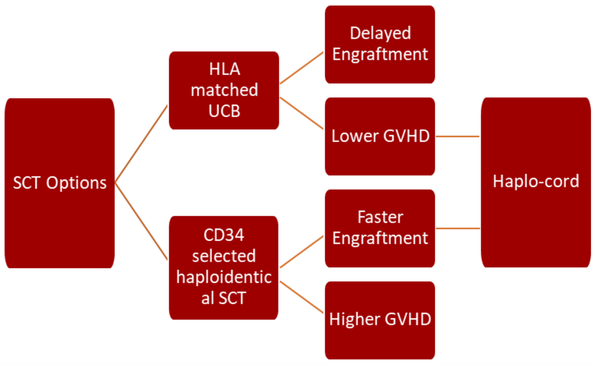
EFFECT OF ADDING UMBILICAL CORD BLOOD DERIVED STEM CELLS TO CD34-SELECTED HAPLOIDENTICAL STEM CELL TRANSPLANT (HAPLO-CORD) ON POST-TRANSPLANT SURVIVAL AND GRAFT-VERSUS-HOST DISEASE IN PATIENTS WITH HEMATOLOGICAL MALIGNANCIES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction

The use of HLA-matched umbilical cord blood (UCB)-derived stem cells is a viable alternative to CD34-selected haploidentical stem cells (haplo-SCT). UCB stem cells offer lower graft-versus-host disease (GVHD) rates due to their immune-naïve nature. However, this is limited by delayed engraftment as compared to haplo-SCT. To overcome this, combining UCB-derived and haploidentical stem cells (haplo- cord SCT) has been proposed.



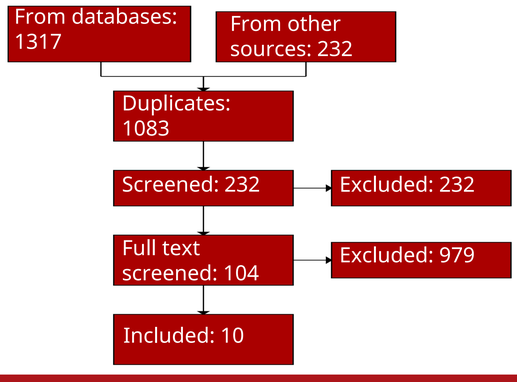
Objectives

To evaluate the impact of haplo-cord SCT on survival outcomes and post- transplant complications in patients with hematological malignancies as compared to haplo-SCT alone.

Methods

PubMed, Embase, Cochrane, ClinicalTrials.gov, and WHO ICTRP were searched. Outcomes were meta-analyzed using a random-effects model. For arm-level data, Mantel-Haenszel method, and for contrast-level data, inverse variance method was used. Heterogeneity was assessed by the DerSimonian and Laird methods, and confidence intervals by the Wald method. All the analyses were done in RevMan Web.

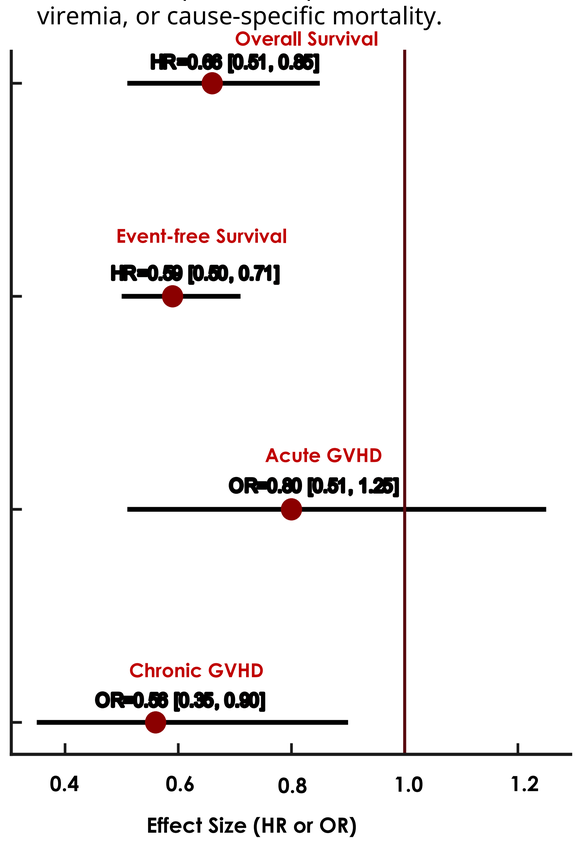
PRISMA Flowchart



Results

Two RCTs and 8 observational studies encompassing 1,435 patients were included.

- Haplo-cord group demonstrated significantly better overall survival compared to haplo-SCT alone (HR=0.66; 95%-CI:0.51–0.85).
- No significant differences were observed between the two groups for 1-year, 2-year, and 3-year survival rates.
- Event-free survival, defined as the absence of disease progression or relapse, was superior in the haplo-cord group (HR=0.59; 95%-CI:0.50–0.71), with a significant advantage emerging at 3 years (OR=1.75; 95%-CI: 1.26–2.44).
- Haplo-cord transplantation was associated with lower odds of relapse at a 3-year timepoint post-transplant (OR=0.46;95%-CI:0.31–0.67). The incidence of acute GVHD at 100 days post-transplant was similar between the groups (OR=0.80;95%-CI:0.51–1.25), while the incidence of chronic GVHD was significantly lower in the haplo-cord group (OR=0.56; 95%-CI:0.35–0.90).
- No significant differences were found in neutrophil and platelet engraftment at day 30, incidence of post- transplant CMV and EBV viremia, or cause-specific mortality.



Discussion

Haplo-cord SCT offers superior survival and lower relapse rates compared to haplo-SCT alone. It is also associated with a significantly reduced incidence of chronic GVHD, whereas rates of early engraftment and transplant-related adverse events remain comparable between the two approaches.

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The author(s) declare no conflicts of interest related to this poster presentation.