CLL-449

Patterns of Treatment and Prognostic Testing Among Black Patients With Chronic Lymphocytic Leukemia (CLL): Results From InformCLL, a Prospective, Observational Registry

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KEY TAKEAWAYS

- Black patients with CLL tended to be younger, with worse ECOG status, more advanced disease, and shorter time to 1L therapy than the overall informCLL registry population.
- Similar to the overall registry population, the rates of prognostic testing, which is recommended for treatment optimization, were suboptimal in Black patients, particularly in the 1L setting.
- Although ibrutinib was the most common treatment among Black patients, use of 1L CIT remained persistent.

OBJECTIVE

- To evaluate treatment patterns over time and prognostic biomarker testing rates in Black patients with CLL enrolled in the informCLL registry.

CONCLUSIONS

- Black patients with CLL tended to be younger, with worse ECOG status, more advanced disease, and shorter time to 1L therapy than the overall informCLL registry population; these findings are consistent with prior reports of Black patients with CLL.[6,9]
- This registry, with the highest prevalence of Black patients enrolled from the South, appears representative of the overall distribution of the Black population in the United States.[10]
- While ibrutinib was the most common treatment in Black patients, use of CIT in 1L appears to remain more persistent among Black patients than in the overall registry population.
- Similar to the overall registry population, prognostic testing rates in Black patients were low. Currently, iwCLL guidelines[7,11] recommend performing prognostic biomarker testing, as patients with poor-risk genomic features have inferior outcomes with CIT.
- These results highlight the need for an increased awareness of guidelines recommendations for prognostic testing, as well as close monitoring of disease status in Black patients, as they will tend to require initial CLL therapy more rapidly than other patients. Given that Black patients with cancer, including hematologic malignancies, have worse survival outcomes relative to White patients,[3,9] final analysis from the informCLL registry evaluating clinical outcomes by race/ethnicity is warranted.

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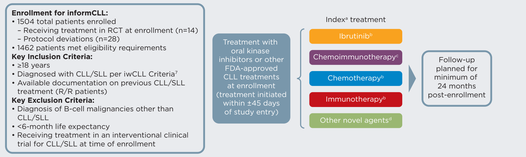
INTRODUCTION

- The incidence of CLL/SLL in the United States differs by race, with incidence rates being higher among White populations than non-White populations.[1,2]
- Based on studies from the SEER registry, Black patients represent approximately 6-7% of newly diagnosed cases of CLL in the United States[3-5]; however, data on real-world practice patterns in Black patients with CLL are limited, especially in terms of targeted therapies.
- Prior observational studies from academic centers have reported younger age at diagnosis and shorter time to first treatment among Black patients, relative to non-Black patients with CLL.[2,6]
- informCLL is a multicenter US registry of patients with CLL and represents a valuable opportunity for exploring real-world treatment practices in a large cohort of patients, treated primarily in the community-based setting.

METHODS

- informCLL registry study design (**Figure 1**):
  - US-based, multicenter, prospective observational study in patients who received treatment for CLL/SLL
  - Eligible patients were enrolled from October 2015 to June 2019.
- Baseline demographics and clinical characteristics, prognostic biomarker testing rates (FISH, *TP53* mutation, IGHV mutation), and types of index treatment received in the subset of Black patients from the informCLL registry were summarized descriptively by LOT: 1L and R/R.
- Logistic regression analysis was used to assess association of baseline characteristics (including race as a covariate) and the likelihood of receiving FISH testing for the overall registry population.
  - Variables considered for univariate logistic regression included: time from initial diagnosis to treatment, age (>70; ≤70 years), sex, race (Black; White; other), ECOG performance status, Rai stage, CCI, LOT (1L; R/R), institution type (community; academic), geographic region, and having a prior malignancy.
  - Variables that were significant on univariate analyses (at P <0.15 level) were included in the multivariate regression model to identify factors that were independently associated with FISH testing.

