Cyclin E but not bcl-2, bax or mcl-1 is differentially expressed in ZAP 70-positive and ZAP 70-negative B-CLL cells.

The clinical course of chronic lymphocytic leukemia is variable. While some patients have indolent disease, others require aggressive treatment within a short time after diagnosis. Differences in the expression of proteins regulating cell cycle and apoptosis may be responsible for the heterogeneous course of the disease. Recently, protein ZAP 70 [zeta-chain (T-cell receptor) associated protein kinase 70 kDa] has been found to be differentially expressed within two biologic subgroups, characterized by the presence or absence of somatic mutations in specific immunoglobulin heavy-chain variable region genes. In the present work, we analyzed highly purified B-CLL cells from 60 patients for ZAP 70 expression and the expression of cyclin E, bcl-2, bax, and mcl-1 as well as the ratios of bcl-2/bax and mcl-1/bax. The results indicate that cyclin E is expressed significantly higher in ZAP 70-positive as in ZAP 70-negative samples. We did not observe significant differences within the expression of Bcl-2 family memberproteins. We conclude that higher cyclin E expression in samples of ZAP 70-positive patients may reflect a larger proliferating compartment in vivo compared to ZAP 70-negative patients and that cyclin E may add prognostic information in this context for patients with B-CLL.