Outcomes during BTKi treatment for chronic lymphocytic leukemia: Insights from remote therapeutic monitoring

Gurjyot Doshi[1], Mustafa Ascha[2], Lee Ding[3], Russell Knoth[4], Ronda Copher[3], James Essell[5]

[1]Texas Oncology, Houston, TX, USA; [2]Canopy Care, Austin, TX, USA; [3]BeOne Medicines Ltd., San Carlos, CA, USA; [4]Snell Medical Communication, Montreal, QC, Canada; [5]Oncology Hematology Care, Cincinnati, OH, USA

Introduction

Bruton tyrosine kinase inhibitors (BTKis) are an established cornerstone therapy for chronic lymphocytic leukemia/ small lymphocytic lymphoma (CLL/SLL), but real-world comparisons between second-generation BTKis in this class remain limited. Electronic patient-reported outcomes (ePROs) may provide valuable insights into how understanding symptoms may impact time of treatment and patient outcomes. This study reports on data from practices using Canopy's ePRO-based Remote Therapeutic Monitoring Program (Canopy RTM) system to examine and characterize symptoms reported by patients diagnosed with CLL/SLL and treated with a second-generation BTKi.

Method

This was an observational study of adult patients diagnosed with CLL/SLL, who were BTKi treatment-naïve, and treated with a BTKi between January 1, 2024, and June 5, 2025, in a US community oncology setting. Patients were identified from electronic health record (EHR) data as undergoing treatment with a BTKi and then invited to participate in Canopy RTM. Canopy RTM is an EMR-integrated cloud-based symptoms questionnaire delivered to patients via smartphone apps, web app, or interactive voice response, as described elsewhere (Cherny et al., 2022). Patients were included in the analysis if they submitted at least one symptom report. The 5 most frequently reported symptoms by all patients were examined by treatment cohort (zanubrutinib or acalabrutinib) and in two time periods: <6 months and ≥6 months of treatment.

Results

Of 173 BTKi-naïve patients diagnosed with CLL/SLL who submitted at least one ePRO report, 71 (41.0%) were treated with zanubrutinib and 65 (37.6%) were treated with acalabrutinib (the remaining 37 (21.4%) were treated with ibrutinib, the first generation BTKi, and excluded from this analysis). The index date was the date of initiation of BTKi treatment. Overall, median age was 72.2 years, and 64.7% were male. No differences were found for age (p=0.7) or gender (p=0.2) between the zanubrutinib and acalabrutinib cohorts. Among patients treated with zanubrutinib or acalabrutinib (N=136), 72% of each cohort had no evidence of any previous anticancer drug exposure. Following BTKi treatment initiation, the five most frequently reported symptoms were weakness/fatigue (39.7%), pain (22.1%), headache (18.4%), sleep issues (16.2%), and difficulty breathing (14.7%).

Among patients who submitted ePROs during the first six months of treatment, those receiving zanubrutinib reported fatigue or weakness in 38% of cases, pain in 15%, headache in 13%, sleep disturbances in 9%, and difficulty breathing in 16%, compared to 49%, 22%, 33%, 22%, and 11%, respectively, among those treated with acalabrutinib. For patients treated for six months or longer, fatigue or weakness was reported equally at 28% for both groups, while pain was reported in 22% of zanubrutinib-treated patients versus 31% for acalabrutinib, headache in 6% vs. 11%, sleep disturbances in 16% vs. 14%, and difficulty breathing in 13% vs. 17%.

Conclusion

Understanding the patient's perspective while undergoing treatment enables timely and targeted management of their symptoms and can optimize the patient's experience. Results from the Canopy RTM platform suggest that patients diagnosed with CLL/SLL who are BTKi-naïve and newly treated with zanubrutinib generally report fewer symptoms than those treated with acalabrutinib, regardless of treatment duration. Additional analysis will explore patient characteristics and the non-random allocation to treatment conditions.