Figure 1. InformCLL Study Design

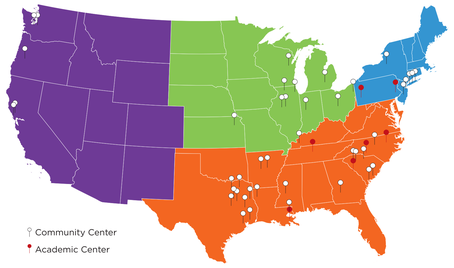


[a]Index treatment defined as treatment received at registry enrollment. [b]Single agent or in combination. [c]Anti-CD20 monoclonal antibodies in combination with chemotherapy. [d]Idelalisib, venetoclax, or other drugs (single agent or in combination).

RESULTS

- Of 1462 enrolled patients (overall registry population), 106 (7%) were Black.
- Overall, 87% of practice sites that enrolled Black patients were community-based practices, similar to the overall population (93%).[8]
- Black patients were predominantly enrolled in the South (69%) (**Figure 2**).

Figure 2. Enrollment Sites for Black Patients With CLL



- Among Black patients, median (range) age was 66 (40-92) years, 65% had ECOG status ≥1, 22% had high comorbidity burden (CCI ≥3), 64% had Rai stage III-IV, and median time from initial diagnosis to treatment on the registry was 40 months (**Table 1**).
  - In the overall registry population, median (range) age was 71 (34-95) years, 53% had ECOG status ≥1, 16% had CCI ≥3, 51% had Rai stage III-IV, and median time from initial diagnosis to treatment was 41 months.[8]
  - In the 1L cohort of patients, median time from initial diagnosis to first treatment on the registry was 7 months for Black patients and 19 months for the overall registry population.
  - Specific baseline comorbidities observed at a higher rate among Black patients relative to the overall registry population included hypertension (82% vs 64% in overall population), diabetes mellitus (36% vs 23%), pulmonary issues/COPD (25% vs 19%), moderate to severe chronic kidney disease (16% vs 10%), and cerebrovascular disease (12% vs 6%).
  - Baseline comorbidities observed at a lower rate among Black patients relative to the overall registry population included thyroid disorders (7% vs 16%) and cardiac arrhythmias (3% vs 13%).

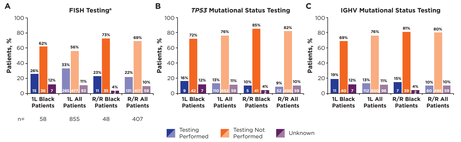
Table 1. Baseline Characteristics of Black Patients Enrolled In informCLL (2015-2019)

Characteristic	1L n=58	R/R n=48
Median age (range), y	65 (45–90)	67 (40–92)
ECOG performance status, n/N (%)		
0	20/54 (37)	14/44 (32)
1	33/54 (61)	27/44 (61)
≥2	1/54 (2)	3/44 (7)
Institution type, n (%)		
Community	35 (88)	27 (82)
Academic	5 (13)	6 (18)
Insurance, n (%)[a]		
Private	19 (33)	21 (44)
Public	43 (74)	34 (71)
US region, n (%)		
Midwest	7 (12)	8 (17)
Northeast	5 (9)	6 (13)
South	41 (71)	32 (67)
West	5 (9)	2 (4)
CCI		
Median (range)	1 (0-7)	1 (0-8)
CCI ≥ 3, n (%)	10 (17)	13 (27)
Rai stage, n/N (%)		
Stage 0	3/32 (9)	0/24 (0)
Stage I-II	12/32 (38)	5/24 (21)
Stage III-IV	17/32 (53)	19/24 (79)
Median time from initial diagnosis to treatment at enrollment, mo (range)	7 (<0.1–137)	72 (2–234)
FISH testing, n (%)		
Testing done	15/58 (26)	11/48 (23)
Del(17p) yes, n/N (%)	4/15 (27)	1/11 (9)
***TP53* testing, n (%)**		
Testing done	9/58 (16)	5/48 (10)
TP53 mutation, n/N (%)	3/9 (33)	2/5 (40)
IGHV testing, n (%)		
Testing done	11/58 (19)	7/48 (15)
Unmutated IGHV, n/N (%)	7/11 (64)	5/7 (71)

[a]Patients could have both private and public health insurance.

