The Relationship Between Typical and Atypical B-Cell Chronic Lymphocytic Leukemia: A Comparative Genomic Hybridization-Based Study

Abstract

B-cell chronic lymphocytic leukemia (CLL) can be classified as typical or atypical based on morphologic and immunophenotypic features. The relationship between these 2 groups is uncertain, and there is some evidence they may be different entities. We used comparative genomic hybridization (CGH) to explore the cytogenetic relationship between typical and atypical B-cell CLL. Results showed a similar pattern of chromosome gains and losses detected in typical and atypical B-cell CLL, suggesting they are related disorders. Gain on chromosome 12 material occurred in cases that were apparently normal by interphase fluorescence in situ hybridization (FISH). The common region mapped to chromosome 12q21. Gains on chromosome 4 were present in 74% (32) of cases analyzed and were confirmed by interphase FISH in 30% (13) of cases. We previously have shown the strong association between trisomy 12 as detected by FISH and CD11a expression in atypical B-cell CLL. In the present study, CGH demonstrated additional gains on 12p and 12q outside the common amplified region of 12q21 in these patients.

Keywords: Typical B-CLL, Atypical B-CLL, Trisomy 12, Partial Trisomy 12, Comparative Genomic Hybridisation (CGH)

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