Young Fellow and Best Abstract Presentations

Title: Treatment outcome of adult patients with acute lymphoblastic leukemia with HyperCVAD: ten-year experience and the way forward

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Introduction: The age-adjusted incidence of acute lymphoblastic leukemia (ALL) has increased. However, local data of treatment outcome of adult ALL patients with HyperCVAD, one of the most common regimens for adult ALL, are limited.

Objective: This study aims to review the treatment outcome of adult ALL patients and to identify prognosticators for survival outcome. Future perspectives of adult ALL treatment strategies in Hong Kong will also be discussed.

Methodology: This is a retrospective analysis of two tertiary haematology centres in Hong Kong from January 2007 to September 2017. Enrolled patients were treated with HyperCVAD ±tyrosine kinase inhibitor (TKI). Patient would be referred for allogeneic haematopoietic stem cell transplantation (HSCT) after complete remission (CR) if they fulfilled the criteria. Outcome measures included CR rate, relapse rate, overall survival (OS) and relapse-free survival (RFS). Various parameters would be studied for their prognostic significance.

Result: Eighty-seven newly diagnosed ALL patients (Male to female ratio: 1.4:1) were recruited for analysis. The median age at diagnosis was 42 years old. High-risk group accounted for 46% of patients. With HyperCVAD, the overall CR rate was 93% and the induction mortality was 3%. While awaiting HSCT, 26% of patients relapsed and 40% of them could attain CR2. Overall, 68% of patients with CR underwent HSCT and post-HSCT relapse rate was 54%. Both standard-risk and high-risk patients had comparable post-HSCT relapse rate. Patients with HSCT had a significantly longer survival than those without HSCT (5-year OS: 43.3% vs. 9.4%, $p < 0.01$ and 5-year RFS: 35.4% vs. 21.7%, $p = 0.02$). Patients who achieved CR1 after the first cycle of chemotherapy had a longer 5-year OS (39.1% vs. 10%, $p = 0.02$) than those after the second cycle. Standard-risk and high-risk groups had comparable survival outcome. In multivariate analysis (MVA), HSCT and achievement of CR1 after the first cycle of HyperCVAD strongly predicted longer OS. Patient aged < 40 years old had a higher 5-year OS (39.9% vs. 23.5%, $p = 0.03$) than patient aged ≥ 40 years old but this OS benefit was not proven in MVA.

Conclusion: Despite a high CR rate with HyperCVAD, adult ALL patients still experienced high relapse rate prior to and after HSCT and hence poor survival. Treatment modification in various subgroups and more accurate disease monitoring tools should be considered.