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Leukaemia Section

Mini Review

+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 fibromatosis, 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 leukaemias (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 anaemia (RA), one RA with excess of blasts (RAEB), one chronic myelomonocytic leukaemia (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 lympoid cases were: three acute lymphoblastic leukaemias (ALL) (two of which involved the T-cell lineage), one chronic lymphocytic leukaemia (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 lymploid 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 view point.

Genes involved and proteins

Note

Genes involved are unknown.

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