OUTCOMES WITH ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT IN THERAPY RELATED MYELODYSPLASTIC SYNDROME: A SYSTEMATIC REVIEW AND META-ANALYSIS

Moazzam Shahzad, MD[1,2], Muhammad Fareed Khalid, MD[3], Atif Butt, MD[4], Muhammad Kashif Amin, MD[5], Muhammad Shan-Ul-Abedin, MD[6], Maheen Zaidi, MD[7], Mohammad Ammad-Ud-Din, MD[1,2], Sudeepthi Bandikatla, MD[1,2], Michael Jaglal[1]

1. H. Lee Moffitt Cancer & Research Institute
2. University of South Florida, Tampa, FL, USA
3. Danbury Hospital, Danbury, CT, USA
4. St. Mary's Medical Center, Huntington, WV, USA
5. Kansas University Medical Center, Kansas City, KS, USA,
6. Abingdon Medical Center, Abingdon, PA, USA
7. Baptist Memorial Hospital-North Mississippi, Oxford, MS, USA

INTRODUCTION

The prognosis of therapy-related myelodysplastic syndrome (t-MDS) is dismal with current treatment options. Allogeneic hematopoietic stem cell transplant (allo-HCT) is the potentially curative treatment option in t-MDS patients. This systematic review and meta-analysis aimed to look at the outcomes of allo-HCT in t-MDS patients.

AIM

To determine the outcomes of allo-HSCT in patients with t-MDS.

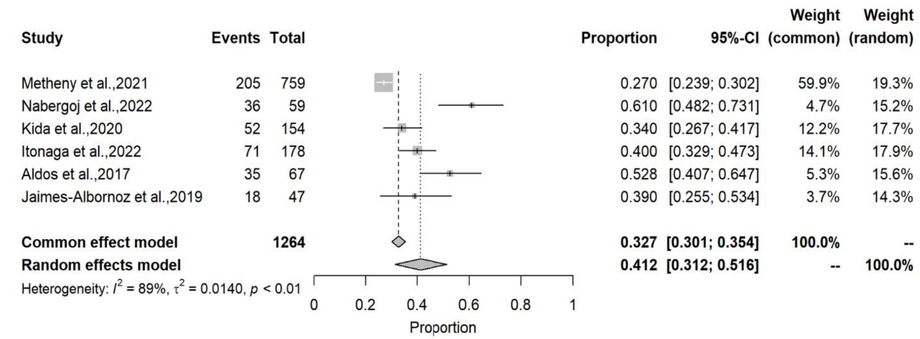
METHOD

- Following PRISMA guidelines, a literature search was performed on PubMed, Cochrane, and Clinicaltrials.gov.
- Seven original studies reporting outcomes of allo-HCT in adult patients with t-MDS were included after screening 742 articles.
- The inter-study variance was calculated using the Der Simonian-Laird Estimator.
- Proportions along with a 95% confidence Interval (CI) were extracted to compute pooled analysis using the 'meta' package by Schwarzer et al. in the R programming language (version 4.16-2).

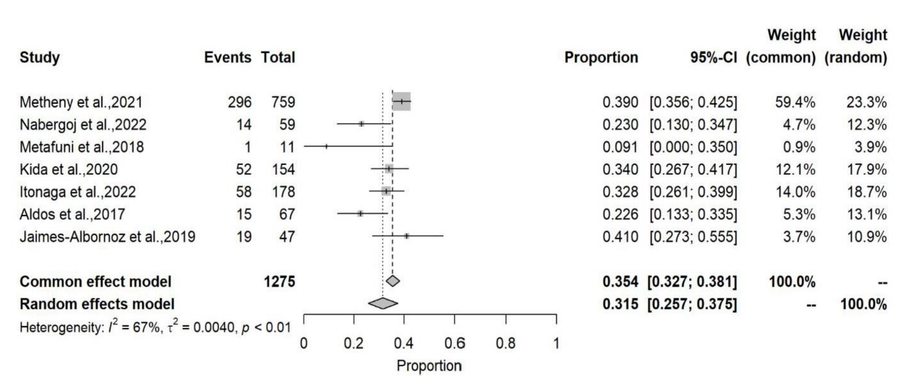
RESULTS

- A total of 1275 patients were included for analysis.
- The median age of participants was 56 (18-74) years, and 53% were male.
- The median time from prior treatment to the development of t-MDS was 67.5 (2.2-190) months, and the median follow-up time was 32 (0-195.96) months.
- The type of donor was matched related donor 36%, matched unrelated donor 27%, mismatched related donor 3%, mismatched unrelated donor 12%, and unrelated donor with unknown matching status 23%.
- The source of stem cells was peripheral, bone marrow, and cord blood in 78%, 13%, and 9% of patients, respectively. Myeloablative conditioning was used in 44% and 56% of the patients received reduced-intensity conditioning.
- At a median follow-up of 3 (1-5) years, the pooled overall survival (OS) was 41.2% (95% CI 0.31-0.52, I2=89%, p<0.01, n=1264), while the pooled progression-free survival was 33.9% (95% CI 0.25-0.44, I2=89%, p<0.01, n=1217).
- The pooled relapse rate and non-relapse mortality at a median follow-up of 2 years (1-5) was 31.5% (95% CI 0.26-0.38, I2=67%, p<0.01, n=1275) and 30.4% (95% CI 0.23-0.38, I2=72%, p<0.01, n=1097), respectively.
- The pooled incidence of acute and chronic graft versus host disease (GVHD) was 30.9% (95% CI 0.24-0.38, I2=0%, p=0.41, n=184) and 37.6% (95% CI 0.25-0.51, I2=78%, p<0.01, n=876), respectively.

Overall Survival



Relapse Rate



CONCLUSIONS

Allo-HCT is an attractive treatment modality for t-MDS patients, with favorable outcomes and acceptable incidence of GvHD.

CONTACT INFORMATION

Moazzam Shahzad, MD
H. Lee Moffitt Cancer & Research Institute
Moazzam.Shahzad@moffitt.org