

## Leukaemia Section

### Mini Review

# t(15;17)(q22;q21) in treatment related leukemia

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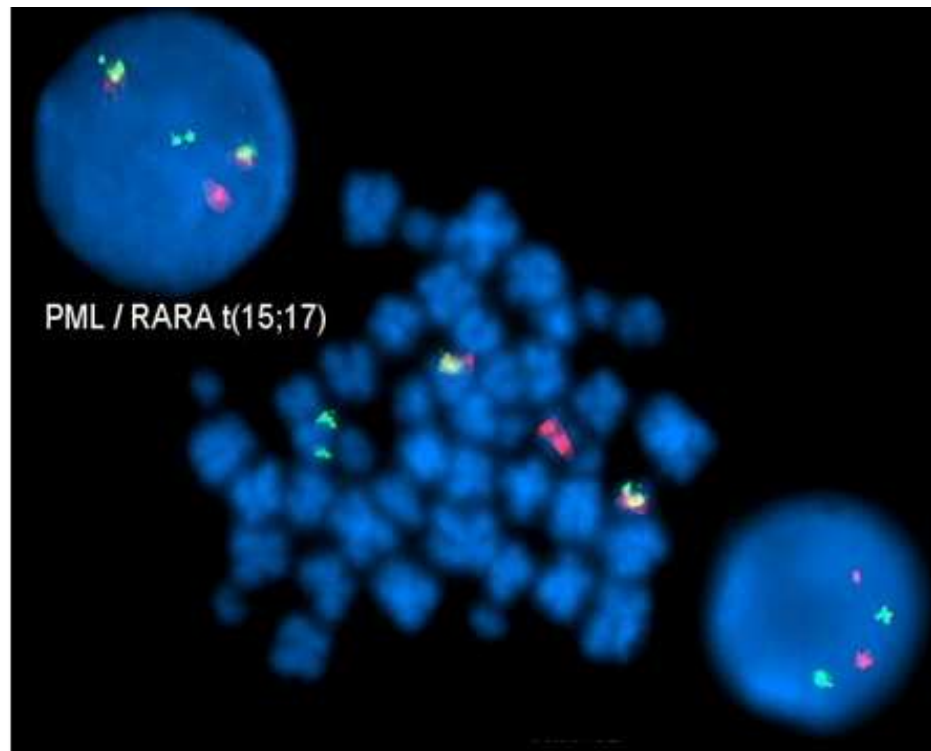
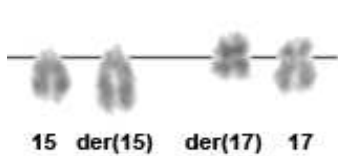
Online updated version : <http://AtlasGeneticsOncology.org/Anomalies/t1517q22q21TreatRelID1298.html>

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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 see), published in Genes, Chromosomes and Cancer in 2002.



t(15;17)(q22;q21) (or t(15;17)(q24;q21), since PML sits in 15q24, and RARA in 17q21) Top: G-banding - Courtesy Diane H. Norback, Eric B. Johnson, and Sara Morrison-Delap, UW Cytogenetic Services; Bottom and right: R- banding and FISH - Courtesy Hossein Mossafa.

## Clinics and pathology

### Disease

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

### Note

The study included 41 cases; t-MDS with progression to ANLL accounted for 7% and t-ANLL for the remaining 93% the ANLL subtype was M3 in all but one case; no case of acute lymphoblastic leukaemia.

### Epidemiology

t(15;17)(q22;q21) was found in 8% of t-MDS/t-ANLL; sex ratio: 15M/26F.

### Clinics

Age at diagnosis of the primary disease 46 yrs (range 18-79); age at diagnosis of the t-MDS/t-ANLL: 49 yrs (range 19-81). Median interval was 29 mths (range: 9-175). Primary disease was a solid tumor in 71% of cases (breast cancer in particular) and a hematologic malignancy in 27%, treatment was radiotherapy (29%, a high proportion compared to other groups), chemotherapy (17%), or both (54%). Treatment included topoisomerase II inhibitors in 49% of cases and alkylating agents in 59%.

### Prognosis

Median survival was 29 mths. Outcome was better than the outcome of patients with 11q23 rearrangement, 3q21q26 rearrangement, 12p13

rearrangement, t(9;22), t(8;16), or a 21q22 rearrangement) and similar, during the first 2 yrs to that of the inv(16) treatment related leukemias.

## Cytogenetics

### Additional anomalies

The t(15;17) was found solely in 59% of cases; additional anomalies were: +8 in 12% , -5/del(5q) in 5%, or -7/del(7q).

## Result of the chromosomal anomaly

### Hybrid gene

#### Description

5' PML -3' RARA.

## References

Andersen MK, Larson RA, Mauritzson N, Schnittger S, Jhanwar SC, Pedersen-Bjergaard J. Balanced chromosome abnormalities inv(16) and t(15;17) in therapy-related myelodysplastic syndromes and acute leukemia: report from an international workshop. *Genes Chromosomes Cancer*. 2002 Apr;33(4):395-400

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