CD5+, CD11c+, TRAP-POSITIVE CHRONIC LYMPHOCYTIC LEUKEMIA/PROLYMPHOCYTIC LEUKEMIA

To the Editor:

We read with interest the two recent reports in Blood1,2 outlining a unique subset of the chronic lymphoproliferative disorders with morphologic features of chronic lymphocytic leukemia (CLL) and/or prolymphocytic leukemia (PLL). In addition to the characteristic expression of CD5, these patients exhibited concurrent expression of CD11c previously considered specific for hairy cell leukemia (HCL). Both reports noted that tartrate-resistant acid phosphatase (TRAP) was negative in all patients tested. We report a CLL/PLL patient with CD5 and CD11c expression who also exhibited TRAP positivity. The patient is a 65-year-old Caucasian female who presented in 1987 with shoulder pain. There was no lymphadenopathy or organomegaly. The leukocyte count was \(30.5 \times 10^9/L\) with 90% lymphocytes. Limited immunophenotypic analysis of these lymphocytes showed CD19+, CD5+ and moderate intensity \(\kappa\) light chain positivity.

Over the next 4 years the patient was treated with intermittent courses of low-dose chlorambucil, prednisolone, and cyclophosphamide. In May 1991, she had developed palpable splenomegaly (4 cm below left costal margin) with no lymphadenopathy. The leukocyte count was \(300 \times 10^9/L\) with neutrophils of \(3 \times 10^9/L\), smear cells \(69 \times 10^9/L\), and lymphocytes \(228 \times 10^9/L\), 27% of which had characteristic prolymphocytic morphology with a regular cytoplasmic outline. The hemoglobin was 85 g/L and the platelet count was \(167 \times 10^9/L\).

Bone marrow aspirate displayed normal megakaryopoiesis and markedly reduced erythropoiesis and myelopoiesis with 80% small lymphocytes and 20% prolymphocytes. The trephine was 90% cellular with a diffuse infiltration of lymphocytes. Reticulin was mildly increased.

TRAP staining of the peripheral blood and bone marrow was positive in the majority of prolymphocytes. Electron microscopy (EM) confirmed the presence of populations of mature lymphocytes and prolymphocytes (Fig 1).

Immunophenotypic analysis of peripheral blood and bone marrow displayed positivity for CD5, CD19, CD20, CD22, surface \(\kappa\) 59% (moderate intensity), CD11b, and CD11c with CD11/CD19 coexpression. In addition, the cells were negative for CD25 and CD10.

With light microscopy and EM, the lymphoproliferative disorder of the patient is consistent with CLL/PLL. The expression of CD5 together with the monoclonal light chain expression of moderate intensity concurs with this classification. CD11c and CD11c/19...
coexpression was present, whereas CD25 was absent. Importantly, no cytoplasmic projections or ribosomal lamellar complexes characteristic of HCL were noted on EM.

What is intriguing about the current patient is her TRAP positivity. Although TRAP positivity is classically associated with HCL, 10% of HCL are TRAP-negative, and up to 5% of PLL patients exhibit TRAP positivity.

Although we partly agree with Hanson et al's proposal that "CD11c-positive, Leu 8, CD25 and TRAP negative B-cell malignancy constitute a spectrum of disorders...intermediate between CLL and HCL," we do not consider TRAP negativity an absolute criterion for phenotypic inclusion into this group of chronic lymphoproliferative disorders. It will be necessary to review a greater number of patients, and a spectrum of intermediate chronic lymphoproliferative disorders will clearly be necessary in the evaluation of HCL, but are not essential for the diagnosis of HCL. The finding of TRAP positivity in this case of chronic lymphocytic leukemia and hairy cell leukemia. Blood 76:2360, 1990


REFERENCES


CD5+, CD11C+, trap-positive chronic lymphocytic leukemia/prolymphocytic leukemia [letter; comment]

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