Real-world treatment patterns, clinical outcomes, and healthcare resource utilization of patients with Chronic Lymphocytic Leukemia treated with Fixed Duration Therapy in a 1L Setting in Alberta, Canada

George, S.[1], Thibault, S.[1], Stephen, M. [2], Owen, C. [3], Hamilton, M.[1], Vuong, V.[1], Cheung, W.[2]

AstraZeneca Canada, Mississauga, Ontario, Canada[1], Oncology Outcomes, Calgary, Alberta, Canada[2], University of Calgary, Calgary, Alberta, Canada[3]

Background

- **Chronic lymphocytic leukemia** (CLL) is the most common adult leukemia in Canada.
- Several standard-of-care options are available, including treat-to-progression regimens and fixed duration (FD) regimens such as **chemotherapies** and, recently, **targeted** FD treatments.
- A **treatment shift** towards targeted FD therapies provides patients with a drug holiday from continuous treatment while reducing cumulative adverse events and healthcare resource use (HCRU).
- However, there is limited Canadian data on current **treatment patterns**, **clinical outcomes**, and **HCRU** of CLL patients treated with FD regimens, especially in context of emerging targeted treatments.

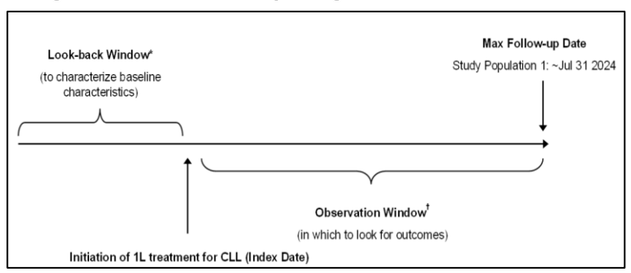
Methods

- This is a **population-based observational study** of secondary data that utilizes linked health administrative data from Alberta, Canada (population ~4.37 million).
- The primary study population will include all individuals **diagnosed with CLL** between January 1, 2010 and December 31, 2022 and who initiated **FD therapy in a first-line (1L)** setting between between January 1, 2010 and December 31, 2023.

Data Sources

- The **Oncology Outcomes** (O2) database was utilized to characterize the study population and outcomes.

Figure 1 Overview of Study Design



†Patients will have a maximum of 14 years observation

- O2 database includes **health administrative data** linked to electronic medical records, physician billing claims, lab and pathology results from Alberta, Canada.

Inclusion / Exclusion Criteria

- **Eligible** cohort included patients 18 years or older with a documented diagnosis of CLL and initiated an 1L FD treatment for CLL within the study period.
- Patients were **excluded** if they were ineligible for Alberta health insurance plan, resided outside of Alberta at index, participated in a clinical trial related to the treatment of CLL or missing data/inadequate follow-up.

Results

Table 1 Baseline demographic characteristics at 1L treatment initiation, overall and by FD therapy type †

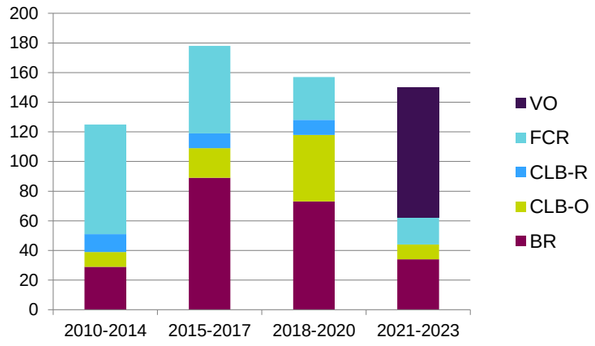
Value	Overall (N=589)	BR (N=225)	FCR (N=179)	CLB+O (N=77)	V+O (N=88)	P-value
*Age (Mean, SD)						
Years	64 (11.2)	67 (8.0)	54.7 (9.4)	74.8 (6.3)	63.3 (9.8)	<0.001
Sex (N, %)						
Male	412 (69.9)	147 (65.3)	129 (72.1)	57 (74)	65 (73.9)	0.4
Treatment Centre (N, %)						
Academic	411 (70.6)	151 (68.3)	131 (74)	65 (85.5)	47 (53.4)	<0.001
Community	169-172 (28-29)	68-71 (30-32)	45-48 (25-27)	10-12 (13-15)	41 (46.6)	
Missing	<10	<10	<10	<10	<10	
Rurality (N, %)						
Rural	93 (15.8)	39 (17.3)	25 (14)	17 (22.1)	11(12.5)	0.4
Urban	496 (84.2)	186 (82.7)	154 (86)	60(77.9)	77 (87.5)	
CCI Score (N, %)						
0	430 (73.3)	156 (70)	144(80.4)	51 (66.2)	70 (79.5)	0.005
1	112 (19.1)	45 (20.2)	30 (16.8)	19 (24.7)	11 (12.5)	
2	30 (5.1)	14 (6.3)	<10	<10	<10	
3+	15 (2.6)	<10	<10	<10	<10	
Missing	<10	<10	0	0	0	

