

Title: Outcome of Allogeneic Hematopoietic Stem Cell Transplant (Allo-HSCT) for Acute Lymphoblastic Leukemia/Lymphoma in Hong Kong: A Retrospective Study

Author: TH Lam, YM Cheung, PYJ Sim, KWA Lie, YL Kwong

Introduction: The optimal treatment for ALL is evolving, particularly for B-ALL with the introduction of minimal residual disease (MRD) monitoring, bispecific T-cell engager, and CAR-T therapy. Our unit historically offers all adult ALL patients with suitable donors to undergo Allo-HSCT in first complete remission (CR1). Here we retrospectively reviewed the outcome of 70 patients undergoing Allo-HSCT between Jun-2016 and Feb-2020.

Methods: Clinical records of 70 consecutive patients undergoing 1st Allo-HSCT for ALL during the study period were reviewed and analyzed. All had at least 6 months follow-up at last data cut-off.

Results: The overall survival (OS) and disease-free survival (DFS) at 24 months were 75% and 53% respectively. Patients transplanted in >CR1 had worse DFS (median 44 vs 6 months, $p=0.00$). Twenty-six patients had pre-transplant MRD tested: 11 positive and 15 negative. Patients who were tested negative had a trend towards better DFS (83% vs 60%, $P=0.078$). None of the pre-HSCT clinical factors determined MRD status at transplant. Re-emergence or persistence of MRD positivity predicts relapse ($P<0.001$). Blinatumomab was used in five patients pre-HSCT, two in MRD positive CR1 with one successful MRD eradication. One patient achieved MRD negative CR2 pre-HSCT but developed morphological relapse at 5 months post-HSCT.

Conclusion: HSCT performed at CR1 with the aid of MRD detection predicts the best outcome in terms of DFS and OS. The best treatment for MRD eradication needs further studies.