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CYTOMEGALOVIRUS REACTIVATION FOLLOWING ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION AND ITS ASSOCIATION WITH DONOR VIRUS-SPECIFIC CELLULAR IMMUNITY

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INTRODUCTION

- Nearly 60-70% CMV seropositive recipients have CMV reactivation (CMV-R) after allo-SCT[1]
- Recipient CMV-specific cell-mediated immunity (CMI) assessment can predict CMV-R risk in patients after allo-SCT[2,3]
- Lack of data on the CMV-R profile in India and the impact of pre-SCT donor CMI on CMV-R in allo-SCT recipients.

AIM

- To examine the CMV-R profile following allo-SCT in a tertiary care cancer center in India.
- To explore the association between pre-transplant donor CMI and CMV-R severity

METHODS

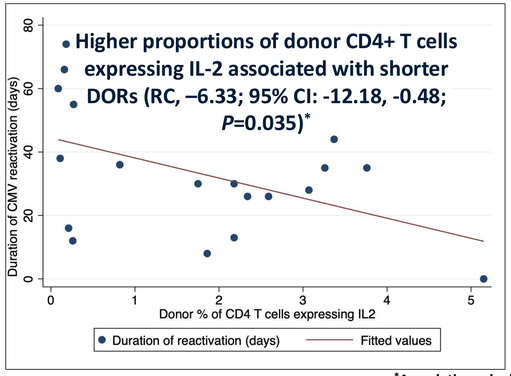
- Prospective, observational study including consecutive allo-SCT recipients
- CMV PCR monitoring was done in all patients post-SCT and CMI assessment in a subset of 19 donors
- Clinical predictors of CMV-R duration (DOR) and association of donor CMI with DOR and peak titers were examined using linear regression

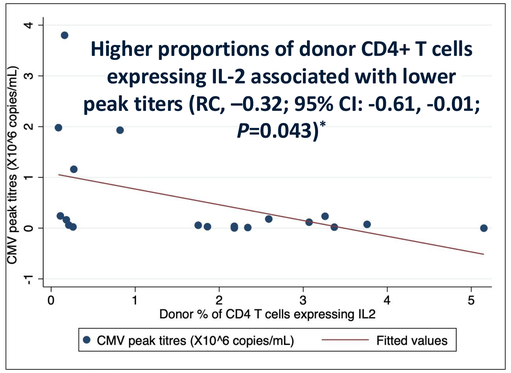
RESULTS

- Fifty-one patients recruited

Baseline characteristic (n=51)	Value
Age (in years), Mean (SD)	22.31 (10.62)
Gender (n,%) Male	38 (74.5)
Type of transplant (n,%)	
Haploidentical	27 (52.9)
Matched sibling donor	24 (47.1)
Donor sex (n,%)	
Male	35(68.6)
Donor age (in years), Mean (SD)	30.44 (15.64)
Diagnosis (n, %)	
AML	24(47.1)
ALL	14(27.4)
Others	13(25.5)
Regimen intensity(n,%)	
Myeloablative	32(62.8)
Reduced intensity	19(37.2)
Received ATG (n,%)	36(70.6)

- 74.5% (38/51) patients had CMV-R after transplant with mean DOR of 21.63 days (SD 20.15)
- ATG receipt (RC: 15.08; 95% CI 3.71, 26.44; p=0.010) and aGVHD (RC: 11.70; 95% CI: 0.71, 22.70; p=0.037) associated with prolonged DOR.
- Higher donor age associated with higher peak CMV titers (copies/mL) (RC: 1292.8, 95% CI: 35.09, 2550.51; p=0.044)





*Associations significant after adjustment for clinical characteristics

CONCLUSIONS

- CMV infection post-allo SCT incidence in Indian setting is similar that reported world over.
- Strong donor cellular immune responses to CMV are independently associated with shorter recipient CMV DORs and lower peak titers.
- Pretransplant donor CMV CMI assessment may aid in tailoring individualised surveillance for CMV and have considerations for prophylaxis.

REFERENCES

[1]Altaf et al. J Infect Dis. 2021; [2]Lopez-Oliva et al. Nefrologia. 2017; [3]Einsele et al. Blood. 2020

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