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CD49d and CD26 are independent prognostic markers for disease progression in patients with chronic lymphocytic leukemia

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Objective: CLL is characterized by extremely variable clinical course. Several prognostic factors can predict disease progression and therapeutic outcomes in those patients. The aim of the present study was to evaluate the use of CD49d and CD26 as independent prognostic markers in CLL patients.

Methods: The present study measured surface expression of CD49d and CD26 by three-color flow cytometry in a series of 103 previously untreated CLL patients. We evaluated the prognostic role of CD49d and CD26 to predict the risk of lymphocyte doubling, disease progression and overall survival.

Results: We confirmed that CD49d and CD26 were significant predictors of lymphocyte doubling (P<0.001 for both markers) and disease progression (P<0.001 for both markers) but insignificant for overall survival (P=0.303 and 0.519 respectively). Furthermore, multivariate analysis between clinical parameters and flow cytometry markers revealed that CD49d and CD26 are independent prognostic markers for lymphocyte doubling (HR=1.487 P=007 and HR=2.248, P=0.014 respectively) and progression to a more advanced stage (HR=3.191, P=0.049 and HR=7.887, P=0.003). Also, concordant expression of both markers was found to improve their predictive power.

Discussion: Many studies reported that CD49d and CD26 combined analysis was found to improve their power to predict the risk of lymphocyte doubling and disease progression.

Conclusion: CD49d and CD26 have independent prognostic value and we suggest its use as a part of routine panel for prognostic stratification of CLL at diagnosis.

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Updates in pediatric acute lymphoblastic leukemia (ALL): Past, present and look to the future

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Officially diagnosed in 1845, four types of leukemia were classified in 1913. Historically, it was treated with arsenic as mentioned by Hippocrates (460-370 BC). A fatal disease with survival of a few months, found the ray of hope in 1950 wherein Farber successfully brought a brief remissions using ACTH. In late fifties, first systematic chemotherapy trials were conducted and five years survival of 3% was achieved. First confirmed cure of leukemia was seen in early 70's and in last decade of 20th century, 70% cure rates were observed. CCG studies discovered the benefits of escalating dose intensity and addition of steroids in Induction and Re-Induction therapy. The focus was then shifted towards decreasing toxicity and late effects of the therapy. CCG-1961 was the first high-risk ALL trial in CCG to eliminate cranial radiation for all rapid early responder patients. With this, concept of tailoring the intensity of the treatment according to the risk of relapse started finding its roots. For very high risk group, stem cell transplantation emerged as the treatment of choice. Genomic profiling which helped improving risk stratification also alluded effectiveness of tyrosine kinase inhibitors in HR/VHR groups. We have successfully achieved cure rates of more than 80%. Interim analyses from various studies indicate a possible improvement to 90-95% in certain subgroups. Data on clinical features present at diagnosis and particular sentinel cytogenetic and/or molecular abnormalities is vital in establishing the new risk classification algorithm for finding the high quality cure in nearly all children with ALL.

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