ASH Annual Meeting – December 10, 2023

Final Results from Phase 1 Study of Briquilimab, an Anti-CD117 Monoclonal Antibody, in Combination with Low Dose Irradiation and Fludarabine Conditioning, Shows Durable Remissions in Older Adults with Acute Myeloid Leukemia in Complete Remission and Myelodysplastic Syndrome Undergoing Allogeneic Hematopoietic Cell Transplantation (AHCT)

Arpita Gandhi, Andrew S. Artz, Catherine J. Lee, Ankur Varma, Bart Scott, Hye-sook Kwon, Minyoung Youn, Chikako Yanagiba, Jeyakavitha Arulprakasam, Anne Le, Judith A. Shizuru, Wendy W. Pang, Lori Muffly

Conflict of Interest

Gandhi – None

Muffly - Advisory Boards: Pfizer, Amgen, Jazz, Medexus, CTI Biopharma, Kite; Research Funding: Astellas, Jasper, Adaptive, Kite, BMS; Consulting: Astellas

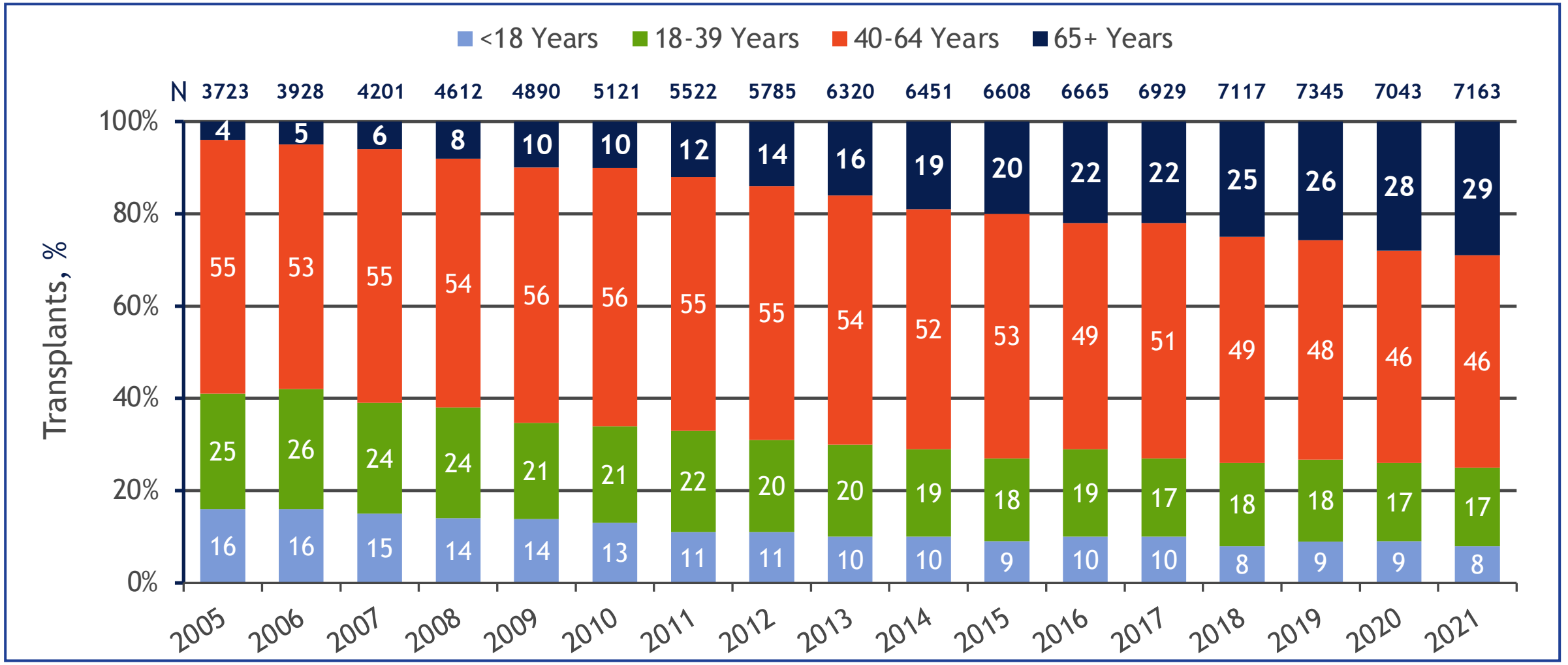
Lee - Advisory Boards: Kadmon, Kite, Jazz; Research Funding: Incyte; Consulting: Fresenius

Scott- Advisory Boards: BMS, Alexion, Incyte, Taiho

Kwon, Youn, Yanagiba, Arulprakasam, Le, Pang - Employment: Jasper

Shizuru - Executive: Jasper; Advisory Boards: Shoreline

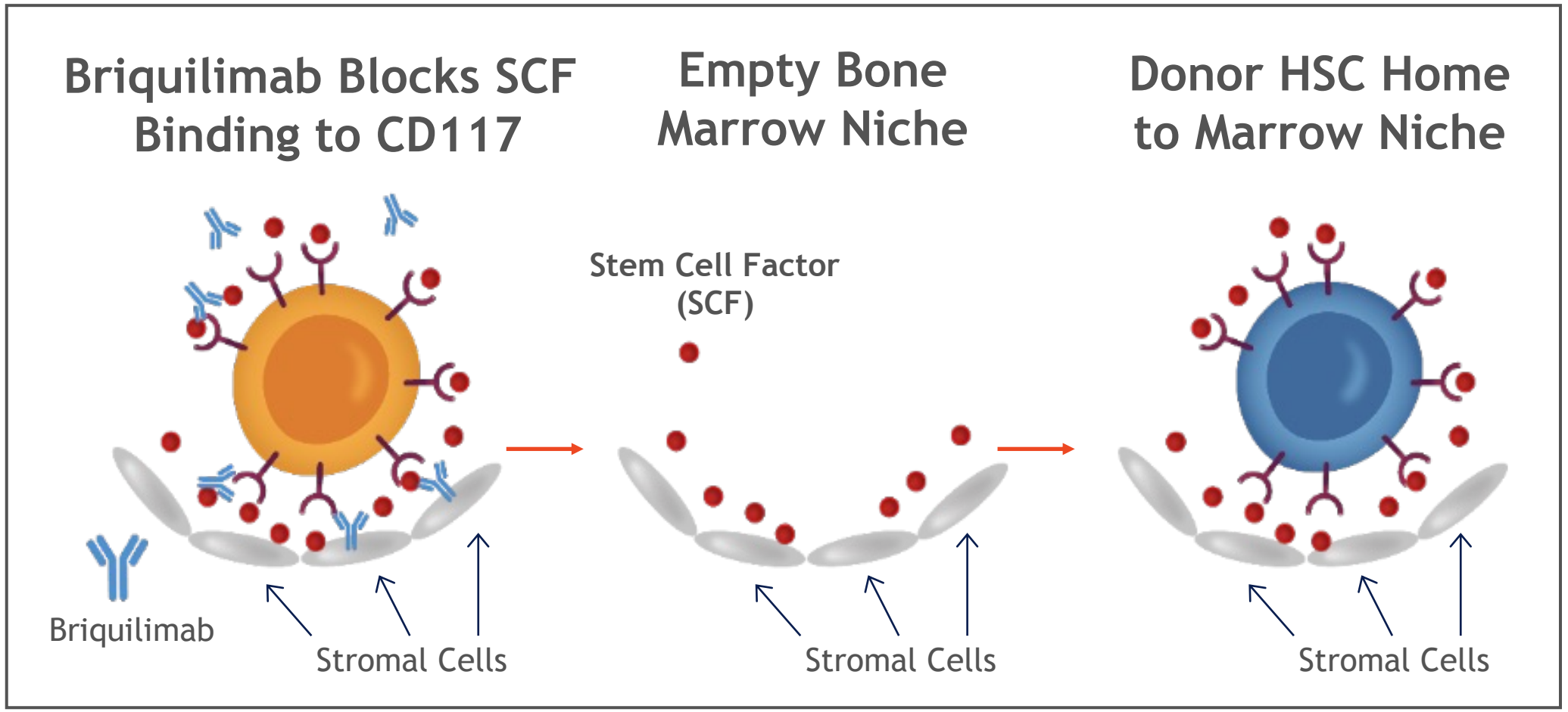
Allogeneic HCT rates have significantly increased, especially in over 65 years old, in the U.S.



