

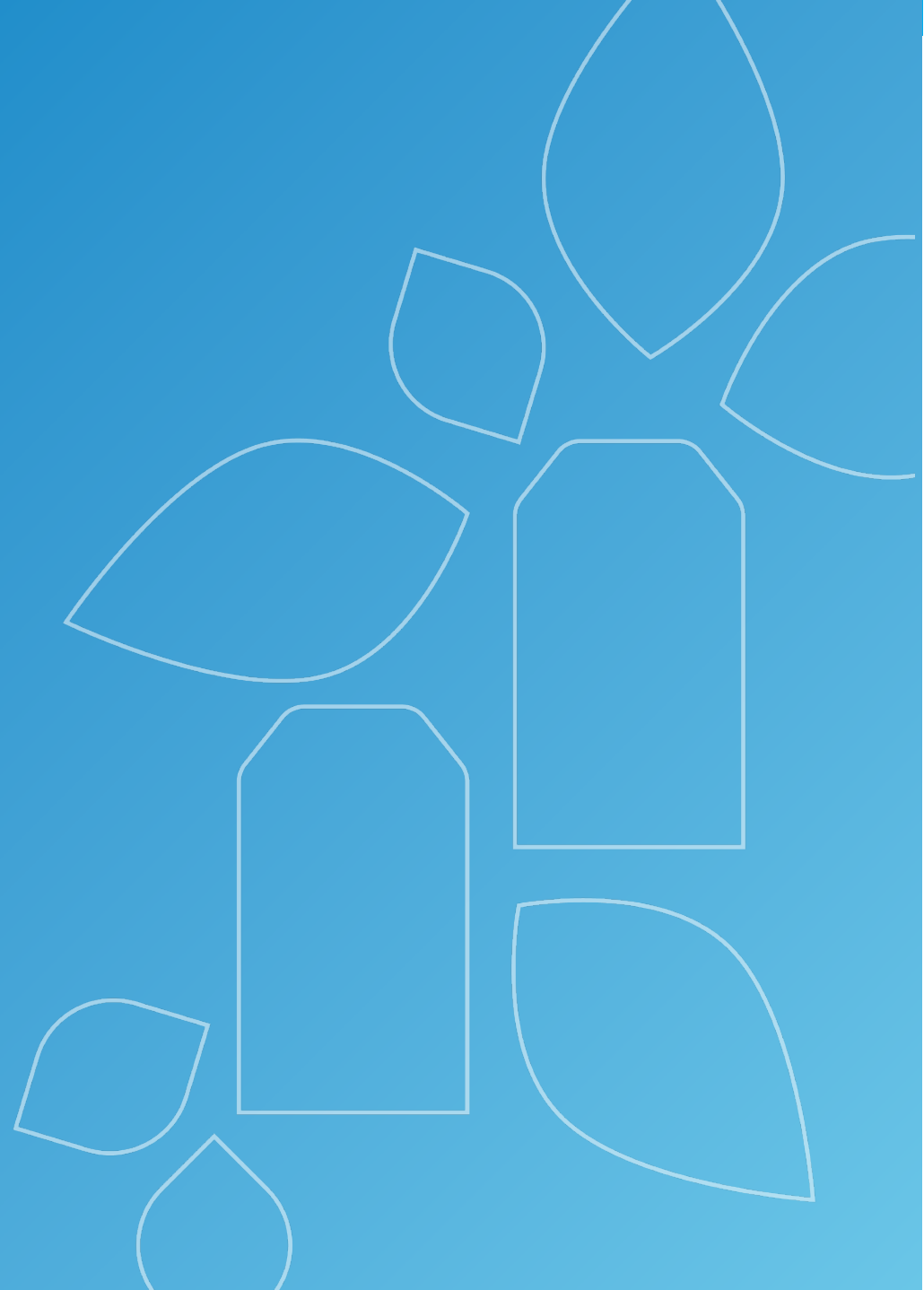


Southeastern Multidisciplinary Approaches to Cancer Symposium

# Updates in Multiple Myeloma

Sabarish Ayyappan, MD

Medical Director of Cellular Therapy  
Associate Clinical Professor  
City of Hope Atlanta



# Disclosures

Consultant for Abbvie, ADC Therapeutics, Fate Therapeutics, Genmab, Iowa Oncology Society & Regeneron. On the Speaker's Bureau for Beigene, Genmab, & Peerview.

*This presentation and/or comments will provide a balanced, non-promotional, and evidence-based approach to all diagnostic, therapeutic and/or research related content.*

**The off-label/investigational use of anitocabtagene autoleuce will be addressed.**



# Cultural Linguistic Competency (CLC) & Implicit Bias (IB)

## STATE LAW:

The California legislature has passed Assembly Bill (AB) 1195, which states that as of July 1, 2006, all Category 1 CME activities that relate to patient care must include a cultural diversity/linguistics component. It has also passed AB 241, which states that as of January 1, 2022, all continuing education courses for a physician and surgeon **must** contain curriculum that includes specified instruction in the understanding of implicit bias in medical treatment.

*The cultural and linguistic competency (CLC) and implicit bias (IB) definitions reiterate how patients' diverse backgrounds may impact their access to care.*

## EXEMPTION:

Business and Professions Code 2190.1 exempts activities which are dedicated solely to research or other issues that do not contain a direct patient care component.

*The following CLC & IB components will be addressed in this presentation:*

- *Disparities in Incidence and Outcomes in myeloma . Barriers to Equitable Care and Importance of Inclusive Clinical Trials*
- *Strategies to Reduce Implicit Bias*
- *Providing implicit bias and cultural humility training, Standardizing referral and treatment pathways and*
- *Expanding diverse clinical trial recruitment*



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**01**      **Current treatment algorithm and High-Risk Definition**

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**02**      **Update on Bispecific antibody therapy in myeloma**

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**03**      **Update on CART therapy in myeloma**

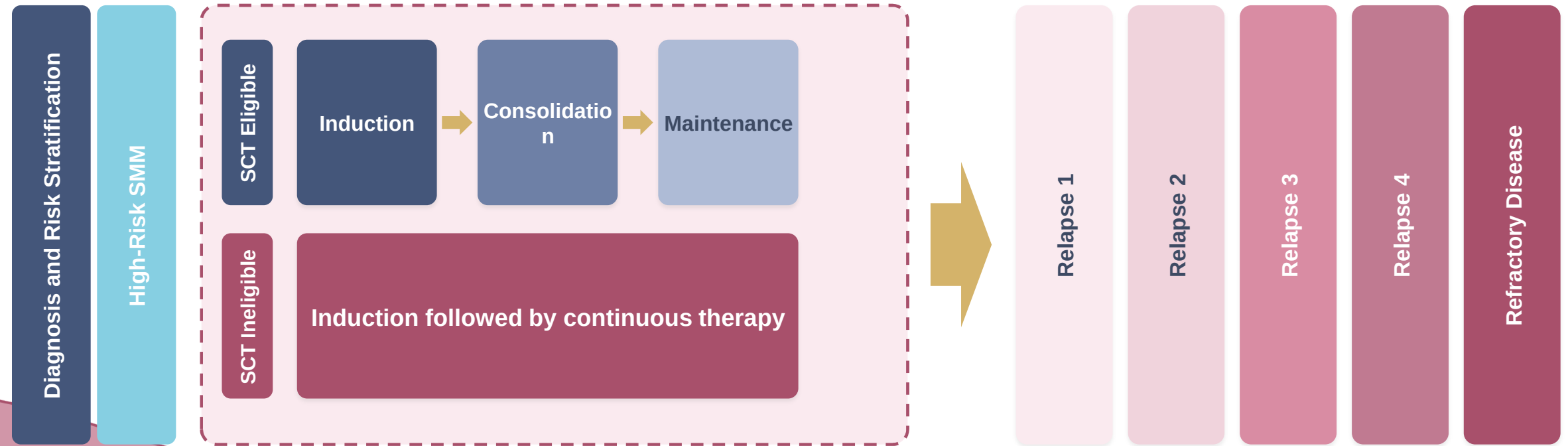
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**04**      **Emerging therapies**



# Myeloma Treatment Paradigm

*SCT-Eligible vs. SCT-Ineligible Pathways and Relapse Progression*

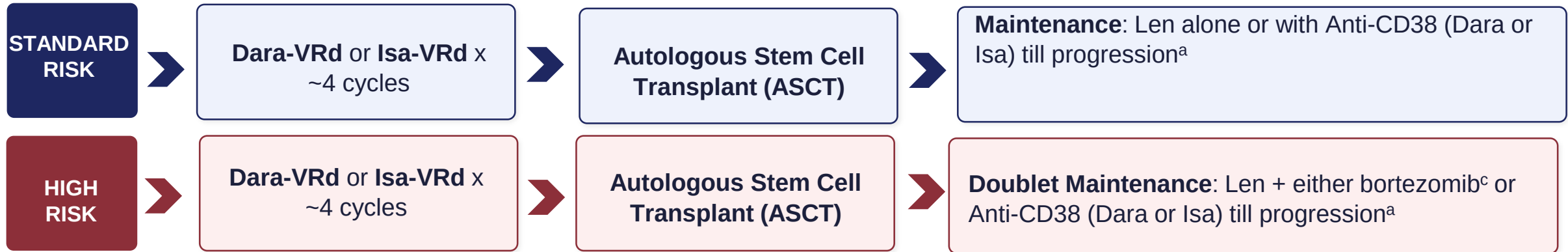


**Tumor  
Burden**

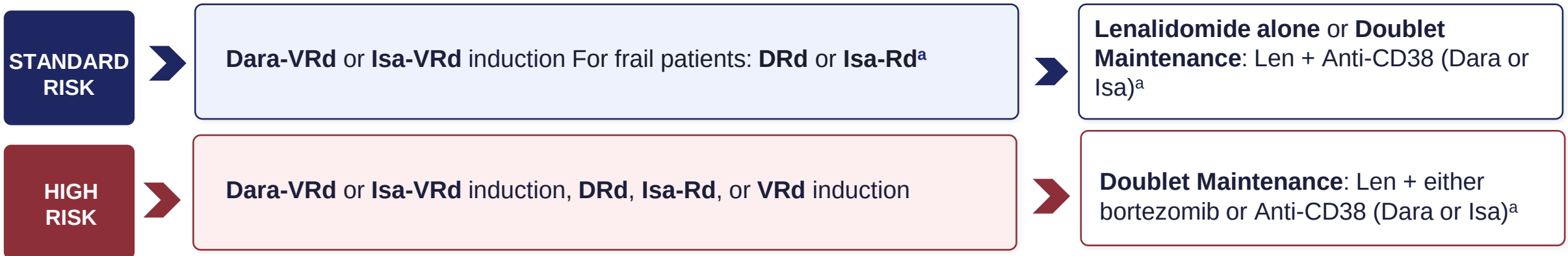
# Newly Diagnosed Multiple Myeloma

**Collect  
Stem Cells<sup>b</sup>**

## TRANSPLANT ELIGIBLE



## TRANSPLANT INELIGIBLE

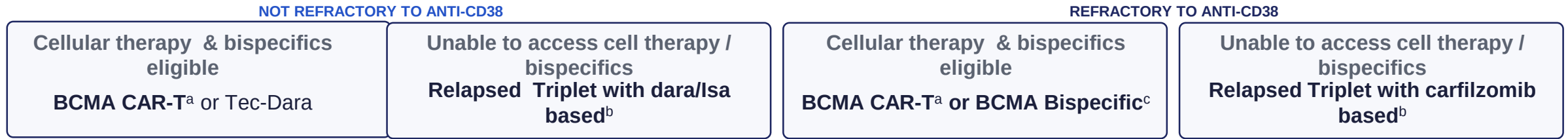


Dara-VRd, daratumumab + bortezomib + lenalidomide + dexamethasone; Isa-VRd, isatuximab + bortezomib + lenalidomide + dexamethasone; VRd, bortezomib + lenalidomide + dexamethasone; DRd, daratumumab + lenalidomide + dexamethasone; Isa-Rd, isatuximab + lenalidomide + dexamethasone; Dara, daratumumab; Isa, isatuximab; Len, lenalidomide; MRD, minimal residual disease.

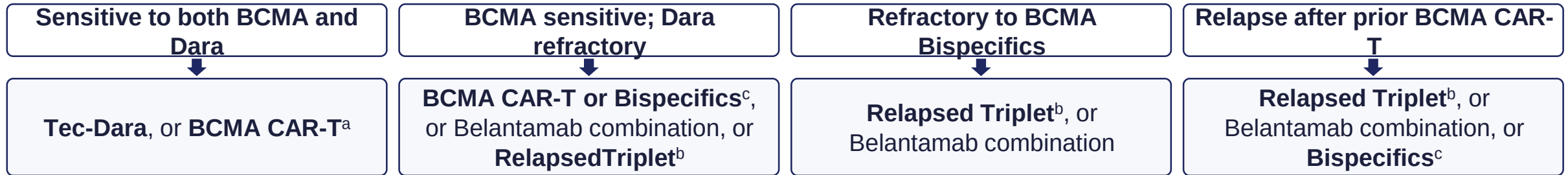


# Multiple Myeloma: Relapse & Refractory Treatment Algorithm

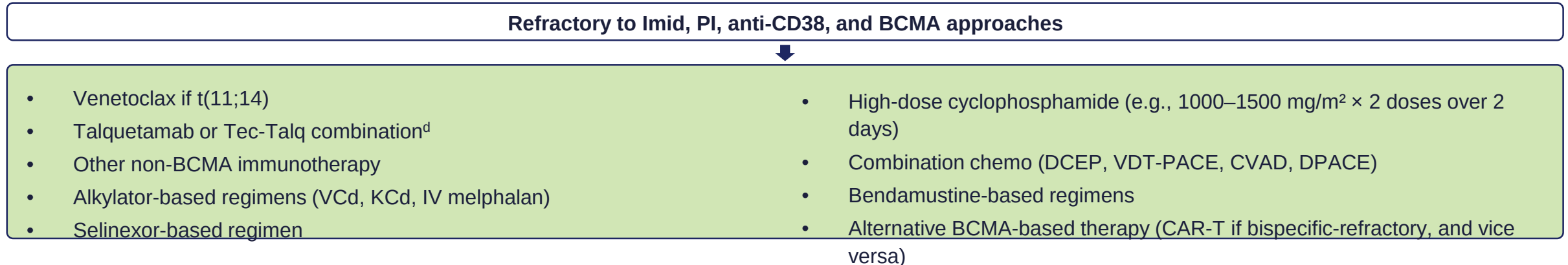
## FIRST RELAPSE



## SECOND RELAPSE



## REFRACTORY MM



<sup>a</sup> Cilta-cel should be discussed with eligible patients; discuss pros/cons of a one-time CAR-T approach vs prolonged therapy. <sup>b</sup> Choice of standard triplet is based on refractoriness to Len, anti-CD38, and other drugs. Key options: DRd, KRd, KPd, Anti CD38-Pd, Anti CD38-Kd, EloPd, Dara-KPd, PI-Cd — choose a triplet with ≥ 2 drugs the patient is not refractory to. If t(11;14), Dara-Venetoclax-dex and Carfilzomib-Venetoclax-Dex are additional options.

<sup>c</sup> BCMA Bispecifics can be teclistamab, elranatamab, linvoseltamab, or the Tec-Dara combination. <sup>d</sup> Tec-Talq combination has shown efficacy in patients with relapsed MM plus EMD.



# High-Risk Multiple Myeloma

2025 IMS/IMWG Consensus Genomic Classification

**HIGH-RISK DISEASE** = ANY ONE of the four criteria below (single unified definition, no separate ISS staging required)

## 1 del(17p) and/or TP53 mutation

**del(17p)** with clonal cell fraction (CCF) **≥20%**, and/or a **TP53 mutation** — either alone is sufficient.

## 2 IgH translocation + 1q/1p lesion

**t(4;14), t(14;16), or t(14;20) PLUS** gain/amp(1q21) and/or del(1p32).  
*Translocation alone is no longer sufficient for HR.*

## 3 Chromosome 1p burden

**Monoallelic del(1p32)** with concurrent 1q gain, **OR** a **biallelic del(1p32)** on its own.

## 4 β2-microglobulin (renal-adjusted)

**β2-microglobulin ≥5.5 mg/L**, counted **only when creatinine is normal** (excludes renal-impairment confounding).

**Key shift from legacy criteria:** old model (del17p OR t(4;14) OR t(14;16), any single hit → HR) treated IgH translocations as independently high-risk.  
*New model requires co-occurring 1q/1p abnormality — translocation alone → standard risk.*

Avet-Loiseau H, et al. IMS/IMWG consensus recommendations on the definition of high-risk multiple myeloma. *J Clin Oncol.* 2025;43(24):2739–2751.





# Bispecific Antibody Therapy

## ❑ “Off the shelf” immunotherapy with multiple binding domains

Target different tumor antigens like **BCMA**, **GPRC5D**, **FcRH5**

Also bind to immune cell targets, including CD3 (T cells)

**Teclistamab\***: CD3 x BCMA

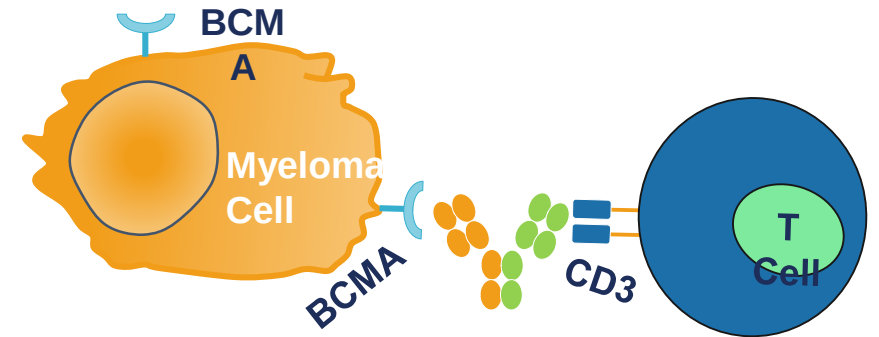
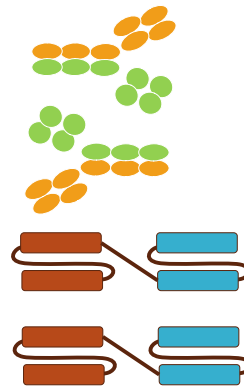
**Elranatamab\***: CD3 x BCMA

**Linvoseltamab\***: CD3 x BCMA

**Talquetamab\***: CD3 x GPRC5D

**Cevostamab**: CD3 x FcRH5

**Etentamig**: CD3 x BCMA



\*FDA approved as monotherapy for treating adults with R/R MM after ≥4 prior lines of therapy, including a PI, IMiD, and anti-CD38 mAb.

## ❑ Variable administration: SC or IV options with required step-up dosing



Elranatamab-bcmm PI. Linvoseltamab-gcpt PI. Talquetamab-tgvs PI. Teclistamab-cqyv PI.  
van de Donk. Lancet. 2023;402:142.



# Approved Bispecific Therapies for Myeloma

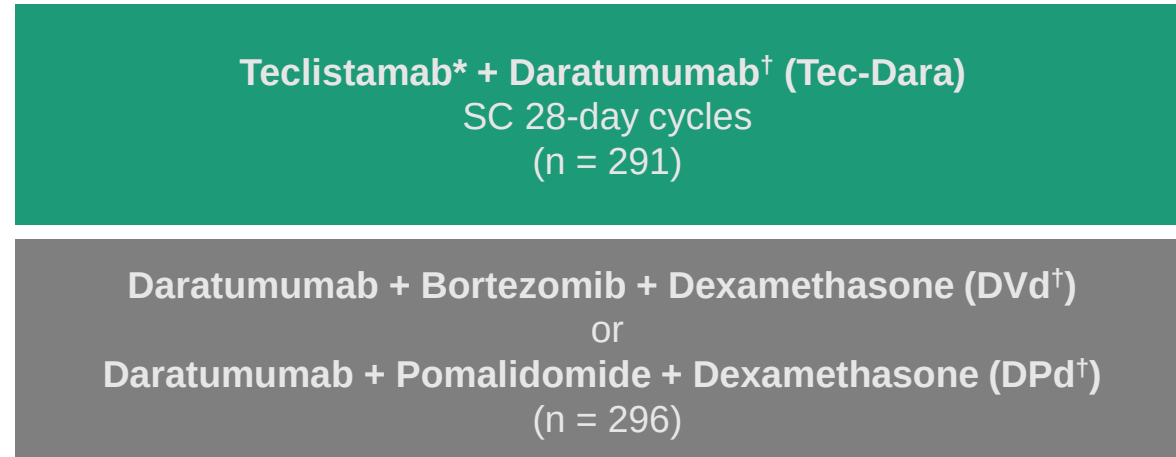
| BsAb                       | Teclistamab <sup>1</sup>                            | Elranatamab <sup>2</sup>                                   | Linvoseltamab <sup>3</sup>                          | Talquetamab <sup>4</sup>                                                                    |
|----------------------------|-----------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------|
| Targets                    | BCMA x CD3                                          | BCMA x CD3                                                 | BCMA x CD3                                          | GPRC5D x CD3                                                                                |
| Trial/phase/n treated      | MajesTEC-1<br>phase I/II; n = 165                   | MagnetisMM-3<br>phase II; n = 123                          | LINKER-MM1<br>phase I/II; n = 117                   | MonumenTAL-1<br>phase I; n = 232                                                            |
| Patient population         | ≥3 LoT, including 1 PI, 1 IMiD, and 1 anti-CD38 mAb | Cohort A: refractory to ≥1 PI, 1 IMiD, and 1 anti-CD38 mAb | ≥3 LoT, including 1 PI, 1 IMiD, and 1 anti-CD38 mAb | R/R MM with intolerance to or progressed on established therapies (data for all SC cohorts) |
| ECOG PS ≥1, %              | 67                                                  | 63                                                         | 85                                                  | NR (excluded PS ≥2)                                                                         |
| Prior BCMA therapy allowed | Not allowed                                         | Cohort A: no                                               | No, except BCMA ADCs                                | Yes                                                                                         |
| Median age, yr (range)     | 64 (33-84)                                          | 68 (36-89)                                                 | 70 (37-91)                                          | 64 (39-84)                                                                                  |
| • Age ≥75 yr, %            | 15                                                  | NR                                                         | 27                                                  | 30 for ≥70 yr                                                                               |
| EMD, %                     | 17                                                  | 32                                                         | 16                                                  | 32                                                                                          |
| High-risk cytogenetics, %  | 26                                                  | 25                                                         | 39                                                  | 16                                                                                          |
| Median LoT, n (range)      | 5 (2-14)                                            | 5 (2-22)                                                   | 5 (2-16)                                            | 5.5 (2-17)                                                                                  |
| Triple-class refractory, % | 78                                                  | 97                                                         | 82                                                  | 75                                                                                          |
| Penta-drug refractory, %   | 30                                                  | 42                                                         | 28                                                  | 25                                                                                          |

1. Moureau. NEJM. 2022;387:495. 2. Lesokhin. Nat Med. 2023;29:2259. 3. Bumma. JCO. 2024;42:2702. 4. Chari. NEJM. 2022;387:2232.



# MajesTEC-3: Teclistamab + Daratumumab in R/R MM

Adults with MM previously treated with 1-3 prior LoT including a PI and lenalidomide; PD on/after most recent therapy; no prior treatment with BCMA-targeted therapy; not refractory to anti-CD38 therapy or any study drug; ECOG PS 0-2 (N = 587)



\*1.5 mg/kg QW cycle 1 (preceded by step-up dose schedule) and cycle 2, 3 mg/kg Q2W cycles 3-6, and 3 mg/kg Q4W cycles 7+.  
†Dosed according to approved schedules.

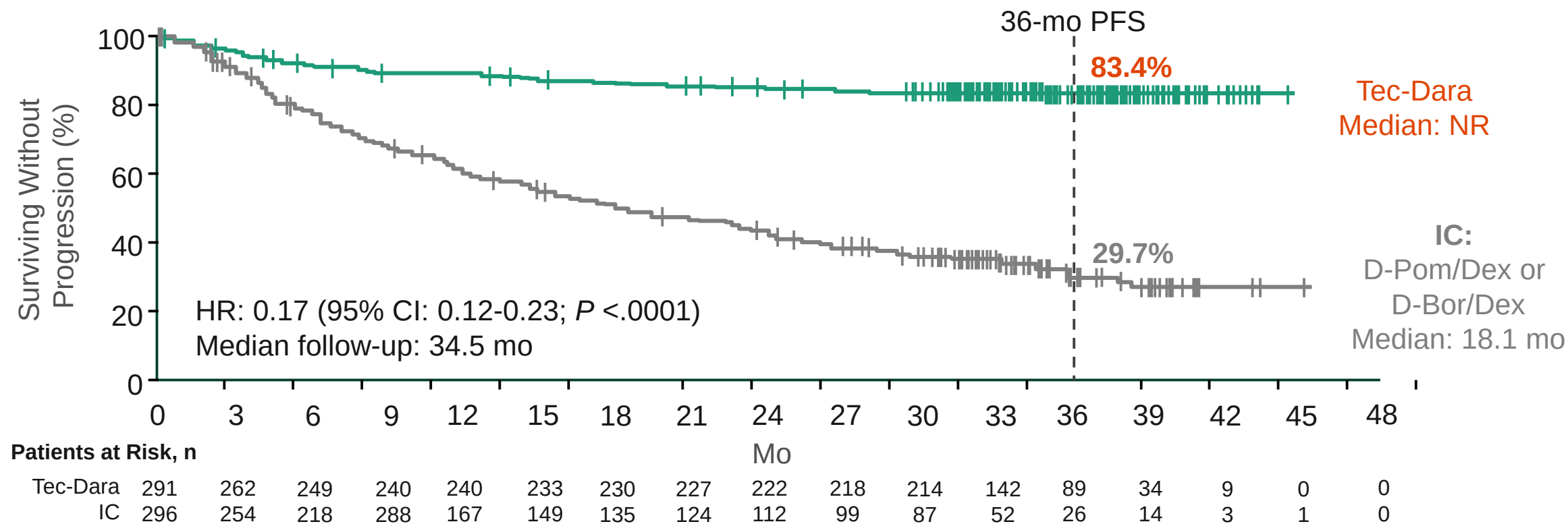
*Until PD, unacceptable toxicity, end of study, or consent withdrawal*

- **Primary endpoint: PFS by IRC**
- **Key secondary endpoints: CRR, ORR, MRD ( $10^{-5}$  by NGS), OS, safety, time to worsening of symptoms**

Study unblinded:  
36-mo PFS HR: 0.17



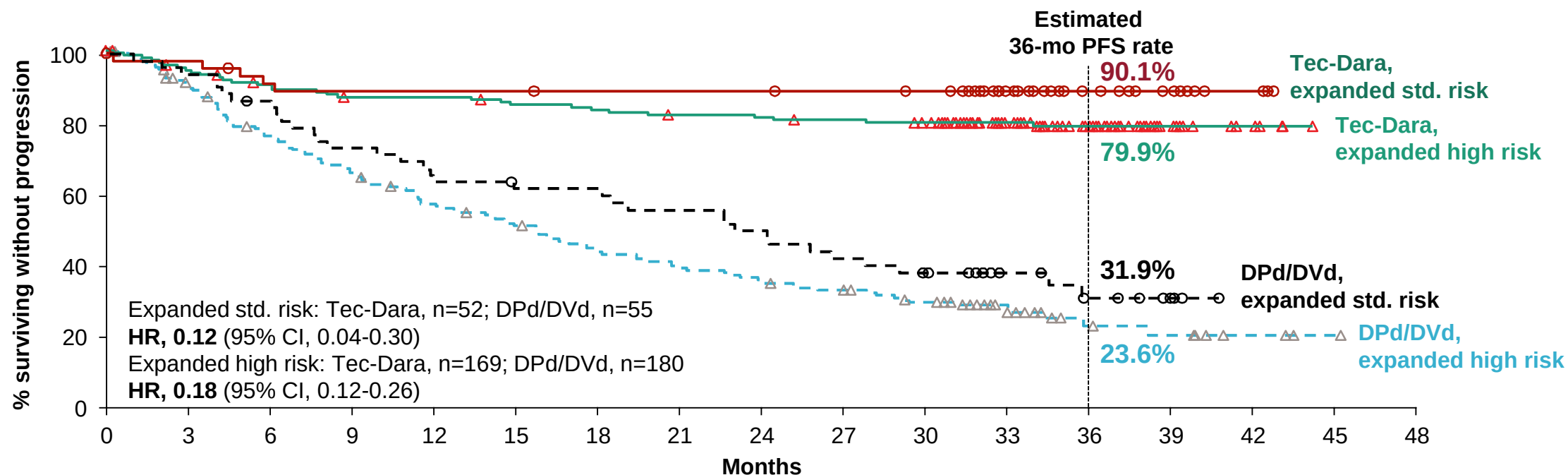
# MajesTEC-3: PFS



On March 5, 2026, the FDA approved teclistamab in combination with daratumumab for adult patients with R/R MM who have received at least 1 prior line of therapy, including a proteasome inhibitor and an immunomodulatory agent, based on the results of the MajesTEC-3 trial



# MajesTEC-3: PFS by Expanded<sup>a</sup> Cytogenetic Risk

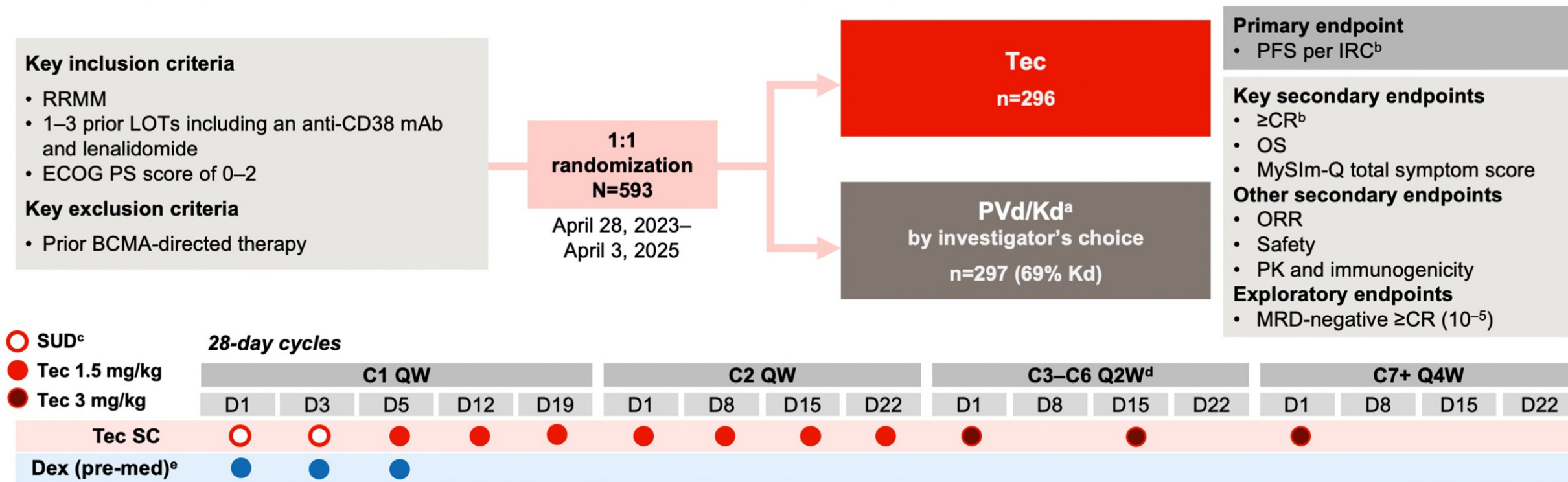


| No. at risk                  | 0   | 3   | 6   | 9   | 12  | 15  | 18  | 21  | 24  | 27  | 30  | 33 | 36 | 39 | 42 | 45 | 48 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| Tec-Dara, expanded std. risk | 52  | 50  | 46  | 45  | 45  | 45  | 44  | 44  | 44  | 43  | 42  | 28 | 15 | 8  | 3  | 0  | -  |
| DPd/DVd, expanded std. risk  | 55  | 51  | 46  | 39  | 34  | 32  | 32  | 29  | 26  | 22  | 19  | 12 | 8  | 3  | 0  | 0  | -  |
| Tec-Dara, expanded high risk | 169 | 147 | 139 | 133 | 133 | 129 | 127 | 124 | 123 | 121 | 119 | 80 | 53 | 19 | 6  | 0  | 0  |
| DPd/DVd, expanded high risk  | 180 | 153 | 129 | 110 | 95  | 84  | 71  | 64  | 57  | 52  | 45  | 27 | 11 | 8  | 3  | 1  | 0  |

**Tec-Dara maintained superior PFS vs DPd/DVd across expanded cytogenetic risk groups, consistent with the overall study effect<sup>1</sup>**



# MajesTEC-9: Phase 3 Study Design



**Monthly Tec dosing from C7 (earlier if  $\geq$ VGPR); steroid free after C1D5**

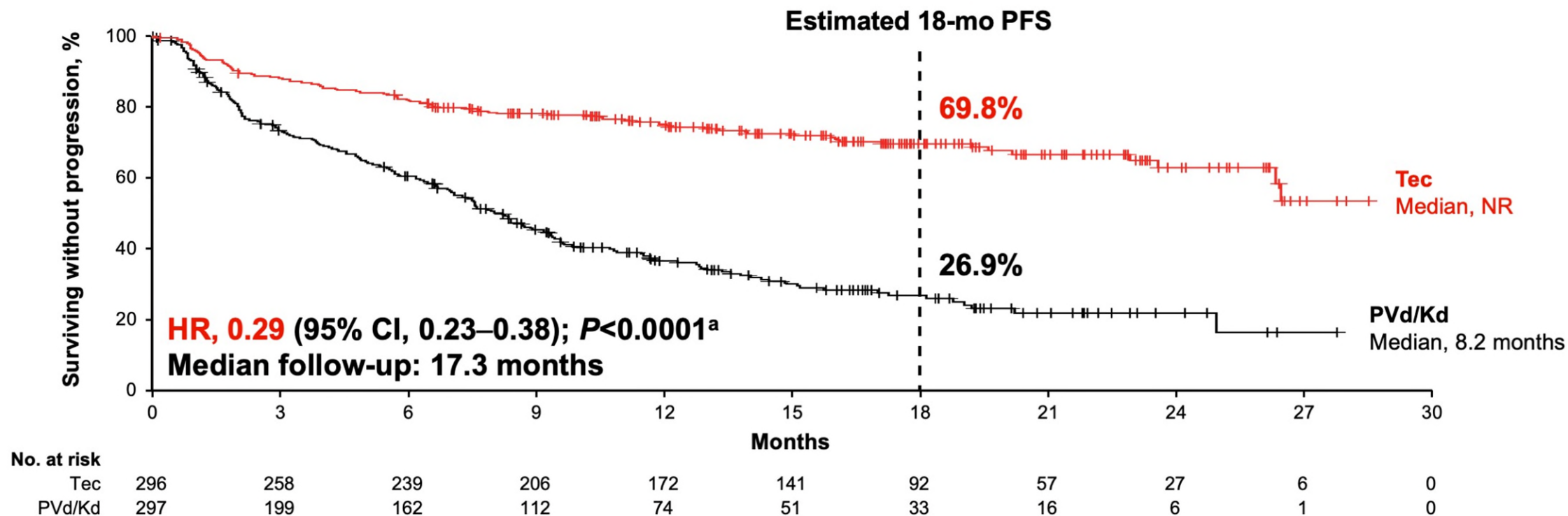
<sup>a</sup>Administered per the approved schedules. Kd was administered either twice weekly (20/56 mg/m<sup>2</sup>) or once weekly (20/70 mg/m<sup>2</sup>) depending on the local clinical practice. <sup>b</sup>Disease progression and response were assessed by an IRC per IMWG 2016 criteria. <sup>c</sup>Patients received SUD of 0.06 mg/kg and 0.3 mg/kg on D1 and D3, respectively. <sup>d</sup>Patients with confirmed  $\geq$ VGPR could switch to dosing Q4W earlier than C7 per investigator's discretion. <sup>e</sup>Dex, acetaminophen, and diphenhydramine pre-med was required on C1 D1, D3, and D5.

