

# First Multi-Center Prospective Clinical Trial of HLA-Mismatched Unrelated Donor Bone Marrow Transplantation Using Post-Transplant Cyclophosphamide: 3-Year Outcomes

## National Marrow Donor Program®(NMDP)/Be The Match®-sponsored phase II trial from the CIBMTR® (Center for International Blood and Marrow Transplantation®)

### Highlights for Physicians:

Post-transplant cyclophosphamide (PTCy) based graft-versus-host disease (GVHD) prevention demonstrates favorable 3-year outcomes in patients receiving mismatched unrelated donor hematopoietic cell transplantation (MMUD HCT). This study shows promise for improving access for those needing HCT, including for ethnically diverse patients.

- **Outcomes for patients receiving a MMUD HCT using PTCy-based GVHD prevention remain good at 3 years post-transplant.** This prospective, multi-center phase II trial concluded that MMUD HCT in the setting of PTCy is associated with strong 1-year and 3-year survival and GVHD outcomes.
- **Patients with more HLA mismatching (<7/8) did not show worse outcomes,** providing early reassurance of a safe and effective approach to improve HCT access for those without a 7/8 or 8/8 matched donor.
- **Overall survival (OS) was excellent at 1 and 3 years, particularly for patients receiving reduced intensity conditioning (RIC, OS=70%).** Rates of chronic GVHD (cGVHD) were low for all severity grades and groups.
- **Ethnically diverse patients made up 48% of the observed patient population,** suggesting MMUD HCT with PTCy-based GVHD prophylaxis can significantly expand access to groups less likely to find a fully matched unrelated donor.

### Results at a Glance:

**15-MMUD:** N=40 RIC, N=40 myeloablative conditioning (MAC), aged 18-70 (median 52) transplanted (HLA matches 4-6/8 in 39% and 7/8 in 61%) at 11 centers December 2016-March 2019 for acute leukemia, myelodysplastic syndromes, chronic lymphocytic lymphoma, and non-Hodgkin lymphoma.

- The study met its primary endpoint of greater than 65% OS at 1 year (OS=76%).
- 3-year outcomes post-transplant remain very good. OS in the RIC cohort was particularly good at 70%, and non-relapse mortality (NRM) was 15%. Rates of cGVHD were low at 20% for all grades and 5% for severe cGVHD, with a relapse rate of 29%, and GVHD-free relapse free survival (GRFS) was 44% in the RIC group.
- Although 3-year survival in the MAC cohort remained acceptable at 62%, relapse rates were high at 51%, and NRM was 10%. cGVHD occurred in 38% of patients, with 13% reporting severe disease. GVHD-free, relapse-free survival (GRFS) in this cohort was low at 17%. OS was 63% in the 7/8 group and 71% in the 4-6/8 group.

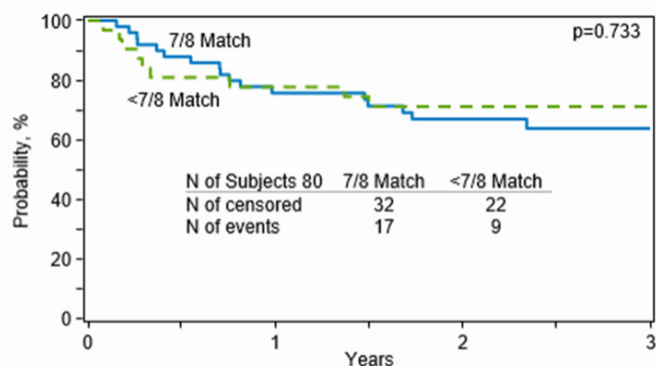


Figure 1. Overall Survival in the 7/8 and <7/8 Matched Cohorts

### Advancing Practice and Improving Access:

The NMDP/Be The Match and the CIBMTR are committed to expanding access to all patients needing HCT. This study was a precursor to the ACCESS trial (DOI: [10.1182/blood-2022-162581](https://doi.org/10.1182/blood-2022-162581)), which expands the evaluation of PTCy-based GVHD prevention to peripheral blood stem grafts in adults and bone marrow grafts in pediatric patients. Our research programs are evaluating novel treatment strategies that allow for the safe and effective use of MMUD HCT, expanding access to 100% of patients in need with excellent outcomes.

You can support your patient's journey both pre- and post-transplant by:

- Discussing transplantation options early with your patients to optimize donor search
- Examining your center's protocols for MMUD HCT and processes for HLA typing at diagnosis
- Considering PTCy as a GVHD prevention strategy

To review more clinical research, visit [BeTheMatchClinical.org/Research](https://www.BetheMatchClinical.org/Research)

Read the clinical trial results in the *Journal of Clinical Oncology* (DOI: [10.1200/JCO.20.03502](https://doi.org/10.1200/JCO.20.03502)) and the published abstract of the 3-year outcomes in *Transplantation and Cellular Therapy* (DOI: [10.1016/j.jtct.2022.12.017](https://doi.org/10.1016/j.jtct.2022.12.017)).

