Hyperleukocytosis and Chronic Lymphocytic Leukemia: Comparing Clinical, Immunophenotypic, and Cytogenetic Data

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Abstract

Chronic lymphocytic leukemia (CLL) is one of the most common leukemias with approximately 14,570 new diagnoses and 4,380 deaths per year in the US. Although the clinical course is typically indolent, there are some variations that are poorly understood. Hyperleukocytosis (absolute leukocyte count exceeding 100,000 cells/mm3) in CLL has been clinically described in the literature but immunophenotypic and cytogenetic characteristics have not been explored. This study examined retrospective data from hematopathology reports of patients with typical CLL and the hyperleukocytic variant to compare clinical, immunophenotypic, and cytogenetic differences between the two groups. We found significant clinical implications in hyperleukocytosis, particularly thrombocytopenia. Flow cytometry showed that hyperleukocytic CLL cells where immunophenotypically identical. Our data did not demonstrate any difference in cytogenetic events, however limitations in our data gathering warrants further future investigation. Our research suggests that development of hyperleukocytosis is an independent event from IgVH mutation status, a leading prognostic indicator. The impact on hyperleukocytosis in CLL on long term survival is still uncertain.