Real-world Bruton tyrosine kinase inhibitor (BTKi) utilization and clinical outcomes among patients with chronic lymphocytic leukemia (CLL)/small lymphocytic lymphoma (SLL)

Authors: Jing-Zhou Hou, MD, PhD[1]; Rushir Choksi, MD[1]; Gregory A. Maglinte, PhD, MPH[3]; Anupama Vasudevan, BDS, MPH, PhD[2]; Anna Rui, MPH[2]; Brandon Wang, MBA[2]; Hoa Pham, PharmD[3]; Ann Lasn[3]; Simon Blanc, MD[2]

Affiliations: [1]UPMC, Pittsburgh, PA, USA; [2]Integra Connect PrecisionQ, West Palm Beach, FL, USA; [3]BeiGene, San Mateo, CA, USA

Introduction: BTKis are standard-of-care therapies for CLL and SLL in both the frontline and relapsed/refractory settings. The NCCN has listed the second-generation BTKi acalabrutinib and next-generation zanubrutinib as preferred agents over the first-generation BTKi ibrutinib based on toxicity profiles. The aim of this study was to describe the characteristics and outcomes of patients with CLL/SLL treated with BTKis in the first-line setting in community oncology practices.

Methods: US adult patients diagnosed with CLL/SLL who initiated treatment between January 1, 2020, and November 30, 2023, were identified using the Integra Connect PrecisionQ de-identified real-world database. Patients were followed until May 30, 2024. This matched cohort study used structured and curated data in which patients who initiated zanubrutinib were matched at a 1:2 ratio based on age and sex with patients who initiated acalabrutinib.

Results: A total of 414 patients were included in the study, including 138 zanubrutinib patients matched with 276 acalabrutinib patients. The median duration of follow-up was 12.7 (range 1.7, 53.0) months; 15.3 (1.7, 53.0) months for acalabrutinib and 10.9 (2.3, 32.2) months for zanubrutinib. The median age for both groups was 76 (range 45, 89) years, and in both groups 37.7% were female. Baseline ECOG status was similar between groups, with 90.2% of patients in the acalabrutinib group and 89.6% of patients in the zanubrutinib group having an ECOG status of 0 or 1 at index.

Cytopenias were the most frequent noncardiac comorbidities in both groups at baseline. Anemia was recorded for 38.0% and 45.7% of the acalabrutinib and zanubrutinib groups, respectively; thrombocytopenia was noted in 27.9% and 29.0%, respectively; and neutropenia was noted in 9.4% and 10.1%, respectively. Overall, 11.2% of patients in the acalabrutinib group and 14.5% of patients in the zanubrutinib group had a preexisting cardiac comorbidity. The most common baseline cardiac comorbidity was hypertension, which was reported by 9.4% of the acalabrutinib group and 10.9% of the zanubrutinib group.

The ongoing treatment probability was 80.7% (95% CI 75.5%, 84.9%) at 6 months and 68.8% (95% CI 62.6%, 74.2%) at 12 months in the acalabrutinib group and 89.8% (95% CI 83.5%, 93.9%) at 6 months and 81.2% (95% CI 72.7%, 87.2%) at 12 months in the zanubrutinib group (unadjusted HR [95% CI]: 0.56 [0.31, 1.01], P=0.05 [6 months]; 0.56 [0.35, 0.89], P<0.05 [12 months]). The probability of not receiving a subsequent treatment was 85.0% (95% CI 80.2%, 88.8%) at 6 months and 76.8% (95% CI 71.1%, 81.5%) at 12 months in the acalabrutinib group and 89.8% (95% CI 83.5%, 93.9%) at 6 months and 82.0% (95% CI 73.5%, 87.9%) at 12 months in the zanubrutinib group (unadjusted HR [95% CI]: 0.74 [0.40, 1.36], P=0.33 [6 months]; 0.74 [0.45, 1.21], P=0.23 [12 months]). Median overall survival was not reached in either the acalabrutinib or zanubrutinib group (unadjusted HR [95% CI]: 0.89 [0.48, 1.65], P=0.72).

Conclusions: This study describes the baseline demographic and clinical characteristics and outcomes of patients with CLL/SLL treated with BTKis in the first-line setting. While zanubrutinib had relatively smaller sample size and shorter follow-up, patients were more likely to remain on first-line treatment at 6 and 12 months in the zanubrutinib group. Additionally, patients in the zanubrutinib group were less likely to

require a subsequent treatment at 6 and 12 months compared to patients in the acalabrutinib group. Further data curation and additional analyses are pending to understand the observed differences among BTKi utilization and outcomes in these patients with CLL/SLL. This study is subject to the inherent limitation of a retrospective observational real-world database.