CIBMTR®
CENTER FOR INTERNATIONAL BLOOD & MARROW TRANSPLANT RESEARCH

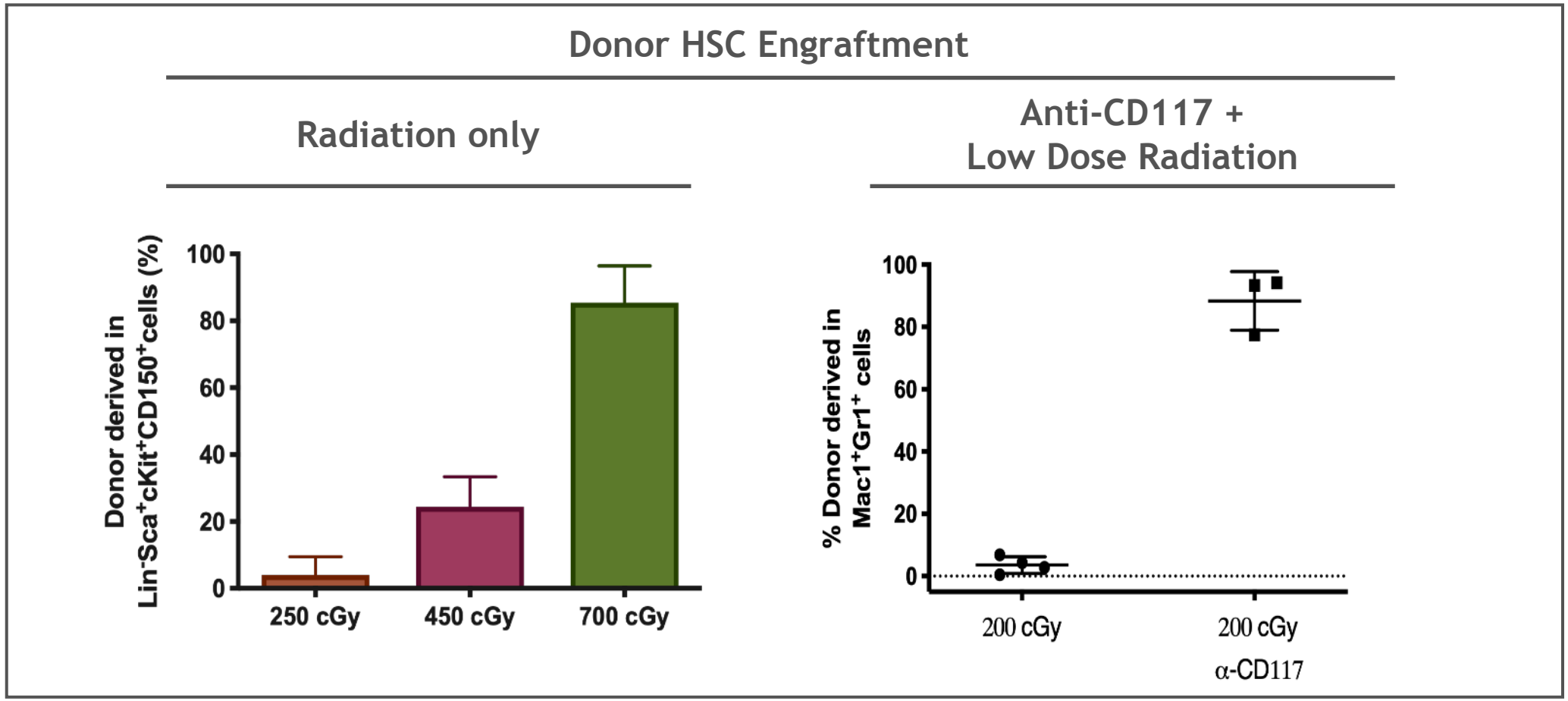
Includes Acute Myeloid Leukemia, Acute Lymphoblastic Leukemia, Myelodysplastic Syndromes/Myeloproliferative Neoplasms, Non-Hodgkin Lymphoma, Hodgkin Lymphoma

Briquilimab Inhibits CD117 (c-Kit; Stem Cell Factor Receptor) Signaling Leading to Transient Clearance of Hematopoietic Stem Cells (HSCs) from Their Bone Marrow Niche



Briquilimab is an investigational agent and not approved for any indication.

Blockade of CD117 is Synergistic with Low Dose Radiation to Enhance Clearance of HSCs from the Niche and Enable HSC Engraftment in Immunocompetent Mouse Model



Chhabra et al. Sci Transl Med 2016; Pang et al. ASH 2019

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Study Design: Single-arm, Open Label, in MDS/AML Patients Not Eligible for Myeloablative Conditioning Regimens

Key inclusion criteria:

- MDS or AML
- ≥60 years or HCT-CI ≥3
- HLA matched related or unrelated donor
- Exclude prior HCT

→ N = 32 patients →

Experimental arm:

Briquilimab 0.6 mg/kg
+ **Flu** 30 mg/m^2 x 3 days
+ **TBI** 200-300 cGy
+ HCT

Assessments:

Primary endpoints:

- Safety and tolerability of briquilimab/TBI/Flu
- Briquilimab pharmacokinetics

Secondary endpoints:

- Engraftment and donor chimerism
- Relapse-free survival
- GVHD, Non-relapse mortality, and Overall Survival
- MRD clearance

Exploratory endpoints:

- Depletion of HSPCs by briquilimab

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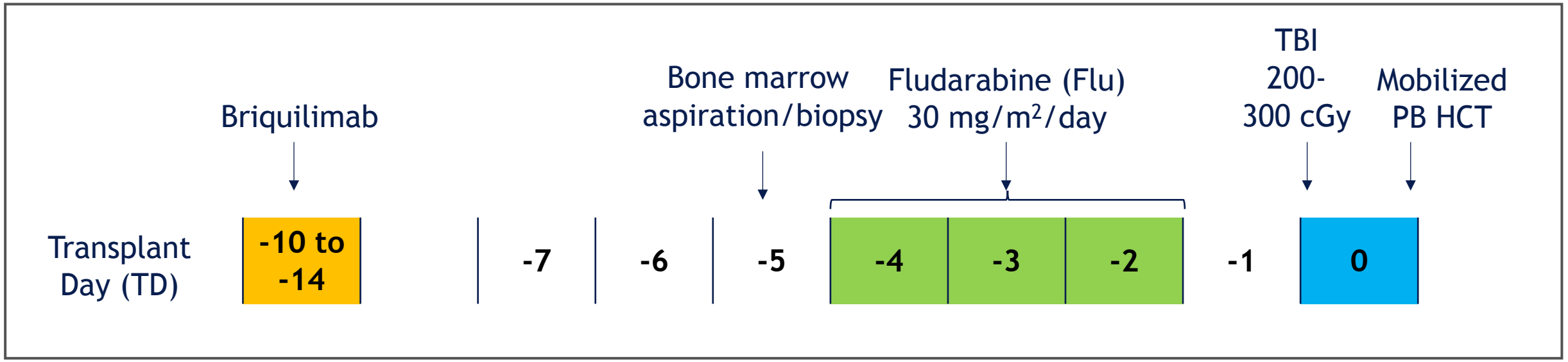
Treatment Schema: Outpatient Conditioning Regimen



- Real-time PK measurements and modeling were used to determine Flu start date
- TBI increased from 200 to 300 cGy after first 7 subjects to aid lymphoablation
- GVHD prophylaxis: Tacrolimus, Sirolimus, Mycophenolate Mofetil (Sandmaier et al, Lancet Haematology 2019)

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MDS & AML Patient Characteristics

Characteristic	All (N = 32)	AML in CR (N=13)	MDS (N = 16)	AML not in CR (N = 3)
Median age (range) - year	70 (62-79)	70 (62-79)	70 (63-77)	66 (66-69)
Sex – no. (%)				
Male	20 (62.5%)	8 (61.5%)	11 (68.8%)	1 (33.3%)
Female	12 (37.5%)	5 (38.5%)	5 (31.3%)	2 (66.7%)
Prior AML/MDS Therapy – no. (%)				
Untreated or growth factor supportive care only	3 (9.4%)	0 (0%)	3 (18.8%)	0 (0%)
One regimen only	16 (50.0%)	5 (38.5%)	11 (68.8%)	0 (0%)
Multiple regimens	10 (31.3%)	8 (61.5%)	2 (12.5%)	3 (100%)
Donor Type – no. (%)				
Matched related donor	7 (21.9%)	1 (7.7%)	6 (37.5%)	0 (0%)
Matched unrelated donor	21 (78.1%)	12 (92.3%)	10 (62.5%)	3 (100%)
TBI dose – no. (%)				
200 cGy	7 (21.9%)	3 (23.1%)	4 (25.0%)	0 (100%)
300 cGy	21 (78.1%)	10 (76.9%)	12 (75.0%)	3 (100%)

