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Acute lymphoblastic leukemias with deletion of 11q23 or a novel inversion (11)(p13q23) lack MLL gene rearrangements and have favorable clinical features

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Abstract

Balanced translocations affecting the 11q23 region are among the most frequent chromosomal abnormalities in childhood acute lymphoblastic leukemia (ALL), comprising 5% to 6%. These cases consistently have a rearranged MLL gene and are associated with high-risk presenting features, hyperleukocytosis and younger age, and a poor treatment outcome. To assess the clinical and biologic significance of 11q23-associated structural chromosomal abnormalities other than translocations, we studied 17 cases of childhood ALL [14 with del(11)(q23) and 3 with inv(11)(p12q23)] that were identified among 785 cases with successful chromosome analysis. In contrast to reported cases with 11q23 and MLL gene rearrangement, our series was characterized by relatively low leukocyte counts (median, 15.1 x 10(9)/L), expression of CD10 antigen but not myeloid-associated CD15 and CDw65 antigens, a relatively high frequency of T-cell immunophenotypes, and a generally favorable prognosis. All 13 cases with interpretable molecular analysis lacked MLL gene rearrangements. We suggest that most cases with deletions or inversions affecting the 11q23 region represent clinically and biologically different entities as compared with those defined by 11q23 translocation.

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