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Leukaemia Section

Mini Review

del(13q) in non-Hodgkin's lymphoma

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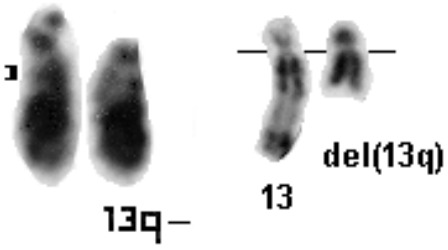
Identity

Note: the chromosome 13q deletion is a relatively common finding in chronic myeloproliferative disorders and lymphoid neoplasias, including B-cell chronic lymphocytic leukemia (CLL), non-Hodgkin's lymphoma (NHL) and multiple myeloma (MM). Whereas the commonly deleted region comprise a 100-kb gene-rich segment at the 13q14 chromosome band in CLL, the commonly deleted segment in NHL was not characterized in detail.



del(13)(q14q21) in NHL (G-banding) - Antonio Cuneo; the vertical bar indicates the missing chromosome segment (left); del(13)(q14q33) R- banding (right) – Editor.

Clinics and pathology

Disease

B-NHL

Phenotype/cell stem origin

Peripheral B-cells at different stages of differentiation.
Pre germinal centre: small lymphocytic lymphoma (SLL), mantle cell lymphoma (MCL).
Post-germinal centre: marginal zone B-cell lymphoma (MZBCL) follicle centre cell lymphoma (FCCL), diffuse large cell lymphoma (DLCL).

Epidemiology

Incidence.
SLL: 5-10% of all NHL diagnosed by surgical biopsy.
MCL: 5-10% of all NHL in western countries.
MZBCL: 0-15% of NHL, including the extra-nodal form the nodal and the splenic form.
FCCL: 30-40% of NHL.
DLCL: 30-40% of NHL.

Clinics

SLL: low-grade histology, usually running an indolent course; survival largely dependent on clinical stage at presentation.
MCL: intermediate-grade histology, poor response to therapy, median survival 3-4 years.
MZBCL: low-grade histology, indolent disease, median survival >5 years.
FCCL: low-grade histology, indolent disease, median survival > 5 years.
DLCL: high grade histology, aggressive disease, survival influenced by age, stage at presentation, performance status.

Prognosis

The significance of 13q- is uncertain because of heterogeneity of patients population and histology; a low CR rate was described but it is not clear whether this depends on its close association with MCL.

Cytogenetics

Additional anomalies

With the notable exception of SLL/CLL the 13q deletion is not found as an isolated change in NHL;

Histology	Frequency of 13q-	
	by conventional chromosome analysis	by FISH using a 13q14 probe
SLL and MCL	5-10%	40-60%
MZBCL, FCCL,	<5%	10-17%
DLCL	<5%	10-40%
T-cell NHL (all, including CD30+)	<5%	10-40%

it was reported as a stemline-associated anomaly in most cases having complex karyotypes, suggesting that it may represent a relatively early event in the cytogenetic history of NHL; the association with other anomalies reflects the incidence of the 13q- chromosome in distinct histologic subsets: thus it was frequently found in karyotypes presenting the t(11;14)(q13;q32); many patients with the inv(14)(q11q32), associated with T-cell lymphoid neoplasias, were found to carry a 13q- chromosome.

Genes involved and proteins

Note

Involved loci: the few characterized cases showed a deletion of the D13S319 marker, located between the Rb locus and the D13S25 marker; FISH studies were performed using probes targeting the Rb locus or the loci comprised between Rb and the D13S25 marker.

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