Abstract 256
Phase 2 Registrational Study of Anitocabtagene Autoleucel for the Treatment of Patients with Relapsed and/or Refractory Multiple Myeloma (RRMM): Updated Results from iMMagine-1

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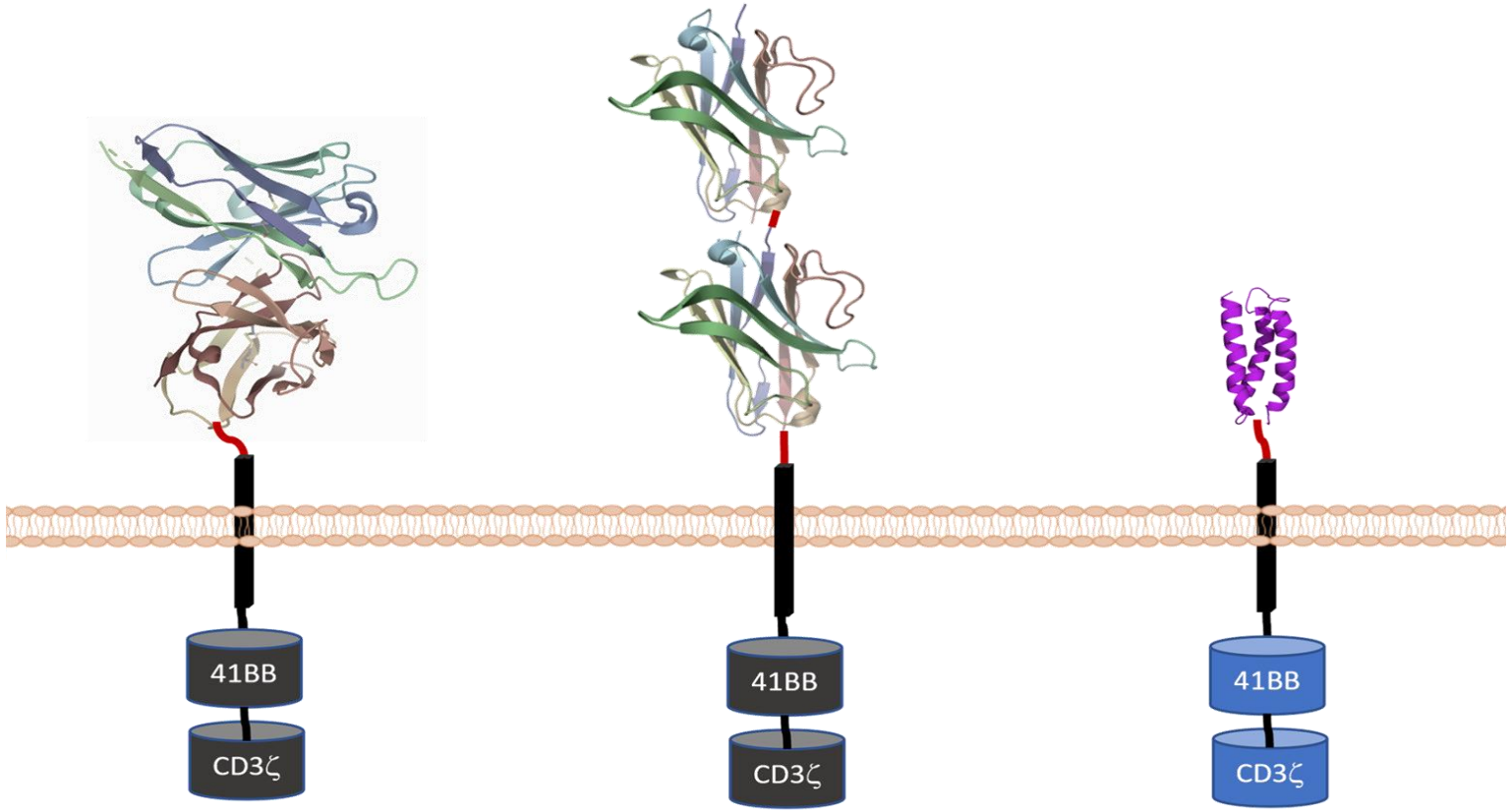
Anitocabtagene autoleucel (anito-cel/CART-ddBCMA)

Autologous BCMA-directed CAR T-cell therapy using a novel, D-Domain binder[1,2]



scFv
(~25 kDa)

