

Leukaemia Section

Short Communication

t(3;8)(q27;q24)

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Clinics and pathology

Disease

Non Hodgkin lymphoma (NHL)

Phenotype/cell stem origin

Found in diffuse large B-cell lymphoma (DLBCL) and Burkitt lymphoma (BL).

Epidemiology

4 cases to date, three cases of DLBCL and one BL. There was 1 male and 3 female patients. Patients were in their fifties (53, 53, and 56 years), apart from an eleven year old patient, but the latter was affected by a cancer-prone disease/chromosome instability syndrome, namely an ataxia telangiectasia (AT).

Clinics

The t(3;8) may be considered as a secondary event in two DLBCL cases harbouring a t(14;18) (Bertrand et al., 2007). In the third case of DLBCL, the disease was thought to have evolved from a follicular lymphoma, also present in the patient in various organs (Wang et al., 2007). To be noted that the patient with a BL had AT (Sandlund et al., 2006).

Prognosis

Prognostic data were available from only two of the four cases, with survivals noted at: 26+ mths and 114+ mths (in two DLBCL cases).

Cytogenetics

Cytogenetics morphological

Major karyotypic abnormalities in 3 of 4 cases, with +7 in two patients, +12 in two cases, t(14;18)(q32;q21) in two cases, and duplication of the der(8)t(3;8) in two cases; Other anomalies known to be

recurrent in lymphoid malignancies were also present: del(6q) (one case), and +18 (one case).

Genes involved and proteins

BCL6

Location

3q27

Protein

Transcription factor, with a N-term BTB/POZ domain and 6 zinc fingers. The protein can bind to sequence specific DNA and repress its trans-cription. Normally expressed in germinal center B and T cells

MYC

Location

8q24

Protein

Transcription factor, with a DNA binding domain, a helix-loop-helix domain and a leucine zipper. Forms heterodimers with MAX; MYC/MAX complexes bind DNA, activate transcription and promote cell proliferation and transformation.

Result of the chromosomal anomaly

Hybrid gene

Description

5' BCL6 is translocated next to MYC on the der(8).

References

Sandlund JT, Kastan MB, Kennedy W, Behm F, Entrekina E, Pui CH, Kalwinsky DT, Raimondi SC. A subtle t(3;8) results in plausible juxtaposition of MYC and BCL6 in a child with Burkitt lymphoma/leukemia and ataxia-telangiectasia. *Cancer Genet Cytogenet.* 2006 Jul 1;168(1):69-72

Bertrand P, Bastard C, Maingonnat C, Jardin F, Maisonneuve C, Courel MN, Ruminy P, Picquenot JM, Tilly H. Mapping of MYC breakpoints in 8q24 rearrangements involving non-immunoglobulin partners in B-cell lymphomas. *Leukemia*. 2007 Mar;21(3):515-23

Wang HY, Bossler AD, Schaffer A, Tomczak E, DiPatri D, Frank DM, Nowell PC, Bagg A. A novel t(3;8)(q27;q24.1) simultaneously involving both the BCL6 and MYC genes in a

diffuse large B-cell lymphoma. *Cancer Genet Cytogenet*. 2007 Jan 1;172(1):45-53

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