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ANTI-THYMOCYTE IMMUNOGLOBULIN (THYMOGLOBULIN®) FOR GRAFT-VERSUS-HOST DISEASE PROPHYLAXIS IN MATCHED-RELATED DONOR PERIPHERAL BLOOD HEMATOPOIETIC CELL TRANSPLANTATION

ME Ramos [a], LJ Arcuri [b], CO Ribeiro [a]

[a] *Instituto Nacional de Cancer, Rio de Janeiro, RJ, Brazil*
[b] *Hospital Israelita Albert Einstein, São Paulo, SP, Brazil*

Introduction: Graft-versus-host disease (GVHD) is the leading complication of allogeneic hematopoietic cell transplantation, significantly impairing quality of life. One of the most recognized risk factors is the source of the peripheral blood graft. Kroger et al conducted a randomized trial that demonstrated improved outcomes with antihuman T-lymphocyte immune globulin (ATLG) from a matched-related donor (MRD) using peripheral blood stem cell (PBSC) grafts. Unfortunately, they used the ALTG Fresenius brand, while Thymoglobulin is the only brand available in Brazil. **Aim:** To report the results of ATG Thymoglobulin-based PBSC in MRD and to compare our results with those achieved by Kroger et al with ATLG. **Material and methods:** We included patients with hematologic malignancies who underwent MRD HCT with a PBSC graft between 2019 and 2024 in this single-center cohort study. Patients received a total dose of ATG 4 mg/kg close to the HCT, in conjunction with a calcineurin inhibitor and an antimetabolite agent. Survival and cumulative incidence curves were constructed using the Kaplan-Meier or Gray method, respectively. Results were confirmed with Matching-Adjusted Indirect Comparison (MAIC). **Results:** With a median follow-up of 29 months, we included 36 patients. The median age was 45 years, and most patients had acute leukemia (Table 1). Two-year overall survival (OS) was 71%; progression-free survival (PFS), 71%; relapse, 17%; non-relapse mortality (NRM), 11%; chronic GVHD (cGVHD), 48%; and moderate or severe chronic GVHD (cGVHDms), 29% (Table 2). Six-month grades II-IV and III-IV acute GVHD (aGVHD) occurred in 36% and 8% of patients, respectively. Immunosuppression tapering started at a median of 71 days (range: 15-109). MAIC adjustment for Kroger et al baseline profile did not change the results. **Discussion and conclusion:** We have observed impressive OS, PFS, relapse, and NRM rates with ATG Thymoglobulin in MRD utilizing PBSCs. The cGVHD rate was 48%, which falls between the 36% observed in the ALTG arm and nearly 70% in the control arm of the Kroger et al study. Similarly, our moderate or severe cGVHD was 29%, again positioned between the 8% and 52% noted in the ALTG and control arms of the Kroger et al trial. Notably, the Kroger trial protocol commenced tapering cyclosporine around day +120. It ceased immunosuppression around day +180, whereas in our cohort, the calcineurin inhibitor tapering usually began much earlier, which could have impacted cGVHDms prevention. We have demonstrated excellent results with Thymoglobulin in MRD HCT using PBSC, partially confirming the results achieved by the Kroger et al trial with ATG-Fresenius. Early calcineurin inhibitor discontinuation may impair adequate GVHD prophylaxis with ATG Thymoglobulin.

References: Kroger et al. Antilymphocyte Globulin for Prevention of Chronic Graft-versus-Host Disease. N Engl J Med. 2016.

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ASSOCIATION OF NEUTROPHIL-TO-PLATELET RATIO AND LYMPHOCYTE-TO-NEUTROPHIIL RATIO AT ADMISSION AND ENGRAFTMENT WITH ACUTE AND CHRONIC-GRAFT-VERSUS-HOST DISEASE AND SURVIVAL AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION

MR Silva [a], LQ Da Silva [b], LC Guzelotto [c], AC Vigorito [c], LB Ribeiro [c], MP Colella [c], EV De Paula [a]

[a] *Centro de Hematologia e Hemoterapia, Faculdade de Ciências Médicas, Universidade Estadual de Campinas, Campinas, SP, Brazil*
[b] *Faculdade de Ciências Médicas, Universidade Estadual de Campinas, Campinas, SP, Brazil*
[c] *Centro de Hematologia e Hemoterapia, Universidade Estadual de Campinas, Campinas, SP, Brazil*

Introduction: Graft-versus-host disease (GVHD) is a primary cause of morbidity and mortality following allogeneic hematopoietic stem cell transplantation (allo-HSCT). The inflammatory state during immune reconstitution is critical, with neutrophils, lymphocytes and platelets playing relevant roles in the cascade of thromboinflammatory events that underlie the pathogenesis of post HSCT complications. Yet the prognostic value of simple biomarkers reflecting the balance between these cells such as the neutrophil-to-platelet ratio (NPR) and neutrophil-to-lymphocyte ratio (NLR) requires further clarification for different post-transplant complications. **Aim:** This study aimed to investigate the association between NPR and NLR, measured at admission and at neutrophil engraftment, with the development of acute GVHD (aGVHD), chronic GVHD (cGVHD), and overall survival (OS) in patients undergoing allo-HSCT. **Material and methods:** We conducted a retrospective, single-center study including 173 adult patients who underwent their first allo-HSCT between January 2012 and December 2021. NPR and NLR were calculated at admission and on the day of neutrophil engraftment. Baseline variables recognized as potential predictors of negative outcomes after allo-HSCT were prospectively registered as part of patient management and obtained from the medical records. **Results:** The patient cohort (n = 173) had a median age of 44 years (IQR: 32-55) and included 58.4% males. Overall survival was 63.4% after a median follow-up of 194 days (IQR 50-917). The predominant graft source was peripheral blood stem cells (86.13%), and fully HLA-matched donors accounted for 78.61% of cases. The cumulative incidence of grade II-IV acute GVHD (aGVHD) was 16.8%, and chronic GVHD (cGVHD)