**Leukaemia Section**

**Short Communication**

**t(5;11)(q31;q23)**

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### Clinics and pathology

**Phenotype/cell stem origin**

1 case of chronic myelogenous leukemia (CML), one JMML evolving towards a M4-M5 type acute non lymphocytic leukemia (ANLL), two M5-ANLL, one treatment related ANLL (t-ANLL), and one L2 acute lymphoblastic leukemia (ALL).

**Epidemiology**

6 cases known in the literature; two infants, one 18 months old baby, and three adults (7, 55, 60 years); sex ration 4M/1F.

**Clinics**

WBC: 20-420 X 10^9/l

**Pathology**

In at least 2 infant cases, cutane infiltrations were noticed.

**Prognosis**

Survival (mths) was: 8+, 17, 17+, 48+ and 65+.

### Cytogenetics

**Probes**

YAC, 13HH4.

**Additional anomalies**

Sole anomaly in 5 of 6 cases; accompanied with +8 in one case.

### Genes involved and proteins

**GRAF (GTPase regulator associated with FAK)**

Location: 5q31

**MLL (Mixed Lineage Leukemia)**

Location: 11q23

**Result of the chromosomal anomaly**

**Hybrid gene**

**Description**

5' MLL-Inverted MLL-GRAF 3'

**Fusion protein**

**Description**

Hybrid transcript MLL-GRAF contains the code for the following domains: AT-hook+DNA methyltransferase (from MLL) + SH3 (from GRAF).

### References


Bower M, Chaplin T, Das S, Kearney L, Gibbons B, Riley JH, Lister TA, Young BD. The isolation of a yeast artificial chromosome which spans the chromosome 11q23 region involved in a number of translocations in acute leukemias. Leukemia. 1993 Aug;7 Suppl 2:S34-9


Borkhardt A, Bojesen S, Haas OA, Fuchs U, Bartelheimer D, Loncarevic IF, Bohle RM, Harbott J, Repp R, Jaeger U, Viehmann S, Henn T, Korth P, Scharr D, Lampert F. The human GRAF gene is fused to MLL in a unique t(5;11)(q31;q23) and both alleles are disrupted in three cases of myelodysplastic syndrome/acute myeloid leukemia with a deletion 5q. Proc Natl Acad Sci U S A. 2000 Aug 1;97(16):9168-73

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