Leukaemia Section
Short Communication

der(20)t(1;20)(q10-21;q11-13)

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Published in Atlas Database: June 2015
Online updated version : http://AtlasGeneticsOncology.org/Anomalies/t0120q10q11ID1657.html
Printable original version : http://documents.irevues.inist.fr/bitstream/handle/2042/66059/06-2015-t0120q10q11ID1657.pdf
DOI: 10.4267/2042/66059

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Abstract
Review on t(1;20)(q10-21;q11-13), with data on clinics.

Clinics and pathology

Disease
Acute myeloid leukemia (AML), acute lymphoblastic leukemia (ALL), myeloproliferative neoplasm (MPN), Myelodysplastic syndrome (MDS), multiple myeloma (MM), Burkitt lymphomas and non-Burkitt type lymphomas.

Phenotype/cell stem origin
Suggested involvement of a pluripotent stem cell.

Epidemiology
Rare karyotypic event in various hematologic malignancies; AML/MDS (5 cases), ALL (4 cases), MPN (2 cases), MM (4 cases), lymphoma (4 cases). Male predominance (15 males/ 3 females); patients ages ranged from 1 to 73 years; described mainly in adults (aged 28 to 73 years); all the 4 ALL patients were children (aged 1 to 7 years) (Table 1).

Prognosis
Seems to confer a poor prognosis.

<table>
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<th>Sex</th>
<th>Age</th>
<th>Karyotype</th>
<th>Diagnosis</th>
<th>Reference</th>
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</table>
Cytogenetics

**Cytogenetics morphological**

Cytogenetically heterogeneous, the breakpoints in 1q varied from 1q10 to 1q21, with a clustering to 1q21, and the 20q breaks occurred in 20q10 to 20q13, mainly in the 20q13 region.

![Partial karyotypes showing the unbalanced t(20q)(q10;11)](image)

**Additional anomalies**

Usually present with additional chromosomal abnormalities; may be found together with well-known primary abnormalities such as t(9;22)(q34;q11), t(4;11)(q21;q23), and t(14;18)(q23;q21), t(8;14)(q24;q32).

**Result of the chromosomal anomaly**

**Fusion protein**

Oncogenesis

Unbalanced translocations involving all or part of the long arms of chromosomes 1 and 20 are found in both hematologic neoplasms and lymphomas. The abnormality is usually present with complex pattern of rearrangements or occurring in a subclone; indicating that der(20t)(1;20) might be a secondary aberration. The extra copy of 1q segment and/or 20q monosome may directly or indirectly provide a proliferative advantage leading to clonal evolution associated with tumor progression and advanced disease.

**References**


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