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ELEVENTH ANNUAL MEETING

THE OUTCOMES OF PATIENTS WITH T-CELL PROLYMPHOCYTIC LEUKEMIA AFTER ALLOGENEIC STEM CELL TRANSPLANT: A MULTICENTER RETROSPECTIVE STUDY

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INTRODUCTION

- T-cell prolymphocytic leukemia (T-PLL) is an aggressive and rare T-cell malignancy with limited patient outcome data
- Although the optimal treatment of T-PLL remains to be defined, retrospective studies have suggested that allogeneic transplant (allo-HCT) offers the best chance of long-term disease-free survival

AIM

- We aim to report the outcomes of T-PLL patients after allo-HCT from two centers in the United States

METHOD

- This is a retrospective analysis of patients diagnosed with T-PLL who underwent allogeneic transplant between 2002-2022 at Dana Farber Cancer Institute and Massachusetts General Hospital
- The study population included patients aged ≥ 18 with T-PLL who underwent allo-HCT
- Time-to-event endpoints are estimated using the Kaplan-Meier method with 95% confidence intervals calculated using Greenwood's method to estimate variance

RESULTS

Table 1: Patient characteristics	n = 35 (%)
Site	
DFCI	33 (94)
MGH	2 (6)
Age	
Median (range)	61 (41 - 77)
Karnofsky PS	
≥90	17 (49)
<90	13 (37)
Missing	5 (14)
Year of transplant	
Up to 2010	9 (26)
After 2010	26 (74)
Initial Treatment	
Alemtuzumab	30 (86)
Fludarabine, melphalan	4 (11)
Pentostatin	1 (3)
No. of transplants	
Median (range)	1 (1 - 2)
1	31 (89)
2	4 (11)
Disease status at transplant	
CR	23 (66)
PR	7 (20)
SD	3 (9)
Missing	2 (6)
Transplant type	
Allogeneic - related donor	8 (23)
Allogeneic - related haploidentical	4 (11)
Allogeneic - unrelated donor	23 (66)
Conditioning	
Myeloablative	3 (9)
Reduced-intensity	32 (91)
Missing	1 (3)
GVHD prophylaxis	
CNI + MMF + Cy	6 (17)
CNI + MMF	2 (6)
CNI + MTX	20 (57)
CNI	6 (17)
Rituximab*	1 (3)

CNI (calcineurin inhibitor), MTX (methotrexate), MMF (mycophenolate), Cy (cyclophosphamide).
*Rituximab given on clinical trial.

Patient outcomes

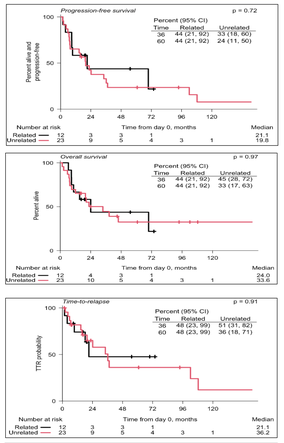


Figure 1: *(A) Progression free survival, (B) Overall survival and (C) Time to relapse in months*

Patient outcomes by donor type

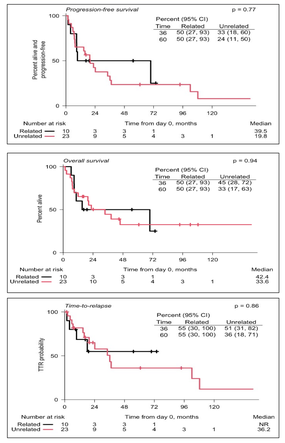


Figure 2: (A) PFS, (B) OS and (C) TTR in months by donor type

Patient outcomes by year of transplant

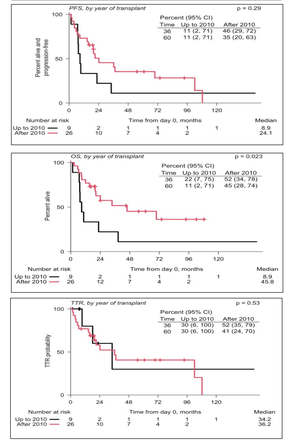


Figure 3: (A) PFS, (B) OS and (C) TTR in months by transplant year

Table 2: GVHD	
Acute graft-versus-host disease	**n=16 (46%)**
AGVHD max grade	
I	4 (25)
II	9 (56)
III	3 (19)
AGVHD, time to max grade, months	
Median (range)	3.4 (1.4 - 6.5)
Chronic graft-versus-host disease	**n=13 (37%)**
CGVHD severity	
Mild	9 (69)
Moderate	4 (31)
CGVHD, time to max grade, months	
Median (range)	12.7 (5.9 - 60.3)

Table 3: Count recovery and cause of death	
	n = 35 (%)
Absolute neutrophile count (ANC) < 500 cells/mm³	
Yes	24 (69)
No	7 (20)
Missing	*4 (11)*
Days to ANC	
Median (range)	14 (0 - 49)
Missing	*4 (11)*
Platelets < 50k	
Yes	25 (71)
No	6 (17)
Missing	*4 (11)*
Days to platelets <50k	
Median (range)	18 (0 - 110)
Missing	*4 (11)*
Cause of death	
Cardiac failure	1 (3)
COVID-19	1 (3)
Disease progression	14 (40)
Infection/sepsis	4 (11)
Other	1 (3)
Alive	13 (37)
Missing	*1 (3)*

CONCLUSIONS

- Even though the outcomes of T-PLL patients remain poor, OS has improved since 2010
- Relapse is still the most common cause of treatment failure
- Novel therapies are needed for this rare and aggressive disease
- Analysis of immune reconstitution after allo-HCT and correlation with treatment outcomes is ongoing

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