Bivalent camelid VHH
(~30 kDa)

D-Domain
(~8 kDa)

D-Domain Attributes:
Non-Antibody Derived Synthetic Protein[1,2]

Size

Small D-Domain construct facilitates high transduction efficiency and CAR positivity[2-4] resulting in a low total cell dose

Structure & Stability

D-Domain CARs are stable and lack tonic signaling[4,6] due to the rapid folding, lack of disulfide bonds, and hydrophobic core[5,6] of the D-Domain

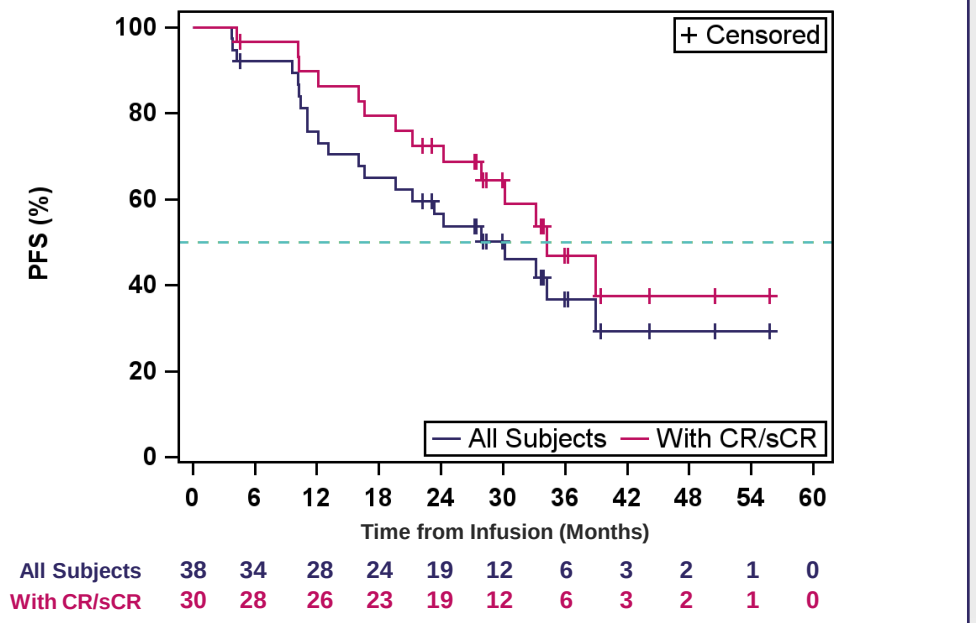
Binding

The D-Domain binder has a fast off-rate[4] and high CAR surface expression[4]. This combination may allow optimal tumor cell killing without prolonged inflammation

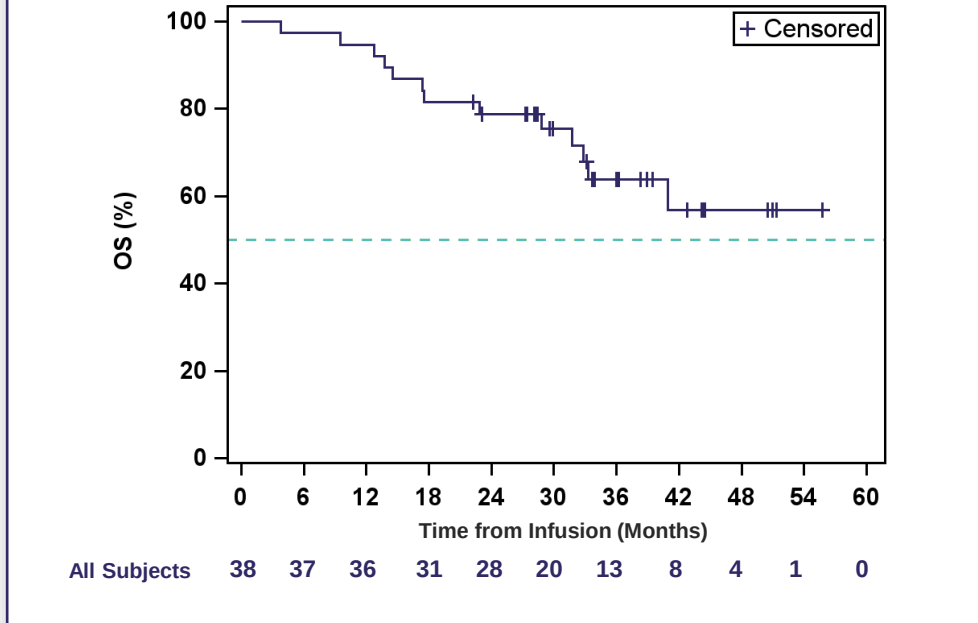
[1]Rotte, et al. Immuno-Oncology Insights 2022; 3(1), 13–24; [2]Frigault, et al. Blood Adv. 2023; 7(5):768-777; [3]Cante-Barrett, et al. BMC Res. Notes 2016; 9:13; [4]Buonato, et al. Mol. Cancer Ther. 2022; 21(7):1171-1183; [5]Zhu, et al. Proc. Nat. Acad. Sci. 2003; 100(26): 15486-15491; [6]Qin, et al. Mol. Ther. 2019; 27(7): 1262-1274.

Background: Anito-cel Phase 1 Demonstrated mPFS of 30.2 Months in a 4L+ RRMM Population

Median PFS of 30.2 Months at 38.1 Months of Follow-up (N=38)



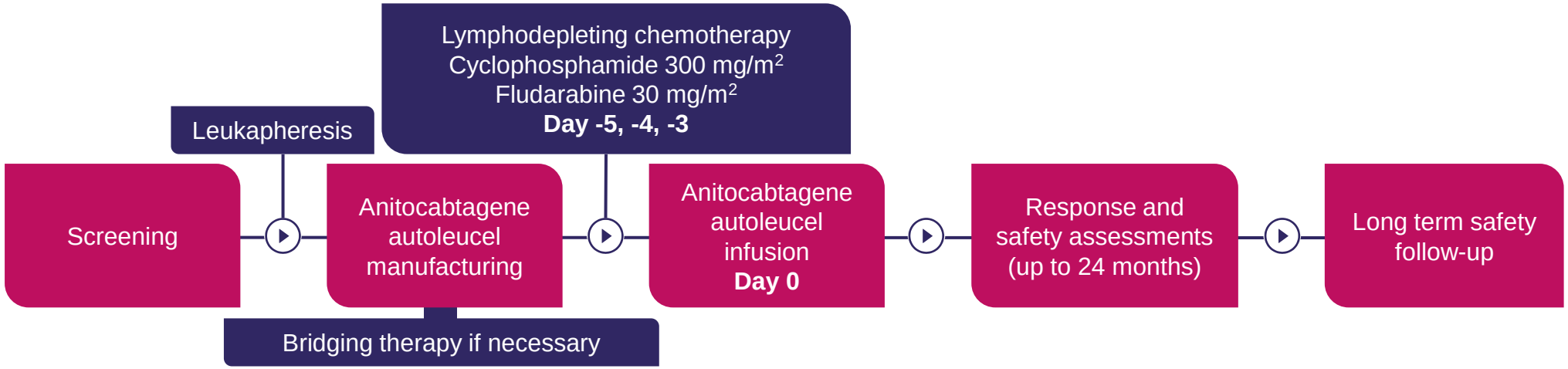
Median Overall Survival Not Reached (N=38)



- **With a median follow-up of 38.1 months, anito-cel achieved rapid, high response rates with long-term durable remissions in a refractory, heavily pre-treated 4L+ RRMM population :**
  - sCR/CR achieved in 79% of patients
  - Median PFS of 30.2 months in all patients and 34.3 months in patients with sCR/CR
  - Median OS not reached
  - Similar efficacy and durable remissions were observed across high-risk subgroups (68% of patients had high-risk features)
- **The safety profile is predictable and manageable with no delayed or non-ICANS neurotoxicities, including no Parkinsonism, no cranial nerve palsies, and no Guillain-Barré syndrome**

Responses determined by IMWG Consensus Criteria; Bishop MR, et al. Blood (2024) 144 (Supplement 1): 4825 as presented in poster #4825 at ASH 2024; Data cut off: October 3, 2024

iMMagine-1: Phase 2 Study Design



Key Eligibility Criteria

- Prior IMiD, PI, and CD38-targeted therapy
- Received ≥3 prior lines of therapy
- Refractory to the last line of therapy
- ECOG PS of 0 or 1
- Evidence of measurable disease

Target Dose of 115 x 10^6 CAR+ T cells

Primary Endpoint:

- ORR, per 2016 IMWG criteria

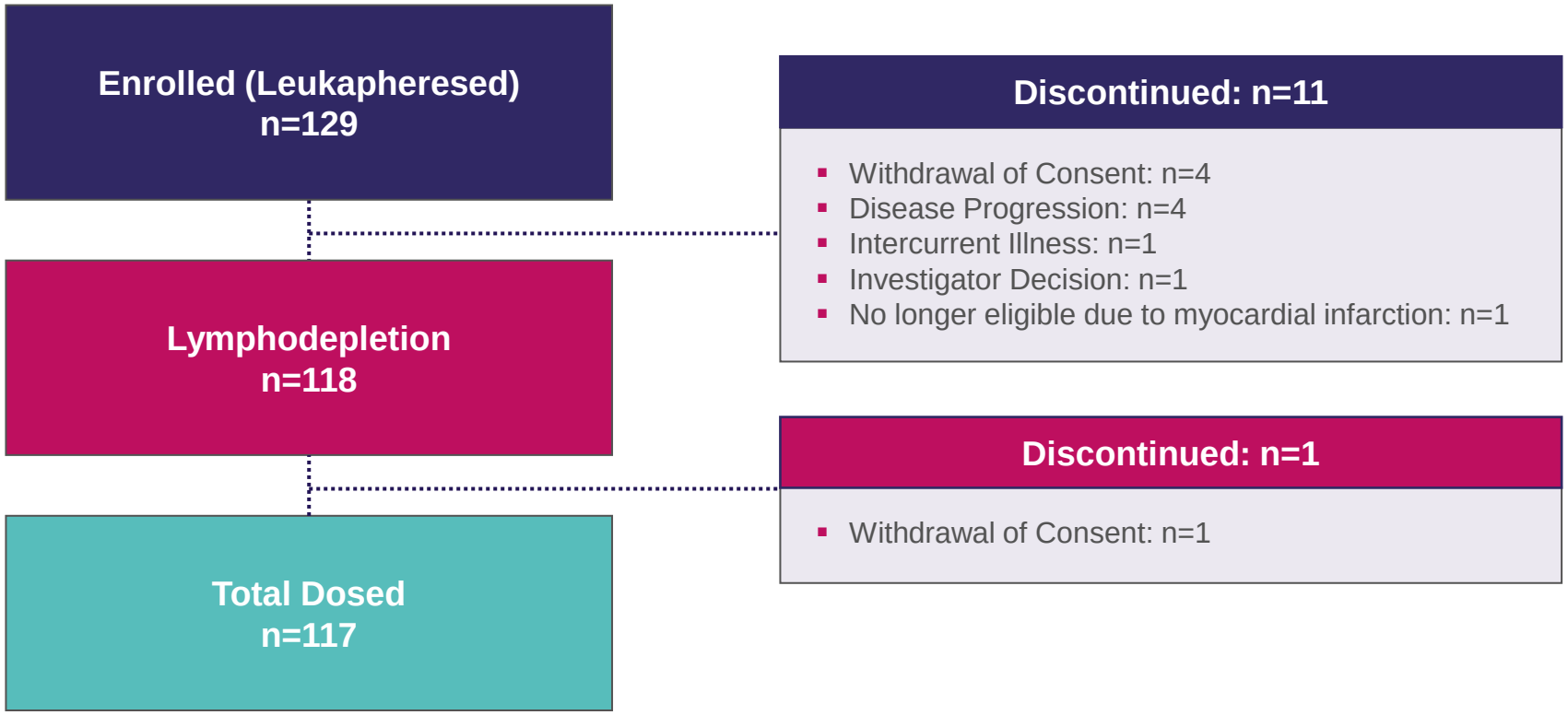
Key Secondary Endpoints:

- sCR/CR rate, per 2016 IMWG criteria
- ORR in patients limited to 3 prior LoT, per 2016 IMWG criteria

Primary and key secondary endpoints to be assessed per Independent Review Committee (IRC); Investigator assessment of response per IMWG also permitted per protocol.
CR, complete response; ECOG PS, Eastern Cooperative Oncology Group Performance Status; IMiD, immunomodulatory drug; IMWG, International Myeloma Working Group; LoT, line of therapy; ORR, overall response rate; PI, proteosome inhibitor; sCR, stringent complete response.