- FISH testing was performed in 25% of Black patients overall, compared with 28% in the overall population[8]; breakdown by LOT is shown in **Figure 3A**.
- *TP53* and IGHV mutation tests were performed in 13% and 17% of Black patients overall, respectively (**Figure 3B,C**).

Figure 3. FISH, *TP53*, and IGHV Mutational Testing Distribution by LOT



[a]Includes del(17p), del(11q), del(13q), and/or trisomy 12.

- Among the small subset of Black patients with FISH testing results, only 5 had a confirmed del(17p); of these patients, 4 were treated in 1L setting and received CIT (n=2), ibrutinib (n=1), or IT (n=1); the 1 patient with R/R CLL received ibrutinib.
- Results of univariate analysis of baseline factors associated with performing FISH testing are shown in **Table 2**.
- In multivariate analysis, factors that were independently associated with higher likelihood of FISH testing were shorter time from initial diagnosis to treatment, better ECOG status, earlier LOT, community practice setting, and having a history of other malignancy (**Table 2**).

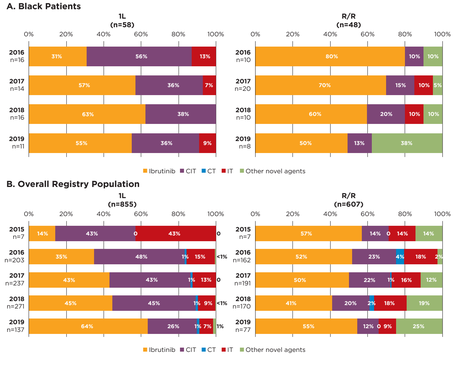
Table 2. Logistic Regression Analyses of Baseline Factors Associated With Performing FISH Testing

Variables[a]	Univariate analysis P<0.15	Multivariable analysis P<0.05
Time from initial diagnosis to treatment at enrollment (≤18 mo, >18 to ≤36 mo, >36 mo)	<0.0001	**0.0102**
Race (Black, White, other)	0.0475	0.0839
ECOG status (0-1, ≥2, not specified)	0.0215	**0.0333**
Rai stage (0-I, ≥II, unknown)	0.0364	0.0590
LOT (1L, R/R)	<0.0001	**0.0033**
Institution type (community, academic)	0.0029	**0.0077**
History of other malignancy (no, yes)	0.1254	**0.0386**

[a]The reference category for each variable is denoted in underlined text..

- As in the overall registry population, ibrutinib was the most frequent treatment among Black patients in both 1L (overall population, 45%; Black patients, 50%) and R/R cohorts (49% and 67%, respectively), followed by CIT (1L: overall population, 42%; Black patients, 43%; R/R: 20% and 15%, respectively).
  - In the 1L cohort, treatment with ibrutinib generally increased over time, while CIT use tended to persist through latter years of enrollment (**Figure 4A**).
  - Although sample sizes were small when evaluating treatment selection by year, 1L CIT use appeared more persistent among Black patients (36% in 2019) than in the overall registry population (26% in 2019; **Figure 4A,B**).
  - In R/R patients, use of ibrutinib tended to decrease over time, while CIT use remained consistent and treatment with other novel agents increased (**Figure 4A**).

Figure 4. Proportion of Black Patients per Index Treatment Group Enrolled Over Time (2015–2019)[a]



[a]2015 data for Black patients are not shown, because only 1 Black patient (1L) was enrolled in that year.

