



Association of cytogenetics and immunophenotype in prognosis of children with acute lymphoblastic leukemia: Literature Review

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ARTICLE INFO	ABSTRACT
Article type Review article Article history Received: 8 Jan 2014 Revised: 15 Jan 2014 Accepted: 20 Jan 2014 Keywords Acute lymphoblastic leukemia Cytogenetic Immunophenotype Prognosis	Acute lymphoblastic leukemia (ALL) is the most common type of neoplastic disorder diagnosed in childhood. It is the cause of one third of all pediatric malignancies. ALL is characterized by the abnormal production and proliferation of immature lymphoblasts in bone marrow (BM). It seems that ALL occurs due to a genetic mutation in DNA structure producing white blood cell (WBC) stem cells. Because ALL is a systemic disease, its primary management is based on chemotherapy. There are important risk factors responsible for the poor prognosis of ALL in children less than 1 year old and greater than 10 years old, such as: high WBC, mature T cell, mature B cell, central nervous system (CNS) involvement, DNA index < 1 (hypodiploid), triploidy, tetraploidy, Mixed-Lineage Leukemia (MLL) gene re-arrangement on 11q23, the Philadelphia chromosome t(9;22), reduction in platelet count, hemoglobin > 10 at diagnosis, no remission at the end of induction therapy and Minimal residual disease at the end of consolidation therapy. Complications might appear during the treatment including tumor lysis syndrome, bleeding, renal failure, sepsis, seizure, thrombosis, etc. Some consequences might identify after a long-term follow-up such as learning impairment, growth retardation, and secondary malignancies. It is estimated that up to 90% of pediatric ALL cases are curable.

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Introduction

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