

08. **EFFICACY OF TRIPLE PROPHYLAXIS FOR PREVENTION OF GRAFT-VERSUS-HOST DISEASE IN MATCHED SIBLING ALLOGENEIC PERIPHERAL BLOOD HEMATOPOIETIC STEM CELL TRANSPLANTATION IN PEDIATRIC PATIENTS**

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 <https://www.youtube.com/watch?v=vlsNiqV1-28&t=25638s>

BACKGROUND: Graft-versus-host disease (GVHD) continues to compromise the overall success of allogeneic hematopoietic stem cell transplantation. It is the most important cause of morbidity and non-relapse mortality after allogeneic hematopoietic stem cell transplantation for malignant disease. In adults, post-transplant cyclophosphamide (Cy-PT) has been shown to be a feasible, economically accessible, and effective strategy to reduce the incidence of GVHD in matched sibling hematopoietic stem cell transplantation in combination with a calcineurin inhibitor plus mycophenolate mofetil (MMF). **AIM:** Demonstrate the clinical benefit of Cy-PT plus a calcineurin inhibitor combined with MMF for GVHD prophylaxis in HLA-matched, related peripheral blood stem cell transplants in pediatric patients with malignant hematologic neoplasms compared to standard therapy in historical controls. **METHODS:** A retrospective study was conducted on 22 pediatric patients with malignant hematologic neoplasms who underwent HLA-matched related peripheral blood allogeneic stem cell transplantation (alloSCT) between July 2012 and December 2022. A comparison was made between two groups, one with triple prophylaxis using Cy-PT, cyclosporine (CsA), and MMF, and a historical cohort that received standard GVHD prophylaxis based on CsA and methotrexate (MTX). Patients were identified from a hospital registry. Descriptive and inferential statistics will be reported, using SPSS version 25 for analysis. **RESULTS:** Twenty-two patients received HLA-matched alloSCT from first-degree relatives genotypically identical in HLA-A, HLA-B, and HLA-DRB1 alleles. The demographic characteristics of both groups are summarized in the table. No patient experienced primary graft failure, sinusoidal obstructive syndrome, or hemorrhagic cystitis. Acute GVHD grade II-IV did not develop in patients who received Cy-PT, whereas in the CsA/MTX prophylaxis group, 1 (9%) grade IV patient was observed who died due to this cause before day 100. Two patients (18%) developed Moderate/Severe GVHD in the CsA/MTX group, and 1 (9%) had moderate GVHD in the Cy-PT group. Two-year overall survival was similar between the two groups (Cy-PT 53% and CsA/MTX 67%), as was event-free survival (PTCy 48% vs. CsA/MTX 61%). **CONCLUSION:** Peripheral blood represents a feasible option in our setting due to rapid graft engraftment, short hospital stays, and low incidence of primary graft failure, but with a higher incidence of GVHD as reported in the literature. We explored the efficacy and safety of triple prophylaxis for HLA-matched alloSCTs from peripheral blood using

Cy-PT + CsA + MMF in a small group of patients, with outcomes slightly better than standard prophylaxis. These preliminary results motivate us to continue with this new regimen.

Table. Population characteristics.

Variable	CsA (n=11)	CsA (n=11)	p
Median recipient age at alloSCT (min-max)	12 (2-18)	11 (7-21)	0.12
Median follow-up (min-max)	15 (2-85)	13 (3-48)	0.8
Diagnosis			0.2
Acute lymphoblastic leukemia (%)	7 (64)	4 (36)	
Acute myeloid leukemia (%)	4 (36)	6 (55)	
Chronic myeloid leukemia (%)	0 (0)	1 (9)	
Relapse (%)	6 (55)	6 (55)	
Estimated 24-month overall survival	67%	54%	0.88
Estimated 24-month event-free survival	61%	48%	0.92
GVHD			0.413
Acute grade II-IV (%)	1 (9)	0 (0)	
Acute grade III-IV (%)	1 (9)	0 (0)	
Severe chronic (%)	2 (18)	1 (9)	

Key words: Graft vs Host Disease; Peripheral Blood Stem Cell Transplantation; Leukemi (Source: MeSH-NLM).