Post-Transplant Cyclophosphamide Eliminates Survival Disparities between 8/8 Matched and 7/8 Mismatched Unrelated Donor Hematopoietic Cell Transplantation in Adults with Hematologic Malignancies

A CIBMTR® (Center for International Blood and Marrow Transplant Research®) study

Study Details:

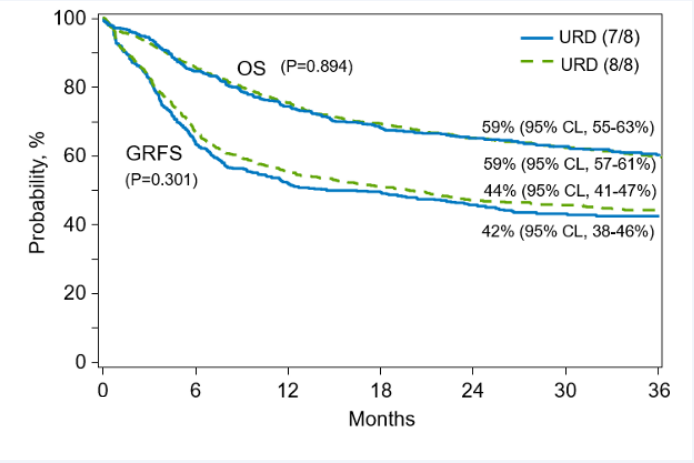
This CIBMTR observational study evaluated the effectiveness of post-transplant cyclophosphamide (PTCy) for graft-versus-host disease (GVHD) prevention in recipients of human leukocyte antigen (HLA)-matched unrelated donor (8/8 MUD) and mismatched (7/8) unrelated donor (MMUD) hematopoietic cell transplantation (HCT). Haploidentical (haplo) related HCT was used as a comparison group.

Patients (n=4,829, including 1,517 8/8 MUD, 540 7/8 MMUD, 2,772 haplo) who underwent their first allogeneic HCT procedure between 2017 and 2020 to treat acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML) or myelodysplastic syndrome (MDS) were given PTCy-based GVHD prophylaxis. MUD patients had MDS or underwent myeloablative conditioning more often, but all groups were balanced across other donor, patient and disease characteristics.

Results at a Glance:

- The study found no significant difference in GVHD-free, relapse-free survival (GRFS) or overall survival (OS) between the 8/8 MUD and 7/8 MMUD HCT recipients up to 3 years post-HCT.
- MUD patients faced a slightly reduced risk of developing moderate to severe chronic GVHD compared to 7/8 MMUD patients.
- Outcomes of MUD HCT were more favorable than haplo HCT in terms of GRFS and OS, primarily due to the higher non-relapse mortality (NRM) and chronic GVHD rates in haplo HCT.
- When comparing the 3-year GRFS or OS outcomes, there were no significant differences between the 7/8 MMUD and haplo groups.

Figure: Adjusted GRFS and OS by Donor Type



Clinical Impact:

The use of PTCy-based GVHD prevention has significantly reduced disparities in GRFS and OS between 8/8 MUD and 7/8 MMUD HCT. This approach expands the potential pool of donors and particularly benefits patients from diverse racial and ethnic backgrounds, emphasizing the crucial role of PTCy in improving HCT outcomes and accessibility. Additionally, MUD HCT is the preferred choice over haplo HCT for patients lacking a matched sibling donor based on observed GFRS and OS outcomes.

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Read the published ASH abstract in *Blood*
(https://ash.confex.com/ash/2023/webprogram/Paper172722.html).

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