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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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Objective: To evaluate real-world treatment patterns and prognostic biomarker testing in Black patients with CLL enrolled in informCLL. **Patients and Methods:** informCLL, a US-based, prospective, observation registry, enrolled patients who initiated FDA-approved treatment for CLL/SLL (October 2015 - June 2019). Baseline characteristics, FISH testing rates, and patterns of treatment were summarized by lines of therapy (LOT). **Results:** Of 1462 enrolled patients, 106 (7%) were Black. Black patients were predominantly enrolled in the South (69%) and from community-based practices (87%). Compared with the overall registry population, Black patients were younger (median age 66 years vs 71 years), had higher proportions with ECOG status ≥1 (65% vs 53%) and Rai stage III-IV (64% vs 51%), and similar time from diagnosis to treatment on registry (median 40 months vs 41 months) but shorter time from diagnosis to first-line treatment (median 7 months vs 19 months). FISH testing rates were similar (25% vs 28%). In a multivariate analysis (performed in overall registry population), baseline factors associated with FISH testing were shorter time from diagnosis to treatment, better ECOG status, earlier LOT (first-line), community practice setting, and a prior malignancy ($p<0.05$ for all); race was not a predictive factor. As observed in the overall population, ibrutinib was the most frequent treatment among Black patients in first-line (50%) and R/R (67%) settings, followed by chemoimmunotherapy (first-line, 43%; R/R, 15%). In the first-line cohort, ibrutinib use generally increased over time (2016, 31%; 2017, 57%; 2018, 63%; 2019, 55%) while chemoimmunotherapy use persisted (56%, 36%, 38%, and 36%, respectively). In R/R patients, ibrutinib use decreased over time while chemoimmunotherapy remained consistent. **Conclusions:** In informCLL, Black patients with CLL tended to be younger, with worse ECOG status, more advanced disease, and shorter time to first-line therapy than the overall registry population. Black patients may need close monitoring of disease status as they will tend to require initial CLL therapy more rapidly than other patients. Although ibrutinib was the most common treatment in Black patients, chemoimmunotherapy use remained persistent. Prognostic testing rates were suboptimal in Black patients, similar to the overall population.

Keywords: CLL, Black, African American, real-world, registry

CLL-461

Humoral Response to COVID-19 Vaccine: A Challenge in CLL

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Chronic lymphocytic leukaemia (CLL) is associated with some degree of immune dysfunction as a result of the disease itself and/ or treatment. COVID-19 has a major impact on patients with CLL who are at increased risk for severe disease and death. In this study, we aimed to understand the efficacy of anti-SARS-CoV-2 vaccines in patients with CLL. From January 2021, we collected data on 166 vaccinated patients with CLL followed at our site. Median age was 68 years (range 41-92); 43 (26%) were treatment-naïve (TN), 25 (15%) were previously treated, 95 (57%) were on active therapy, and 3 (2%) were experiencing relapse. Most patients received BNT162b2 (87%), followed by mRNA-1273 (4%) and ChAdOx1-S (3%); data is missing in 6%. Serology testing was performed with the SARS-CoV-2 S1/S2 IgG assay (Elecsys® Anti-SARS-CoV-2) 2 to 3 weeks after second and third vaccine doses and considered negative for antibody titers below 0.4 U/ml. Vaccine response was evaluated post-dose 2 in 119 patients and post-dose 3 in 74 patients. Post second dose, a higher seroconversion rate was observed in TN patients and those with sustained clinical response after therapy discontinuation (42% and 46% respectively) compared with actively treated patients (20.5%; [p=0.024; p=0.048]). Antibody response rate in patients receiving BTKi was considerably lower 19.7% (12/61). Three (42.9%) out of 7 patients who received venetoclax monotherapy seroconverted. None of the patients exposed to anti-CD20 antibodies (3/8 with targeted therapy, 2/8 with chemotherapy, 3/8 as single agent) <12 months before vaccination responded. Among patients actively treated who failed to achieve a humoral response after two-dose, 25.6% responded to the third dose of vaccine, although with a weak antibody level (median 8.64 U/ml, range 0.55-175). Overall,

post third dose a higher median (IQR) antibody titer (127.9 U/mL; 0.55-2500) was observed compared to one post second dose (19.2 U/ml; 0.86-2500) in patients on therapy. Notably, all patients in clinical remission after treatment present titers above the upper limit of quantification (>2500 U/mL) post third dose. **Conclusions:** Humoral immune response to the COVID-19 vaccine is impaired in most patients with CLL and correlates with treatment status. **Keywords:** CLL, chronic lymphocytic leukemia, SARS-CoV-2, vaccination, antibody response, treatment status

CLL-477

Historical Trends in the Front-Line Treatment in Patients With Chronic Lymphocytic Leukemia: Experience from a European Center

