Phenotypic Characterization of Adult Acute Lymphoblastic Leukaemia: Are Cytoplasmic Immunoglobulins Related to Prognosis?

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The detection of cytoplasmic immunoglobulins (Cylg), the positivity to several early B cell lineage-specific monoclonal antibodies (MoAb), and the demonstration of immunoglobulin-gene rearrangements, provide evidence that common (CALLA+) acute lymphoblastic leukaemia (ALL) blast cells belong to, or differentiate along the B-cell lineage [1-3]. Only a few cases of ALL arrive to express a mature, surface membrane immunoglobulin positive (Smlg+) B cell phenotype, that is invariably associated with a very poor prognosis either in adults or in children [3, 4]. Therefore also early B cell differentiation markers can have an important relationship with prognosis. In fact, a pediatric oncology group [5] reported that the 1st complete remission length was significantly shorter in children with CALLA+ Cylg+ leukaemia than in children with CALLA+ Cylg- disease. That finding alerted on the possibility that the expression of early-B-lineage markers is also associated with a poorer prognosis. In adults, the frequency of Cylg+ ALL seems to be the same as in children (32% vs. 27%) [5,6] but a comparison between Cylg+ and Cylg- cases has not yet been attempted. Over the last 4 years, we have studied the phenotype of the cells of 41 consecutive adult patients (more than 15 years old) with ALL, by contemporary detection of Smlg and Cylg [1,7] and by means of a panel of MoAb, including anti-la (Ortho Ph. C), anti-CALLA (Vil-AI kindly provided by Dr. W. Knapp; or J5, Coulter Clone), OKT6 and OKT11 (Ortho Ph. C), and RFT1 and RFT2 (kindly provided by Dr. G. Janossy). Anti-BA1 and Anti-BA2 MoAb (Hy-britech) were tested in 18 cases. Other MoAb were used whenever appropriate. Twenty-seven patients (66%) were negative for any T markers and for Smlg, and were CALLA+. Ten of these 27 cases (37%) were Cylg+, i.e., they had 15-70% Cylg+ cells (mean and median = 40%). All patients were treated according to the L17M protocol with arm B consolidation, without implantation of an Ommaya reservoir [8]. The median time at risk is 25 months for Cylg- patients and 29 months for Cylg+ ones. A comparison between Cylg+ and Cylg- patients is shown in table I. The two groups are quite similar, with regard to presenting features and treatment outcome. Numbers are small, so that the probability of not detecting an existing difference is high. However, a big difference such

Table I. Presenting features and outcome of therapy of Cylg- and Cylg+ adult patients

as that related to very strong prognostic markers, e.g., SmIg+, L3, Ph+ [3, 4], seems unlikely. For a minor difference to be detected, further information on the clinical relevance of the detection of CyIg is urgently and rapidly needed.

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