iMMagine-1: Overall Patient Disposition

Data cut-off: October 7, 2025; Median follow-up of 15.9 months



Anito-cel was successfully manufactured for 99% of patients enrolled

iMMagine-1: Patient and Disease Characteristics

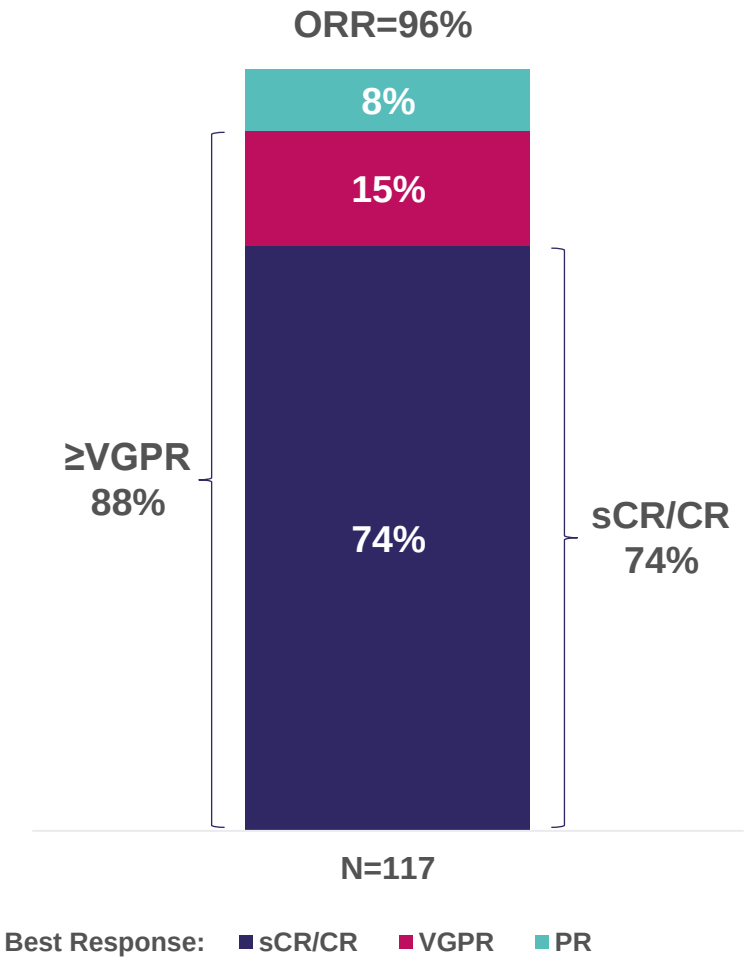
Characteristics	N=117
Age (years), median (min - max)	64 (38 – 78)
Age ≥ 65	58 (50%)
Age ≥ 70	33 (28%)
Age ≥ 75	10 (9%)
Gender (male / female)	66 (56%) / 51 (44%)
Race	
White	90 (77%)
Black / African American	17 (15%)
Asian / Other	10 (9%)
ECOG PS 0 / 1	54 (46%) / 63 (54%)
Extramedullary disease[a]	21 (18%)
Bone marrow plasma cells[b]	
≤ 30%	74 (65%)
> 30% to < 60%	19 (17%)
≥ 60%	20 (18%)
High risk cytogenetics[c]	47 (40%)

Characteristics	N=117
Refractory to last line of therapy	117 (100%)
Triple refractory	102 (87%)
Penta refractory	48 (41%)
Prior lines of therapy, median (min - max)	3 (3 – 8)
3 Prior LoT	65 (56%)
Time since diagnosis (years), median (min - max)	7.5 (1.0 – 23.1)
Prior ASCT	92 (79%)
Bridging therapy	89 (76%)
Outpatient administration	9 (8%)

a) Presence of a non-bone based plasmacytoma; b) 113 patients had bone marrow disease assessments done at screening or baseline; c) Defined as the presence of Del 17p, t(14;16), or t(4;14).
Note: Updates to data resulting from ongoing data review; ASCT, autologous stem cell transplant; ECOG PS, Eastern Cooperative Oncology Group Performance Status; LoT, line of therapy

iMMagine-1: Overall Response Rate and Depth of Response

Efficacy Evaluable Patients, N=117



- Responses continue to deepen over time
- At a median follow-up of 15.9 months, IRC-assessed ORR was 96% and sCR/CR rate was 74%