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Context: The treatment of chronic lymphocytic leukemia (CLL) has dramatically evolved over the last decade thanks to the introduction of the targeted therapies. Nowadays, international guidelines (ESMO 2021, NCCN 2022) recommend targeted therapies including BTKi and BCL2i combinations as the preferred regimens for the treatment of most treatment naïve CLL patients. **Objective:** To describe pattern changes in the front-line treatment in CLL patients. **Design:** This is a retrospective, single center, and non-interventional study. We included patients treated in clinical trials and in routine clinical practice. Front-line treatment was classified in three groups: (1) chemotherapy-based regimens, (2) chemoimmunotherapy and (3) targeted therapies (i.e., BTK inhibitors, PI3K inhibitors, or BCL2 inhibitors). **Setting:** We reviewed front-line treatment strategies in CLL patients in our institution. **Patients or Other Participants:** We enrolled in total 780 patients diagnosed with CLL between 1979-2022 from our database. **Interventions:** No interventions were made in this study. **Main Outcome Measures:** We analyzed the patterns of treatments in front-line and their impact on survival. **Results:** After a median of 6.5 years (3.3-11.1) of follow-up, 40.1% (313/780) of patients required treatment. Alkylating agents in monotherapy (chlorambucil) were the most used until 2012, and from that year on, immunochemotherapy with fludarabine and cyclophosphamide with rituximab (FCR). Since 2018, targeted therapies were the most common therapeutic strategy (72%) [BTKi (52%), and BCL2i as monotherapy or in combinations (20%)] versus immunochemotherapy (28%). In an exploratory analysis of survival, after a median of 7.5 years (4.7-11.8) of follow-up, those patients treated with targeted therapies showed a longer progression free survival (OR 0.16; 0.07-0.35; p<0.0001) compared to other therapies, although no differences in overall survival were observed (OR 0.83; 0.45-1.54; p=0.56). **Conclusions:** In our center, targeted therapies have become the most used treatment in CLL, with BTKi standing out followed by BCL2i, which reflects the historical development and approval of these agents. This study provides useful information for the design of therapeutic strategies for CLL both in the healthcare setting and in clinical trials in our country. No grant funding has been provided for this study. **Keywords:** CLL, targeted therapies, chemotherapy, front-line

CLL-492

Real-World Adherence to First-Line Ibrutinib and Acalabrutinib Single-Agent Among Patients With Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma

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Context: Treatment guidelines recommend Bruton's tyrosine kinase inhibitors (BTKi) ibrutinib (once-daily) and acalabrutinib (twice-daily) as preferred regimens for chronic lymphocytic leukemia (CLL)/small lymphocytic lymphoma (SLL). However, data are limited for adherence, which has been demonstrated as being higher in chronic diseases for once-daily versus twice-daily regimens and thus may inform treatment effectiveness. **Objective:** To compare refill adherence between CLL/SLL patients treated with first-line (1L) ibrutinib or acalabrutinib single-agent. **Methods:** Specialty pharmacy electronic medical records from academic integrated care networks (01/01/2017-11/30/2020) were used. Adult CLL/SLL patients with ≥12 months of data availability without antineoplastic agent use before ibrutinib or acalabrutinib single-agent initiation (index date) were included. Adherence was measured by the proportion of days covered (PDC) and medication possession ratio (MPR) during fixed periods of time during the ibrutinib/acalabrutinib line of therapy (LOT), which lasted until the earliest of second-line treatment initiation, death, or end of data. PDC and MPR were calculated as the sum of days of supply (DOS) divided by the duration of the period of interest; PDC calculations shifted forward prescriptions with overlapping DOS; MPR counted all DOS. The proportion of adherent patients (PDC/MPR ≥80%) was compared between ibrutinib versus acalabrutinib using logistic regression models adjusted for baseline characteristics. **Results:** Among 288 and 80 patients treated with ibrutinib and acalabrutinib, mean age was 70.9 and 73.2 years, 35.8% and 45.0% were female, and mean LOT duration was 19.3 and 10.1 months, respectively. At all time points (first 3, 6, 9, and 12 months of the LOT), patients treated with ibrutinib were more likely to be adherent based on the proportion of patients with PDC/MPR ≥80% (odds ratio [OR] ranges=1.58-2.17 and 1.64-2.37); while results did not reach statistical significance at 3 and 12 months, they did at 6 months (PDC: 76.4% [ibrutinib] versus 60.0% [acalabrutinib], OR [95%CI]=2.17 [1.12-4.21]; MPR: 76.8% versus 60.0%, OR=2.20 [1.13-4.28]) and 9 months (PDC: 66.5% versus 46.3%, OR =2.05 [1.02-4.12]; MPR: 69.2%