

Impact of Donor Type on GVHD and Survival in Pediatric Haploidentical HSCT: A 10-Year Single-Center Study



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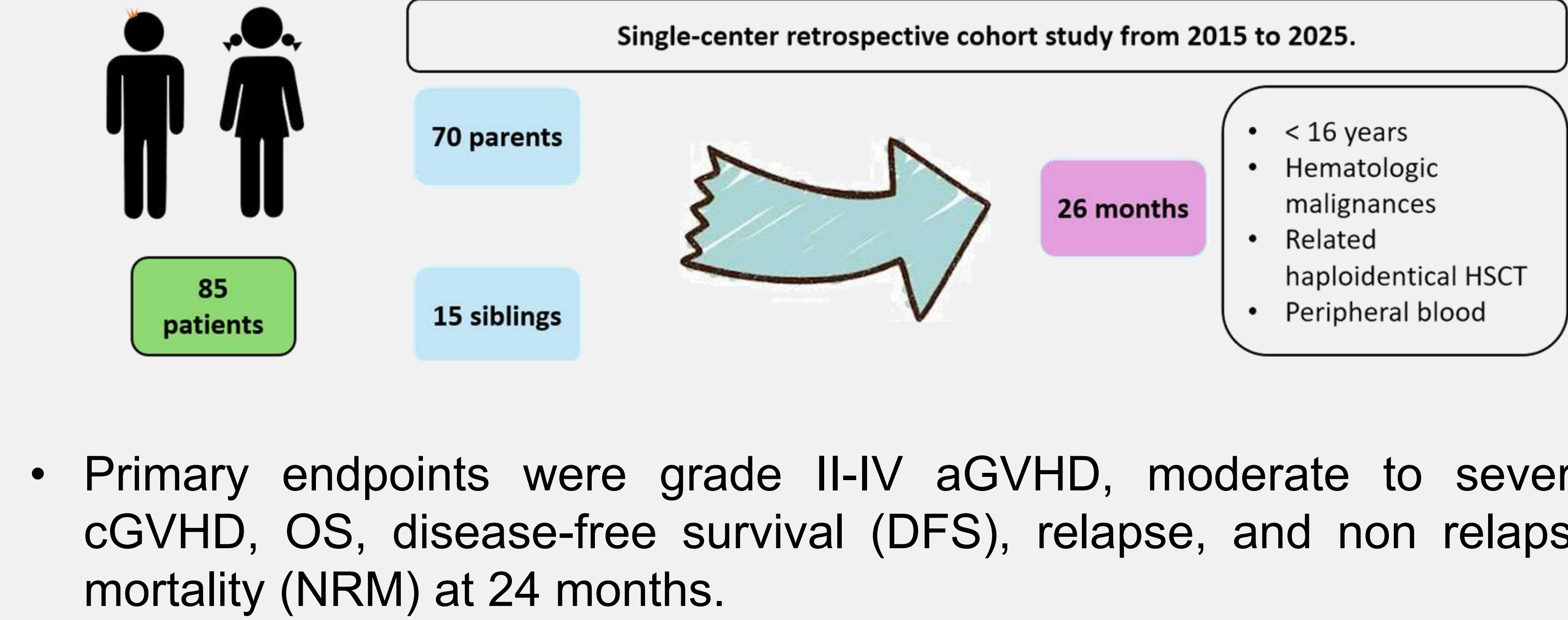
INTRODUCTION

- Donor age and related immunogenetic factors influence outcomes after haploidentical hematopoietic stem cell transplantation (HSCT), particularly graft-vs-host disease (GVHD).
- Sibling donors may offer advantages in pediatrics due to younger age and more favorable immunologic matching.

AIM

To compare overall survival (OS) and acute and chronic GVHD incidence between parental and sibling haploidentical donors in a pediatric single-center cohort.

METHOD



CONCLUSIONS

- Sibling haploidentical donors were associated with significantly lower rates of acute and moderate to severe chronic GVHD and lower NRM compared with parental donors, with comparable OS and DFS.
- These findings support preferential consideration of sibling donors when available.
- Larger studies are warranted to confirm relapse and survival trends.

RESULTS

- Median neutrophil and platelet **engraftment** were 15 days (IQR, 13.5–17.0) and 16 days (IQR, 14.0–20.0).
- Grade II-IV aGVHD** occurred more frequently with parental donors than sibling donors (49.5% vs 15.2%; $P=0.015$).
- Moderate to severe cGVHD** incidence at 12 and 24 months was 24.2% (95% CI, 14.0%–35.8%) and 26.5% (95% CI, 15.7%–38.6%) (parental group)
- No moderate to severe **chronic GVHD** cases occurred in the sibling group ($P=0.047$).
- Cumulative relapse** at 24 months tended to be higher with sibling donors (38.2% vs 24.9%; $P=0.222$).
- OS** at 24 months was 59.7% (parental) vs 68.8% (sibling) ($P=0.454$); **DFS** was 55.1% vs 61.8% ($P=0.561$).
- NRM** at 24 months was higher in the parental group (20.0% vs 0%; $P=0.043$); causes included infections ($n=8$), GVHD ($n=5$), and hemophagocytic lymphohistiocytosis ($n=1$).