C, Cycle; CR, complete response; D, Day; Dex, dexamethasone; ECOG PS, Eastern Cooperative Oncology Group performance status; IMWG, International Myeloma Working Group; IRC, independent review committee; MRD, minimal residual disease; MySIm-Q, Multiple Myeloma Symptom and Impact Questionnaire; ORR, overall response rate; PK, pharmacokinetics; pre-med, pre-medication; QW, weekly; Q2W, every 2 weeks; Q4W, every 4 weeks; SC, subcutaneous; SUD, step-up dosing; VGPR, very good partial response.





# MajesTEC-9: Tec Significantly Improved PFS (Primary Endpoint)



**Tec significantly improved PFS, with a 71% reduction in the risk of disease progression or death in a highly refractory population**

<sup>a</sup>The  $P$  value crossed the prespecified stopping boundary for superiority for the first interim analysis ( $P=0.0197$ ).

CI, confidence interval; NR, not reached.

From *The New England Journal of Medicine*, Touzeau C, et al., Teclistamab in Multiple Myeloma with One to Three Previous Lines of Therapy.

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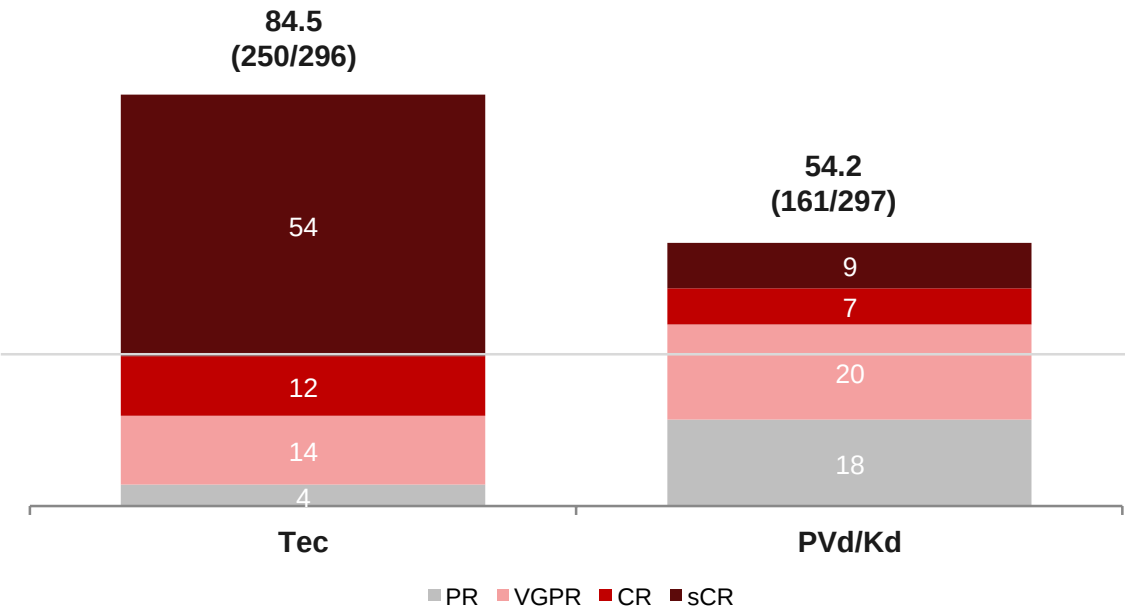


# MajesTEC-9: Response, Duration, and MRD-Negativity

Tec vs PVd/Kd — Median follow-up 17.3 months

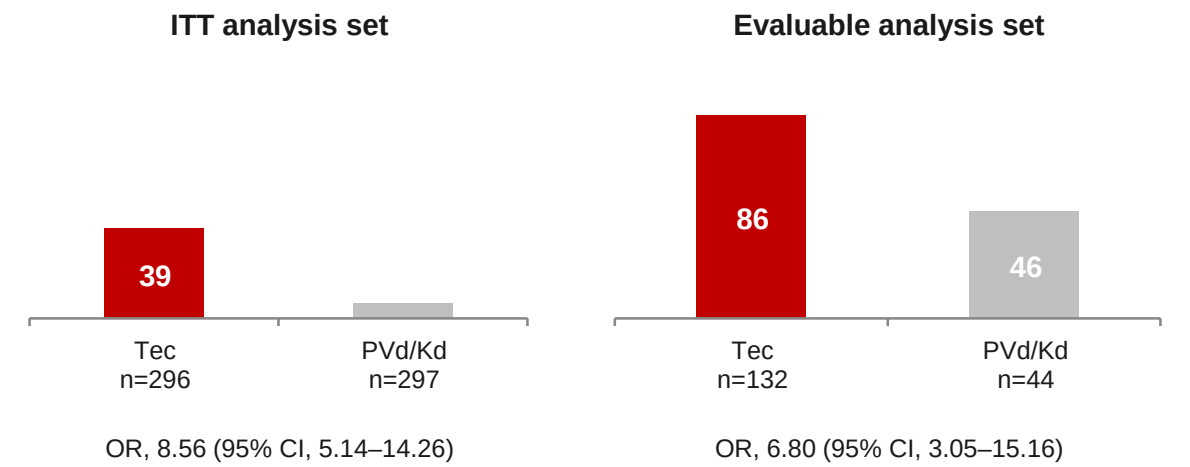
## Treatment Response

ORR: OR 4.62 (95% CI, 3.13–6.83); P<.0001    ≥CR: OR 10.42 (95% CI, 6.89–15.76); P<.0001



|                                   | Tec (n=250)      | PVd/Kd (n=161)   |
|-----------------------------------|------------------|------------------|
| Median time to first response, mo | 1.2 (0.9–7.9)    | 1.1 (0.7–11.1)   |
| Median time to first ≥CR, mo      | 5.8 (1.0–23.0)   | 5.6 (0.9–16.3)   |
| Median (95% CI) DOR, mo           | NE (25.2–NE)     | 13.4 (10.4–17.3) |
| Estimated 18-mo DOR, % (95% CI)   | 80.6 (74.1–85.5) | 40.1 (30.8–49.1) |

## MRD-Negative (10<sup>-5</sup>) ≥CR Rate



Tec demonstrated significantly higher ORR, a ≥CR rate nearly 4× that of control, more durable responses, and an ~86% MRD-negative ≥CR rate among MRD-evaluable patients.

DOR, duration of response; ITT, intent-to-treat; MRD, minimal residual disease; NE, not estimable; NGF, next-generation flow cytometry; OR, odds ratio; PR, partial response; sCR, stringent complete response.

Presented by R Mina at the American Society of Clinical Oncology (ASCO) Annual Meeting; May 29–June 2, 2026; Chicago, IL, USA.





# MonumenTAL-3: Talquetamab-Daratumumab in Relapsed or Refractory Myeloma

Phase 3, multicenter, open-label study conducted at 182 sites in 18 countries



## Patients

### Key inclusion criteria

- RRMM\*
- $\geq 1$  prior LOT, including lenalidomide and a PI<sup>†</sup>
- ECOG PS score of 0-2

### Key exclusion criteria

- Refractory to anti-CD38 mAbs
- Prior GPRC5D-directed therapy
- Prior pomalidomide therapy
- T-cell redirecting therapy  $\leq 3$  months before randomization

1:1:1  
randomization  
N=864  
Nov 4, 2022 to  
Mar 13, 2025

Tal-DP  
N=287

Tal-D  
N=287

DPd  
N=290

93 (10.9%) patients were  
included from the United States



## Endpoints

### Primary endpoint

- PFS per IRC

### Key secondary endpoints

- ORR
- $\geq$ CR
- MRD-negative CR ( $10^{-5}$ )
- OS

### Additional secondary endpoints

- Safety
- PK and immunogenicity

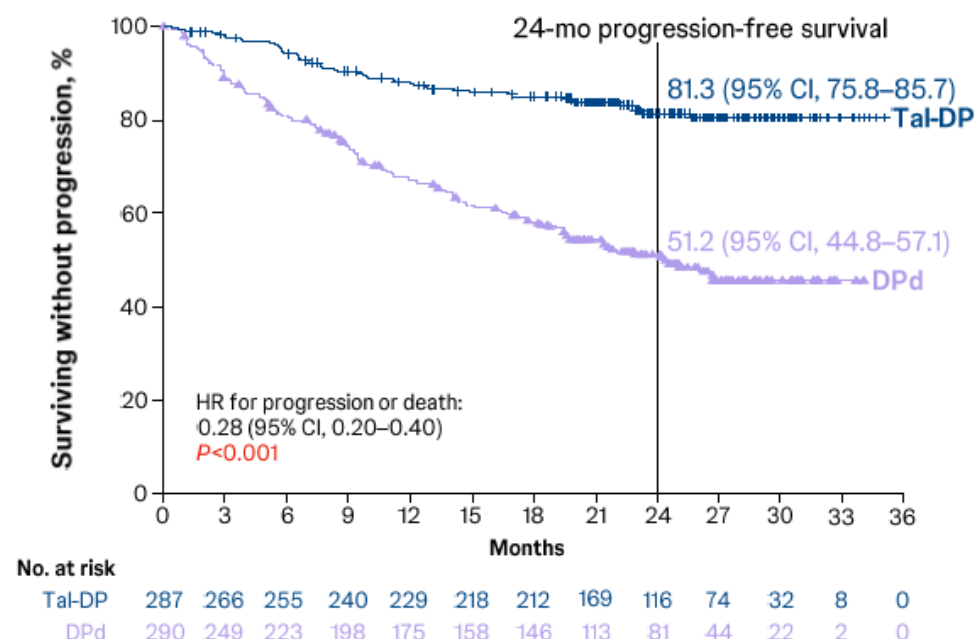
864 patients with RRMM and  $\geq 1$  prior LOT<sup>†</sup> were randomized to Tal-DP, Tal-D, or DPd; primary endpoint was PFS