	Median (months)	Interquartile Range	Min, Max
Time to first response	1.0	1.0, 1.9	0.9, 13.8
Time to best response	4.8	2.1, 9.0	0.9, 23.8
Time to sCR/CR	3.2	2.0, 9.2	0.9, 23.8

Responses are per IMWG criteria and are IRC assessed; ORR defined as partial response or better.
CR, complete response; IRC, independent review committee; ORR, overall response rate; PR, partial response; sCR, stringent complete response; VGPR, very good partial response

iMMagine-1: Minimal Residual Disease (MRD) Status

MRD Negativity at 10^{-5} Sensitivity Level	
Overall MRD negativity, % (n/N)	95% (91/96)
Median time to MRD negativity, months (min – max)	1.0 (0.9 – 6.4)
MRD negativity sustained for ≥ 6 months, % (n/N)	83% (54/65)
MRD Negativity at 10^{-6} Sensitivity Level	
Overall MRD negativity, % (n/N)	78% (68/87)

Evaluable patients for overall MRD negativity had an identifiable malignant clone in the baseline bone marrow sample and had a post-treatment bone marrow sample sufficient to assess MRD negativity at 10^{-5} or at 10^{-6}; for sustained MRD negativity, evaluable patients had 2 post-infusion MRD negative assessments at 10^{-5} level at least 6 months apart while still being in ongoing response

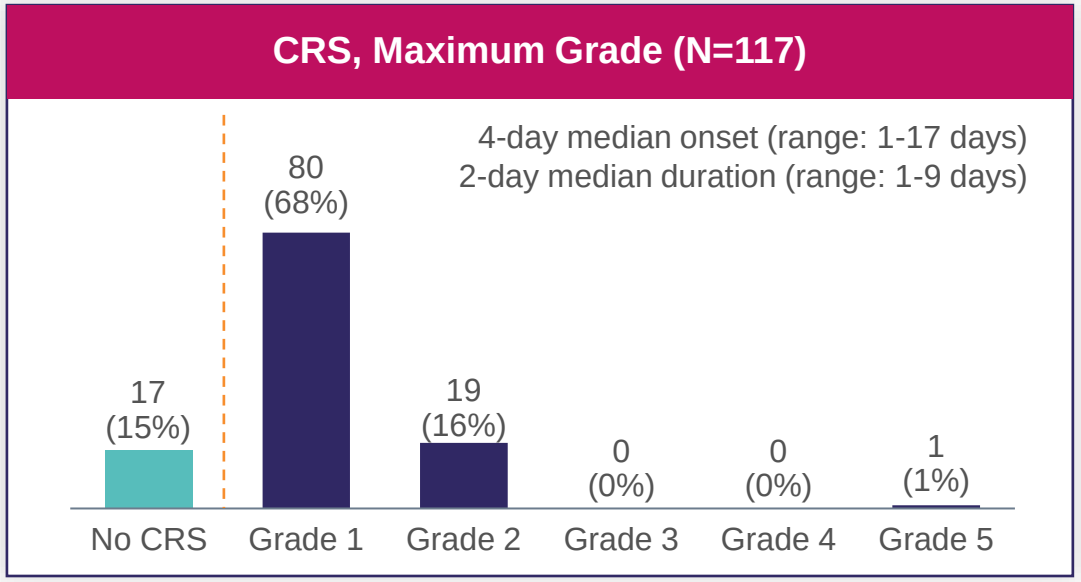
iMMagine-1: PFS and OS Rates Estimated by Kaplan-Meier