*At diagnosis † CLB-R not included in table ** a range is presented due to small cell suppression

Abbreviations are Bendamustine + Rituximab (BR), Fludarabine + Cyclophosphamide + Rituximab (FCR) Chlorambucil + Obinutuzumab (Clb+O), Venetoclax + Obinutuzumab (VO)

- **589 CLL** patients were identified; **69.9%** were **male**, and median age (at diagnosis) was **65 years**.
- Significant differences were observed between type of 1L FD treatment initiated and **age**, **treatment center** and **CCI score**

Figure 2. Distribution of FD therapy across year of index treatment

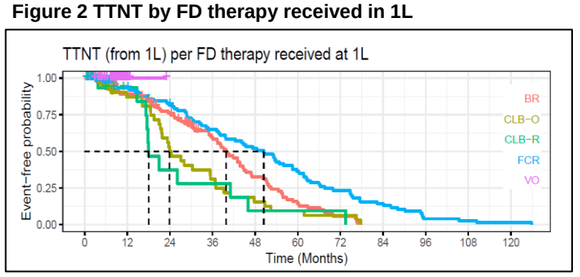


- In **recent years** (2021-2023), a majority of patients received (V+O) (N=88, 58.7%), followed by (BR) (N=34, 22.7%), (FCR) (N=18, 12.0%), and (Clb+O) (N=10, 6.7%), in comparison to **previous years** (2010-2020) where chemotherapy regimens FCR, CLB+O and BR are amongst the most common

Time to next treatment line (TTNT) and overall survival (OS)

- Median TTNT was 39.6 months (95%CI 36.0-44.0), with differences observed by FD 1L treatment type.

Figure 2 TTNT by FD therapy received in 1L



- **Increased follow-up time** is needed to establish trends in TTNT between 1L FD targeted and chemotherapy regimens.
- Median real-world **OS** from 1L treatment was 12 years (95% CI 11.2 years-NR).

Table 3 Healthcare Resource Utilization (HCRU) within first year only, stratified by targeted therapy vs chemo regimen

Metric	*Strata	N	Mean	SD
All outpatient visits	Chemotherapy	465	5.3	7.7
	Targeted Therapy	70	1.2	1.8
GP visits	Chemotherapy	465	0.3	0.7
	Targeted Therapy	70	0.2	0.5
Oncology visits	Chemotherapy	465	0.2	0.8
	Targeted Therapy	70	0.0	0.1
ED visits	Chemotherapy	465	2.0	4.0
	Targeted Therapy	70	0.8	1.7
Hospital admissions	Chemotherapy	465	0.5	0.9
	Targeted Therapy	70	0.3	0.7
Duration of each hospital admission (in days)	Chemotherapy	465	10.3	17.6
	Targeted Therapy	70	14.1	25.3
ICU admissions	Chemotherapy	465	0.0	0.2
	Targeted Therapy	70	0.0	0.0

*Chemo includes BR, CLB-O, CLB-R, FCR and targeted therapy includes V+O.

- HCRU within the first year of treatment was **similar** amongst 1L FD regimens assessed.
- Targeted therapies (V+O) had **fewer outpatients visits** (1.2) on average than those on FD chemotherapy regimen (5.3).

Conclusions

- These results results **characterize** the current CLL 1L FD treatment landscape in Alberta, Canada.
- Distribution of FD therapy over time demonstrated a **rapid shift** from FD chemotherapy to targeted VO therapy in the CLL treatment landscape, supporting the **development** of further 1L FD therapies for CLL management.
- However, all 1L FD therapies for CLL examined include at least one **intravenous** infusions component. The benefits of **convenience**, reduced **travel**, and reduced impact on **daily life**, amongst other reasons, may be realized from **oral administration**, which increasingly benefits an **older** population who may be receiving care in **rural** or **community** settings, as noted in the study cohort[1].

References

1. Eek D, Krohe M, Mazar I, Horsfield A, Pompilus F, Friebe R, Shields AL. Patient-reported preferences for oral versus intravenous administration for the treatment of cancer: a review of the literature. Patient Prefer Adherence. 2016 Aug 24;10:1609-21. doi: 10.2147/PPA.S106629. PMID: 27601886; PMCID: PMC5003561.

Supported by AstraZeneca

Presented at ISPOR 2025, Montreal, CQ, 14-16 May 2025