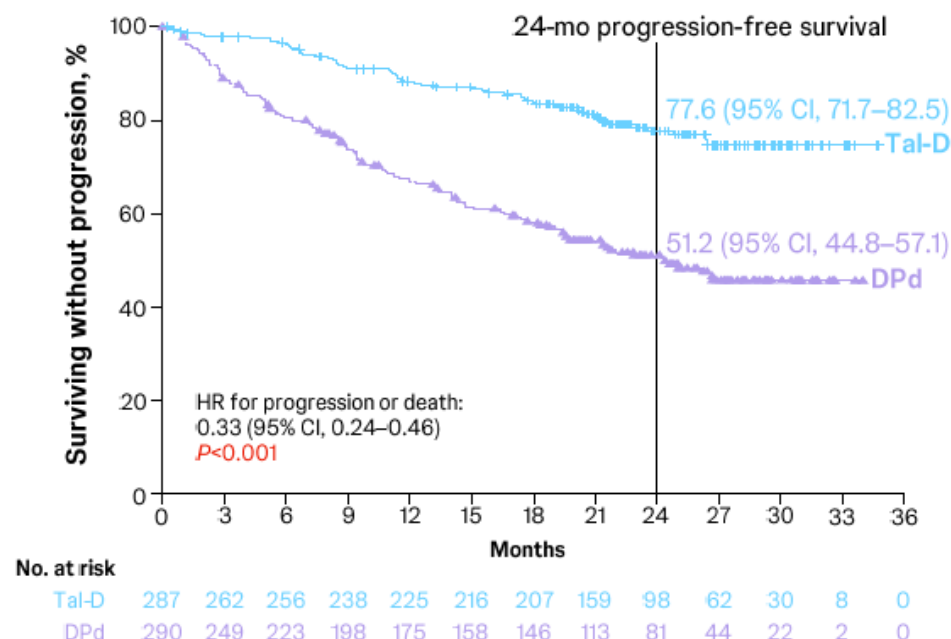
# Progression-Free Survival (Intention-to-Treat Population): Primary Endpoint

Median follow-up: 24.6 months

Tal-DP versus DPd



Tal-D versus DPd

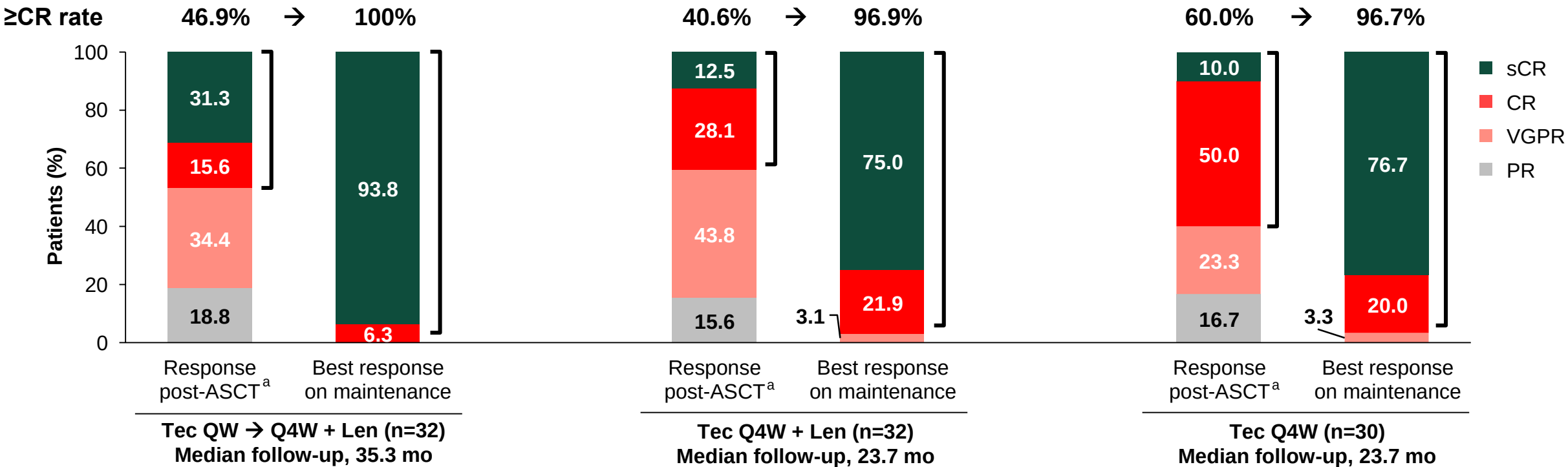


From The New England Journal of Medicine, Mina R, et al, Talquetamab-Daratumumab in Relapsed or Refractory Multiple Myeloma.  
DOI: 10.1056/NEJMoa2604657. Copyright © 2026 Massachusetts Medical Society. Reprinted with permission from Massachusetts Medical Society.

- Tal-DP and Tal-D significantly improved PFS versus DPd, with 81% Tal-DP and 78% Tal-D patients alive and progression free at 2 years
- Median PFS was not reached in the Tal-DP and Tal-D arms and was 24.4 months in the DPd arm



# EMN30/MajesTEC-4 SRI: Response Rates Post-ASCT and During Maintenance



**≥CR was reached in nearly 100% of patients during maintenance across cohorts**

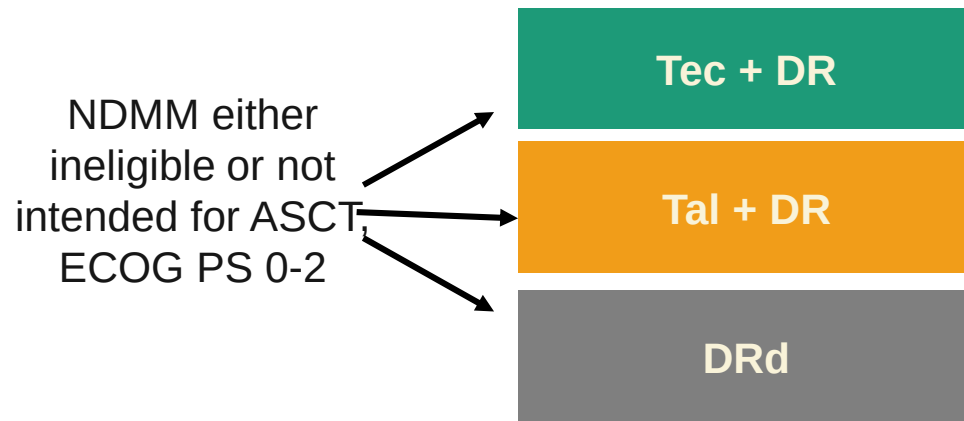
sCR, stringent complete response; VGPR, very good partial response.  
Response based on investigator assessment. <sup>a</sup>Post-ASCT ± consolidation.

Efficacy data cutoff: December 8, 2025



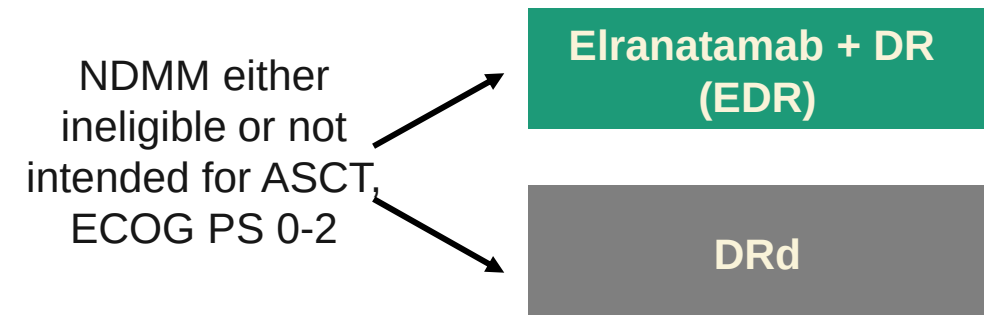
# Bispecific in Newly diagnosed Multiple myeloma ( ASCT ineligible)

## MajesTEC-7 Phase III



**Primary endpoints:**  
PFS and sustained MRD neg

## MagnetisMM-6 Phase III



**Primary endpoints:**  
PFS and sustained MRD neg

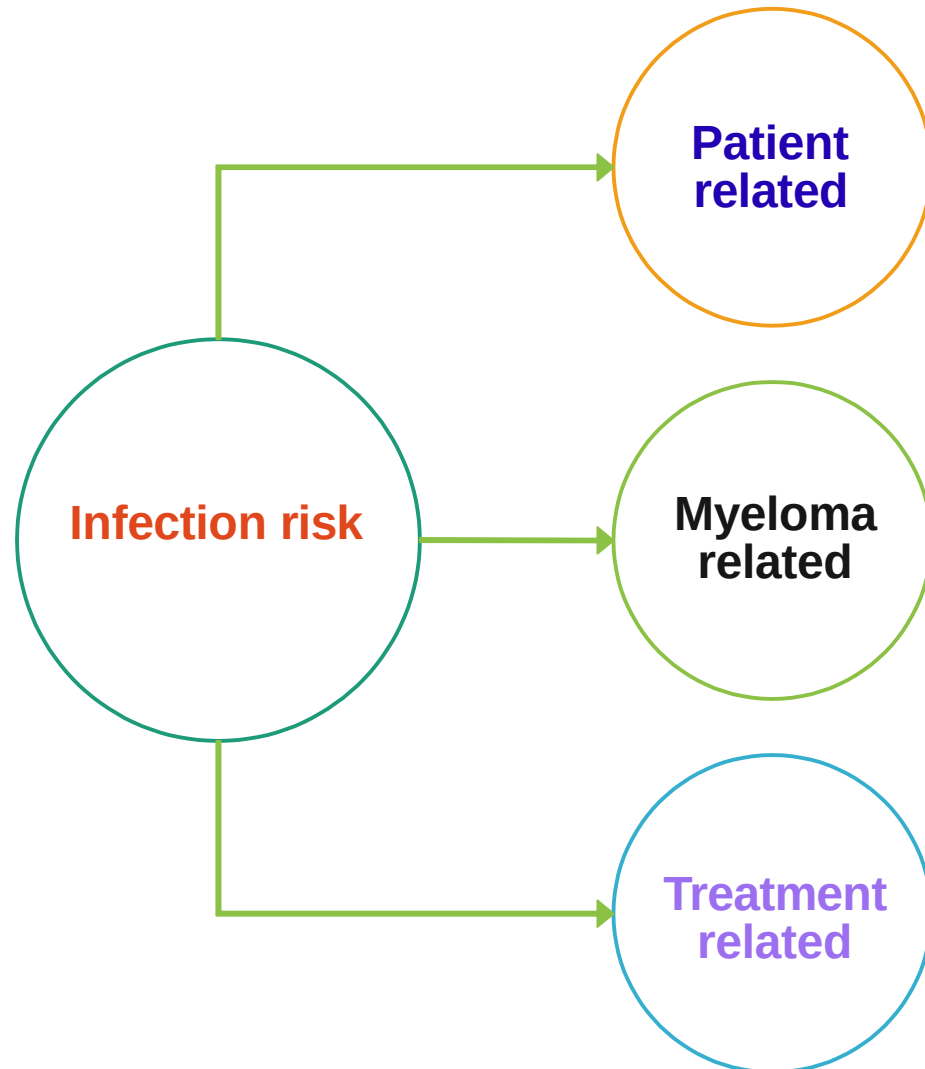
# Safety of Approved Bispecific Antibodies for Multiple Myeloma

| Parameter          | Teclistamab <sup>1-3</sup>        | Elranatamab <sup>4,5</sup>        | Linvoseltamab <sup>6</sup>        | Talquetamab <sup>7-10</sup>                                                 |
|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------------------------------------------------|
| Target             | CD3/BCMA                          | CD3/BCMA                          | CD3/BCMA                          | CD3/GPRC5D                                                                  |
| CRS occurrence     | 72%: Grade 1: 50%<br>Grade 2: 21% | 58%: Grade 1: 44%<br>Grade 2: 14% | 46%: Grade 1: 35%<br>Grade 2: 10% | 76%: Grade 1: 57%<br>Grade 2: 17%                                           |
| ICANS occurrence   | Grade 1/2: 3%<br>Grade 3/4: 0%    | Grade 1/2: 3%<br>Grade 3/4: 0%    | Grade 1/2: 5.4%<br>Grade 3: 2.6%  | Grade 1/2: 3%<br>Grade 3/4: 3%                                              |
| Neutropenia        | Grade 3/4: 56%                    | Grade 3/4: 51%                    | Grade 3/4: 47%                    | Grade 3/4: 35%                                                              |
| Infection          | Grade 3/4: 35%                    | Grade 3/4: 31%                    | Grade 3/4: 38%                    | Grade 3/4: 17%                                                              |
| Skin/nail toxicity | Not reported                      | 26%                               | 15%                               | 62%                                                                         |
| Oral toxicity      | Not reported                      | Not reported                      | Not reported                      | 80% (dysgeusia: 49%,<br>dry mouth: 34%,<br>dysphagia: 23%,<br>ageusia: 18%) |

1. Moreau. NEJM. 2022;387:495. 2. van de Donk. ASCO 2023. Abstr 8011. 3. Teclistamab-cqyv PI. 4. Lesokhin. Nat Med. 2023;29:2259. 5. Elranatamab-bcmm PI. 6. Linvoseltamab PI. 7. Chari. NEJM. 2022;387:2232. 8. Touzeau. EHA 2023. Abstr S191. 9. Talquetamab-tgvs PI. 10. Chari. Lancet. 2025;V12:E269.



