

Leukaemia Section

Mini Review

+10 or trisomy 10 (solely)

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Clinics and pathology

Disease

Acute myeloid leukemia (AML), acute lymphoblastic leukemia (ALL), Acute Biphenotypic Leukemia, and myelodysplastic syndromes (MDS).

Note: Classification: Approximately 33 cases with isolated Trisomy 10 have been described. Over two-thirds of cases associated with this cytogenetic abnormality are AML-M0, M1, or M2; M2 is the most common AML variant in the FAB classification (one-third of cases). Trisomy 10 has been, however, described in all of the FAB variants except M3. Over half of the AML cases have been associated with CD7 expression. Twenty-one cases of AML (including one of our own cases) have been described in the literature. One case each of biphenotypic acute leukemia and eosinophilic leukemia with trisomy 10 have been described. Two cases (including one of our own cases) of high grade MDS (i.e. refractory anemia with excess blasts-2 (RAEB-2)) have been associated with isolated trisomy 10. When specified, most cases of ALL were of the Pre-B type. There have been eight cases of ALL with +10 as the sole abnormality.

Phenotype / Stem cell origin

ALL cases are mostly pre B ALL; AML cases are M0, M1 or M2 AML, with, in most cases, a CD7+, CD33+ phenotype.

Epidemiology

The incidence of isolated trisomy 10 is less than 1% in acute leukemia. About sixty percent of the AML cases have been in males while the ALL cases have had a near equal male to female ratio. About half of the AML cases have been in patients of Oriental descent. AML

cases have ranged in age from two to eighty years of age with a median age of fifty-four years. ALL cases with this cytogenetic abnormality are not strictly seen in the pediatric age range. Three cases (including one of our own cases) have been seen in the adult population.

Clinics

In ANLL cases: WBC: $20 \times 10^9/l$; high blast percentage, low haemoglobin.

Prognosis

About half of the AML cases and two-thirds of the ALL cases have had at least a one year survival after diagnosis. The average survival for AML cases has been 26 months while the ALL cases had a 19 months average survival.

Genetics

Note: genes involved are unknown.

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