POST-TRANSPLANT CYCLOPHOSPHAMIDE IS ASSOCIATED WITH IMPROVED LONG-TERM SURVIVAL FOLLOWING SECOND ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION: A LARGE REAL-WORLD PROPENSITY SCORE–MATCHED ANALYSIS

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INTRODUCTION

Second allogeneic hematopoietic cell transplantation (allo-HCT) remains an important therapeutic strategy for relapsed hematologic malignancies and graft failure, with potential outcomes of graft-versus-host disease (GVHD), infectious complications, and nonrelapse mortality.

Data evaluating posttransplant cyclophosphamide (PTCy)–based GVHD prophylaxis following second allo-HCT remain limited

AIM

To evaluate outcomes associated with PTCy-based GVHD prophylaxis, compared with conventional non-PTCy prophylaxis, following second allo-HCT

METHODS

- We conducted a retrospective propensity score–matched cohort study using the TriNetX Research Network, a federated electronic health record database encompassing 112 health care organizations.
- Adults undergoing a second allogeneic hematopoietic cell transplantation were identified using transplant procedure codes and documentation of a prior transplant.
- Patients receiving post-transplant cyclophosphamide graft-versus-host disease prophylaxis were compared with those receiving conventional non-PTCy prophylaxis.
- The final cohorts included 377 patients in the PTCy group and 326 in the non-PTCy group..

RESULTS

Survival was numerically higher with PTCy at all evaluated time points:
3 months (83.4% vs 81.2%; HR, 0.885; P=0.564),
6 months (75.8% vs 73.0%; HR, 0.882; P=0.479),
1 year (64.7% vs 61.0%; HR, 0.884; P=0.413),
3 years (52.8% vs 45.6%; HR, 0.848; P=0.216), and
5 years (48.9% vs 39.4%; HR, 0.822; P=0.131

Figure 1 Overall Survival

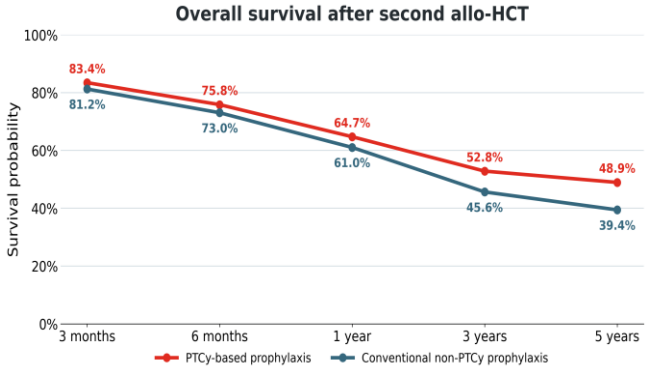
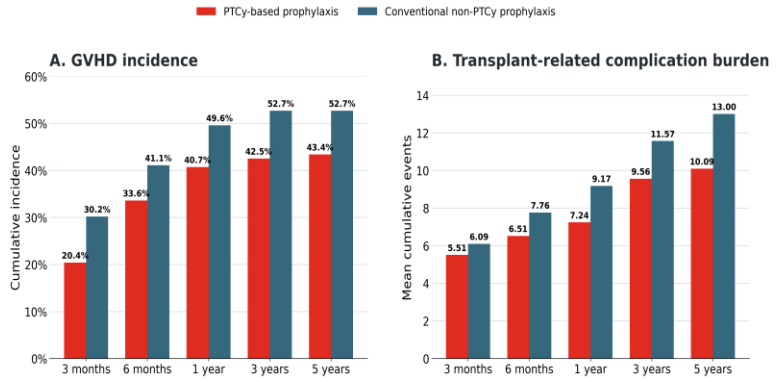


Figure 2: Cumulative transplant-related complication burden include infection-, healthcare utilization-, and organ toxicity-related events



CONCLUSIONS

PTCy-based GVHD prophylaxis was associated with consistently lower numerical GVHD incidence and transplant-related complication burden following second allo-HCT.
Survival was numerically higher with PTCy at all evaluated time points, although the differences did not reach statistical significance.
Larger prospective studies are needed to validate these findings and further define the role of PTCy-based prophylaxis in second allo-HCT.

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