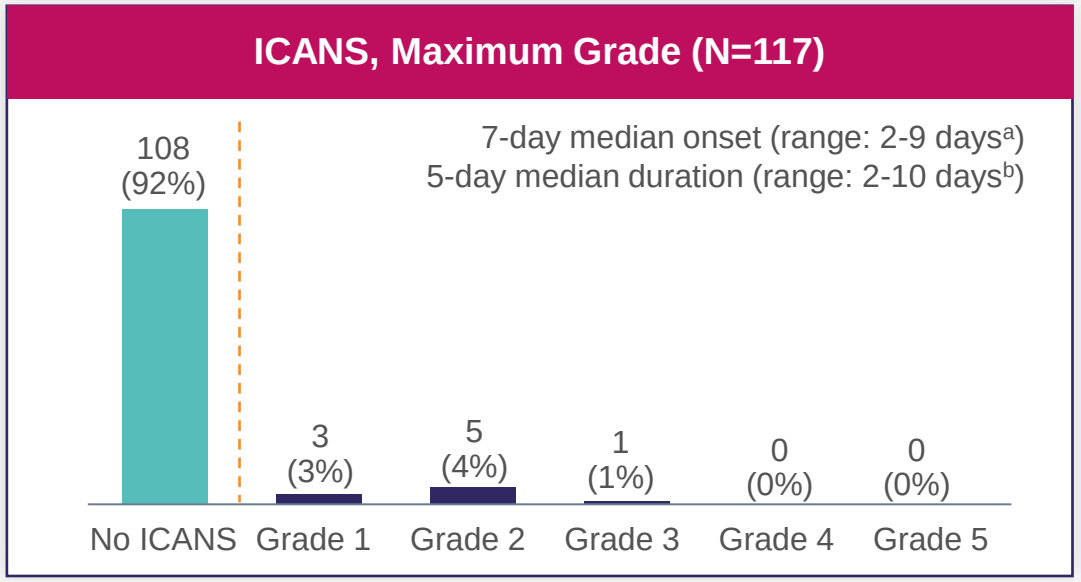
Median PFS and OS were not reached

N=117	PFS Rate (%) (95% CI)	OS Rate (%) (95% CI)
6-Month	93.1 (86.7, 96.5)	95.7 (90.0, 98.2)
12-Month	82.1 (73.6, 88.1)	94.0 (87.8, 97.1)
18-Month	67.4 (55.4, 76.8)	88.0 (78.8, 93.4)
24-Month	61.7 (48.0, 72.8)	83.0 (70.7, 90.5)

Median follow-up of 15.9 months (range: 0.3 – 33.1 months)
PFS, progression-free survival; OS, overall survival

iMMagine-1: Safety Update





- 95% (111/117) of patients had either no CRS or CRS that resolved by ≤10 days of anito-cel infusion
- No new treatment-related or treatment-emergent deaths have occurred since the previous May 1, 2025 datacut
- No secondary primary malignancies of T-cell origin have occurred
- No replication competent lentivirus detected

No delayed or non-ICANS neurotoxicities, including no Parkinsonism, no cranial nerve palsies, and no Guillain-Barré syndrome, and no immune effector cell-associated enterocolitis have been observed to date at ≥10 months since anito-cel infusion

[a]With the exception of n=1 Grade 1 ICANS (confusion) on day 31 post infusion that rapidly resolved. [b]With the exception of n=1 max Grade 2 ICANS with 29-day duration to resolution
Note: Updates to data resulting from ongoing data review; CRS and ICANS assessed per American Society for Transplantation and Cellular Therapy criteria
CRS, cytokine release syndrome; ICANS, immune-effector cell-associated neurotoxicity syndrome

iMMagine-1: Other Treatment-Emergent Adverse Events

The most common Grade 3 and higher treatment-emergent AEs (TEAEs) were cytopenias

	Any Grade AEs ≥20% after cell infusion (N=117)	Grade 3 and higher AEs after cell infusion (N=117)
Hematologic		
Neutropenia	83 (71%)	82 (70%)
Anemia	33 (28%)	29 (25%)
Thrombocytopenia	30 (26%)	30 (26%)
Leukopenia	25 (21%)	24 (21%)
Non-hematologic		
Hypogammaglobulinemia	50 (43%)	1 (1%)
Fatigue	43 (37%)	3 (3%)
Hypophosphatemia	37 (32%)	2 (2%)
Headache	35 (30%)	2 (2%)
Nausea	35 (30%)	1 (1%)
Diarrhea	33 (28%)	1 (1%)
Hypokalemia	29 (25%)	2 (2%)
Cough	24 (21%)	0
Hypertension	23 (20%)	12 (10%)
Infections	64 (55%)	11 (9%)
Upper respiratory tract infection	18 (15%)	1 (1%)
COVID-19	11 (9%)	3 (3%)
Urinary tract infection	8 (7%)	1 (1%)

Note: Updates to data resulting from ongoing data review; TEAE is defined as, 1) any AE with onset date on or after the first anito-cel infusion, until 90 days after the first anito-cel infusion regardless of causality assessment, or until start of subsequent anti-myeloma therapy, whichever is earlier; or 2) any AE occurring at any time assessed by the investigator as related to anito-cel

iMMagine-1: Conclusions

- **Anito-cel utilizes a novel, synthetic, compact and stable D-Domain binder**
  - D-Domain facilitates high transduction efficiency, CAR positivity, and CAR density on the T-cell surface and has a fast off-rate

