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ELEVENTH ANNUAL MEETING

ENHANCED SURVIVAL OF CHRONIC MYELOMONOCYTIC LEUKEMIA (CMML)-DYSPLASTIC OVER THE PROLIFERATIVE SUBTYPE AFTER ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION: A TERTIARY CENTER EXPERIENCE

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INTRODUCTION

- CMML is a hematologic neoplasm distinguished by persistent peripheral monocytosis and overlapping features of myeloproliferative and myelodysplastic neoplasms.[1]
- Allogeneic hematopoietic stem cell transplantation (allo-HCT) is the only curative option, but it is utilized in fewer than 10% of CMML patients.[2]
- With current predictive models, it is unclear which patients would benefit most from allo-HCT.

AIM

- **Evaluate clinical predictors of post-transplant outcomes in CMML**

  Outcomes of interest included overall survival (OS), relapse-free survival (RFS), GVHD-free, relapse-free survival (GRFS), relapse, and non-relapse mortality (NRM)

METHOD

Tertiary-Center Retrospective Study

- Included 27 patients who underwent allo-HCT for a primary diagnosis of CMML of any WHO stage, including acute leukemic transformation, at OHSU between 2004 and 2022
- Predictor variables:
  - Comorbidity index (HCT-CI)[3]
  - Disease subtype (CMML-MDS vs. CMML-MPN)
  - Cytogenetic risk profile (as used in the CPSS)[4]
  - Prognostic risk category at diagnosis (CPSS,[4] Mayo,[5] and the CPSS-Mol[6] and Mayo Molecular Model[7] when possible)
- Reverse Kaplan-Meier method used to estimate survival outcomes, compared with log-rank testing.

RESULTS

Eight-times Longer Overall Survival for CMML-MDS over CMML-MPN

Characteristics

- Median age at transplant was 61 years, 59% male.
- 15 had CPSS of IM-2 or greater.
- Donors were matched unrelated in 15, 9 matched related in 9, mismatched unrelated in 1, haploidentical in 1, double cord blood in 1.

Outcomes

- OS at 1, 3, and 5-years was 52%, 35%, 35%.
- RFS at 1, 3, and 5 years was 44%, 22%, 16%.
- Severe acute GVHD occurred in 26%, and chronic GVHD occurred in 48%.
- GRFS at 1, 3, and 5 years was 26%, 10%, 5%
- CMML-MDS had significantly better OS, RFS, and GRFS compared to CMML-MPN.
- No differences by comorbidity index or prognostic risk category calculated at time of diagnosis.

Figure 1: OS, RFS, and GRFS in all patients and by disease subtype

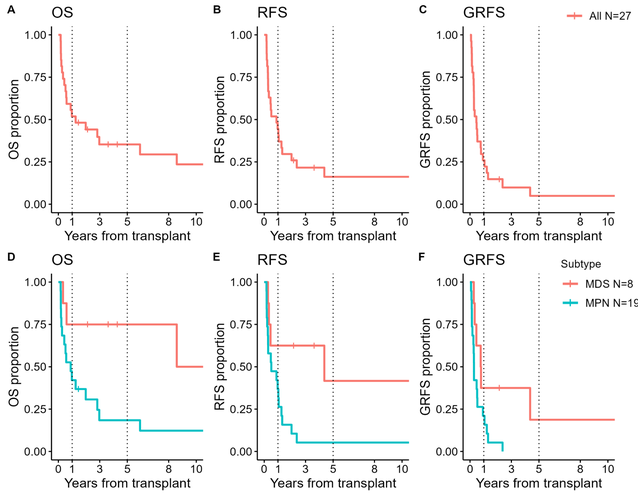


Table 1: Overall outcomes, and outcomes by disease subtype and cytogenetic risk

	OS (median)	RFS (median)	GRFS (median)	Relapse (cumulative at 1y)	NRM (cumulative at 1y)
Overall (n=27)	1.3 yr	10.7 mo	5.5 mo	18.5%	37.0%
CMML-MDS (n=8)	**8.6 yr** [A]	**52.3 mo** [B]	**9.4 mo** [C]	25.0%	12.5%
CMML-MPN (n=19)	**0.9 yr** [A]	**6.2 mo** [B]	**3.4 mo** [C]	15.8%	47.4%
	[A] ***P* = 0.04**	[B] ***P* = 0.03**	[C] ***P* = 0.04**		
High-risk cytogenetics (n=6)	0.5 yr	3.3 mo	**3.1 mo** [D]	33.3%	50.0%
Intermediate / low-risk cytogenetics (n=21)	2.8 yr	12.3 mo	**6.2 mo** [D]	14.3%	33.3%
			[D] ***P* = 0.02**		

Bold with superscript capital letters denotes statistical significance, with an alpha level set at 0.05.
CMML-MDS: WBC at diagnosis of <13,000; CMML-MPN: WBC at diagnosis of >13,000.
High-risk cytogenetics: Trisomy 8, complex cytogenetics, and/or chromosome 7 abnormalities.

CONCLUSIONS

- Allo-HCT can be curative in CMML, though **outcomes are substantially better in those transplanted for CMML-MDS** than those transplanted for CMML-MPN.
- **Traditional prognostic models were not predictive of any outcomes in our cohort.**
- **Future research is needed** to optimize transplantation in patients with CMML, especially those with CMML-MPN.

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