Atlas of Genetics and Cytogenetics in Oncology and Haematology

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Leukaemia Section

Short Communication

Near haploid acute lymphoblastic leukaemia

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Clinics and pathology

Disease

Acute lymphoblastic leukemia (ALL)

Phenotype/cell stem origin

B precursor ALL.

Epidemiology

A rare type of leukaemia; near-haploid patients tend to be children or teenagers; slight excess of females.

Prognosis

Generally short complete remission duration and poor prognosis, although long survivors have been reported.

Cytogenetics

Cytogenetics morphological

Near haploidy is usually defined as <30 chromosomes; typically the abnormal clone has 23-28 chromosomes; the pattern of chromosome loss in near-haploidy is not random as there is preferential retention of two copies of chromosomes 6, 8, 10, 14, 18, 21, and the sex chromosomes; in addition to the haploid clone it is common to see a normal diploid clone and a cell line with double the near-haploid number of chromosomes, resulting in hyperdiploidy; occasionally the near-haploid clone is hard to detect resulting in apparent hyperdiploidy; the hyperdiploid cells however tend to have 2 or 4 copies of chromosomes and can thus be distinguished from typical >50 hyperdiploid ALL ; the distinction is important as near-haploidy defines a rare type of childhood ALL associated with short median complete remission duration and poor prognosis.

Additional anomalies

Occasional structural chromosome abnormality.

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