

The survival rate of childhood acute lymphoblastic leukemia treated with ThaiPOG protocol

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Background: Previous study in Thailand revealed 5-year overall survival (OS) rate of 64.9% in children with acute lymphoblastic leukemia (ALL). The Thai Pediatric Oncology group (ThaiPOG) had established national protocol for ALL since 2006 to improve outcome from the pre-ThaiPOG era.

Objective: The aim of this study was to determine the survival rate of pediatric ALL treated with the ThaiPOG national protocol.

Materials and Methods: A retrospective chart review of children under 15 years old with newly diagnosed ALL between January 2006 and December 2012 was conducted. OS and Event-free survival (EFS) were analyzed by Kaplan Meier method, and use log-rank test to determine the statistical difference.

Results: During the study period, 140 eligible patients were enrolled. The median age at diagnosis was 5.6 years (range 1.2 month – 14.7 years). Majority of the patients were in high risk (46.4%) and standard risk (42.9%) group, however, less than half of the patients had tested for molecular and cytogenetic, DNA ploidy and minimal residual disease. After induction treatment, 94.3% achieved remission. Thirty-five patients (25%) relapsed and 51 patients (36.4%) died. Five-year EFS and OS were 63.7% and 67.3%, respectively. Multivariable Cox regression analysis demonstrated age >10 years old, initial WBC >100,000/mm³ and Philadelphia ALL as an adverse prognostic factors.

Conclusions: The survival rate of ALL using ThaiPOG national protocol is slightly better than previous study. Precise risk stratification is the key to improve treatment outcome. Adjustment of the national chemotherapy protocol especially for the very high risk and high risk patients is warranted.

Keywords: Acute lymphoblastic leukemia, survival, Thailand, ThaiPOG