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HAPLO-IDENTICAL STEM CELL TRANSPLANT OUTCOMES IN PATIENTS WITH DONOR-SPECIFIC ANTIBODIES RECEIVING DESENSITIZATION: INSIGHTS FROM A SINGLE-CENTER EXPERIENCE

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INTRODUCTION

Donor-specific HLA antibodies (DSA) in haplo-SCT patients are associated with engraftment failure. Effective desensitization treatment is crucial for patients needing urgent transplants and lacking alternative donors.

AIM

To analyze outcomes of haplo-SCT in patients with DSA undergoing desensitization.

METHOD

Setting: The study was conducted at the American University of Beirut Medical Center.

Design: A retrospective chart review of patients with hematologic malignancies who underwent haplo-SCT following desensitization therapy to reduce DSA burden from January 2017 to December 2023. Patient demographics, desensitization protocols, and post-transplant outcomes (ANC and platelet engraftment, GvHD, relapse, and overall survival) were analyzed.

Interventions: Patients received pretransplant desensitization with plasmapheresis, intravenous immunoglobulins, and rituximab.

RESULTS

Sixteen patients were identified, median age 49 years, mainly female (68%); 75% had acute myeloid leukemia, and 25% had relapsed lymphoma. Active disease was present in 31% of patients at transplant time. 75% of donors were males, and donor-recipient sex mismatch was present in 56% of patients. Transplants were sourced from children (56%), siblings (19%), and parents (25%). Mean DSA levels before and after desensitization were 2935 and 685 mean fluorescence intensity (MFI), respectively, with mean differences of 2250 MFI. HLA antibodies against Class I, II, or both, were present in 56%, 44%, and 19% of patients, respectively. Bortezomib was added to the desensitization protocol in 37%. Median time between desensitization and transplant was 9 days. Twelve patients received myeloablative conditioning. GvHD prophylaxis for all included cyclosporine (day –3), post-transplant cyclophosphamide (days +3 and +5), and mycophenolate mofetil (day +6).The median time to ANC and platelet engraftment was 14 (12-39 days) and 24 (14-90 days), respectively. One patient had delayed ANC and 2 patients delayed platelet engraftment. Three patients died within 100 days of transplant (2 from infection, 1 from acute GVHD), and 13 patients remained in remission. The rates of acute and chronic GVHD were 37% and 12.5%, respectively. After a median follow-up of 16 months, the 1-year relapse-free survival and overall survival were 44%.

CONCLUSIONS

Haplo-SCT in patients with detectable DSA undergoing desensitization therapy demonstrated promising engraftment rates and acceptable long-term outcomes, bringing valuable insights into refining treatment protocols and patient outcomes.

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