# BsAb Therapy's Infection Risk



**Treatment target (BCMA > non-BCMA)** leads to significant **hypogammaglobulinemia** as well as impaired humoral immunity

## **Treatment MoA (T-cell redirection)**

- T-cell dysfunction/**exhaustion** leads to impaired cellular immunity
- Activation of immunosuppressive T-regulatory cell subtypes
- CRS risk and related concomitant **immunosuppressive** supportive medications (corticosteroids, tocilizumab)

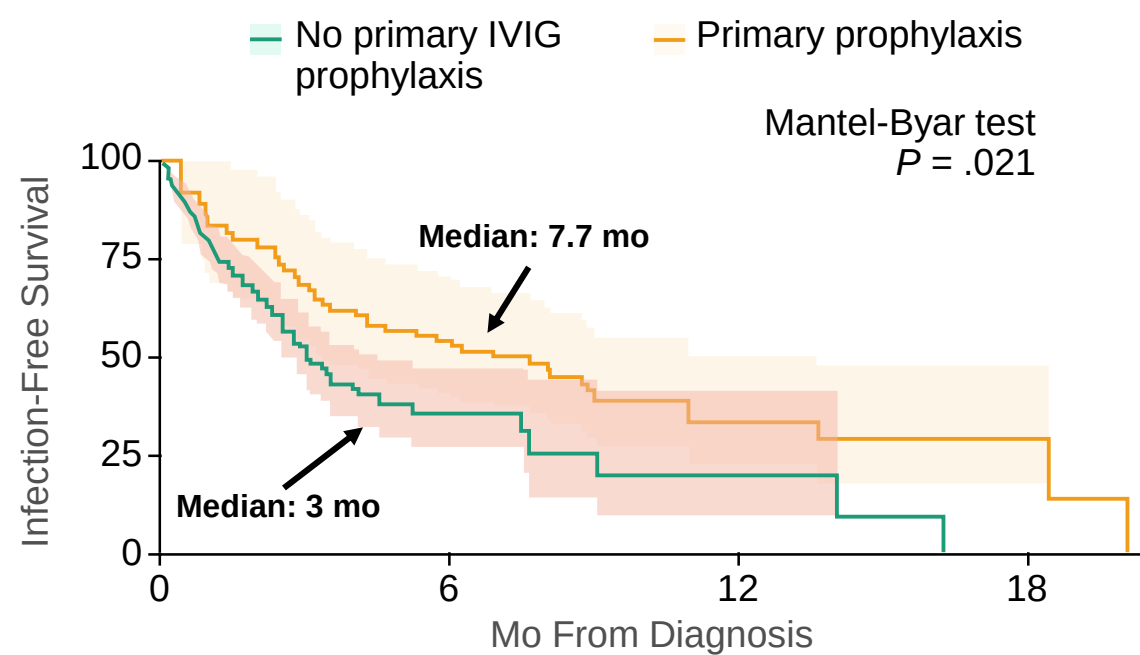
## **Cumulative therapeutic exposure (long)**

- Continuous therapy by design in most protocols in already substantially pretreated patients
- Significant DoR compared with historic conventional therapies used in R/R MM → longer duration of therapy



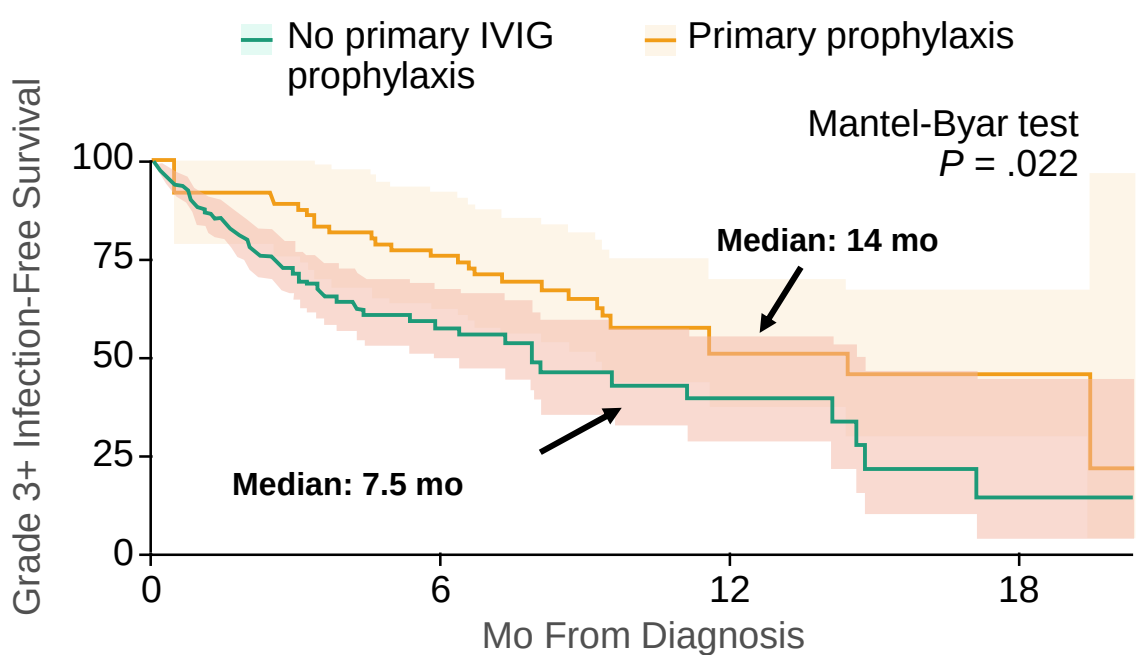
# Effect of IVIG Prophylaxis on Infection-Free Survival in Recipients of BCMA-Directed BsAb for MM

All-Grade Infection



|                             |     |    |    |    |
|-----------------------------|-----|----|----|----|
| No primary IVIG prophylaxis |     |    |    |    |
| At risk                     | 221 | 12 | 2  | 0  |
| Events                      | 0   | 89 | 92 | 94 |
| Primary prophylaxis         |     |    |    |    |
| At risk                     | 13  | 41 | 10 | 2  |
| Events                      | 0   | 25 | 36 | 37 |

Grade ≥3 Infection

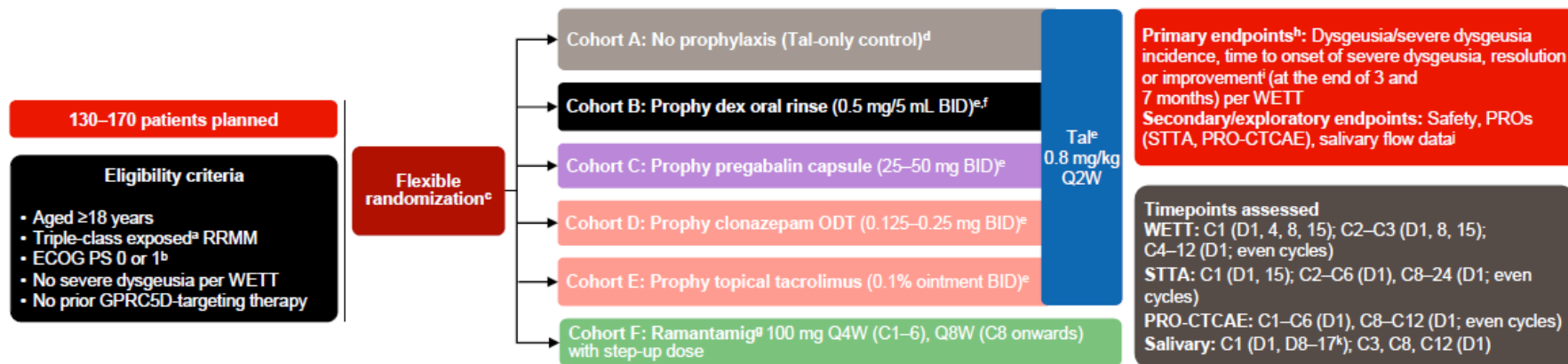


|                             |     |    |    |    |
|-----------------------------|-----|----|----|----|
| No primary IVIG prophylaxis |     |    |    |    |
| At risk                     | 223 | 33 | 9  | 2  |
| Events                      | 0   | 60 | 67 | 71 |
| Primary prophylaxis         |     |    |    |    |
| At risk                     | 13  | 48 | 13 | 2  |
| Events                      | 0   | 12 | 23 | 24 |



# Early Resolution of Talquetamab Oral Side Effects in Relapsed/Refractory Multiple Myeloma: Updated Waterless Empirical Taste Test and Patient-Reported Outcomes Data From TALisman

## TALisman phase 2 study design

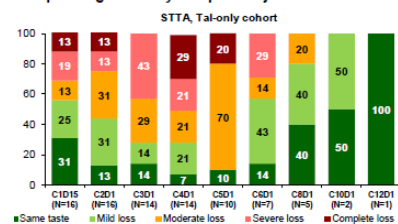


<sup>a</sup> allocated to receive Tal-only, or Tal with prophy dex/pregabalin; <sup>b</sup> cohorts, most patients experienced dysgeusia per WETT

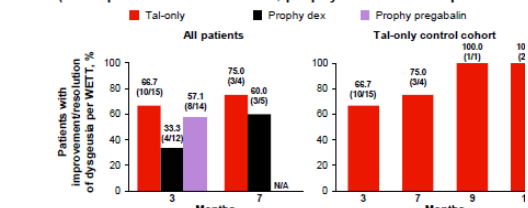
|                       | Tal-only (N=15) | Tal + prophy dex (N=15) | Tal + prophy pregabalin (N=16) |
|-----------------------|-----------------|-------------------------|--------------------------------|
| geusia, n (%)         | 10 (66.7)       | 13 (86.7)               | 10 (62.5)                      |
| re dysgeusia, n (%)   | 12 (80.0)       | 13 (86.7)               | 10 (62.5)                      |
| geusia, days          | 11.9 (6.1–28.0) | 7.9 (3.0–24.0)          | 10.0 (4.0–21.9)                |
| vere dysgeusia, n (%) | 87.9 (7.9–NR)   | 9.1 (4.9–28.9)          | 16.4 (7.9–32.9)                |

to severe dysgeusia was longer than median time to dysgeusia

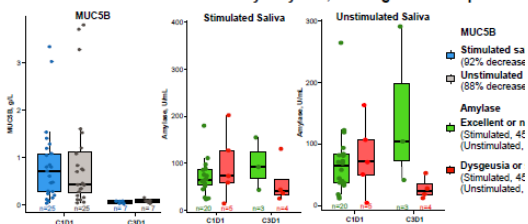
<sup>c</sup> cohort, severity of taste loss tended to stabilize or improve after peaking at 4–5 cycles per subjective STTA



