

# Leukaemia Section

## Short Communication

### t(8;21)(q22;q22) in treatment related leukemia

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#### Identity

**Note:** This data is extracted from a very large study from an International Workshop on treatment related leukemias - restricted to balanced chromosome aberrations (i.e.: -5/del(5q) and -7/del(7q) not taken into account per se), published in Genes, Chromosomes and Cancer in 2002.

#### Clinics and pathology

##### Disease

Treatment related myelodysplasia (t-MDS) or acute non lymphocytic leukaemias (t-ANLL).

##### Note

The study included 44 cases; t-MDS with or without progression to ANLL accounted for 20% and t-ANLL for the remaining 80%; no case of acute lymphoblastic leukaemia.

##### Epidemiology

t(8;21)(q22;q22) was found in 9% of t-MDS/t-ANLL; 1M to 1F sex ratio.

##### Clinics

Age at diagnosis of the primary disease 45 yrs (range 2-75); age at diagnosis of the t-MDS/t-ANLL: 47 yrs for patients with the t(8;21) solely and 50 yrs for patients with an additional anomaly; range was(15-77). Median interval was 39 mths for cases with t(8;21) solely, and 33 mths in other cases; (range: 6-306). Primary disease was a solid tumor in 70% of cases (breast cancer in particular) and a hematologic malignancy in 30%, treated with radiotherapy (12%), chemotherapy (42%), or both (46%).

##### Cytology

Cell morphology was similar to those of de novo t(8;21).

#### Prognosis

Median survival was 17 mths and 31 mths respectively for patients without and with additionnal anomalies, but the difference was not significant. Outcome was better than the outcome of patients with 11q23 rearrangement, 3q21q26 rearrangement, 12p13 rearrangement, t(9;22), t(8;16), or a t(3;21) and worse than the outcome of patients with with t(15;17) or inv(16) treatment related leukemias.

#### Cytogenetics

##### Additional anomalies

The t(8;21) was found solely in 25% of cases; additional anomalies were: -Y or -X in 25% of cases, del(9q) in 18%, +8 in 9%, -7/del(7q) in 7%. A complex karyotype was found in 32% of cases.

#### Result of the chromosomal anomaly

##### Hybrid gene

##### Description

5' AML1 - 3' ETO; breakpoint is most often in the AML1 intron 5.

#### References

Slovak ML, Bedell V, Popplewell L, Arber DA, Schoch C, Slater R. 21q22 balanced chromosome aberrations in therapy-related hematopoietic disorders: report from an international workshop. Genes Chromosomes Cancer. 2002 Apr;33(4):379-94

*This article should be referenced as such:*

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