POTENTIAL LIMITATIONS

- Registry data rely on accurate site reporting; such data may be subject to coding limitations, missing or incomplete data points, and data entry error.
- Interpretation of data for treatment selection over time in Black patients is limited by the small number of patients per enrollment year.

ABBREVIATIONS

1L, first-line; CCI, Charlson Comorbidity Index; CIT, chemoimmunotherapy; CLL, chronic lymphocytic leukemia; COPD, chronic obstructive pulmonary disease; CT, chemotherapy; ECOG, Eastern Cooperative Oncology Group; FDA, US Food and Drug Administration; FISH, fluorescence in situ hybridization; IT, immunotherapy; LOT, line of therapy; RCT, randomized controlled trial; R/R, relapsed/refractory; SEER, Surveillance, Epidemiology, and End Results; SLL, small lymphocytic lymphoma.

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DISCLOSURES

JB: honoraria from Janssen; consulting/advisory role for AbbVie, AstraZeneca, MEI, and BeiGene; research funding from Oncternal Therapeutics, Velosbio/Merck, and Pharmacyclics LLC, an AbbVie Company; **AM:** employment with Memorial Sloan Kettering Cancer Center; consulting/advisory role with AbbVie, Acerta/AstraZeneca, Adaptive Biotechnologies, AstraZeneca, BeiGene, DTRM BioPharma, Genentech, Janssen, Johnson & Johnson, Loxo Oncology, Sunesis, TG Therapeutics, and Pharmacyclics LLC, an AbbVie Company; research funding from AbbVie, Acerta/AstraZeneca, Adaptive Biotechnologies, BeiGene, DTRM BioPharma, Genentech, Genmab, Janssen, Johnson & Johnson, Loxo Oncology, Nurix, Sunesis, TG Therapeutics, and Pharmacyclics LLC, an AbbVie Company; and other relationship with TG Therapeutics; **JS:** honoraria from AbbVie, ADC Therapeutics, AstraZeneca, BeiGene, Genentech, Lilly, TG Therapeutics, and Pharmacyclics LLC, an AbbVie Company; and consulting/advisory role for AbbVie, AstraZeneca, and BeiGene; **DB:** consulting/advisory role for AbbVie, AcQule/Merck, Genentech, Pfizer, TG Therapeutics, and Pharmacyclics LLC, an AbbVie Company; research funding from AbbVie, AcQule, Ascentage, AstraZeneca, BeiGene, CATO SMS, DTRM BioPharma, Genentech, Juno Therapeutics/Celgene/BMS, MEI Pharma, NeWave, Novartis, TG Therapeutics, and Pharmacyclics LLC, an AbbVie Company; and other relationship with AbbVie, National Comprehensive Cancer Network, and Pfizer; **MG:** nothing to disclose; **LW:** employment, stock or other ownership, and patents/royalties/intellectual property with Janssen; **SP:** employment with Janssen; stock or other ownership, and travel/accommodation expenses reimbursement by Amgen and Janssen; **SU:** employment and stock or other ownership with Pharmacyclics LLC, an AbbVie company (self) and Protagonist Therapeutics/Biomea Fusion (family member); and patents/royalties/other intellectual property with Biomea Fusion (family member); **AY, MN:** employment with Pharmacyclics LLC, an AbbVie Company; stock or other ownership with AbbVie; **NG:** consulting/advisory role with AbbVie, Adaptive Biotech, ADC Therapeutics, BeiGene, Bristol Myers Squibb, Genmab, Gilead/Kite, Incyte, Janssen, TG Therapeutics, and Pharmacyclics LLC, an AbbVie Company; research funding from Bristol Myers Squibb, Genentech, TG Therapeutics, and Pharmacyclics LLC, an AbbVie Company; and speakers bureau for AbbVie, Bristol Myers Squibb, Epizyme, Gilead/Kite, Janssen, and Pharmacyclics LLC, an AbbVie Company.

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