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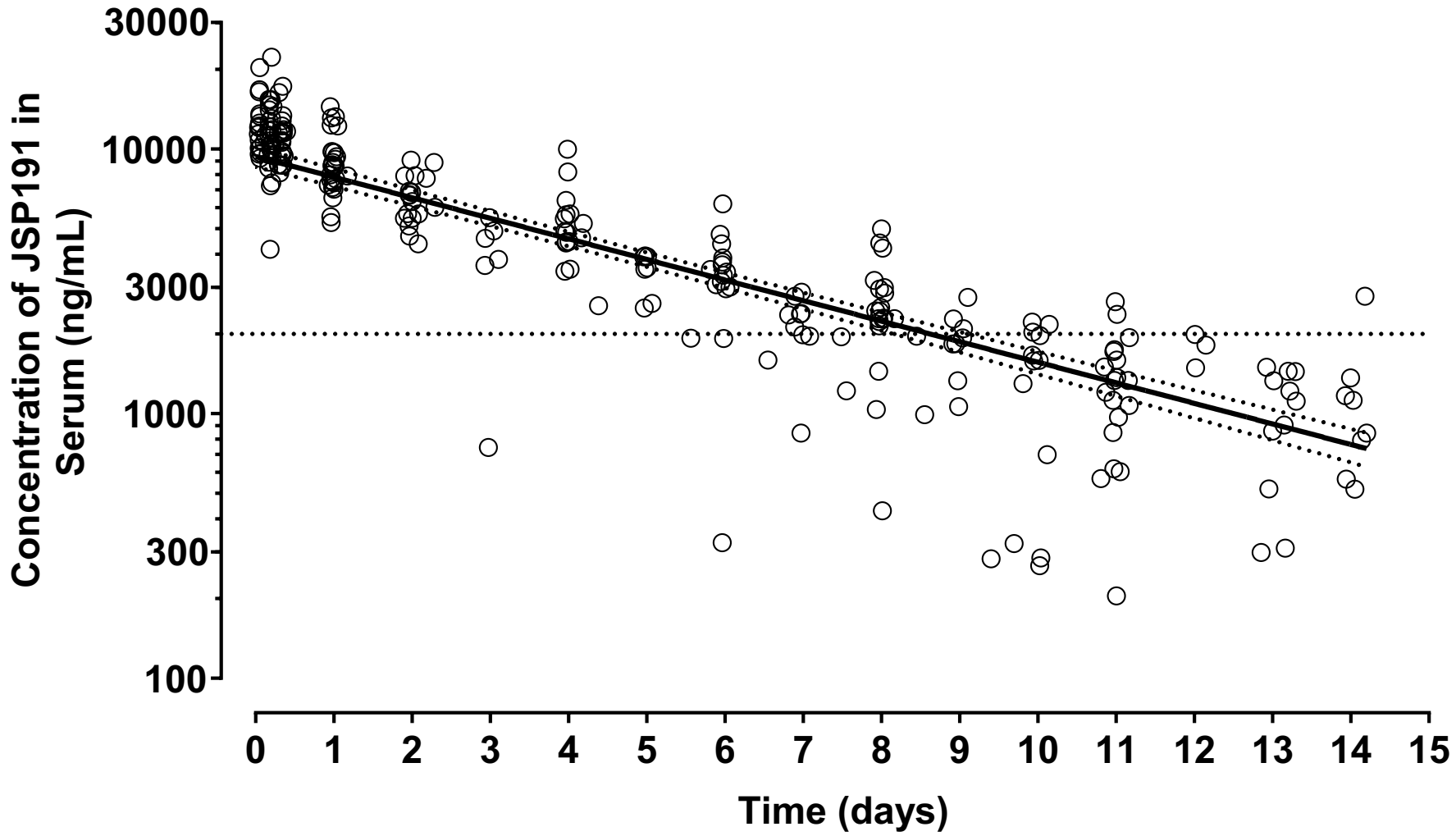
0.6 mg/kg IV Briquilimab PK: Consistent and Predictable Clearance



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Safety and Tolerability

- No significant briquilimab infusion reactions
- No briquilimab-related SAEs
- No primary graft failure (one case of secondary graft failure)

TEAE within 30 Days Post-transplant by Severity Grade	Total (N=32)
Grade 1-2	11 (34.4%)
Grade 3	17 (53.1%)
Grade 4	4 (12.5%)*

*Grade 4 TEAEs reported in 4 subjects: neutropenia, lymphopenia

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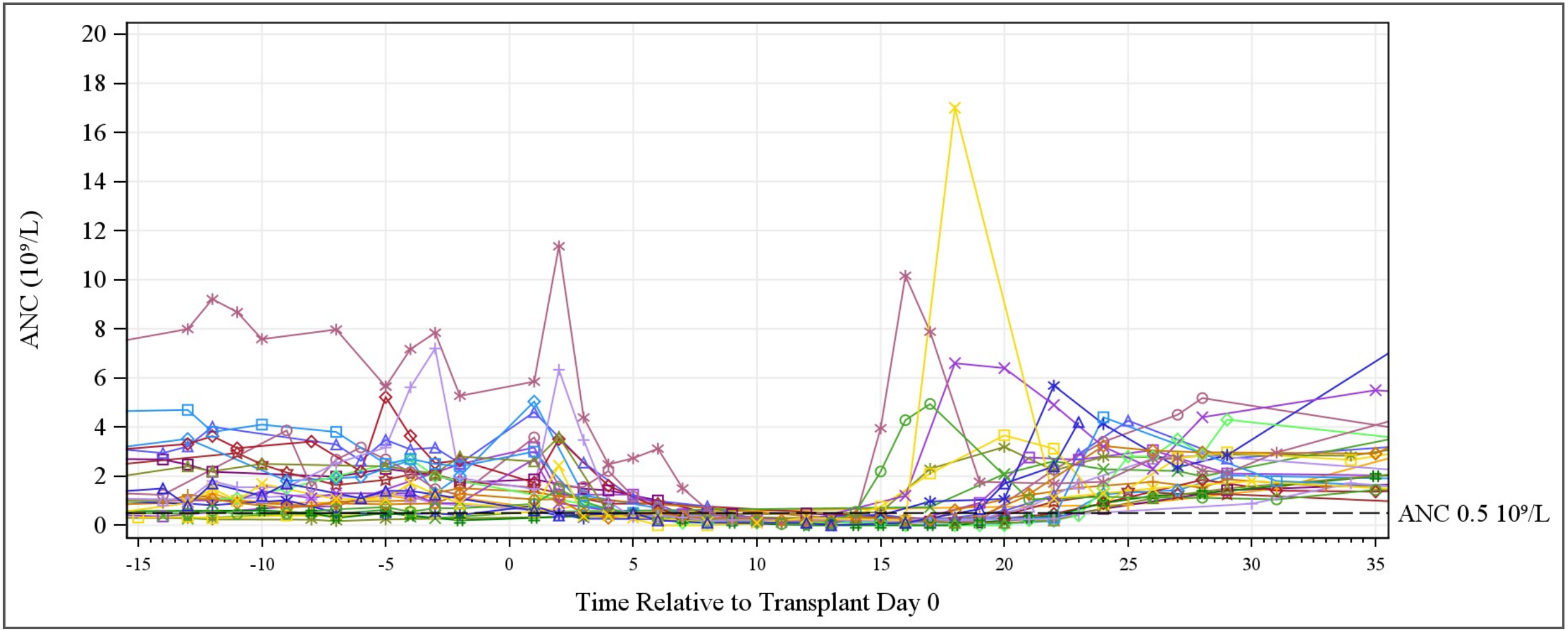
Briquilimab + 200-300 cGy TBI in All Patients Resulted in Neutropenia Followed by Neutrophil Engraftment by TD+26



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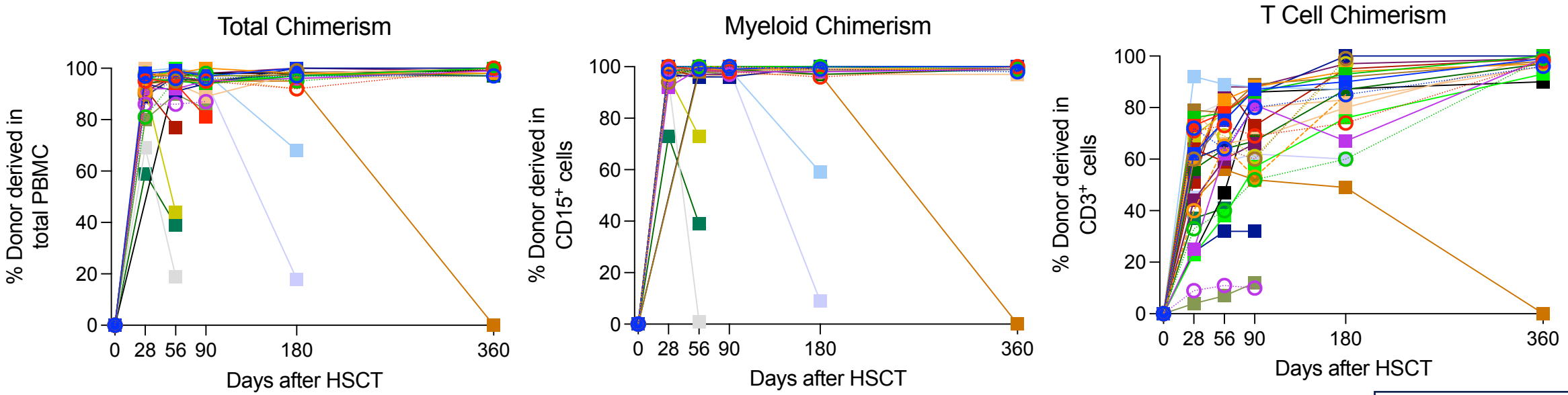
Median donor myeloid chimerism of 99% (range 96-100%) and median total chimerism of 95% (range 81-100%) at TD+90



Median Donor Chimerism:

	TD+28			TD+90			TD+180		
	Total	CD15	CD3	Total	CD15	CD3	Total	CD15	CD3
200 cGy TBI	91%	98%	60%	95%	98%	60%	96%	99%	85%
300 cGy TBI	95%	99%	60%	95%	99%	81%	98%	99%	87%

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Final 1-year Efficacy Outcomes

At 1-year	AML in CR (n=13)	MDS (n=16)
Relapse/Progression	3 (23.1%)	5 (31.3%)
NRM	1 (7.7%)	1 (6.3%)
MRD Negative	8 (61.5%)	6 (37.5%)
Relapse Free Survival	9 (69.2%)	8 (50%)
Overall Survival	9 (69.2%)	8 (50%)

Rates of GVHD	All patients (n=32)
Acute GVHD (MAGIC)	
grade 2	4 (12.5%)
grade 3-4	1 (3.1%)
Chronic GVHD (NIH)	
mild	8 (25.0%)
moderate	5 (15.6%)
severe	0 (0%)

- Measurable residual disease (MRD) was tested using cytogenetics, flow cytometry and next gen sequencing prior to and after HCT
- MRD+ pre HCT to MRD- by 1 year post HCT occurred in
  - 7 of 10 subjects with AML
  - 6 of 14 subjects with MDS
- Median time to conversion from MRD+ to MRD negativity occurred at TD+28

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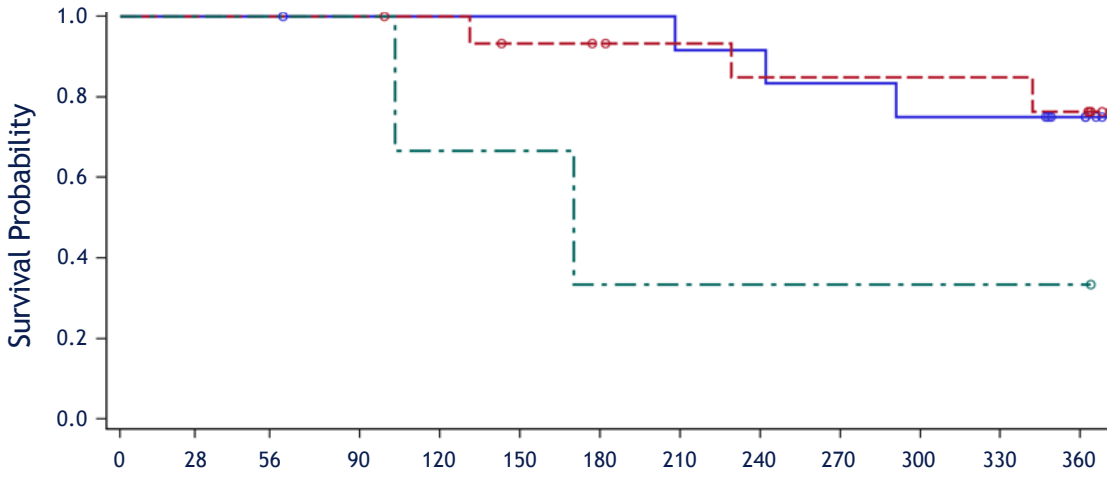
Final 1-year Efficacy Outcomes

