Outcome and Clinical Significance of Immunophenotypic Markers Expressed in Different Treatment Protocols of Pediatric Patients With T-ALL in Developing Countries


Abstract:

This study aimed to evaluate pediatric patients with T-cell acute lymphoblastic leukemia (T-ALL) at two different Arabic cancer centers regarding their clinicopathologic, immunophenotypic and cytogenetic features and outcome. Study included 103 patients with median age of 8.9 years. Male to female ratio was 2.6:1. Patients divided into (group I) treated with BFM-90 treatment protocol between February 2003 and June 2007 and (group II) includes all patients treated thereafter by the total therapy study XIII protocol for high-risk ALL. Outcome of patients with T-ALL significantly improved in patients received treatment protocol of ALL with high-risk criteria. This protocol eliminates the bad outcomes effect of several clinical and immunophenotypic markers. Background: T-cell acute lymphoblastic leukemia (T-ALL) accounts for about 15% of pediatric ALL. With wider use of intensive chemotherapy, the prognosis for childhood T-ALL has improved. Further gains in treatment outcome will likely require methods to identify patients who continue to fail on contemporary protocols. This study aimed to evaluate pediatric patients with T-ALL at 2 different Arabic cancer centers regarding their clinicopathologic, immunophenotypic, and cytogenetic features and outcome. Patients and Methods: This retrospective study included all children with T-ALL treated between 2003 and 2013 at 2 oncology centers in the Middle East. Patients were divided into (group I) treated with Berlin- Frankfurt-Münster (BFM)-90 treatment protocol between February 2003 and June 2007 and (group II) includes all patients treated thereafter by the Total Therapy Study XIII protocol for high-risk ALL. Results: This study included 103 patients with a median age of 8.9 years. The male to female ratio was 2.6:1. The median initial white blood cell count was 123 × 10^9/L. Central nervous system leukemia was detected in 15%. The early T-cell precursor (ETP)-ALL phenotype was found in 16.5%. The 5-year overall survival was 20.7% 67.5% and 72.9% 5.7% (P

Keywords:

ETP-ALL, Hematologic neoplasm, High-risk criteria, Pediatric leukemia, Prognosis

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