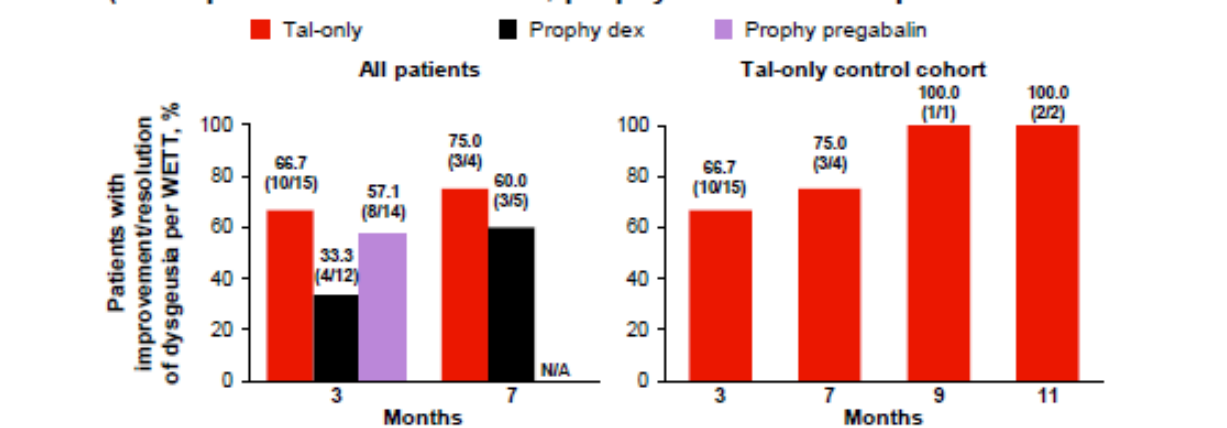
Dysgeusia per WETT resolved in most (10/15) patients after 3 months, (6/9 of patients after 7 months; prophylaxis did not improve outcomes)



Onset of dysgeusia coincides with reduction in salivary MUC5B and towards reduced salivary amylase, although data are preliminary



**Dysgeusia per WETT resolved in most (10/15) patients after 3 months, resolving in (6/9 of patients after 7 months; prophylaxis did not improve outcomes)**



D, day; dex, dexamethasone; NR, not reported; NS, non-significant; PRO-CTCAE, Patient-Reported Outcomes-Common Terminology Criteria for Adverse Events; prophy, prophylaxis; STTA, Scale of Subjective Total Taste Acuity; Tal, Talquetamab; WETT, Waterless Empirical Taste Test



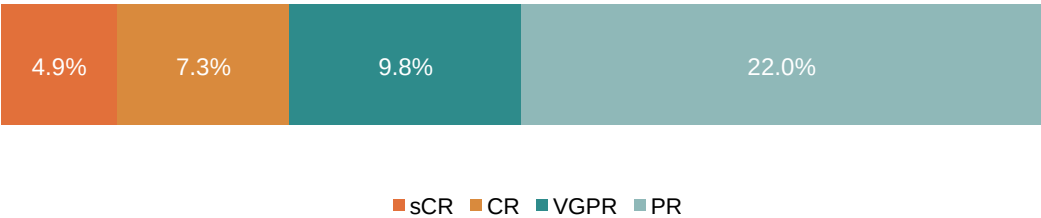


# Cevostamab in Triple-Class Refractory MM After Prior BCMA CAR-T: Efficacy & Safety

Expansion results from the Phase I/II CAMMA 2 study (N=41)

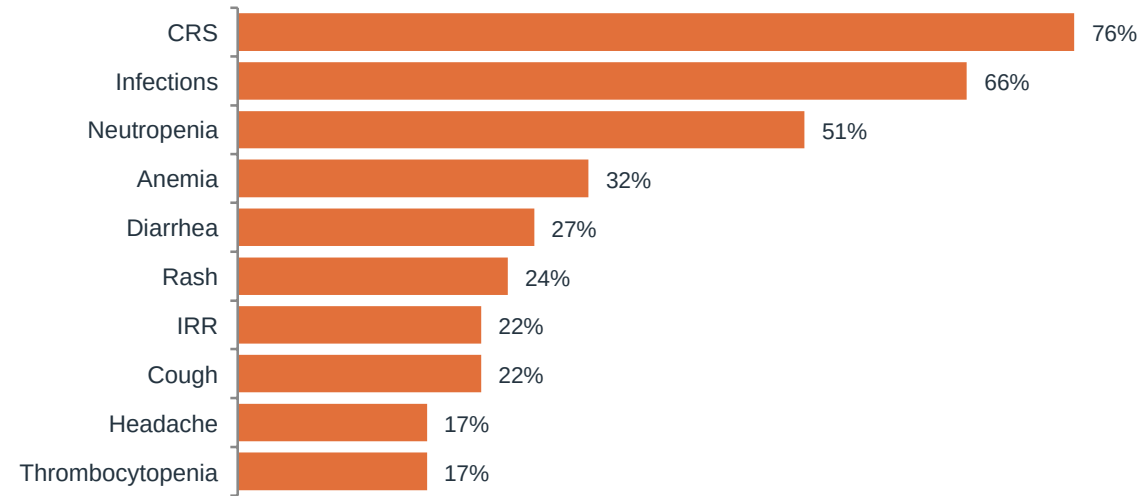


RESPONSE DEPTH (N=41)



SAFETY

MOST COMMON AEs, ANY GRADE (≥15% of patients)



CRS

- All Grade 1–2
- 77% within 24h of infusion
- Managed w/ toc (51.6%) or steroids (51.6%); all resolved

DISCONTINUATION

- Serious AEs in 68.3% of patients
- AE-related d/c in 1 pt (Gr 5 MDS, unrelated)
- No Gr 5 events among cytopenias

44.4% of responders (8/18) remain in remission at data cut-off

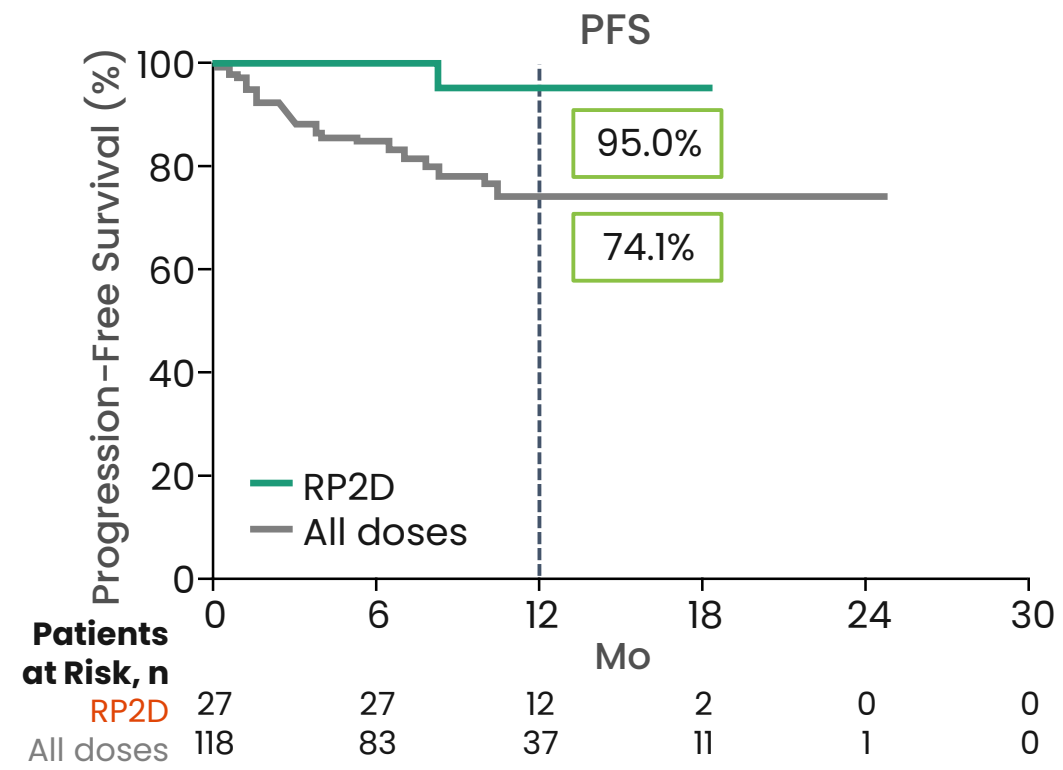
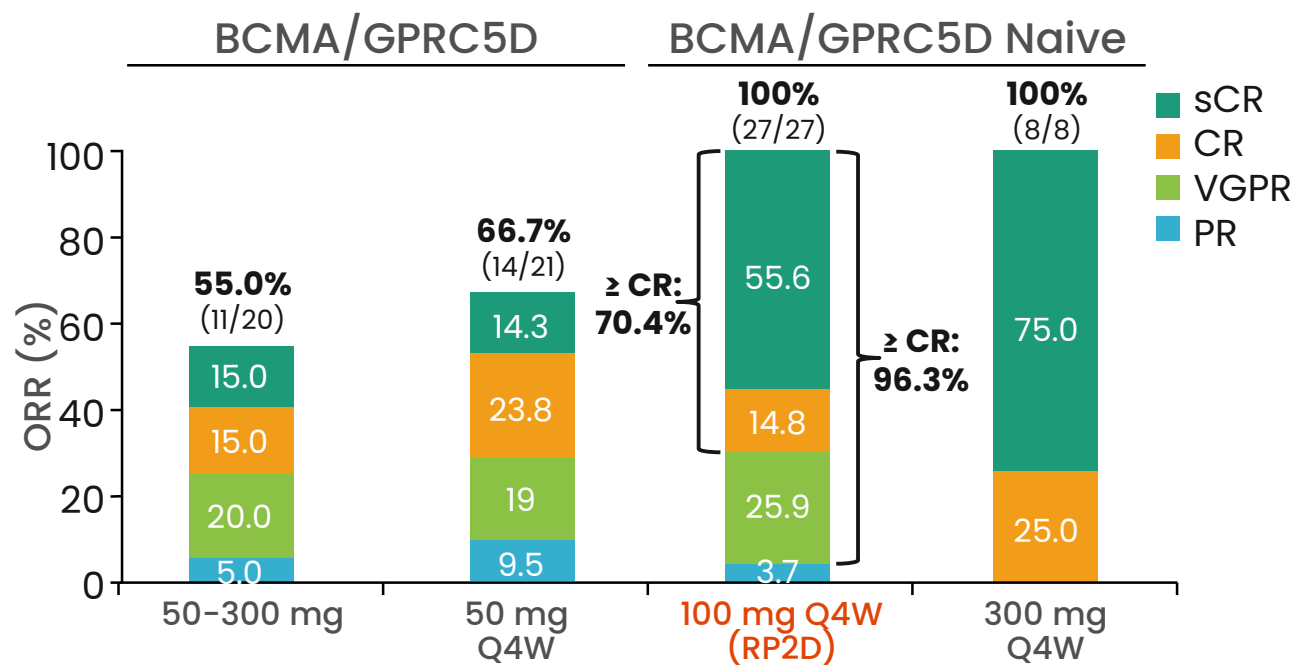
59.8% DOR rate at 15 months (95% CI: 36.7–83.0)

75.6% of patients received BCMA CAR-T as their last prior line; median 13.4 months since last anti-BCMA therapy.



