+20 or trisomy 20 (solely)

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Clinics and pathology

Disease
Myeloid and lymphoid malignancies (Shabtai et al., 1978; Kristoffersson et al., 1985; Michalová et al., 1987; Palka et al., 1987; Speaks et al., 1987; Attas et al., 1989; Cuneo et al., 1989; Nayak et al., 1990; Cuneo et al., 1992; Cuneo et al., 1995; Hashimoto et al., 1995; Rigolin et al., 1997; Jaing et al., 1999; Mauritzson et al., 2001; Tamura et al., 2001; Mikhail et al., 2002; Farag et al., 2006; Paulsson et al., 2008).

Note
Trisomy 20 solely has also been reported in various benign and malignant solid tumours, in particular in desmoid fibromatosi, colonic adenomatous polyps, colorectal adenocarcinomas, fibroadenomas of the breast, breast adenocarcinoma, transitional cell carcinoma of the urinary tract, squamous cell carcinoma of the oro-pharynx and naso-pharynx; it has also been found more rarely in many other solid tumours (see records in the Mitelman Database).

Phenotype/cell stem origin
Trisomy 20 solely has been described in 20 cases of hematological malignancies:
This was a myeloid malignancy in 12 cases: six acute myeloid leukemias (AML), four myelodysplastic syndromes (MDS), and two myeloproliferative disorders (MPD). They were: two M4-AML, two M5-AML, one M0-AML, one AML not otherwise specified (NOS), one refractory anemia (RA), one RA with excess of blasts (RAEB), one chronic myelomonocytic leukemia (CMML), one MDS-NOS, and two polycytemia vera (PV). One AML, a M5-AML, appeared to be treatment-related, in a 8-year-old girl with neuroblastoma, diagnosed 32 months before onset of the leukaemia. A cryptic rearrangement of MLL was found. Survival was short (Jaing et al., 1999).

The 8 lymphoid cases were: three acute lymphoblastic leukemias (ALL) (two of which involved the T-cell lineage), one chronic lymphocytic leukemia (CLL), three non Hodgkin lymphomas (NHL) : one follicular (FL), one diffuse large B-cell (DLBL), and one T-cell lymphoma; and one Waldenstrom macroglobulinemia.

Epidemiology
In the myeloid group, there were 7 male and 5 female patients, median age was 68-72 years (range: 8-79 years, 8 of the 10 documented cases were above 60 years). In the lymphoid group, there was an unbalanced sex ratio: 6 male and 2 female patients; median age was 33-53 years (range: 7-76 years).

Prognosis
Data is very scarce, and not conclusive, inasmuch as the genes involved in these cases are unknown, and as the trisomy 20 group is probably heterogeneous from that viewpoint.

Genes involved and proteins

Note
Genes involved are unknown.

References


A recent publication by Huret JL indicates that trisomy 20 or +20 is now recognized as a significant chromosomal abnormality in various hematologic malignancies. This article should be referenced as such: