

Infection Burden of Double Stranded DNA (dsDNA) Viruses after CD34+ Selected, T-cell Depleted (TCD) Hematopoietic Cell Transplantation (HCT) for Myeloid Malignancies at Memorial Sloan Kettering Cancer Center (MSK)

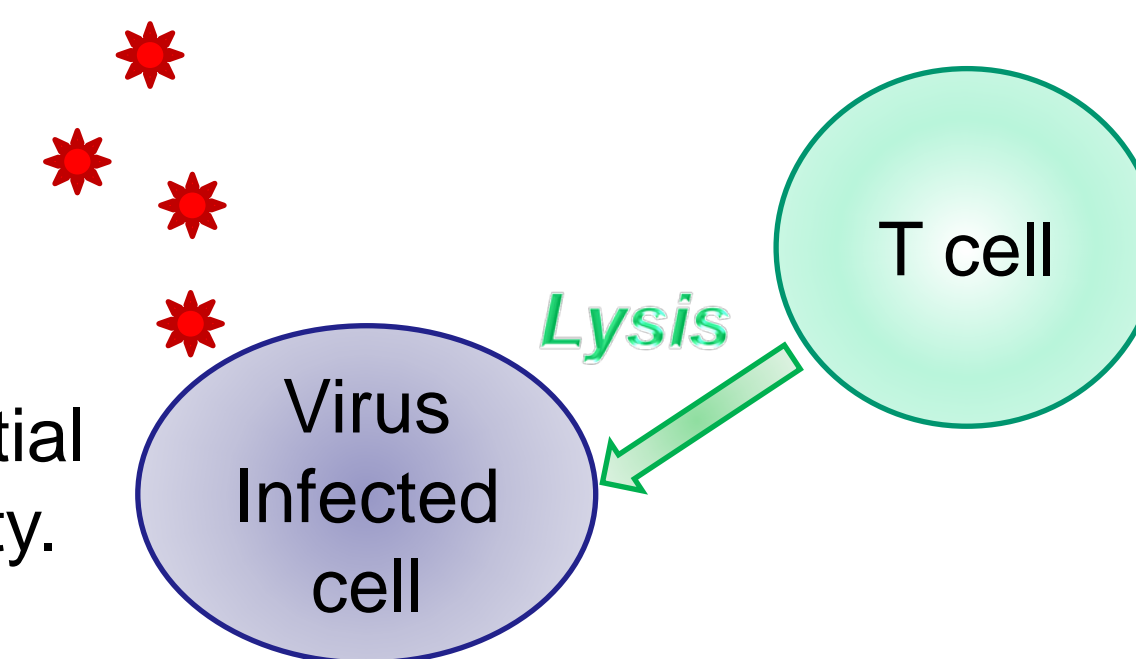
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Background

❖ The ds DNA viruses Cytomegalovirus (CMV), Adenovirus (ADV), Human herpes virus 6 (HHV6) and Epstein-Barr virus (EBV) may cause serious infections in HCT recipients.

❖ T-cells are essential for antiviral immunity.



❖ A 5-log reduction of T-cells in the allograft is achieved by the Clinimacs® CD34+ Selection System.



❖ Recipients of *ex vivo* TCD HCT are susceptible to infections by DsDNA viruses.

Objectives

- Estimate the incidences of CMV, ADV, HHV6 and EBV viremia stratified by recipient CMV serostatus (R+ vs R-).
- Estimate the incidences of end organ disease (EOD) by CMV, ADV, HHV6 and EBV at 1 year post HCT.
- Estimate rates of co-infections by ds DNA viruses.

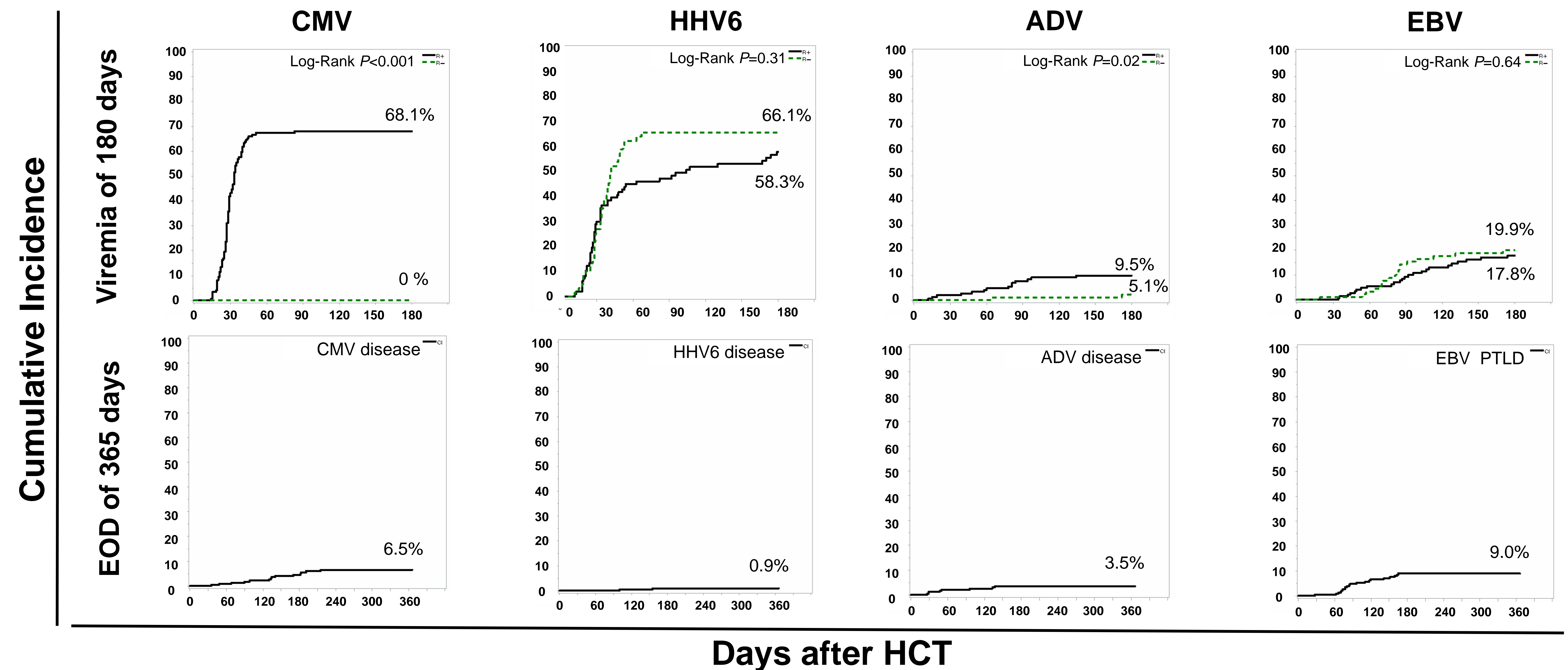
Methods

❖ TCD HCT recipients of acute leukemia and myelodysplastic syndrome at MSK from June 2010 to December 2014 were routinely monitored by quantitative polymerase chain reaction (qPCR) assays for CMV, ADV, HHV6 and EBV.

❖ End organ disease (EOD) was scored by standard criteria.

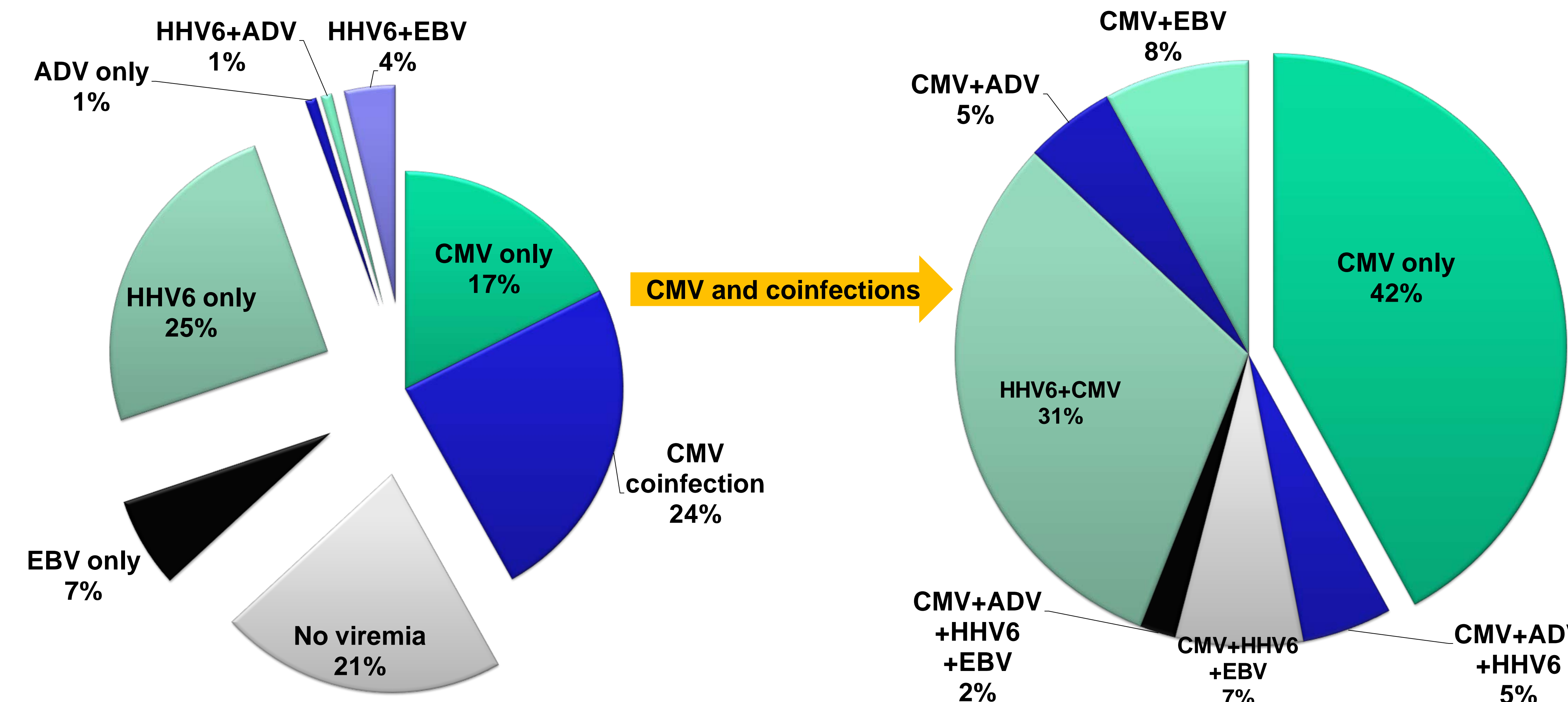
❖ Cumulative incidence (CI) for viremia and EOD was estimated by the Kaplan-Meier method and compared by the log-rank test. $P < 0.05$ was deemed statistically significant.

Rates of viremia and end organ disease (EOD)



79% patients developed viremia and 77% had onset <100 days post HCT (N=239)

58% patients with CMV viremia had viral coinfections (N=100)



Conclusions

- 77% of patients developed at least 1 viral infection, within the first 100 days post HCT.
- Among patients with CMV viremia, 58% had coinfections with additional dsDNA virus(es).
- Our data highlights the burden of viremias in recipients of TCD allografts.
- Despite high rates of viremia, rates of end organ disease were low, supporting the effectiveness of active surveillance and aggressive preemptive therapy.

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