Younger unrelated donors may be preferable over HLA match in the post-transplant cyclophosphamide era

A study from the Acute Leukemia Working Party of the EBMT

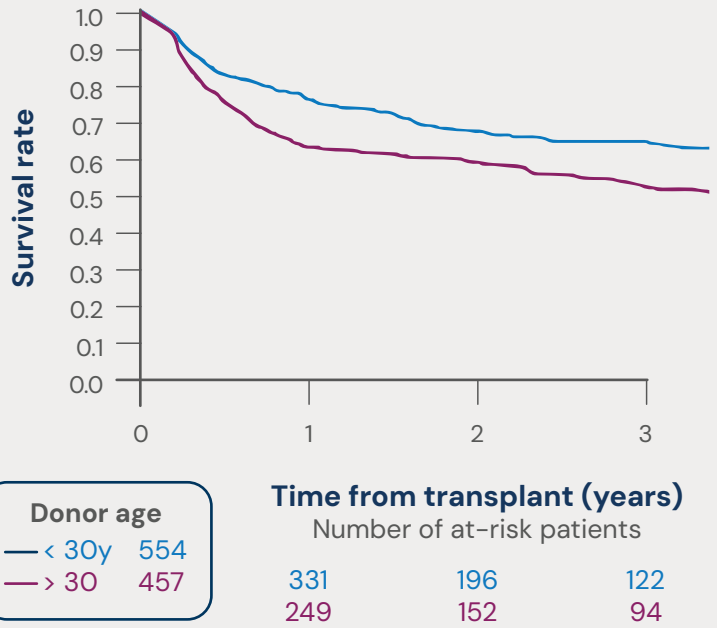
Study details:

EBMT researchers explored optimal donor selection criteria in the context of post-transplant cyclophosphamide (PTCy), a key strategy for preventing graft-versus-host disease (GVHD) in hematopoietic cell transplant (HCT). The study aimed to determine whether younger mismatched unrelated donors (MMUD) could provide better outcomes than older fully HLA-matched unrelated donors (MUD) for patients with acute myeloid leukemia (AML). This retrospective study analyzed data from 1,011 adult patients with AML who received their first allogeneic HCT using peripheral blood stem cells and PTCy between 2010 and 2021.

Results at a glance:

- No significant difference in leukemia-free survival (LFS), overall survival (OS), GVHD-free, and relapse-free survival (GRFS) or non-relapse mortality (NRM) between 10/10 MUDs and 9/10 MMUDs.
- Donor age over 30 was associated with worse outcomes, including higher relapse rates and lower LFS, OS and GRFS.
- Younger donors (under 30 years) were linked to better survival outcomes, suggesting that age may be more important than HLA matching in this context.
- CMV-negative donors for CMV-negative recipients improved LFS, further highlighting the importance of non-HLA factors in donor selection.

Figure: Adjusted LFS post-transplant by donor age.



Clinical impact:

This study suggests that in the PTCy era, younger donor age may be more critical than HLA matching in improving transplant outcomes for patients with AML. Younger donors, specifically those under 30 years, significantly improved survival outcomes, which may prompt a reconsideration of current donor selection guidelines that prioritize HLA compatibility. These findings warrant further evaluation in other patient populations.

Scan to review more recent clinical research

Read the published abstract in Blood (DOI: 10.1182/blood.2023023697).

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