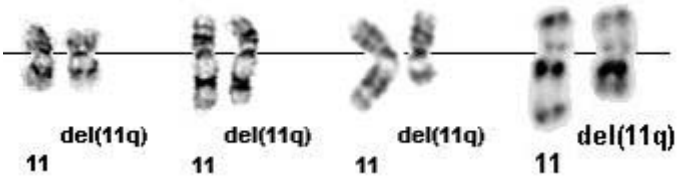
del(11q) in non-Hodgkin's lymphoma (NHL)

Identity



del(11q) G- banding (the 3 left partial karyotypes) - Courtesy Diane H. Norback, Eric B. Johnson, Sara Morrison-Delap Cytogenetics at the Waisman Center; R-banding (right) - Editor

Clinics and Pathology

Disease the overall incidence in NHL is 4-5%, the highest incidence having been reported in mantle cell lymphoma, where up to 70% of the cases studied by FISH may harbour a cryptic deletion in association with the classical t(11;14) translocation; FISH detects an approximate 10% incidence of 11q deletion among other histologic subsets of B-NHL; among diffuse large B-cell lymphoma the 11q- chromosome shows a preferential association with the immunoblastic variant; sensitive molecular cytogenetic methods may show 50-70% of T-cell prolymphocytic leukemia to carry an 11q deletion involving the ATM gene

Prognosis a possible association between 11q-/ATM- and poor prognosis in B-cell NHL was reported

Cytogenetics

Cytogenetics Morphological the chromosome 11q deletion occurring in NHL most frequently affects the q22-23 bands; the 11q- anomaly occurs as a secondary change in the majority of cases

Cytogenetics Molecular because the size of the deleted segment may be beyond the resolution power of conventional banding analysis, many cases can only be detected by interphase FISH or other genetic methods using probes targeting the 11q22.3-q23.1 region

Genes involved and Proteins

Note the region of minimal deletion was narrowed down to a 2-3 Mb pair segment where the ataxia teleangiectasia (ATM) gene is located; sequencing studies showed mutation in the remaining ATM allele in a significant fraction of cases

External links

Other database	del(11q) in non-Hodgkin's lymphoma (NHL)	Mitelman database (CGAP - NCBI)

Bibliography

Correlation of chromosome abnormalities with histologic and immunologic

characteristics in non-Hodgkin's lymphoma and adult T-cell leukemia-lymphoma.
Fifth International Workshop on chromosomes in leukemia-lymphoma.
Blood 1987; 70: 1554-1564.

Chromosome 11q rearrangements in B non Hodgkin's lymphoma.
Vandenberghe E, De Wolf Peeters C, Wlodarska I et al.
Br J Haematol 1992; 81: 212-219.

Molecular cytogeneytic delineation of a novel critical genomic region in chromosome bands 11q22.3-23.1 in lymphoproliferative disorders.
Stilgenbauer S, Liebish P, James MR, et al.
Proc Natl Acad Sci USA 1996; 93: 11837-11841.

Cytogenetic and interphase cytogenetic characterization of atypical chronic lymphocytic leukemia carrying BCL1 translocation.
Cuneo A, Bigoni R, Negrini M, et al.
Cancer Res 1997; 57: 1144-1150.

Biallelic mutations in the ATM gene in T-prolymphocytic leukemia.
Stilgenbauer S, Schaffner C, Litterst A, et al.
Nature Med 1997; 3: 1155-1159.

Inactivation of the ATM gene in T-cell prolymphocytic leukemias.
Stoppa-Lyonnet D, Soulier J, Laugé A, Dastot H, Garand R, Sigaux F, Stern MH.
Blood 1998; 91: 3920-3926.

Clinicopthogenetic significance of chromosomal abnormalities in patients with blastic peripheral B-cell lymphoma.
Schlegelberger B, Zwingers T, Harder T, Nowotny H, Siebert R, Vesely M, Bartels H, Sonnen R, Hopfinger G, Nader A, Ott G, Muller-Hermelink K, Feller A, Heinz R, for the Kiel-Wien-Lymphoma Study Group.
Blood 1999; 94: 3114-3120.

Molecular characterization of 11q deletions points to a pathogenetic role of the ATM gene in mantle cell lymphoma.
Stilgenbauer S, Winkler D, Ott G et al.
Blood 1999; 94: 3262-3264.

Acquired deletion of the ataxia teleangiectasia (ATM) LOCUS in non-Hodgkin's lymphoma: correlation with clinicobiological features.
Cuneo A, Bigoni R, Rigolin GM, Roberti MG, Bardi A, Negrini M, Sabbioni S, Russo G, Narducci MG, Minotto C, Agostini P, Campioni D, Milani R, Castoldi GL.
J Clin Oncol 2000; 18: 2607-2614.

Contributor(s)

Written 01-2001 Antonio Cuneo, Gianluigi Castoldi

Citation

This paper should be referenced as such :

Cuneo A and Castoldi G . del(11q) in non-Hodgkin's lymphoma (NHL). Atlas Genet

Cytogenet Oncol Haematol. January 2001 .
URL :
http://www.infobiogen.fr/services/chromcancer/Anomalies/del11qNHLID2020.html