Atlas of Genetics and Cytogenetics in Oncology and Haematology

OPEN ACCESS JOURNAL AT INIST-CNRS

Case Report Section

Paper co-edited with the European LeukemiaNet

A t(4;12)(q11;p13) in a patient with coincident CLL at the same time of AML diagnosis

Paola Dal Cin, Daniel J DeAngelo, Richard M Stone

Department of Pathology, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115, USA (PDC); Department of Adult Oncology, Dana-Farber Cancer Institute, Boston, MA (DJD, RMS)

Published in Atlas Database: May 2007

Online updated version is available from: http://AtlasGeneticsOncology.org/Reports/0412DalCinID100023.html
DOI: 10.4267/2042/38515

Clinics

Age and sex: 56 year s old male patient.
Previous History:
- no preleukemia
- no previous malignant disease (but coincident CLL at the same time of AML diagnosis. No prior therapy for CLL);
- no inborn condition of note.

Organomegaly:
- no hepatomegaly;
- no splenomegaly;
- no enlarged lymph nodes.

Blood

WBC: 52.2 x 10^9/l; Hb: 10.2 g/dl; platelets: 158.0 x 10^9/l; blasts: 86% (peripheral blood).
Bone marrow: Bone Marrow Differential:
- Cellularity : o.k.
- Megakaryocytes : present
- Blasts : 66% 'blast like' immature forms
- Promyelocytes : 1%
- Myeloid Activity : 13%
- Erythroid Activity : 6%
- Lymphocytes : 13%
- Other : -

Cytopathology classification

Cytology: M0.
Immunophenotype: A population of immature cells positive for CD45(dim), HLA-DR, CD7, CD34 (majority) and myeloid markers CD33 and CD13, with absence of staining for B cell, monocytic, and other T cell markers, consistent with myeloblast. A minor clonal kappa positive (moderate intensity) population of CD5 positive B cells which were negative for CD23 was also detected, suggesting a co-existing CD5 positive B cell lymphoproliferative disorder. A minor population of CD19 positive B cells co-expresses CD5 and exhibits monotypic surface immunoglobulin kappa light chain staining, consistent with involvement by the patient's known B cell lymphoproliferative disorder.
Rearranged Ig or Tcr: n/a.
Pathology: Cellular aspirate with prominent population of 'blast-like' large cells with dispersed chromatin, distinct nucleoli and modest amounts of blue, agranular cytoplasm.
Electron microscopy: n/a.
Precise diagnosis: Acute myelogenous leukemia and chronic lymphocytic leukemia.

Survival

Date of diagnosis: 01-2002.
Treatment: Induction: ADE consisting of daunorubicin, cytarabine and etoposide plus PSC-833 (he was randomized to the treatment arm) on CALGB 19808. Consolidation with high-dose cytarabine and etoposide with stem cell harvest as per CALGB 19808. Auto stem cell transplant: on April 24, 2002. Conditioning regimen consisted of busulfan and etoposide as per CALGB 19808.
Complete remission: + on BM on Feb 8, 2002
Treatment related death: -;
Relapse: + June 17, 2003;
Phenotype at relapse: AML M0;
Status: Dead (06-2003);
Survival: 21 months.

Karyotype

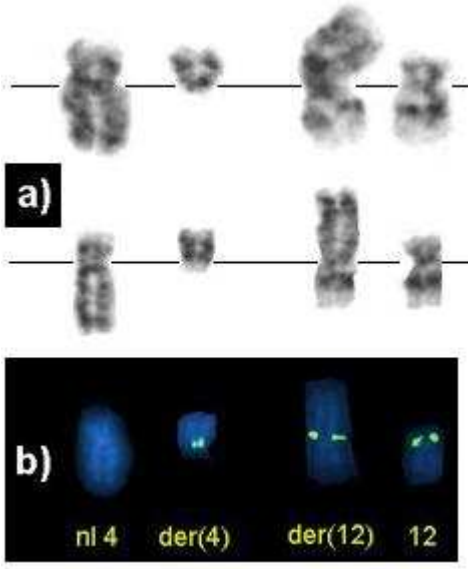
Sample: Bone Marrow; Culture time: 24 h; Banding: GTG.
Results: 46,XY,t(4;12)(q11-12;p13)[18]/46,XY[2]
Karyotype at relapse: 46,XY,t(4;12)(q11-q2;p13),+16,-17[1]/46,XY[19]

