Real-World Evaluation of Treatment Discontinuation and Healthcare Resource Utilization in Patients with Chronic Lymphocytic Leukemia or Small Lymphocytic Lymphoma

Authors: Asher Alban Chanan-Khan, MD[1], Swetha Challagulla, MS[2]*, Elizabeth Donckels, MSPH[3]*, Po-Ya Chuang, MHA[4]* and Keri Yang, PhD, MBA, MPH, MS, CPM, BSPharm[2]*

Affiliations: [1]Mayo Clinic Florida, Jacksonville, FL; [2]BeiGene USA, Inc, San Mateo, CA; [3]Real Chemistry, Inc, New York, NY; [4]Real Chemistry, Inc, New York City, NY

Introduction: Chronic lymphocytic leukemia and small lymphocytic lymphoma (CLL/SLL) are the most prevalent types of leukemia in the United States. Given the emergence of novel CLL/SLL therapies, it is important to understand real-world treatment characteristics and unmet needs. The objectives of this retrospective cohort study were to examine patient characteristics, treatment patterns, and associated outcomes for patients with CLL/SLL, overall, and by CLL and SLL, respectively.

Methods: A retrospective study was conducted using Symphony Integrated Dataverse (IDV®), a comprehensive, longitudinal, open-claims database, and integrated electronic medical record data. Patients aged ≥18 years with ≥1 diagnosis for CLL or SLL and who initiated a first-line or second-line treatment between January 1, 2020, and December 31, 2022 (index period) were included in the study. Index date was defined as the date of treatment initiation. Patients were required to be continuously enrolled for 365 days prior to the index date and ≥90 days following the index date. Patient data were included until patients were lost to follow-up or to the end of the study period (March 31, 2023). Treatment patterns were examined with the following treatment regimens and stratified by line of therapy: chemotherapy (including bendamustine-based and other chemotherapy), anti-CD20–based, Bruton tyrosine kinase inhibitors (BTKi; ibrutinib- and acalabrutinib-based), and venetoclax-based therapy. Zanubrutinib use was not captured in the BTKi treatment category as its CLL/SLL indication approval date (January 19, 2023) was outside the index period. Discontinuation rate was defined as the percentage of patients who discontinued their current treatment regimen within 90 days. Healthcare resource utilization was measured by number of outpatient visits, inpatient visits, and other medical/hospital services per patient per month (PPPM) during the treatment regimen.

Results: There were 17,748 and 5,667 patients with CLL/SLL who initiated a first-line or second-line treatment regimen during the index period, respectively. The most frequently used treatment regimens in first line were BTKi (49.9%), followed by anti-CD20 (26.1%), venetoclax (15.4%), and chemotherapy (8.6%). BTKi continued to be the predominant treatment (49.6%) in second line, followed by venetoclax (30.9%), chemotherapy (10.4%), and anti-CD20 (9.2%). First-line patients treated with BTKi regimens were older and Medicare-insured when compared with patients receiving venetoclax-based regimens (65+ years: 77.1% vs 66.9%, *P*-value <0.001; Medicare: 61.7% vs 53.0%, *P*-value <0.001). Patients receiving BTKi had significantly lower discontinuation rates compared with other treatment regimens during both first and second lines of therapies (Figure 1). Mean PPPM outpatient visits, inpatient visits, and other medical/hospital services were less frequent with BTKi therapies vs other treatment regimens across both lines of therapy (Table 1). Of the 17,748 patients initiating first line of therapy, 13.3% had SLL while the remaining 86.7% had CLL. The proportion of patients with SLL vs CLL decreased in second line and second line or later (8.0% vs 92.0% and 6.8% vs 93.2%, respectively). Treatment discontinuation rate in SLL patients was higher than that in CLL patients in first line (32.41% and 25.08%, respectively); however, discontinuation rates became comparable with later lines of therapy. Across all lines of therapy, healthcare

resource utilization was significantly higher in SLL patients than CLL patients. Median PPPM outpatient visits were 1.02 for SLL and 0.67 for CLL. Median PPPM for other medical/hospital services was 0.7 for SLL and 0.23 for CLL.

