

Childhood acute lymphoblastic leukemia in Thailand and multicenter studies of Thai pediatric oncology group

Samart Pakakasama

Mahidol University, Thailand

Acute lymphoblastic leukemia (ALL) is the most common malignancy in Thai children aged less than 15 years old. Our institution previously used modified St Jude Children Research Total therapy protocols. We adjusted types and dosages of some chemotherapeutic drugs to be appropriate to our context. The event-free survival (EFS) rates of the modified Total Therapy XIII B were 82.8%, 81.7% and 81.7% at 5, 10 and 15 years whereas EFS rates of the modified Total Therapy XV were 84%, 80.8% and 80.8%, respectively.

With advances in genetic studies, the treatment outcomes of childhood ALL have been improving. Genetic abnormalities identify patients' risk and are used for providing the most effective treatment schemes especially specific targeted therapy. We have implemented genetic analysis for leukemic cells including cytogenetics, RT-PCR for common chromosomal translocations, FISH for *TEL-AML1* and *MLL* rearrangement and IKAROS gene deletion. Pharmacogenetic testing for *TPMT* and *NUDT15* polymorphisms are analyzed and used for individually adjusting mercaptopurine dosage.

Thai Pediatric Oncology Group (Thai POG) has developed ALL treatment protocols aiming for comfortable use in both medical schools and regional hospitals all over the country. Therefore, treatment intensity was less than other ALL protocols. In 2006, Thai POG ALL protocols simply classified the patients into standard and high risk ALL. The 5-year EFS rates in standard and high-risk patients were 66.5% and 51.2%. Currently, we have used updated ALL protocols stratified into standard, high and very high-risk treatment protocols. MRD and genetic abnormalities are incorporated into criteria for risk classification. Data and outcomes of the patients enrolled in these protocols have been collecting and analyzing.