Modified donor lymphocyte infusion associated acute graft-versus-host disease after haploidentical T-cell-replete hematopoietic stem cell transplantation: incidence and risk factors

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Abstract

Objects: To investigate the profile of donor lymphocyte infusion (DLI)-associated acute graft-versus-host disease (GVHD) in haploidentical T-cell-replete hematopoietic stem cell transplantation (HSCT).

Methods: Consecutive 124 patients receiving modified DLI after haploidentical T-cell-replete HSCT were enrolled.

Results: The cumulative incidence of DLI-associated acute GVHD was 53.2% for grade II to IV and 28.4% for grade III to IV. Multivariate analysis demonstrated that the duration of GVHD prophylaxis after DLI was related to the development of DLI-associated grade III to IV acute GVHD (P<0.05). The cumulative incidence of grade III to IV acute GVHD in patients with prophylaxis more than 6 weeks, 4 - 6 weeks, 2 – 4 weeks and less than 2 weeks were 9.3%, 14.4%, 31.6% and 49.5%, respectively (P=0.018). Besides, DLI-associated grade III to IV acute GVHD was the only risk factor for overall survival (P=0.038, OR=2.869) and transplant-related mortality (P=0.018, OR=3.296), but not risk factor for relapse after DLI (P=0.840).

Conclusion: This was the first study to investigate the incidence and risk factors of DLI-associated acute GVHD in haploidentical T-cell-replete HSCT, and for the first time confirmed that the duration of GVHD prophylaxis after DLI was the only risk factor for the development of grade III to IV acute GVHD. DLI with GVHD prophylaxis more than 4 weeks was associated with a lower incidence of grade ? to ? acute GVHD. Besides, this study also showed that DLI-associated grade III to IV acute GVHD was the only risk factor for inferior OS and higher TRM.