Modified donor lymphocyte infusion in the prophylaxis of relapse after HLA-mismatched/haploidentical T-cell-replete hematopoietic stem cell transplantation for advanced-stage acute leukemia: a retrospective risk factors analysis

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Abstract

The role of donor lymphocyte infusion (DLI) in the prophylaxis of relapse has not been defined. We retrospectively analyzed the data of 88 patients with advanced stage acute leukemia after HLA-mismatched/haploidentical hematopoietic stem cell transplantation (HSCT) whose treatment did (n=61) or did not (n=27) include prophylactic DLI. The two groups were compared with respect to relapse and overall survival. Further, a detailed analysis of risk factors was performed.

The 2-year cumulative incidence of relapse in patients receiving prophylactic DLI and not receiving prophylactic DLI were 36% and 55% (P = 0.017). Estimated survival at 3 years was 31% for patients receiving prophylactic DLI and 11% for patients not receiving prophylactic DLI (P=0.001). The three-year probability of LFS was also higher in patients receiving prophylactic DLI (22%) than in patients not receiving prophylactic DLI (11%) (P = .003). Multivariate analysis for relapse showed that use of prophylactic DLI after transplantation was an independent prognostic factor (p=0.025). Higher OS was associated with use of prophylactic DLI (P = 0.002), acute myeloid leukemia (P = 0.027) and female sex (P = 0.023). Our results suggest that the prophylactic modified DLI may increase survival after HLA-mismatched/haploidentical HSCT for advanced-stage acute leukemia.