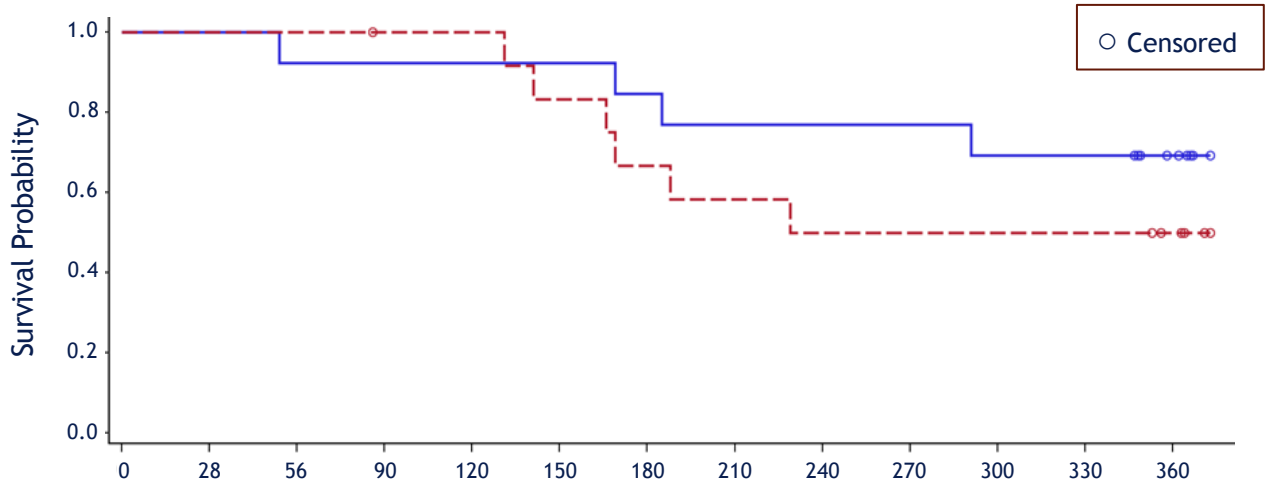
Overall Survival



# of Subjects at Risk

AML in CR	13	13	13	12	12	12	12	11	11	10	9	9	6
MDS	16	16	16	16	15	13	12	11	10	10	10	10	9
AML R/R	3	3	3	3	2	2	1	1	1	1	1	1	1

Relapse-Free Survival



# of Subjects at Risk

AML in CR	13	13	12	12	12	12	11	10	10	10	9	9	5
MDS	13	13	13	12	12	10	8	7	6	6	6	6	4

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Summary of Phase 1 Trial Results

- Briquilimab at a dose of 0.6 mg/kg has predictable clearance and allows donor cell infusion at 9-14 days after briquilimab
- All patients engrafted with neutrophil recovery before Transplant Day +26
- Briquilimab/Flu/TBI is a novel conditioning regimen that appears safe, well-tolerated, permits full donor myeloid chimerism, and results in promising early MRD clearance
- These data are encouraging. The Sponsor, Jasper, is continuing to work with the transplant community on a path forward for briquilimab as a conditioning agent in stem cell transplantation.

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Acknowledgements

- Jasper Therapeutics and the Investigators would like to thank the patients and families for participating in this clinical trial (NCT#04429191).
- We would also like to thank the participating clinical sites, clinical staff, and collaborators

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