

Treatment of Childhood Acute Lymphoblastic Leukemia in a Low-income Country: the Indonesian Experience

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ABSTRACT

We conduct studies in an attempt to characterize the patients and outcome of the Indonesian childhood ALL treatment protocol in our Pediatric Care Unit with the setting of low-income country. The results showed that the annual incidence rate of acute leukemias has increased significantly from 35 in 1999 to 70 per-million per-year in 2009 with a relatively high percentage of the children have AML. Of all ALL cases 83% is B-cell ALL and 17% is T-cell ALL.

Our study concerning response to treatment showed that chemotherapy induced apoptosis of leukemic cells and patients showing poor early response to treatment were significantly associated with adverse presentations at diagnosis, higher induction failure and resistant disease rate with a lower 5-year disease-free survival (DFS) and 5-year event-free survival (EFS) rate as compared with good responders.

Our randomized trials failed to show the benefit of a) prophylactic oral ciprofloxacin against sepsis and mortality during induction treatment, b) treatment intensification using 3 additional doses of L-asparaginase during consolidation in preventing relapse and improving DFS and EFS, c) dexamethasone over prednisone in terms of EFS, DFS and overall survival. There was a trend of higher induction death rate in standard risk patients using dexamethasone in the 4-drug induction of Indonesian protocol.

We found that the high rate of treatment abandonment and toxic death were the major obstacles in our PCU till now that generated a low survival rate. However, the treatment outcome of childhood ALL in our setting has shown progress with the 3-year EFS from 23% (1999-2005) to 37% (2006-2011) as the benefit of our twinning program with the VU University Medical Center, Amsterdam.