Leukaemia Section
Short Communication

t(X;8)(q24;q24)

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Abstract

Review on t(X;8)(q24;q24), with data on clinics

Keywords
Chromosome X; chromosome 8; Blastic plasmacytoid dendritic cell neoplasm

Clinics and pathology

Disease
Blastic plasmacytoid dendritic cell neoplasm (BPDCN)

Note
BPDCN has been known with various names, including agranular CD4+ natural killer (NK) leukemia, CD4+/CD56+ hematodermic neoplasm, and blastic NK lymphoma. BPDCN malignant cells are derived from the precursors of plasmacytoid dendritic cells. It most commonly involves the skin. BPDCN is an aggressive neoplasm. BPDCN is often associated with a complex karyotype (review in Meloni-Ehrig 2017).

Epidemiology
In a series of 41 patients with BPDCN, five had a MYC rearrangement confirmed by FISH: one had a t(X;8)(q24;q24), one had a t(3;8)(p25;q24), two had a t(6;8)(p21;q24) MYC/SUPT3H, and one had a t(8;14)(q24.1;q32) (Boddu et al., 2018).

Clinics
The patient with a t(X;8)(q24;q24) was a 3 year-old girl. She was alive and well 20 months+ after diagnosis.

Cytogenetics
The karyotype was complex, with del(6q), del(9q), and other abnormalities.

Genes involved and proteins

Note
The partner gene of MYC is unknown.

MYC
Location
8q24.21
DNA/RNA
MYC is composed of three exons spanning over 4 kb.

Protein
MYC is expressed in almost all proliferating cells. It is located predominantly in the nucleus. MYC is a transcriptional regulator, capable to induce or repress the expression of thousands genes. MYC is deregulated in cancer by several different mechanisms: chromosomal translocations, amplifications, point mutations, epigenetic reprogramming, enhanced translation and increased protein stability (review in Mohamed, 2017).

References

Mohamed AN. MYC (MYC proto-oncogene, bHLH transcription factor); Atlas Genet Cytogenet Oncol Haematol. in press http://AtlasGeneticsOncology.org/Genes/MYCID27.html

This article should be referenced as such: