AlloVir Virtual Investor Event

December 13, 2021

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These statements are also subject to a number of material risks and uncertainties that are discussed in the section entitled "Risk Factors" in our quarterly report on Form 10-Q for the fiscal quarter ended September 30, 2021, as well as discussions of potential risks, uncertainties, and other important factors in our subsequent filings with the Securities and Exchange Commission. Any forward-looking statement speaks only as of the date on which it was made. Neither we, nor our affiliates, advisors or representatives, undertake any obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

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Diana Brainard, M.D.

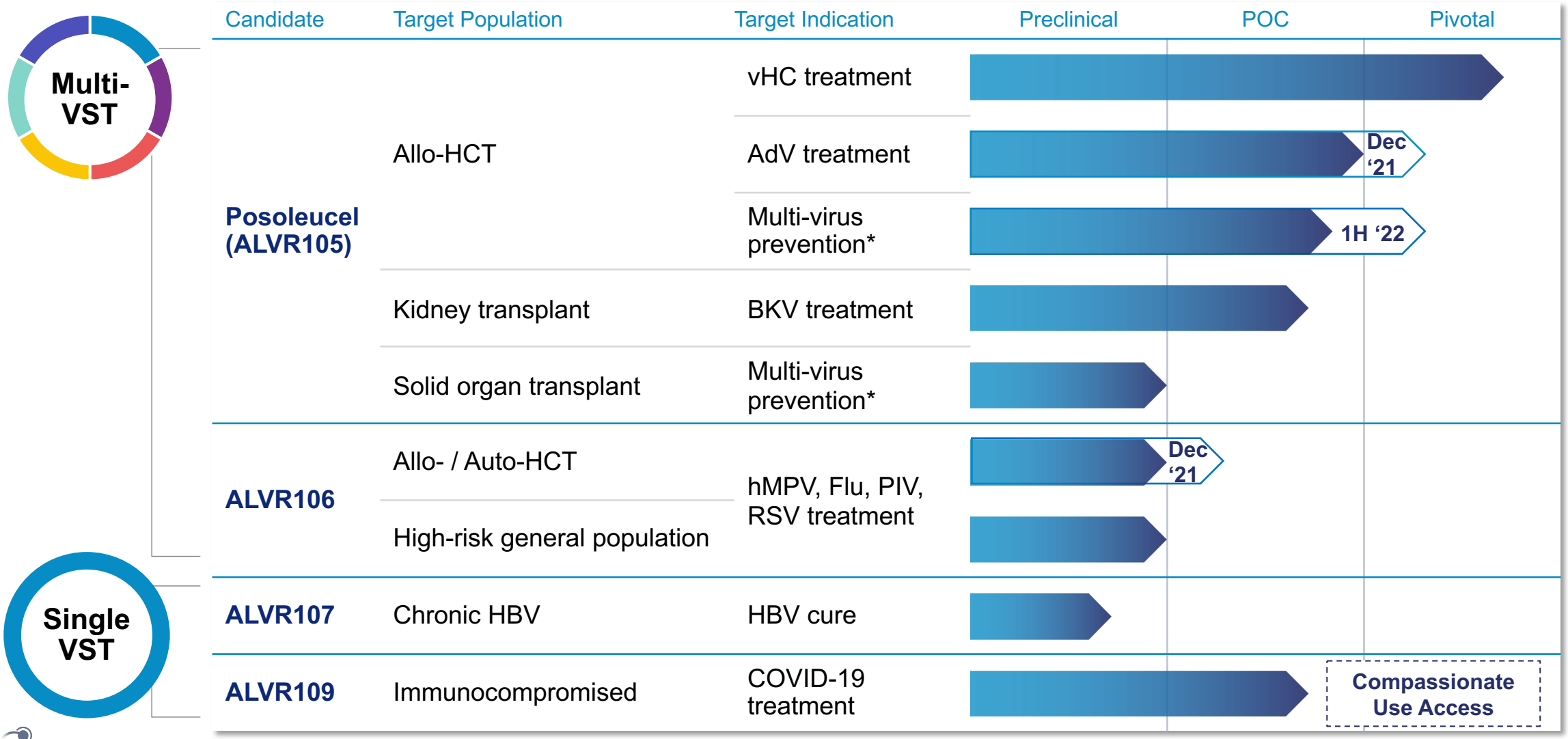
Chief Executive Officer
AlloVir, Inc. (Nasdaq: ALVR)

AlloVir: A Leading Innovator in Allogeneic, Off-the-Shelf, Virus-Specific T Cell Immunotherapies

Clinically validated platform	Rich pipeline	Manufacturing at scale	Large unmet need and global opportunity
93% overall response rate in Phase 2 study	4 products targeting 12 viruses with both treatment and prevention potential	Simple, non-gene-edited, scalable process with manufacturing redundancy	Currently focused on stem cell and solid organ transplant patients
Expedited regulatory review pathways (RMAT, PRIME)	Posoleucel in 3 Phase 3 trials* and 1 ongoing proof-of-concept study by 1H 2022	Off-the-shelf delivery for patient access within 48 hours	Expanding to additional patient populations

*Phase 3 trial for multi-virus prevention anticipated to initiate in 1H 2022, following FDA review of final protocol.
RMAT = Regenerative Medicine Advanced Therapy designation granted by the US Food and Drug Administration; PRIME = Priority Medicines designation granted by the European Medicines Agency.

Our Pipeline Targets 12 Unique Viruses



*Prevention of adenovirus (AdV), BK virus (BKV), cytomegalovirus (CMV), Epstein-Barr virus (EBV), human herpesvirus 6 (HHV-6), JC virus (JCV). Phase 3 trial in allo-HCT anticipated to initiate in 1H 2022, following FDA review of final protocol.
Allo-HCT = allogeneic hematopoietic cell transplantation; Auto-HCT = autologous HCT; HBV = hepatitis B virus; hMPV = human metapneumovirus; Flu = influenza; PIV = parainfluenza virus; POC = proof-of-concept; RSV = respiratory syncytial virus; vHC = virus-associated hemorrhagic cystitis; VST = virus-specific T cell.

AlloVir's Therapies Aim to Treat or Prevent Life-Threatening Viral Diseases For Immunocompromised Patients[1-13]

Challenges

Vulnerable Populations

Single and multiple viral infections are common in the immunocompromised:

- HCT & SOT recipients
- The elderly & the very young
- Patients on chemotherapy or immunomodulators

Limited or No Treatment Options

Therapeutic options raise concerns about:

- Lack of efficacy for off-label treatments
- Significant toxicity
- Emergence of resistance

Substantial Morbidity & Mortality

Uncontrolled viral diseases can:

- Prolong hospitalization
- Increase risk for GVHD or graft rejection
- Cause end-organ damage
- Result in death

Solution

Immunity Restored with VSTs

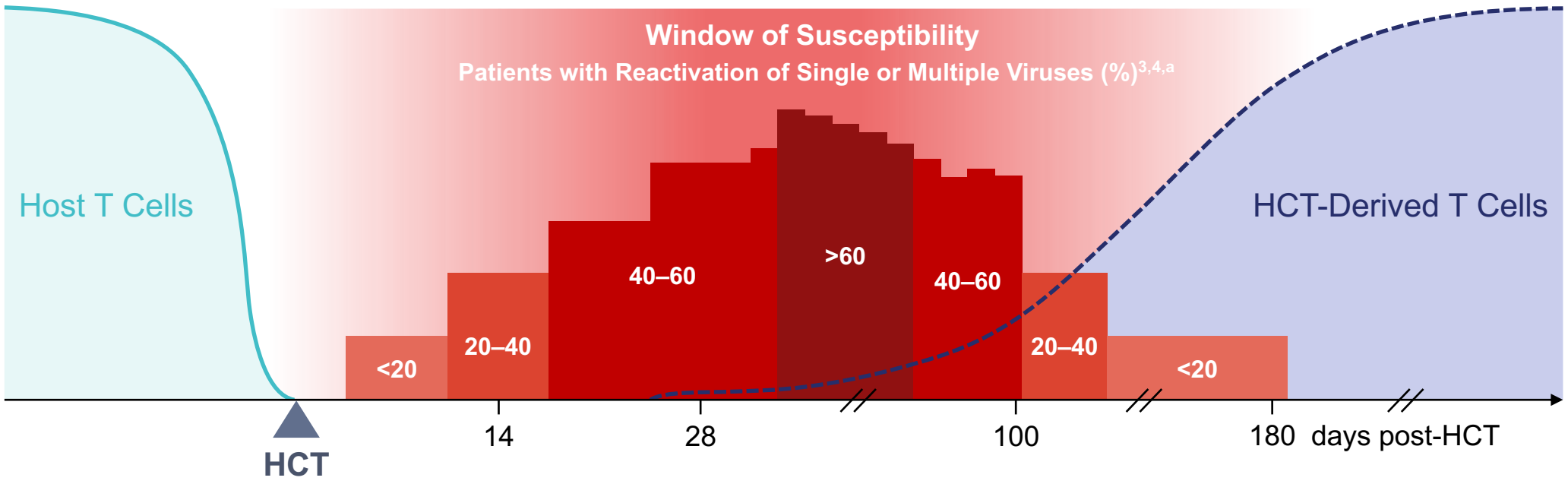
VSTs are a clinically validated approach to restoring protective T-cell immunity

AlloVir's VSTs:

- **Address the underlying immune deficit in high-risk patient populations**
- **Target multiple viruses with limited to no treatment options**
- **Offer off-the-shelf delivery to reach patients quickly**

GVHD = graft vs host disease; SOT = solid organ transplant.
1. Abudayyeh A, et al. *Am J Transplant.* 2016;16:1492-1502; 2. Camargo JF, Komarduri KV. *Hematol Oncol Stem Cell Ther.* 2017;10:233-238; 3. Cesaro S, et al. *Bone Marrow Transplant.* 2018;doi:10.1038/s41409-018-0421-0; 4. Leen AM, et al. *Blood.* 2009;114(19):4283-4292; 5. Perruccio K, et al. *Biol Blood Marrow Transplant.* 2018;24:2549-2557; 6. Saribas AS, et al. Future Virol. 2010;5(3):313-323. doi:10.2217/fvl.10.12; 7. Cho SY, et al. *Kor J Intern Med.* 2018;33:256-276; 8. Law N, Kumar D. *Drugs Aging.* 2017;34:743-754; 9. Gentile G, Antonelli G. *Viruses.* 2019;11:doi:10.3390/v11111049; 10. Kedia S, et al. *J Stem Cell Res Ther.* 2013;doi:10.4172/2157-7633.S3-002; 11. Ison MG, Hirsch HH. *Clin Microbiol Rev.* 2019;32(4):1-33; 12. Jose RJ, et al. *Medicine. 2020.* doi:10.1016/j.mpmed.2020.03.006; 13. Simon AK, Hollander GA, McMichael A. *Proc Biol Sci.* 2015;282(1821):20143085.

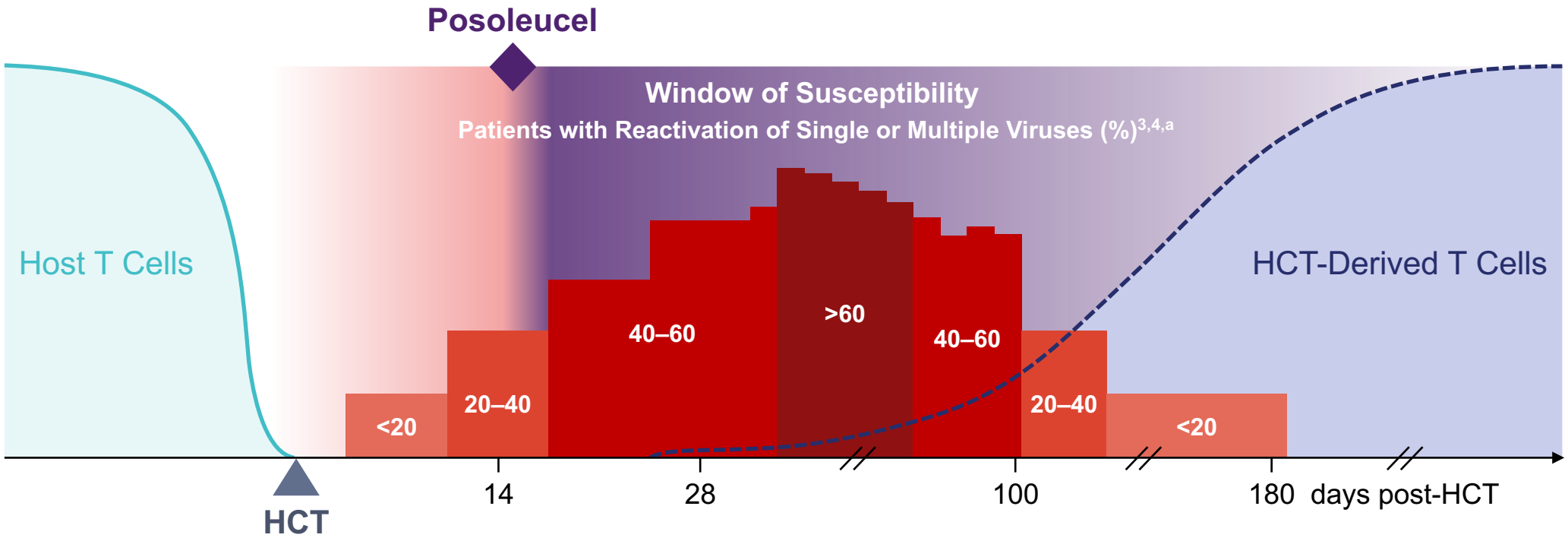
Following HCT, Patients are Susceptible to Life-Threatening Viral Infections[1-6]



[a]Post 100-day data for proportion of patients with viral detection is from Huang YT, et al, as Hill J, et al only measured out to 100 days.

1. Kedia S, et al. *J Stem Cell Res Ther* 2013;S3; 2. Ison M, Hirsch H. *Clin Microbiol Rev* 2019;32:e00042-19; 3. Hill J, et al. *Blood* 2017;129:2316-25; 4. Huang YT, et al. *Biol Blood Marrow Trans* 2017;23:1759-66; 5. Stern L, et al. *Front Immunol* 2018;9:1672; 6. Hill J, et al. *Clin Infect Dis* 2018;66:368-75.

Posoleucel is Designed to Treat and Prevent Viral Infections and Diseases Until the Patient's Own Immune System Recovers[1-6]



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Sanjeet Dadwal, M.D.

Chief, Division of Infectious Diseases and
Professor of Medicine
City of Hope

Posoleucel (ALVR105), an Off-the-Shelf, Multivirus-Specific T-Cell Therapy, for the Prevention of Viral Infections Post-HCT

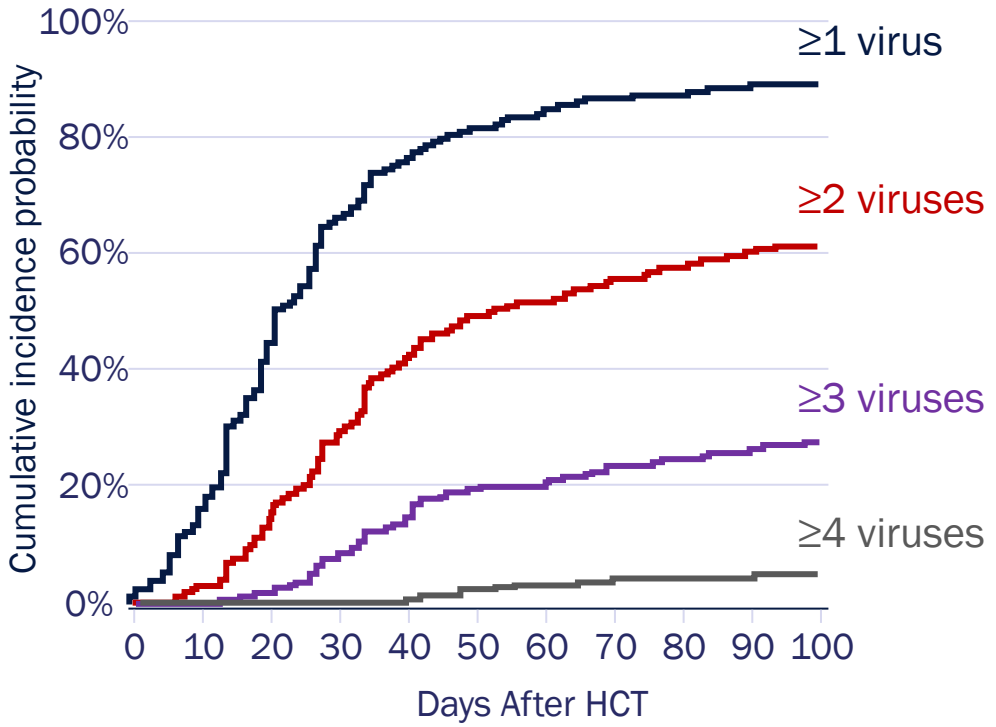
Results from an Open-Label Cohort of a Phase 2 Trial

Sanjeet S. Dadwal[1], Michael Schuster[2], Gary Douglas Myers[3], Keith Boundy[4], Marshelle Warren[5], Elizabeth Stoner[4], Thuy Truong[1], Joshua A. Hill[6]

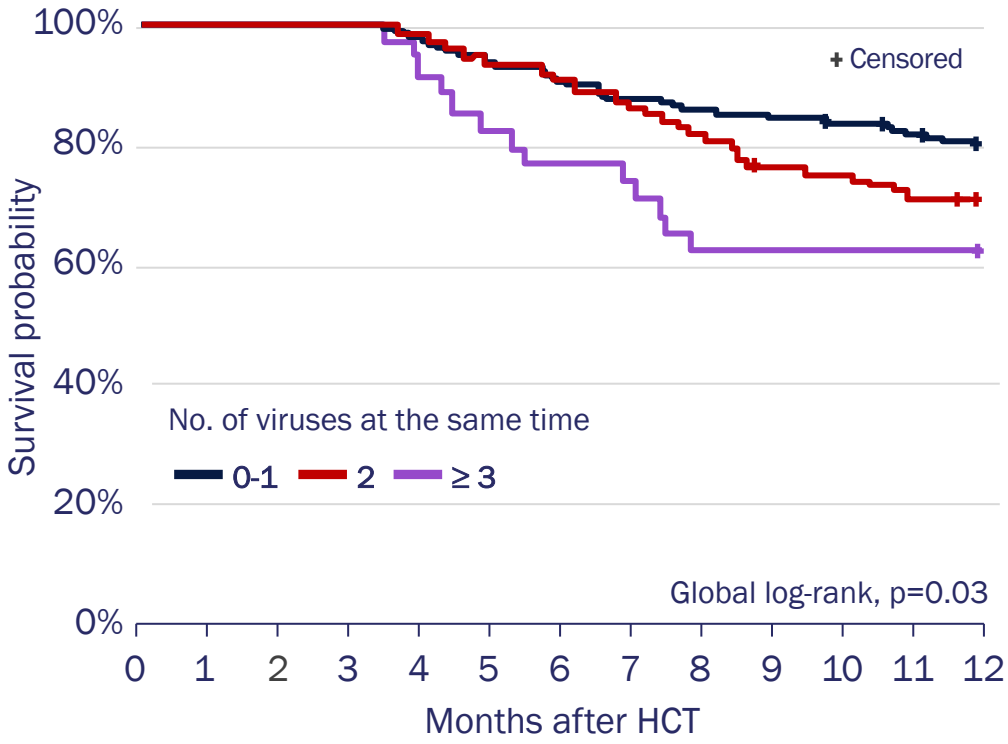
[1]City of Hope National Medical Center, Duarte, CA; [2]Stony Brook Cancer Center, Stony Brook, NY; [3]Children's Mercy Hospital, Kansas City, MO; [4]AlloVir, Cambridge, MA; [5]Glacier Bio, North Bend, WA; [6]Fred Hutchinson Cancer Research Center, Seattle, WA

Multi-Virus Infections Are Common in Allogeneic HCT Patients and Contribute to Significant Mortality

Incidence of AdV, BKV, CMV, EBV, or HHV-6 infection[1] (N=404)



Overall survival, number of viruses at the same time[1] (N=358)



- 61% of patients were treated with antiviral therapies, excluding rituximab, within the first 100 days

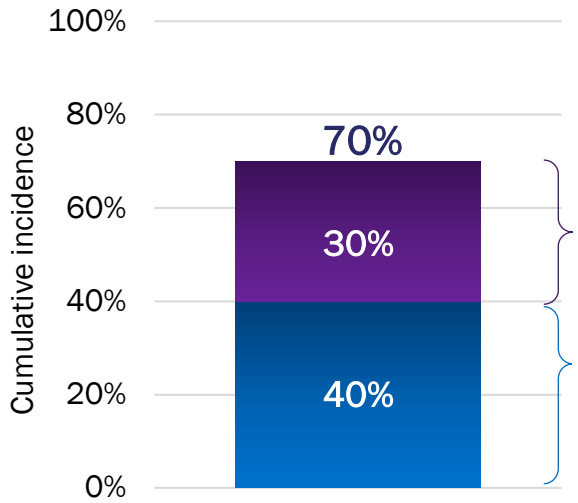
AdV: adenovirus; CMV: cytomegalovirus; EBV: Epstein-Barr virus; HHV-6: human herpesvirus 6.

1. Hill et al, *Blood* 2017;

Approximately 70% Incidence of Clinically Significant Infection and Disease due to AdV, BKV, CMV, EBV, HHV-6, or JCV in High-Risk Allo-HCT Patients

- Allogeneic HCT (allo-HCT) patients are at high risk for common dsDNA infections: AdV, BKV, CMV, EBV, HHV-6, and JCV
- Allo-HCT patients at highest risk: haploidentical donor, UCB, MMUD, MUD, MMRD, T cell depletion (~75% of total allo-HCT patients[1])

Estimated incidence of clinically significant viral infection or disease



Viral complications in high-risk allo-HCT not captured in EMR databases[2-7]

Unrelated donor HCT: EMR database analysis[a]

[a]>1400 patients identified between Jan 2018 and Apr 2021 through use of ganciclovir, valganciclovir, foscarnet, cidofovir, or rituximab or ICD-9/10 code for viral disease where available (e.g., does not include virus associated hemorrhagic cystitis)

Conservative estimate

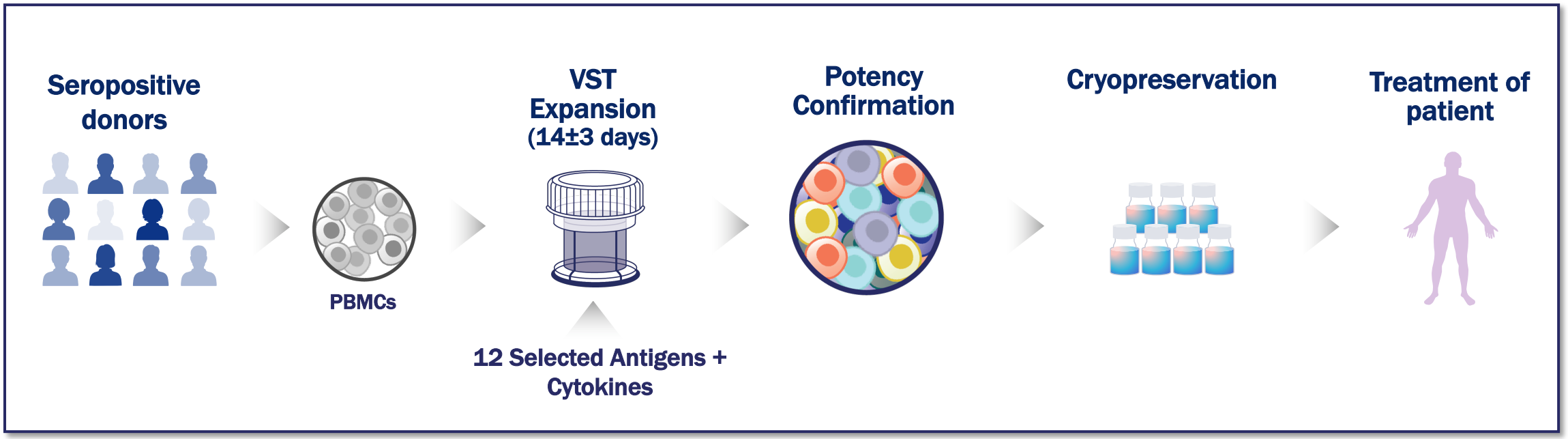
- Not all viral infections or diseases captured
- EMR database does not include patients with haploidentical HCTs

There is an unmet need for preventive therapies targeting multiple viruses in high-risk allo-HCT patients

1. CIBMTR 2020 summary report; 2. Slade et al. *Transpl Infect Dis*. 2017; 3. Mohty et al. *British Journal of Haematology* 2019; 4. Salamonowicz-Bodzioch et al. *Ann Hematol*. 2021; 5. Chang et al. *J Blood Med.* 2019; 6. El-Zimaity et al. *Blood* 2004; 7. Gargiulo et al. *eCancer* 2014

Posoleucel (ALVR105)

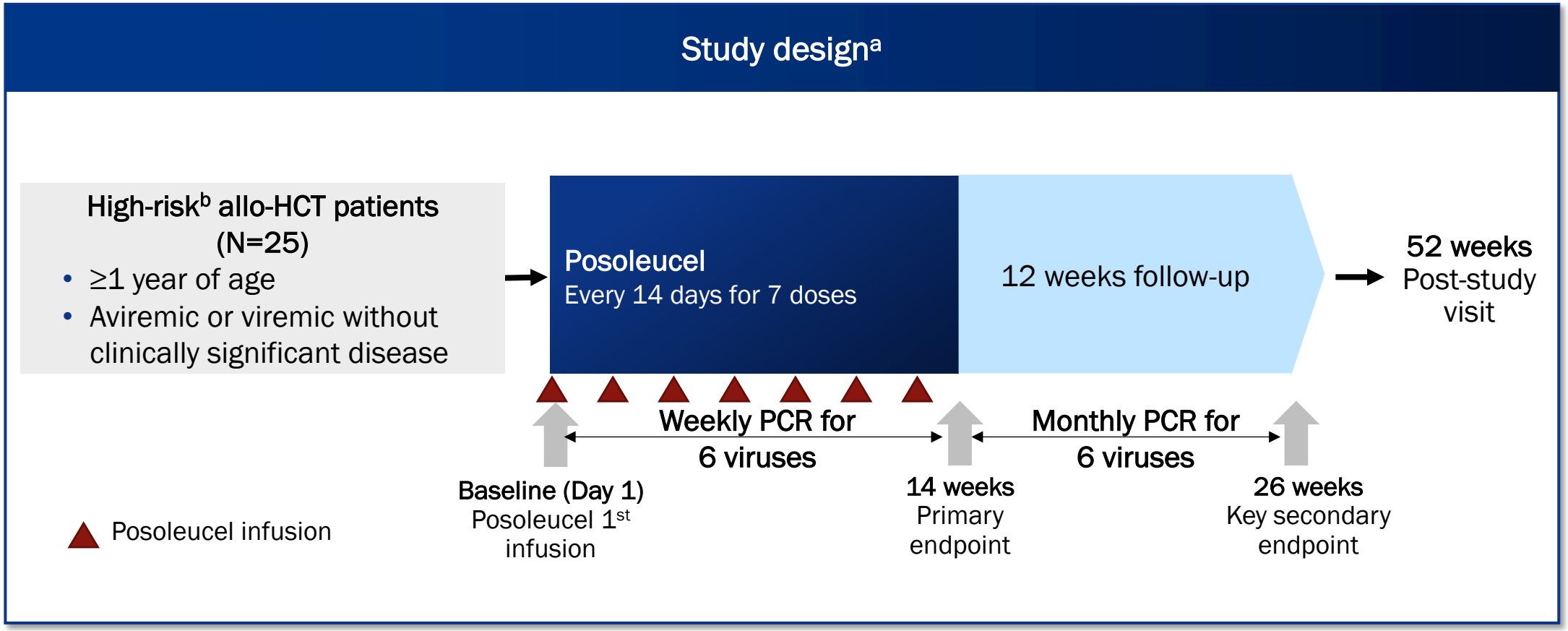
- Allogeneic, off-the-shelf, multivirus-specific T-cell (VST) therapy targeting AdV, BKV, CMV, EBV, HHV-6, and JCV[a]
- 93% response rate in Phase 2 CHARMS study[1]



[a]JCV activity based on homology with BKV

1. Tzannou et al. *Blood* 2020

Phase 2 Multi-Virus Prevention Open-Label Study Design



[a]NCT04693637
[b]High-risk allo-HCT defined as: umbilical cord donor, haploidentical donor, MMRD, MUD, MMUD, recipient of T-cell depletion (ex vivo, alemtuzumab, ATG), persistent lymphopenia <180/mm^3

Endpoint

Primary endpoint: The number of new onset clinically significant infections or episodes of end-organ disease through Week 14

Clinically significant viral infection	Above viral load threshold • CMV: >910 IU/mL • EBV/AdV: >10,000 copies/mL OR >1,000 copies/mL and rising[a] AND Initiation of preemptive antiviral therapy
End-organ disease	Signs or symptoms of organ damage from AdV, BKV, CMV, EBV, HHV-6, or JCV

[a]Defined as two consecutive results of >1,000 copies/mL with the second result being higher than the first and drawn at least 48 hours after the first

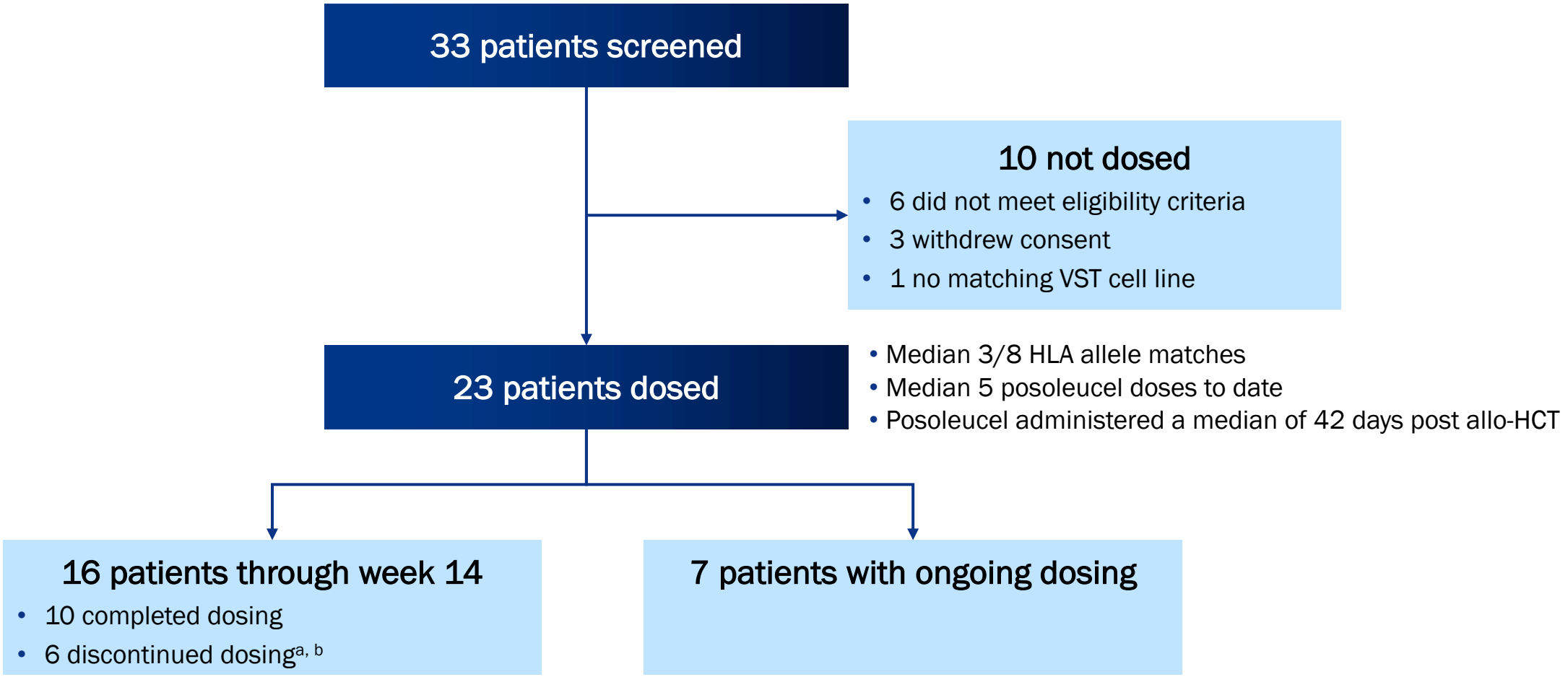
Baseline Demographics

Characteristic	N=23
Age, median years (range)	59 (14-73)
Female, n (%)	12 (52%)
Non-Caucasian or Latino, n (%)	11 (48%)
Diagnosis, n (%)	
Leukemia	14 (61%)
Myelodysplasia/Myelofibrosis	3 (13%)
Lymphoma	2 (9%)
Sickle cell anemia	2 (9%)
Other[a]	2 (9%)

Characteristic	N=23
Donor type, n (%)	
Haploidentical	14 (61%)
Mismatched unrelated	6 (26%)
Matched unrelated[b]	2 (9%)
Umbilical cord blood	1 (4%)
Myeloablative conditioning, n (%)	12 (52%)
Baseline viremia[c], n (%)	10 (43%)
Letermovir prophylaxis, n (%)	14 (61%)

[a]Multiple myeloma and adrenoleukodystrophy
[b]Matched unrelated transplant recipients included if also met another high-risk criterion: T cell depletion or persistent lymphopenia
[c]1 AdV, 7 BKV, 2 EBV and/or 4 HHV-6 viremia(s) detected in 10 patients

Patient Disposition



[a]4 patients due to AEs assessed not related to posoleucel; 1 patient due to AEs assessed as possibly related to posoleucel; 1 patient withdrew consent
[b]Median (range) posoleucel doses: 3 (1-6)

Safety and Tolerability

- No unexpected treatment-emergent adverse events (TEAEs) or serious adverse events (SAEs) were reported
- 6/23 (26%) grade II-IV acute GVHD
  - Consistent with 35-50% of grade II-IV GVHD reported in high risk allo-HCTs[1-3]
  - No association between reported GVHD and number of HLA matches for posoleucel
  - No association between reported GVHD and number of posoleucel doses

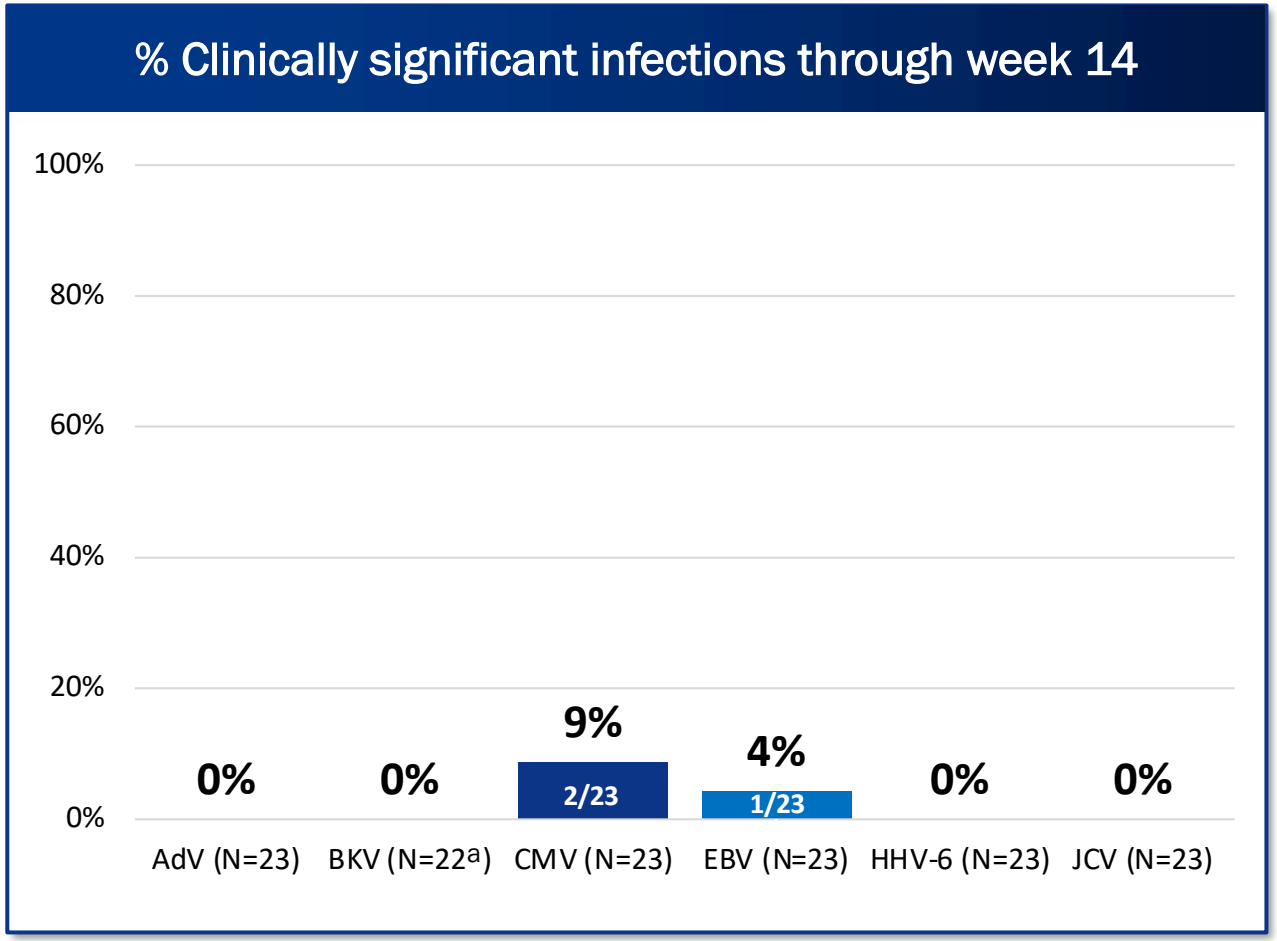
Events	N=23
Common adverse events (AEs)	
Diarrhea	7 (30%)
Weight decrease	5 (22%)
SAEs	11 (48%)
Treatment-related SAE	2 (9%)[a]
Deaths	1 (4%)[b]
Posoleucel DC due to TEAEs	3 (13%)[c]
Adverse events of interest	
Acute GVHD II-IV	6 (26%)
Grade II	2 (9%)
Grade III	4 (17%)
Grade IV	0 (0%)
Cytokine release syndrome	0 (0%)
Infusion reaction	1 (4%)[d]

[a]1 patient with infusion reaction; 1 patient with acute GVHD
[b]Relapse of primary malignancy ~2 months after the 7th dose of posoleucel
[c]2 patients assessed as not related to posoleucel; 1 patient assessed as possibly related to posoleucel
[d]Tolerated subsequent posoleucel doses with pre-medication (diphenhydramine).

1. Malki et al. *Blood Adv*. 2021. 2. Saliba RM, et al. Abstract 31. Presented at: TCT 2020. 3. Chen et al., *Bone Marrow Transplant*. 2017.

Preliminary Results: Primary Endpoint (Week 14)

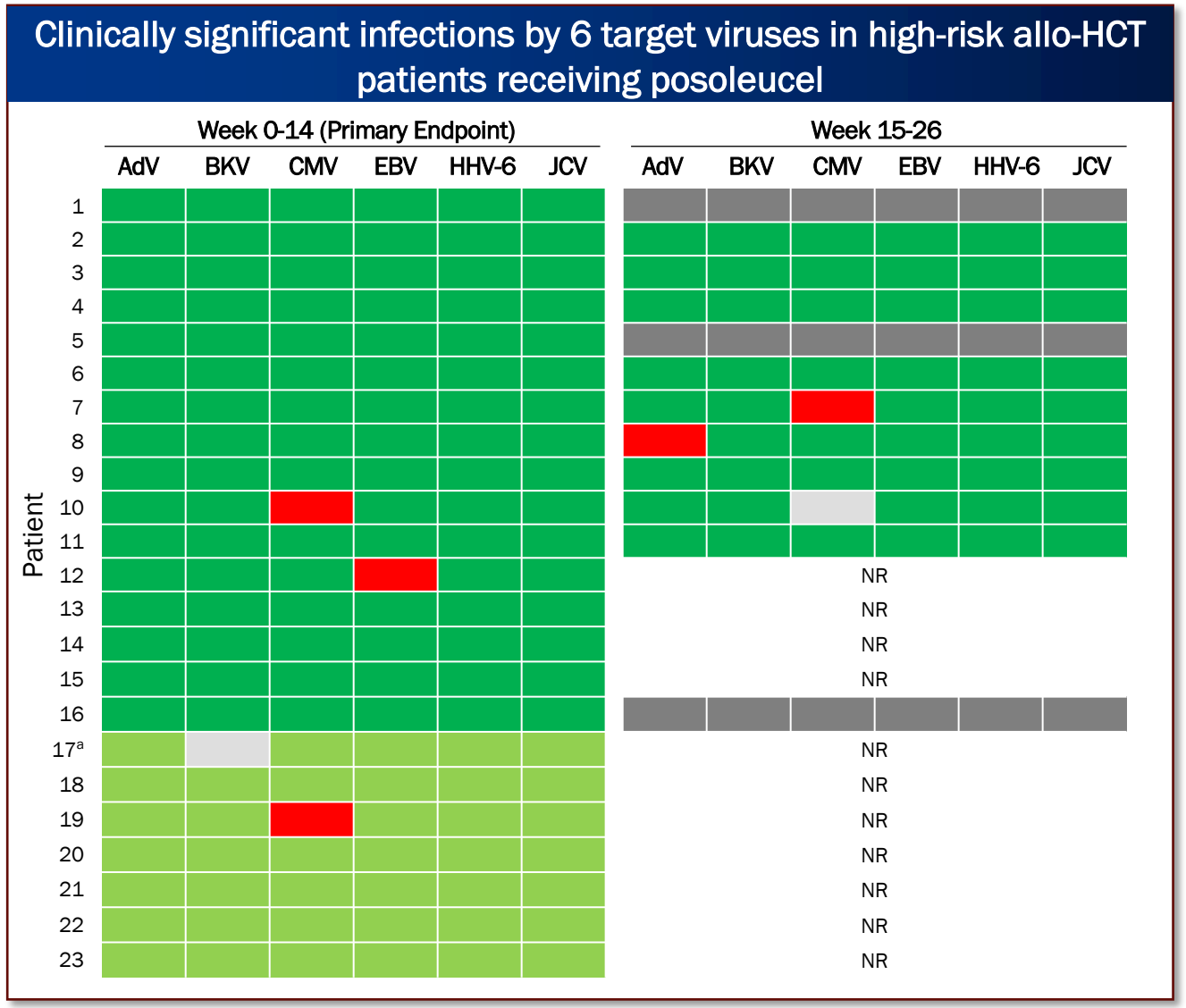
- 3 clinically significant infections
  - 2 patients started on pre-emptive valganciclovir for CMV post letermovir withdrawal
  - 1 patient started on rituximab for EBV in the setting of high-dose steroids
- No end-organ disease[a]



[a]One patient excluded due to BKV hemorrhagic cystitis at baseline

Preliminary Results: Secondary Endpoint (Week 26)

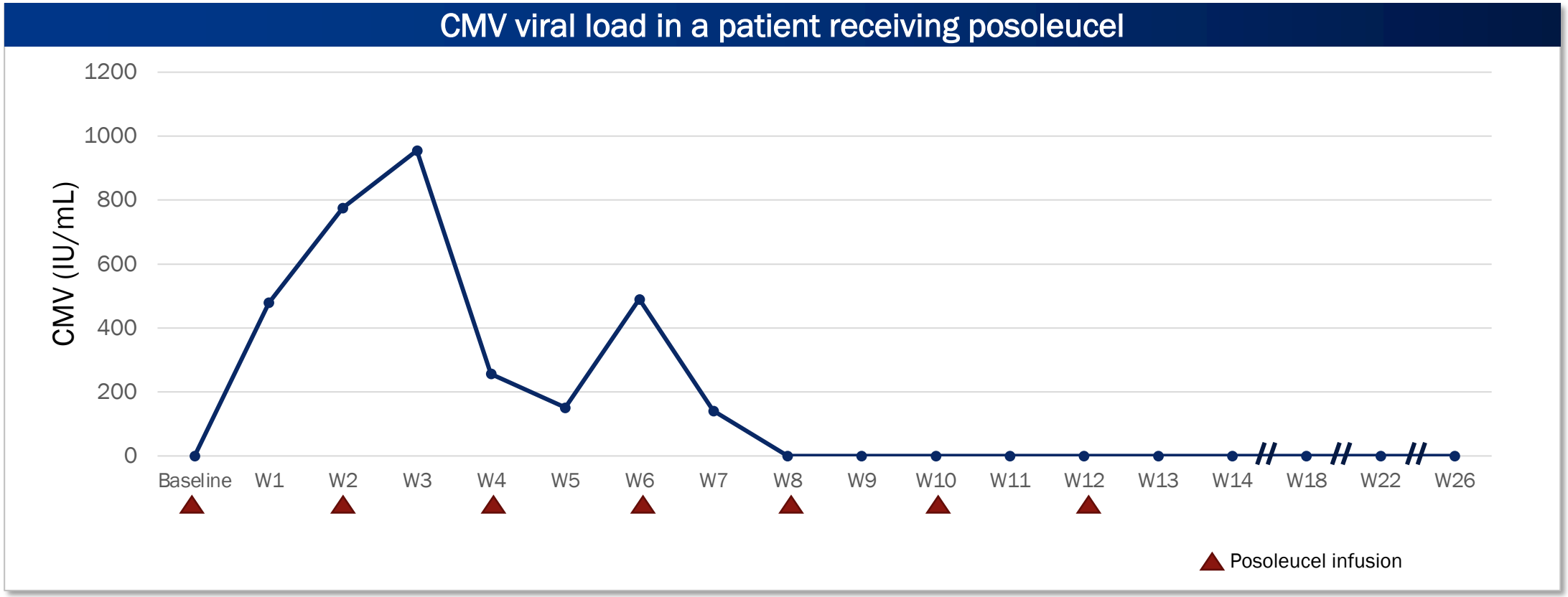
- 2 additional clinically significant infections
  - 1 patient started on pre-emptive valganciclovir for CMV post letermovir withdrawal
  - 1 patient started cidofovir for AdV in the setting of high-dose steroids
- No end-organ disease



[a]BKV hemorrhagic cystitis at baseline

CMV Infection Controlled without Letermovir or Pre-Emptive Therapy while on Posoleucel

- 61YO / Cutaneous T cell lymphoma / Myeloablative conditioning / MMUD HCT
- CMV serostatus: D-/R+
- Last dose of letermovir was 1 day prior to 1st posoleucel dose
- No pre-emptive therapy during study
- Completed all 7 posoleucel doses



Biomarker Summary

- Preliminary assessment of T cell activity by IFNγ ELIspot (N=4) shows increased T cell activity against the infecting target viruses in patients with clinically significant infection

- Preliminary data from TCR sequencing (N=6) demonstrate posoleucel can be detected throughout the 14-week dosing period

Conclusions

- Approximately 70% of high-risk allo-HCT patients develop clinically significant viral infections or disease due to AdV, BKV, CMV, EBV, HHV-6, or JCV

- In the ongoing, open-label cohort of the Phase 2 Multi-Virus Prevention study:
  - **High-risk allo-HCT patients receiving posoleucel had low rates of clinically significant viral infections and no end-organ disease**
  - **Repeat dosing of posoleucel was generally safe and well tolerated**

- These results support the evaluation of posoleucel for the prevention of infections and diseases from the 6 targeted viruses in the upcoming randomized, placebo-controlled Phase 3 trial

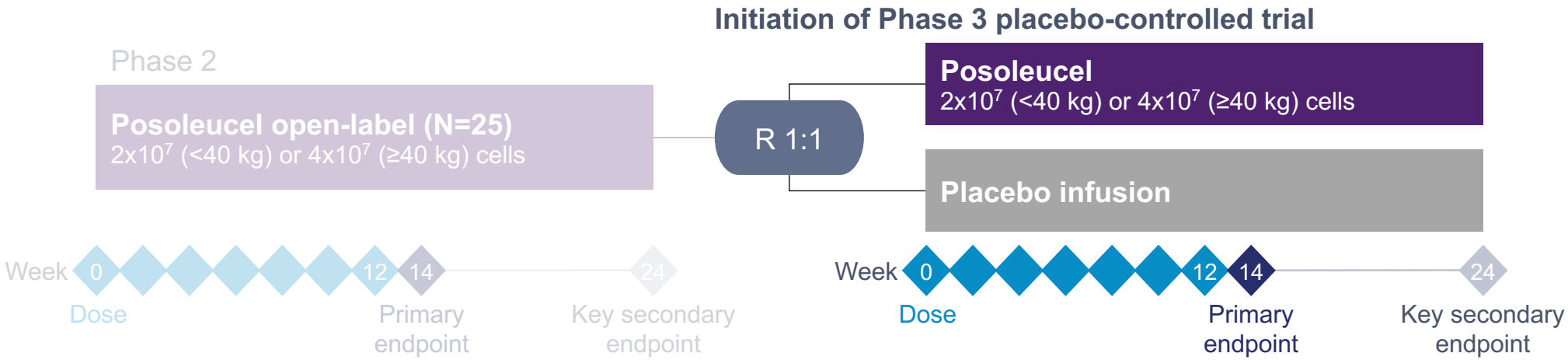
Diana Brainard, M.D.

Chief Executive Officer
AlloVir, Inc. (Nasdaq: ALVR)

Multi-Virus Prevention Data Underscore the Potential of AlloVir's Virus-Specific T Cell Platform and Posoleucel

- Further validation of our VST platform and programs
- Opportunity to transform both patient outcomes and the overall management of HCT recipients
- Phase 3 clinical development for both treatment and prevention anticipated by first half of 2022

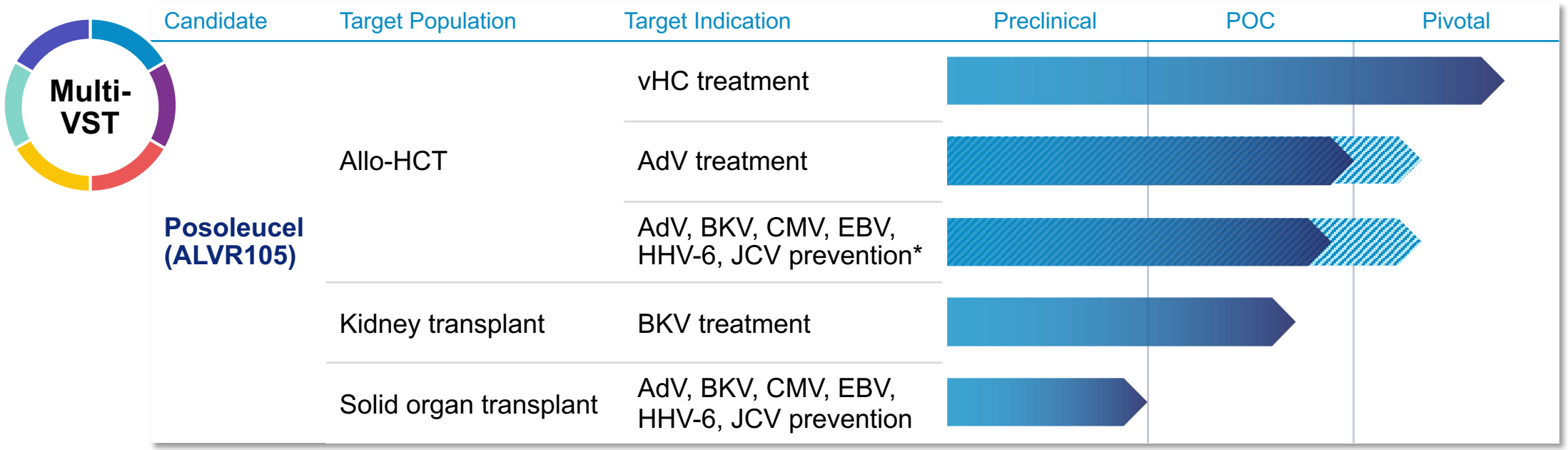
Ongoing Posoleucel Trial for Multi-Virus Prevention Anticipated to Progress to Phase 3 Registrational Study in 1H 2022



- Phase 3, multicenter, randomized, double-blind, placebo-controlled
- Key eligibility criteria: high-risk allo-HCT* recipients, including matched unrelated donor
  - Age ≥1 year
  - Aviremic or viremic without clinically significant disease
- Primary endpoint: reduction in clinically significant viral infection and disease

*High-risk all-HCT defined as haploidentical donor, umbilical cord blood, mismatched unrelated donor, matched unrelated donor, mismatched related donor, recipient of T cell depletion, persistent lymphopenia <180/mm^3.
ClinicalTrials.gov NCT04693637.

Three Ongoing Phase 3 Studies of Posoleucel Anticipated By 1H 2022



*Phase 3 trial for multi-virus prevention in allo-HCT anticipated to initiate in 1H 2022, following FDA review of final protocol.

We Are Delivering on a Broad Set of Preclinical, Regulatory and Clinical Milestones

	Recent Milestones	Remaining 2021 Catalysts	Future Activities
Posoleucel	✓ Pivotal trial initiation in vHC ✓ FDA orphan drug designation for vHC treatment ✓ POC trial initiation in multi-virus prevention and initial data ✓ POC trial initiation in BKV in kidney transplant ✓ **Abstract submission for early data from BKV in kidney transplant trial**	• **Pivotal trial initiation for AdV**	• Phase 3 trial initiation for multi-virus prevention in HCT patients • POC trial initiation for multi-virus prevention in SOT patients
ALVR106	✓ IND clearance by FDA for POC trial in multiple respiratory viruses	• **POC trial initiation for multiple respiratory viruses**	
ALVR107	✓ *In vitro*, preclinical, IND-enabling studies		• POC trial initiation for HBV cure
ALVR109	✓ Initial data for SARS-CoV-2		• Compassionate use access

Q&A

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