- **Anito-cel continues to show deepening responses at a median follow-up of 15.9 months**
  - ORR was 96% and sCR/CR rate was 74%
  - 95% of MRD evaluable patients were MRD negative and 83% had ≥ 6 months of sustained MRD negativity at $\leq 10^{-5}$ sensitivity
  - Median PFS and OS were not reached; 24-month PFS rate was 62% and OS rate was 83%

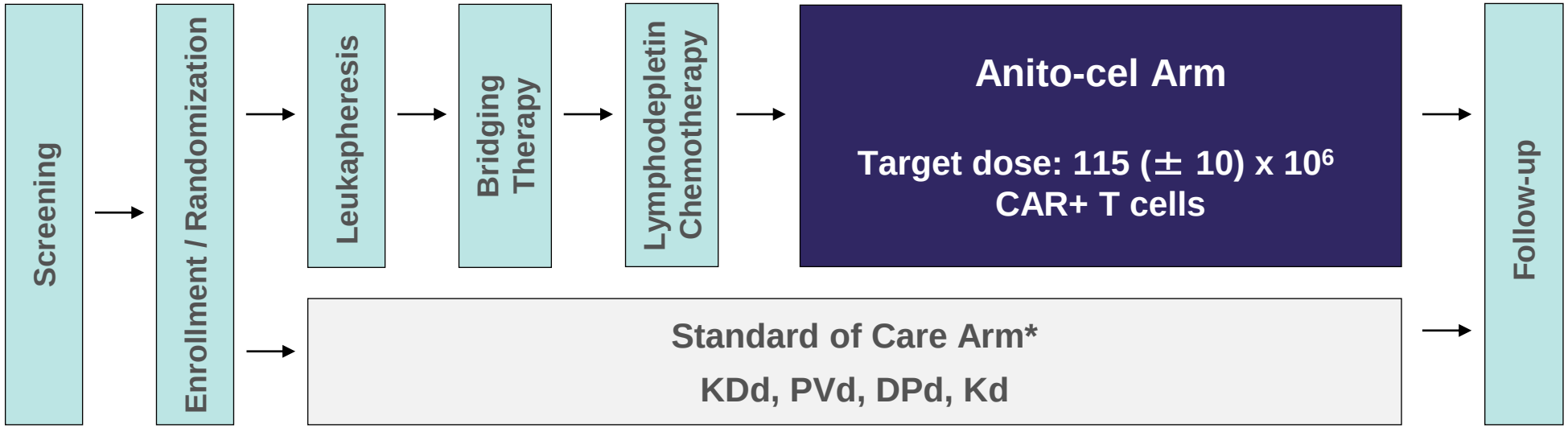
- **The anito-cel safety profile is predictable and manageable as demonstrated in more than 150 patients dosed across the Phase 1 and iMMagine-1 Phase 2 trials**
  - No delayed or non-ICANS neurotoxicities, including no Parkinsonism, no cranial nerve palsies, and no Guillain-Barré syndrome, and no immune effector cell-associated enterocolitis have been observed to date with anito-cel

Anito-cel demonstrated deep, durable responses in 4L+ RRMM with a manageable safety profile, including no delayed or non-ICANS neurotoxicities and no immune effector cell-associated enterocolitis

iMMagine-3 Design, Global Phase 3 Study – Now Enrolling

iMMagine-3 (NCT06413498) is a global, Phase 3 trial comparing anito-cel to standard of care therapy in patients with RRMM after 1-3 prior LoT, including an anti-CD38 monoclonal antibody and an iMiD

Anito-cel is being co-developed by Arcellx and Kite, and is being manufactured by Kite for iMMagine-3



Study Design

- 1:1 Randomization
- n = Approximately 450, ~130 sites globally

Study Endpoints

- Primary Endpoints:
  - PFS
  - MRD-negative CR rate at 9 months
- Key Secondary Endpoints: CR rate, MRD, OS, safety

**Cycles will continue until unacceptable toxicity, progression as per IMWG criteria, or patient withdrawal of consent*

Acknowledgments

We would like to thank:

- **The patients and their families**
- The staff, caregivers, research coordinators and investigators at each participating institution

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Scan the QR code to download a plain language summary infographic for the iMMagine-1 study