PPPM				
Inpatient admissions	6419 (31,566)	15,609 (66,183)	28,595 (81,501)	30,000 (81,333)
Outpatient visits	32,073 (29,927)	31,434 (41,735)	39,329 (68,262)	30,622 (42,427)
Emergency room visits	392 (1981)	360 (1366)	661 (1887)	646 (1235)
Other ancillary services	154 (1762)	290 (3992)	366 (2476)	238 (1872)
Pharmacy	1500 (4868)	4077 (7606)	5514 (9228)	6243 (8899)
Non-pharmacy	39,038 (42,851)	47694 (77,527)	68,952 (107,674)	61,505 (89,055)
Total Costs, PPPM	40,538 (42,688)	51,771 (76,805)	74,466 (106,649)	67,748 (88,691)

[a]Costs are inflation-adjusted USD.
HCRU, healthcare resource utilization; PPPM, per patient per month; SD, standard deviation; USD, United States dollar.

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DISCLOSURES

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