Real-world Bruton tyrosine kinase inhibitor treatment patterns and outcomes among patients with chronic lymphocytic leukemia or small lymphocytic lymphoma in US community oncology practices

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ABSTRACT

Objectives: Bruton tyrosine kinase inhibitor (BTKi) therapies are standard of care for chronic lymphocytic leukemia or small lymphocytic lymphoma (CLL/SLL), with acalabrutinib (acala) and zanubrutinib (zanu) having improved safety profiles vs ibrutinib (ibru). This study assessed real-world clinical characteristics, treatment patterns, and adverse events (AEs) among BTKi-treated patients with CLL/SLL.

Methods: This is a retrospective observational study, updated with 5 months of additional data from a previous analysis. Adults in the US community oncology setting initiated BTKi treatment between January 1, 2020, and July 31, 2023, and were followed to October 31, 2023. De-identified structured electronic health records were analyzed from the Integra Connect-PrecisionQ real-world database. Cardiovascular (CV) AEs (based on ICD codes), time to treatment discontinuation (TTD), and time to next treatment (TTNT) were reported.

Results: A total of 3064 patients initiated BTKi therapies during the index period (1L n=2815; 2L+ n=249). Median age (range) was 72 years (33-90) in 1L and 72 years (42-89) in 2L+. There were 63.1% and 65.5% males in 1L and 2L+, respectively. In 1L, 49.3% of patients were treated with ibru, 43.4% with acala, and 7.2% with zanu. Similar trends were observed for 2L+. More patients experienced CV AEs among those who received 1L ibru vs acala or zanu; 12.1%, 7.6%, and 7.3% at month 6 (P<0.05) and 14.6%, 9.4%, and 8.5% at month 9 (P<0.05). Of patients treated with 1L ibru, 12.7% discontinued ibru and switched to acala or zanu. Median TTD in 1L was shorter for ibru than acala or zanu (Table). The associated probability of remaining on treatment was higher with zanu vs ibru or acala at months 6 and 12 (Table). Median TTNT was not reached for zanu, while it was 30.2 months for ibru and 35.8 months for acala.

Conclusions: While zanu had relatively smaller sample size and shorter follow-up, this study demonstrated better real-world safety and efficacy outcomes for acala and zanu vs ibru. Additional research is needed to explain and validate observed differences favoring zanu over acala.

Table: TTD and TTNT in patients initiating BTKi therapies during index period

1L		**Ibru (N=1389)**	**Acala (N=1223)**	**Zanu (N=203)**
	Median follow-up (range, mos)	20.5 (0.4, 46.0)	14.2 (0.1, 46.0)	6 (1.1, 26.6)
TTD	Discont / Death (n, %)	775 (55.8)	556 (45.5)	45 (22.2)
	Median TTD (95% CI, mos)	13.7 (12.2, 16.0)	19.2 (15.1, 25.3)	19.3 (14.1, NR)

	Prob of continuing same Tx at 6 mos (%, 95% CI)	64.8 (62.2, 67.3)	64.8 (62, 67.4)	81.6 (75.1, 86.6)
	Prob of continuing same Tx at 12 mos (%, 95% CI)	53.3 (50.5, 56)	57.7 (54.7, 60.6)	64.1 (51, 74.6)
TTNT	NT / Death (n, %)	617 (44.4)	457 (37.4)	37 (18.2)
	Median TTNT (95% CI, mos)	30.2 (26.2, 35.5)	35.8 (29.8, NR)	NR (16.7, NR)
	Prob of continuing 1L Tx at 6 mos (%, 95% CI)	75.4 (73, 77.6)	71.3 (68.7, 73.8)	85.3 (79.2, 89.8)
	Prob of continuing 1L Tx at 12 mos (%, 95% CI)	67.3 (64.6, 69.7)	66.3 (63.4, 69)	75 (64.3, 82.9)

1L, first line; acala, acalabrutinib; BTKi, Bruton tyrosine kinase inhibitor; CI, confidence interval; discont, discontinued; ibru, ibrutinib; mos, months; NR, not reached; NT, next treatment; prob, probability; TTD, time to treatment discontinuation; TTNT, time to next treatment; Tx, treatment; zanu, zanubrutinib.