Other molecular studies

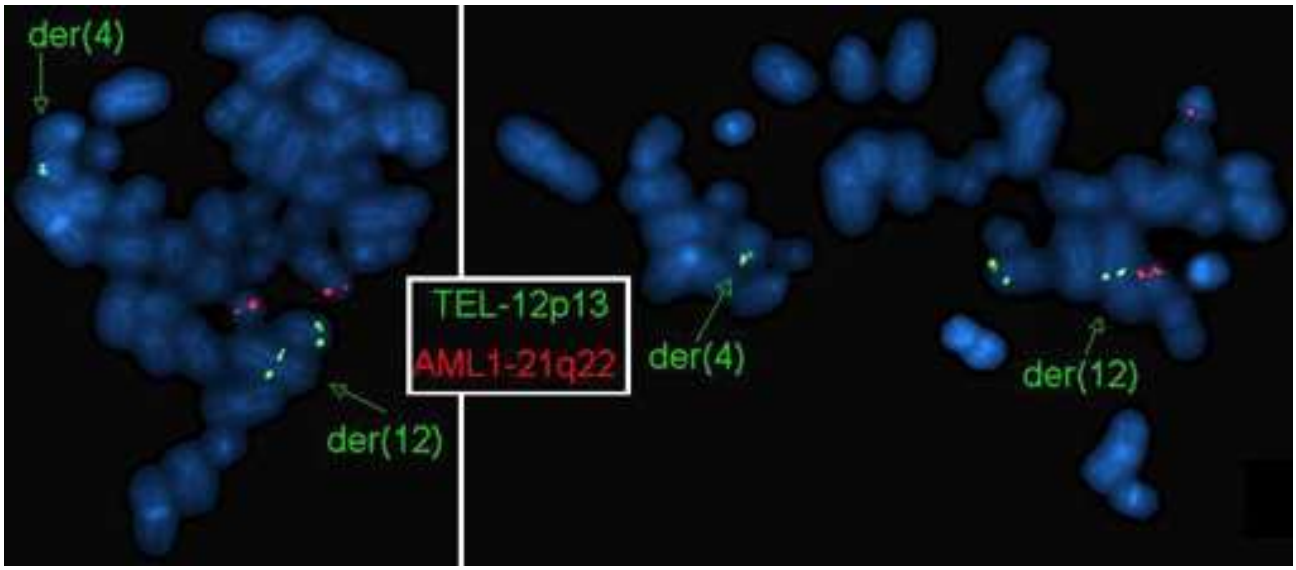
Technics: FISH with LSI (TEL/AML1 ES Dual Color Translocation Probe (Vysis, Inc.)) on metaphases.
Results : ish der(4)(dimTEL+), der(12)(dimTEL+).

Comments

The findings are consistent with AML. Although histologic features of chronic lymphocytic leukemia (CLL) are not seen, flow cytometric analysis shows a small subset of monoclonal B cells, consistent with persistent involvement by the patient's known CLL.



Partial GTG-banding karyotype showing t(4;12)(q11;p13) (a). Partial FISH analysis showing the ETV6 hybridization signals on derivative chromosomes 4 and 12, and on the normal chromosome 12 (b).



This article should be referenced as such:

Dal Cin P, DeAngelo DJ, Stone RM. A t(4;12)(q11;p13) in a patient with coincident CLL at the same time of AML diagnosis. Atlas Genet Cytogenet Oncol Haematol. 2008;12(2):188-189.