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N-Acetyl-β-D-Glucosaminidase Activity in T Chronic Lymphocytic Leukaemia

G.		Basso
M.G.		Cocito
A.		Pezzutto
G.		Semenzato

Department of Pediatrics and Department of Internal Medicine, University of Padua, Italy

Giuseppe Basso, MD, Clinica Pediatrica, Università di Padova, Via Giustiniani, 3, I-35100 Padova (Italy)

To the Editor,

Dempsey et al. [1] recently emphasized the importance of evaluating β-glucosaminidase levels, in association with β-glucuronidase levels, and acid phosphatase activities in the differentiation of T lymphoproliferative disorders. To further confirm the results obtained, they proposed the use of this enzyme in a larger series of chronic lymphocytic leukaemia of T cell origin (T-CLL). The statement of these authors prompts us to submit the data that we have obtained on the behaviour of β-glucosaminidase in 3 patients with T-CLL. β-Glucosaminidase activity was performed on fresh peripheral smears fixed with formalin for 6 min by the hexazonium pararosanilin method [2]. Results are expressed as percent of positive cells according to criteria previously described [3], which improve conditions for observation and make it less dependent on subjective estimations. Table I summarizes the values for β-glucosaminidase found in the 3 T-CLL patients, in 35 B-CLL patients, and in 10 normal donors. We note that in T-CLL cases the enzyme activity was significantly higher than in B-CLL, with values approaching those observed in circulating T cells from healthy subjects. Our data are in agreement with results obtained by Dempsey's laboratory and support the advice to introduce this

Table I. Results of cytochemical study of β-glucosaminidase in CLL and T normal lymphocytes

T-CLL

B-CLL
(35 patients)
Controls'1

case 1
case 2
case 3

E rosettes β -Glucosaminidase

91

65

92 39

96

78

10.2 ± 2.1^b 6.1 ± 1.0^b

80.8 ± 2.8^b

a T lymphocytes of 10 normal controls obtained by rosetting procedure. **b** Mean $\pm$ SE

70

Basso/Cocito/Pezzutto/Semenzato

T-CLL suggest that leukemic cells in this rare variety of the disease derive from almost mature T lymphocytes.

Fig. 1. β -Glucosaminidase activity in lymphocytes of T-CLL.

cytochemical technique in studying chronic lymphoproliferative disorders.

In a previous paper [3] we demonstrate a progressive appearance of six cytochemical enzymes during the T cell ontogenesis: among these β -glucosaminidase activity is present only in late stages of T cell maturation. According to this interpretation the high values for β -glucosaminidase found in

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