# Childhood Lymphomas Come of Age

By Robert L. Redner, MD

Children are not just short adults. This concept was brought home in yesterday's Education Session on Pediatric Hematologic Malignancies, to be presented again today at 9:30 a.m. in Room A411-A412 in the GWCC. This riveting session, chaired by John T. Sandlund, MD, focused on three timely topics in the world of pediatric lymphomas: the molecular genesis of Burkitt's lymphoma, the treatment of childhood lymphoma, and the approach toward adolescents with lymphoma.

Alan Rickinson, PhD, elucidated the state-of-the-art understanding of the pathogenesis of Burkitt's lymphoma. This aggressive lymphoma, first described by Burkitt in African children, also occurs in adults and can be found in endemic, sporadic, and AIDS-associated forms. Its hallmark is translocation and overexpression of the c-myc oncogene, often in association with Epstein-Barr virus (EBV) infection. Yet, additional genetic abnormalities are often found, including defects in the p53 and Rb pathways. Dr. Rickinson's talk detailed the consequences of c-myc dysregulation, as well as the contribution of other molecular abnormalities in the pathogenesis of Burkitt's lymphoma. The contribution of EBV transcripts to malignant transformation remains controversial. The potential contribution of HIV and malarial infection were also highlighted during Dr. Rickinson's talk.

Differences in incidence and outcomes of adult and pediatric acute lymphocytic leukemia (ALL) have long been appreciated. However, differences in incidence, treatment, and outcomes of pediatric lymphomas have not been as well delineated. In a tour-de-force, Alfred Reiter, MD, reviewed the major advances in the treatment of childhood non-Hodgkin lymphoma (NHL). Children with lymphoblastic lymphoma respond well to protocols designed for pediatric ALL, whereas children with B-cell neoplasms respond well to a strategy of rapidly repeated short, dose-intense courses of chemotherapy. Children with anaplastic large-cell lymphoma respond to either strategy. These protocols, however, are associated with considerable toxicity, highlighting the importance of risk stratification. Dr. Reiter emphasized the lack of efficacious salvage regimens, making survival prospects after relapse dismal. His talk concluded with a discussion of the need to evaluate newer treatments that have proven to be effective in treatment of adult NHL, such as monoclonal antibodies, in the pediatric population.

In the final presentation of the session, Dr. Sandlund analyzed the controversial topic of whether adolescents with NHL should be treated as children or adults. Certainly, evidence is arising that pediatric dose-intense protocols may benefit adolescents with ALL. In terms of NHL, children have a better treatment outcome overall than adults. Dr. Sandlund explored the reasons for this, including differences in pharmacokinetics, performance status, and tumor biology. Pediatric strategies are effective in some adult groups, such as those with Burkitt's lymphoma, but not in others. Dr. Sandlund reviewed the successes and failures of pediatric lymphoma protocols when applied to young and older adults, and proposed general principles regarding treatment of adolescents.

Related lymphoma talks in today's Education Program include the sessions on Follicular Lymphoma (7:30 to 9:00 a.m.) and Rational Therapeutic Targets in Large B-Cell and Mantle-Cell Lymphomas (9:30 to 11:00 a.m.).