Retrospective Analysis of Patients With Hairy-Cell Leukemia Treated at a Public Reference Hospital in Brazil

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Introduction

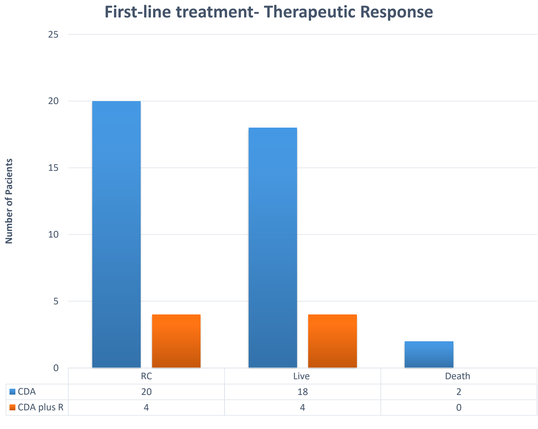
Hairy-cell leukemia (HCL) is a rare B-cell chronic lymphoproliferative disorder whose prognosis has improved with the use of purine nucleoside analogs, such as cladribine (CDA) and pentostatin and Rituximab (R). The morphological identification of hairy cells in the peripheral blood, bone marrow (BM), and spleen requires characterization by multiparametric flow cytometry. Atrephine BM biopsy is necessary to quantify the tumor burden and complete the diagnosis using annexin A1 expression. The landscapeof HCL treatment is changing rapidly, and diagnostic and therapeutic advances in this disease justify efforts to profile patients treated in the Brazilian public health system.

Objectives

Analyze the epidemiological profile of patients affected by HCL in a public reference service in Brazil, considering the epidemiological, laboratory, and clinical variables at diagnosis, the type of treatment used, therapeutic response and infectious complications.

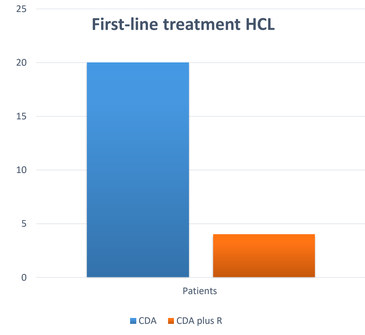
Methods

- We performed a retrospective analysis of 24 patients diagnosed with HCL who were treated at the largest hematology clinic in the Central-West region of Brazil (Base Hospital of the Federal District) between May 1, 2019, and May 1, 2025.
- The HCL diagnosis was established by assessment of PB and/or BM including flow cytometry and immunohistochemistry, as per WHO criteria.
- All patients included in the analysis signed an Informed Consent (IC). All procedures were performed according with Declaration of Helsinki.
- Continuous demographic and clinical characteristics of the patients (e.g., age) were reported through the median with 5th and 95th percentiles, together with the total number of non-missing observations. Categorical parameters (age, gender, Overall response rate [ORR], CR or MRD negativity) were reported using absolute and relative frequencies.
- Statistical analyses were performed using PRISM®.



Results

- N= 24 patients: 66% (n=16) were men and 34% (n=8) were women; the median age was 52 years (range, 42–79 years);
- At diagnosis, fever (80%) was the most common symptom, followed by symptomatic spleen (90%), weight loss (70%), neutropenia (neutrophils<1,000×10^9/L; 66%), and fatigue (60%).
- Of the diagnostic methods, all 24 patients underwent confirmatory flow cytometry analysis, the results of which demonstrated positivity for CD11c, CD25, CD103, and CD123 and BM biopsy results were negative for cyclin D1 plus positive for annexin A1 in all cases.
- Systemic arterial hypertension was the most frequent comorbidity (50%), and 20% of patients were current smokers.
- The median interval from diagnosis to first-line treatment initiation was approximately four months (range 2 to 8 months).
- Granulocyte colony-stimulating factor was used in 100% of cases, cladribine monotherapy was used in 83% (n=20), and rituximab plus cladribine combination therapy was used in 17% (n=4).
- During cladribine therapy, four patients (19%) required hospitalization and therapy with IV antimicrobials for neutropenic fever.
- Complete response was achieved by 92% (n= 22) of patients with measurable residual disease (MRD) negativity by multiparameter flow cytometry (MFC);
- With a median follow-up of 4.8 years, none patient has experienced disease relapse and 2 patients died (1 from COVID-19 and 1 from fusariosis).



Abbreviations: HCL, hairy cell leukemia; CDA Cladribine, R rituximabe

Summary

The present study demonstrates access to treatments with cladribine and rituximab, high complete response rates, and low mortality and infectious complication rates in patients with HCL treated in a Brazilian public hospital.

In HCL, CDA plus R, with R started concomitantly with CDA is an increasingly therapeutic approach in first line therapy.

References

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