Conclusions: BTKi therapy, the primary treatment regimen across first- and second-line therapies, has significantly lower discontinuation rate and healthcare resource utilization compared with other

treatment regimens. Further studies are needed to evaluate real-world clinical outcomes of CLL/SLL regimens to support evidence-based treatment decisions.

Figure 1. Discontinuation Rates across CLL/SLL Treatment Regimens by Line of Therapy
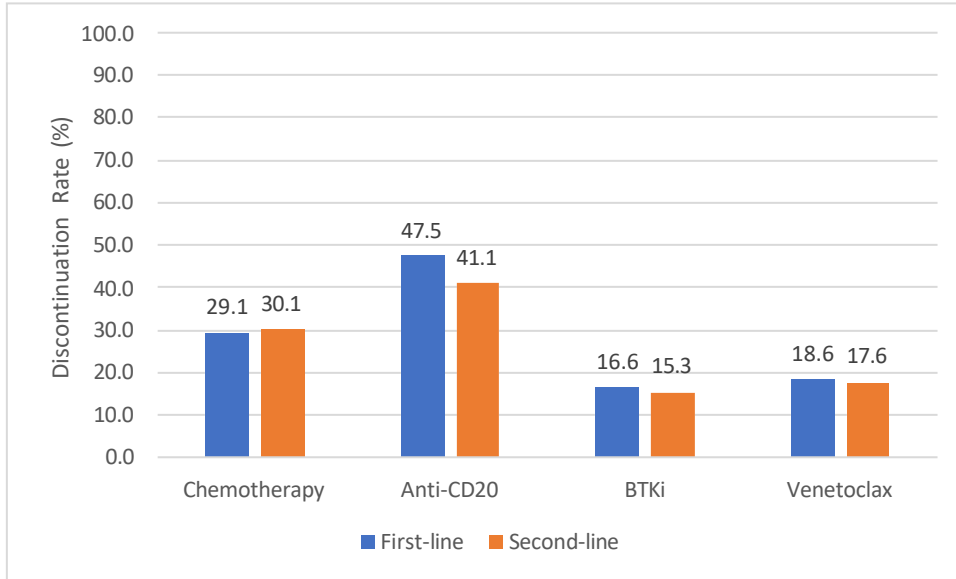
Note: Discontinuation rates reported in first- and second-line therapies were statistically significant ($P<0.0001$; analysis of variance [ANOVA])

Table 1. Healthcare Resource Utilization across CLL/SLL Treatment Regiments by Line of Therapy

Healthcare Resource Utilization (PPPM)	Chemotherapy	Anti-CD20	BTKi	Venetoclax	P-value
First line, n (%)	1530 (8.6%)	4628 (26.1%)	8860 (49.9%)	2730 (15.4%)	
Mean outpatient visits (SD)	2.86 (3.75)	2.88 (3.36)	1.07 (1.63)	1.75 (3.10)	<.0001
Mean inpatient visits (SD)	0.45 (2.24)	0.41 (2.50)	0.31 (1.74)	0.62 (3.37)	0.005
Mean other medical/hospital services (SD)	2.59 (3.31)	2.73 (3.58)	0.85 (1.76)	1.64 (3.38)	<.0001
Second line, n (%)	588 (10.4%)	521 (9.2%)	2810 (49.6%)	1748 (30.8%)	
Mean outpatient visits (SD)	2.9 (4.06)	3.3 (3.98)	1.07 (1.65)	1.47 (2.56)	0.11
Mean inpatient visits (SD)	0.54 (2.87)	0.66 (3.74)	0.31 (1.71)	0.43 (2.52)	0.58
Mean other medical/hospital services (SD)	2.73 (4.00)	2.68 (3.75)	0.97 (1.78)	1.70 (3.09)	0.02

*P-values are derived from ANOVA test