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Prognostic value of T-cell CD38 expression in B-chronic lymphocytic leukemia

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Abstract

B-cell chronic lymphocytic leukemia (B-CLL) is a heterogeneous disease with some patients having an indolent course never needs treatment, while others having rapidly progressive one requires intensive treatment. In recent decades, numerous prognostic markers, such as IgVH mutational status, ZAP-70 and the expression of CD38 on leukemic cells were introduced to screen for patients likely to have progressive course of B-CLL bearing the potential to facilitate risk-adapted treatment strategies.

In B-CLL, T cell function is shown to be dysregulated. CD38 has been demonstrated to be an important transmembrane signaling molecule of T cell with a direct effect on its function. The present study was conducted to analyze CD38 expression on T cells by flow cytometry to evaluate its impact on the clinical course of 88 unselected B-CLL patients and correlate it with other risk factors. CD38 expression level on T cells was shown to predict the clinical course of B-CLL in male patients but not in female patients. Male patients showed CD38 expression on T cells in a stage-dependent manner, in contrast to female patients who showed higher expression irrespective to clinical staging. CD38 expression on T cells negatively interacted with treatment-free survival in male patients. Multivariate analysis revealed that CD38 expression level on T cells is an independent prognostic factor in B-CLL male patients. A simultaneous evaluation of CD38 expression on both B-CLL cells and T cells allowed predicting male patient groups with the most favorable prognosis as well as those with the worst.