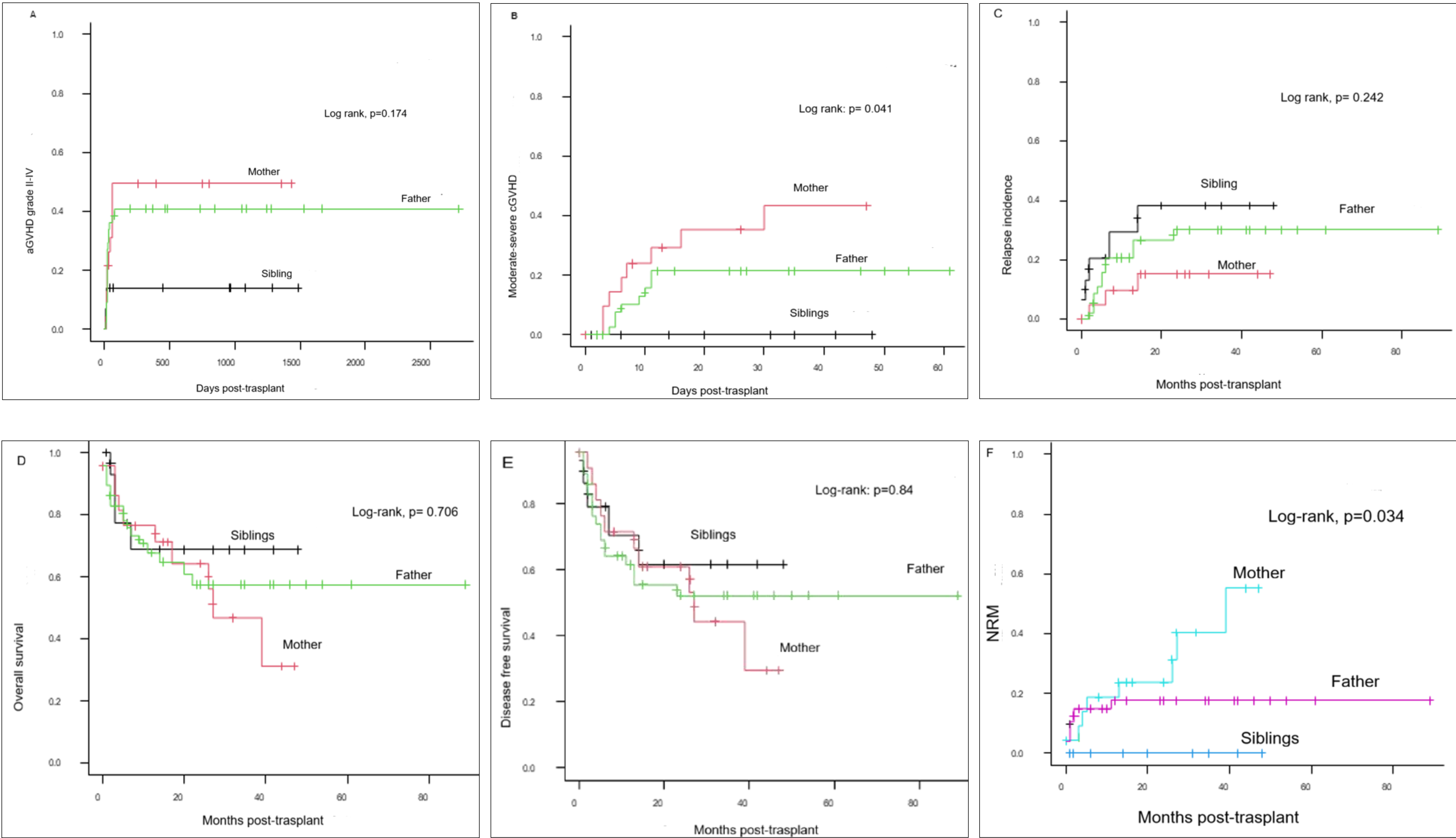


Figure A: acute GVHD incidence
Figure B: chronic GVHD incidence
Figure C: relapse incidence
Figure D: overall survival at 24 months
Figure E: disease free survival at 24 months
Figure F: incidence of non relapse mortality at 24 months

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