



Original article

**Cytogenetic Studies in The Diagnosis and Treatment of Patients
with Various Types of Acute Leukemia**

Orinda Gregg Lynn, Krystine Galina Melville , Lila D. Katelynn

ABSTRACT

Chromosomal changes in acute leukemia patients are crucial for clinical and prognostic assessment. Differential chromosome staining helps study patients' karyotype at different stages of disease development. Cytogenetic typing of bone marrow cells is essential for monitoring graft functioning and assessing myelotransplantation's therapeutic effect. Cytogenetic studies aid diagnosis and therapy selection, with cytogenetic aberrations linked to clinical and hematological features and an additional prognosis criterion proposed. The goal of our study to identify typical and rare karyotype abnormalities in acute leukemia patients, evaluate their pathogenetic significance, and use cytogenetic research for disease diagnosis, prognosis assessment, and therapy selection. The research aims to improve cytogenetic studies by modifying chromosome preparation methods, establishing chromosomal aberrations in patients with acute leukemia, identifying the main clinical and hematological characteristics of acute leukemia based on chromosome damage type, assessing prognostic significance of cytogenetic disorders, monitoring bone marrow chimerism after transplantation, and identifying minimal residual leukemic clones. Cytogenetic studies can help identify minimal residual disease, diagnose, select therapy, and assess prognosis in patients with acute leukemia. The study found that patients with hyperdiploidy 47-50 had higher leukocyte levels at onset of the disease, with an average of $25 \times 10^9/l$. There were no significant differences in peripheral blood blast cell percentages between groups. The T-cell variant was diagnosed in 2 patients with hyperdiploidy 47-50, while B-cell IFT was detected in 3 patients. The T-cell variant was caused by structural abnormalities, such as t(8;14). The timing of achieving P GSR was different in different groups

Keywords: *Acute leukemia, Diagnosis, Cytogenetic studies Prognosis, Bone marrow transplantation*

Non-Open access article

To get the full text of this paper, please contact the editorial board or the support team at:
editor@clinician.site, support@clinician.site

