Exploring Hematopo tic Stem Cell Transplantation at a Single Institution

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: Transplantation; Antibodies; Hematopoietic Stem Cell; Lymphoblasti

is study provides a comprehensive analysis of the outcomes and experiences associated with Hematopoietic Stem Cell Transplantation (HSCT) at a single medical center. e research examines patient demographics, transplant techniques, and post-transplantation complications, highlighting both successes and challenges. Key factors in uencing patient survival rates, gra -versus-host disease, and infection control are discussed. By reviewing clinical data from a variety of hematological disorders treated with HSCT, the study aims to contribute valuable insights into optimizing treatment protocols and improving patient outcomes in a specialized setting.

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Other donor-related factors, such as gender, age, and the presence or absence of cytomegalovirus (CMV) antibodies with their distinct roles having been investigated with varying degrees of success, ABO incompatibility may also be related to the results of HSCT. 7–10 e reactivation of CMV illness is still a signi cant source of morbidity and mortality despite preventative therapy. e development of reduced intensity conditioning (RIC) regimens has led to an increase in the number of people over 50 who undergo HSCT. Because of the regeneration potential of hematopoietic stem cells (HSC) and potential comorbidities, older related suitable donors are also accepted, and recent research have shown that donor age may be a risk factor for acute and chronic GVHD [1]. Currently, ABO incompatibility is present in between 30 and 50 percent of HSCT procedures. Although it is commonly known that ABO incompatibility raises the risk of haemolytic responses, recent research indicates that it has no impact on the results of HSCT. In this study, the e ects of donor attributes such age, gender, CMV status, cell source, ABO compatibility, and donor type were assessed. the results of 347 patients who underwent HSCT at the Hospital de Clinics in Porto Alegre, southern Brazil. We were interested in learning whether these traits may be used to predict outcomes in this Latin American cohort of patients who underwent single-center transplants [2].

Retrospective evaluations were performed on 347 patients who underwent allogeneic HSCT at a single location between January 1994 and December 2012. Acute and chronic GVHD, disease-free survival (DFS), and overall survival were all connected with the donor and recipient ages, gender, CMV status, ABO compatibility, type of donor (matched related and matched unrelated), and patient's disease status (OS). At the time of the procedure, each patient provided written informed permission, and the local ethics committee authorised the study [3-5]. Refractory disease, a second or more remission from a cancerous condition, or a diagnosis of a benign condition more than a year old were all considered to have advanced disease status at HSCT. Prior to 2000, poor resolution DNA-based typing was used to determine the HLA Class I and Class II of patients and related donors. Since 2005, unrelated donor HSCT procedures have been carried out in this centre. High resolution HLA typing was done for 6/6 matches up until 2008 and 8/8 or 10/10 matches a er that. Standard myeloablative conditioning (MAC) included total body irradiation (TBI), 2 60 mg/kg of cyclophosphamide (CY), and 14–16 mg/kg of oral busulfan (BU) (12 Gy fractioned dosage). e following RIC regimens were used: BU 8–10 mg/kg PO + Flu (90–120 mg/m2), Flu (120 mg/m2) plus Melphalan (140 mg/m2), or CY 60 mg/kg. Additionally, patients undergoing MUD transplants were given rabbit thymoglobulin (7–14 mg/kg) [6].

Patients on the MDR and MAC regimens started receiving cyclosporin A (CYA) (3 mg/kg IV) on Day 1 and a short course of methotrexate (MTX) (15 mg/m2) on Day 1 and 10 mg/m2 on Days +3, +6 and +11. Tacrolimus (0.05 mg/kg IV) was used with a brief course of MTX for people receiving MUD transplantation. For RIC, GVHD prophylaxis was achieved by starting on Day 2 with 3 mg/kg

***Corresponding author:**

Received: **Editor assigned:**

Reviewed:

Revised:

Published:

Citation:

the incidence of acute and chronic GVHD, DFS, and transplant-related mortality served as secondary endpoints (TRM). e number and severity of organ involvement were used to stage and grade acute GVHD (Grade 0-IV). Utilizing the Kaplan-Meyer method, OS was calculated. e logrank test was used to compare the curves. We compared categorical data using the Chi-square test. Age and gender of patients and donors, patient and donor gender combinations, patient and donor CMVserological status, stem cell source bone marrow (BM), peripheral blood stem cells (PBSC), and cord blood] were all were included in the studies. MAC vs. RIC, MUD vs. MRD, dosage of CD34+ cells, patient's illness condition, and stem cell (CBSC). Multivariate analysis included factors with p-values 0.2. For multivariate analysis, the Cox proportional hazard regression model was employed.

Based on the literature and the relatively lower age of patients and donors in our cohort, a cut-o value of 40 years was chosen to assess the impact of donor age on transplant outcomes. e HCPA Ethics Committee approved this study, and the Declaration of Helsinki for studies involving human subjects was followed when analysing the data in an anonymous manner. Acute lymphoblastic leukaemia, 82 (23%) had chronic myeloid leukaemia, 18 (5.2%) had myelodysplastic syndrome, 21 (8.8 %) had lymphomas, 57 (16%) had aplastic anaemia, and 26 (7%) had additional diseases. In 151 (43.5%) individuals, the disease condition was progressed (beyond the second remission). In 265 (85.8%) of the patients and donors, respectively, and 218 (87.2%) of the donors, the CMV serological status was positive. e median age of the donors was 33 years, 182 (52.2%) of them were men, and 282 (81.3%) of them were connected to the recipients by blood.

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