Chemo ± immunotherapy remains utilized for chronic lymphocytic lymphoma in the real-world practice: Unmet needs, treatment patterns and age disparities in the United States

Javier Pinilla-Ibarz[1], Swetha Challagulla[2], Qianhong Fu[2], Pengfei Cheng[2], Mei Xue[2], Keri Yang[2]

[1]Moffitt Cancer Center, Tampa, FL, USA; [2]BeOne Medicines Ltd, USA, San Carlos, CA, USA

Introduction

Real-world data on how chronic lymphocytic lymphoma (CLL) therapies are utilized in diverse populations provide insights into prescribing practices, treatment patterns, and outcomes. There is limited real-world evidence assessing the latest treatment patterns and regimens for CLL throughout the entire patient (pt) treatment journey, especially in the vulnerable elderly population. This study aimed to assess treatment utilization patterns, pt characteristics, and healthcare resource utilization (HCRU) for all CLL treatment regimens across all lines of therapy for the overall pt cohort and in elderly pts aged 65+ and 70+ years (yrs).

Methods

A retrospective study was conducted using the USA Symphony Integrated Dataverse to identify adults with ≥1 CLL diagnosis who initiated treatment between 1/1/22-3/31/25. The index date was defined as the date of treatment initiation. Pts were required to be continuously enrolled for at least 30 days prior to and following the index date. Pt sociodemographic, clinical characteristics, and outcomes were reported for all pts by treatment regimen and further stratified by line of therapy. CLL treatment regimens were categorized into 4 mutually exclusive categories: chemo ± immunotherapy including bendamustine ± anti-CD20, and other chemotherapy; anti-CD20–based therapies including monotherapy and combinations; Bruton tyrosine kinase inhibitors (BTKi)-based therapies; and B-cell lymphoma 2 inhibitor (BCL2i)-based therapy. HCRU (outpatient, inpatient, other services) was evaluated during the time on treatment and was reported as per-pt-per-year (PPPY). Baseline characteristics and outcomes were further evaluated in elderly pts (65+ yrs and 70+ yrs).

Results

The analysis included 37,341 pts with CLL: 20,729 initiated first-line (1L) therapy, 12,632 initiated second-line (2L) therapy, and 3,980 initiated third-line or later (3L+) therapy. The median age of all pts was 71 yrs in the 1L and 73 yrs in both 2L and 3L+ settings. The study population was predominantly male (~60%) and White (61.7% - 68.6%).

BTKi was the most commonly used regimen across all lines of therapy: 41.1% in 1L, 46.5% in 2L, and 42.2% in 3L+. Across 1L, 2L, & 3L+, BTKi utilization steadily increased from 2022-2025 with rising zanubrutinib adoption and declining ibrutinib use. Compared to the overall CLL cohort, BTKi use increased while BCL2i use decreased in pts aged 65+ and 70+ yrs across all lines of therapy. Despite an overall decline, chemo ± immunotherapy and anti-CD20 regimens remained in use in 14.3% and 24.2% of 1L pts, respectively, as of Q1 2025, with similar high use patterns observed in elderly pts (65+ yrs: 13.0% and 25.7%; 70+ yrs: 11.9% and 25.9%).

BCL2i pts were relatively younger (median age in 1L, 67 yrs; 2L, 71 yrs) than overall CLL pts in 1L and 2L settings. In both 1L and 2L settings, BCL2i-treated pts had a lower proportion of older adults (65+ yrs) compared to those receiving BTKi (59.0% vs. 74.6% in 1L; 71.5% vs. 81.3% in 2L), a trend reflected in higher Medicare coverage among BTKi users. BTKi and BCL2i pts had the lowest mean Charlson comorbidity index ~1.8 in 1L and ~1.6 in 2L compared with other regimens.

For HCRU, BTKi pts had the lowest mean outpatient (PPPY: 11.3 - 12.3), inpatient (PPPY: 1.1 - 1.7), and other medical visits (PPPY: 8.3 - 10.9) compared with all other treatment regimens in 1L, 2L, and 3L+ settings. Pts receiving chemo ± immunotherapy and anti-CD20-based regimens had the highest mean outpatient (PPPY: 22.3 - 34.0), inpatient (PPPY: 1.5 - 2.4), and other medical visits (PPPY: 14.3 - 22.3) in 1L, 2L, and 3L+ settings. These higher HCRU results remain consistent in elderly pts aged 65+ yrs and 70+ yrs.

Conclusions

This real-world analysis of CLL pts showed that BTKi class is a predominant treatment regimen across all lines of therapy, particularly among elderly pts aged 65+ and 70+ yrs. While 1L use of chemo ± immunotherapy and anti-CD20-based regimens decreased over time, it remains relatively high in 2025 in overall and elderly CLL pts. CLL pts receiving BTKi regimens had the lowest HCRU burden in overall and older pt groups. Notably, CLL pts treated with chemo ± immunotherapy and anti-CD20-based regimens had greater HCRU burden in overall cohort and in elderly pts 65+ and 70+ yrs, emphasizing the need for novel therapies to improve real-world outcomes in these pts.