

Bendamustine as Front-Line Therapy in T-Cell Prolymphocytic Leukemia: A Monocentric Experience

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Background

T-cell prolymphocytic leukemia (T-PLL) is a rare T-cell-neoplasm that is characterized by uncontrolled proliferation of mature T-cell lymphocytes with a very poor prognosis. Nowadays, alemtuzumab as a single agent is the best available option for both treatment-naïve and relapsed/refractory patients; however, its efficacy is hampered by various adverse events (AEs) such as infusion-associated reactions, autoimmune AEs, and opportunistic infections.

Objective

We conducted a monocentric, retrospective study to evaluate the safety and efficacy of bendamustine, which is a bifunctional mechlorethamine derivative with alkylating and antimetabolite activities, as first-line therapy in patients unfit for alemtuzumab.

Materials & Methods

We collected clinical and biological data of 7 T-PLL patients treated with bendamustine between 2014 and 2020 in our institution. Four out of seven (57%) were males, the median age at diagnosis was 73 years (65–83 years). The median time from diagnosis to treatment was 15 months. (Table 1).

Bendamustine was administered intravenously (90 mg/m² on days one and two, every four weeks) for up to six cycles.

Table 1: Patients characteristics

Patient	Age	Sex	Treatment criteria	Best response	Second-line treatment	Status
Pt 1	73	F	dubling time	CR	no	alive
Pt 2	76	M	cytopenia	NR	no	death
Pt 3	75	M	cytopenia	CR	no	alive
Pt 4	72	F	cytopenia	CR	yes (gemcitabine)	death
Pt 5	83	F	cytopenia	PD	no	death
Pt 6	65	M	dubling time	PR	yes (bendamustine)	death
Pt 7	72	M	splenomegaly	SD	yes (bendamustine)	death

References

1. Consensus criteria for diagnosis, staging, and treatment response assessment of T-cell prolymphocytic leukemia, *Blood* 2019
2. Bendamustine is effective in T-cell prolymphocytic leukaemia, *Br J Haematology* 2015
3. Advances and Perspectives in the Treatment of T-PLL, *Curr Hematol Malig Rep* 2020
4. Bendamustine salvage therapy for T cell neoplasms, *Ann Hematol* 2013

Results

Overall response rate was 57%, 3 patients achieved complete response (43%), and one partial response (14%). One patient experienced stable disease, and two patients progressed during treatment. Five patients (71%) experienced a relapse.

Median overall survival (OS) was 63.7 months (19–108); median OS for responding patients was 187 months versus 24 months for non-responding patients (p=0.093). Median progression-free survival (PFS) was 12 months (11–13).

Three patients received second-line therapy: one patient was treated with gemcitabine; the others received a second bendamustine course. Two patients received a third-line therapy with combination chemotherapy: COMP (prednisone, cyclophosphamide, vincristine, myocettm) and CVP (cyclophosphamide, vincristine, prednisone). Two patients experienced infusion-associated reactions. Four patients experienced hematological toxicities: one thrombocytopenia G3, 3 neutropenia G3 requiring G-CSF administration.

Four patients received co-trimoxazole prophylaxis, one received acyclovir prophylaxis. One patient experienced herpetic retinitis.

Premature termination (<3 cycles) occurred in two patients for progressive disease.

Conclusions

Our data are consistent with scientific literature. This treatment is feasible and safe, with an acceptable toxicity profile. Although alemtuzumab remains the standard of care of this rare disease, bendamustine might be a valid option either for unfit patients or for undeferrable disease.

