Myeloablative vs Reduced-Intensity Conditioning with Post-Transplant Cyclophosphamide in Haploidentical Hematopoietic Cell Transplantation for AML and MDS: A CIBMTR Analysis

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Background

Hematopoietic cell transplantation (HCT) using post-transplant cyclophosphamide (PTCy) has become the predominant platform for haploidentical donor transplantation. The optimal conditioning intensity, myeloablative (MAC) or reduced-intensity (RIC), remains uncertain in this setting.

This study compared outcomes between MAC and RIC in patients with acute myeloid leukemia (AML) and myelodysplastic syndrome (MDS) undergoing haploidentical HCT with PTCy-based GVHD prophylaxis.

Methods

Study Design: Retrospective cohort using CIBMTR dataset (P-6219, Modi et al.)

Data Analysis: Kaplan-Meier analysis, Cox proportional hazards regression. p-value <0.05 was statistically significant

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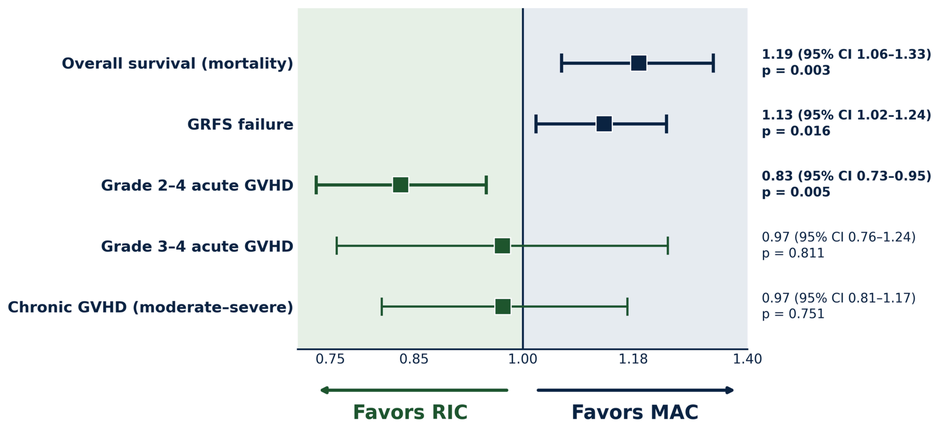
Compared to RIC, MAC was associated with improved OS and GRFS, with no significant difference in severe acute or chronic GVHD.

These findings support favoring MAC for haploidentical transplantation when comorbidities and performance status permit.

Results

- A total of 3,070 patients were included.
- 2,197 with AML and 913 with MDS.
- Mean OS for the overall cohort was 24.1 months (95% CI 23.6–24.6).
- Mean OS: MAC 24.9 (24.1-25.8) and RIC 23.7 (23.1-24.3)
- Mean GRFS: MAC 17.5 (16.6-18.5) and RIC 16.1 (15.5-16.8)

Hazard Ratios of All Outcomes



Overall Survival