# Phase I Study of Trispecific Antibody JNJ-5322 in R/R MM

RP2D: 100 mg SC Q4W with 1 step-up dose



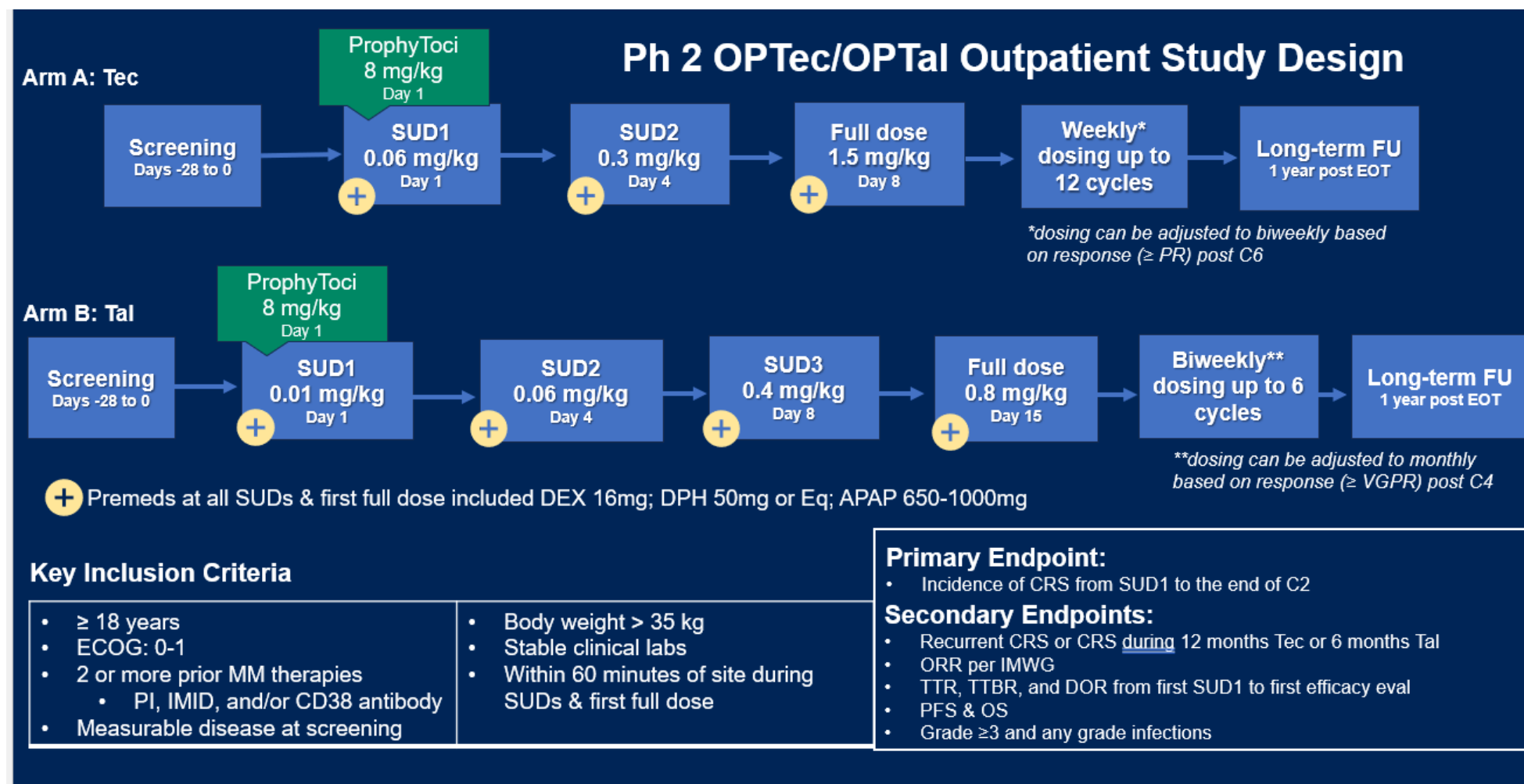
Safety: similar or lower incidence/severity of GPRC5D-associated AEs

Decreased incidence of taste AEs, weight loss

Similar incidence of skin and nail AEs



# OPTec/OPTal: A Phase 2 study to evaluate outpatient (OP) step-up administration of teclistamab (Tec) or talquetamab (Tal) with prophylactic tocilizumab (prophyToci) in patients (pts) with relapsed/refractory multiple myeloma (RRMM)



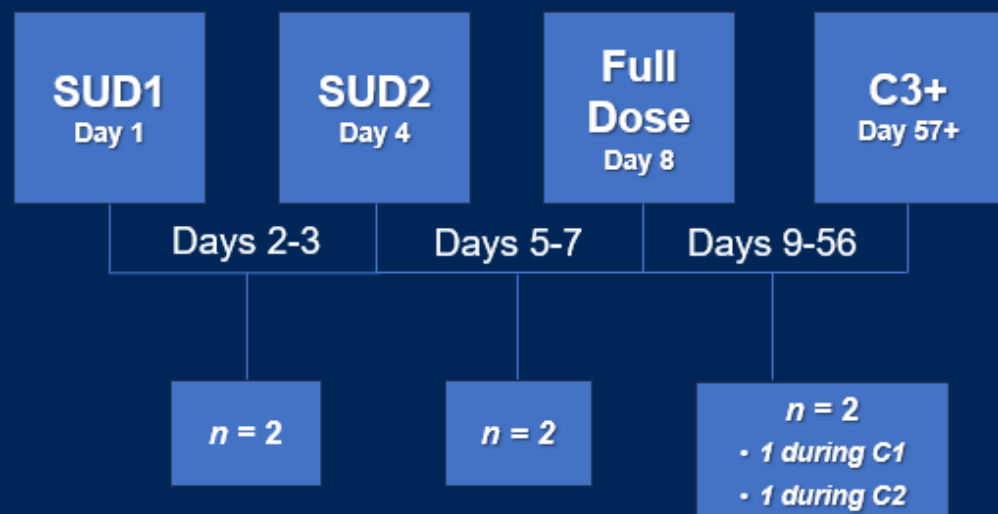
# CRS/ICANS and Management in an Outpatient Setting\*

## Arm A: Tec

**No reported ICANS • No Grade 3 or 4 CRS reported**

CRS Events:  $n = 6$  in 4 of 45 patients (8.9%)

- **Grade 1: 6**



### Management of CRS Events During Treatment

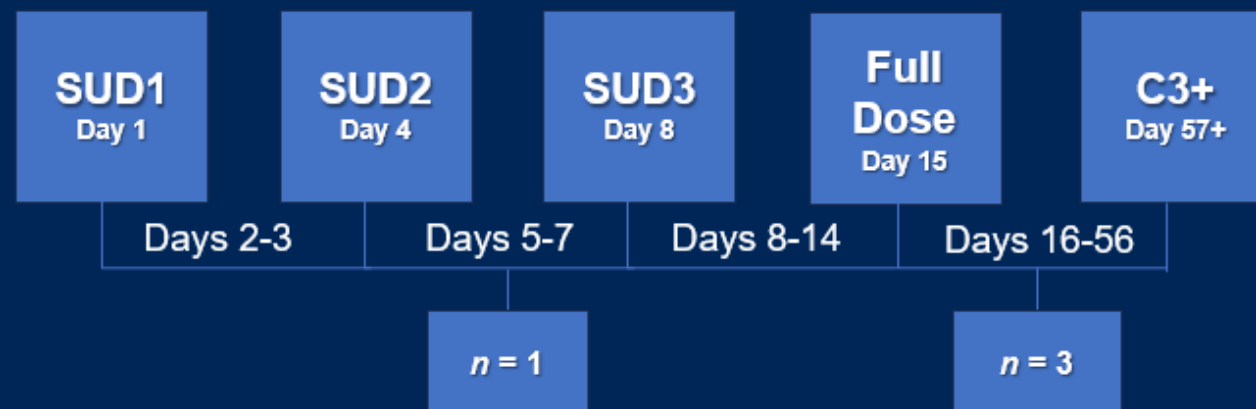
- | Grade | Management                                                                                                                                                                     |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | <ul style="list-style-type: none"><li>• No patients were admitted</li><li>• All patients were managed with dexamethasone</li><li>• Dexamethasone dose range: 8-20 mg</li></ul> |

## Arm B: Tal

**No reported ICANS • No Grade 3 or 4 CRS reported**

CRS Events:  $n = 4$  in 2 of 7 patients (28.5%)

- **Grade 1: 3**
- **Grade 2: 1**



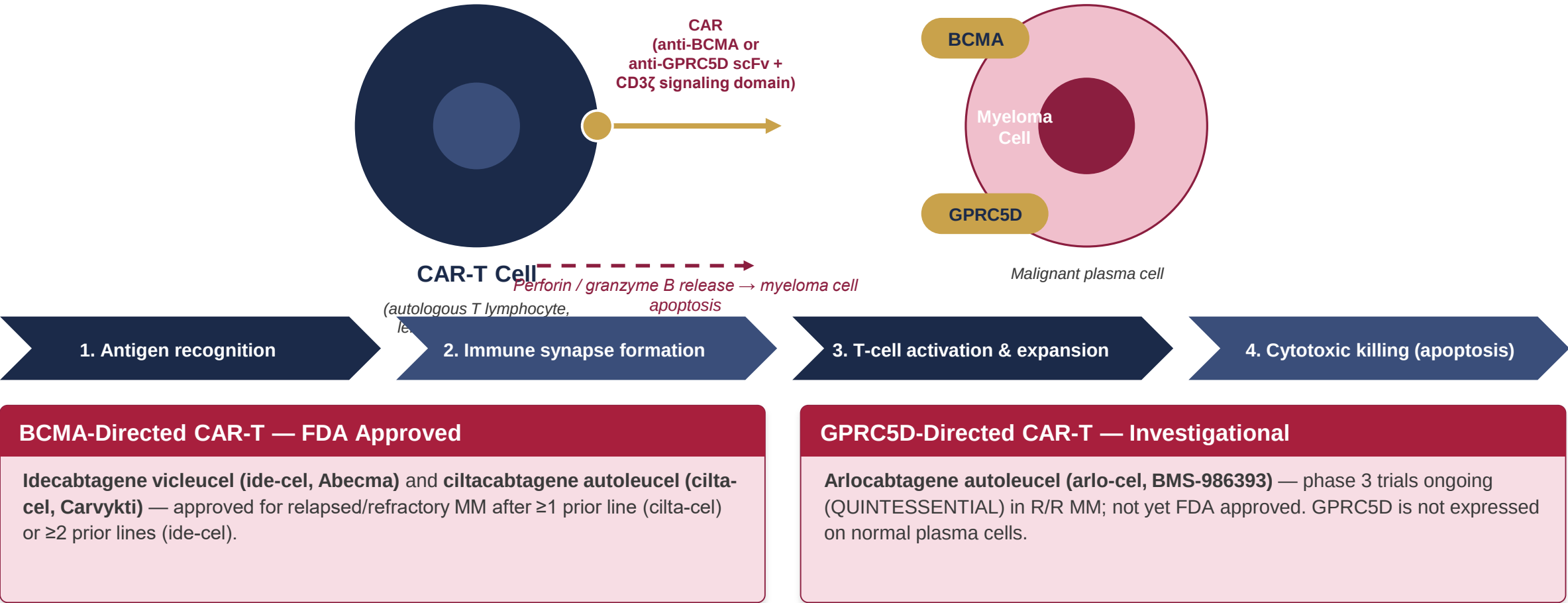
### Management of CRS Events During Treatment

- | Grade | Management                                                                                                                                                                                                                                                                                                                                                                    |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | <ul style="list-style-type: none"><li>• <b>One patient experienced three Grade 1 CRS events (D34, D41, D53)</b></li><li>• Patient was admitted for all 3 events (SAEs)</li><li>• Patient was given dexamethasone (8 mg) and/or antibiotics</li></ul>                                                                                                                          |
| 2     | <ul style="list-style-type: none"><li>• One patient hospitalized (SAE)</li><li>• Patient given dexamethasone (10 mg), fluid hydration, &amp; tocilizumab</li><li>• Resolved within 3 days</li><li>• Tal held for 1 week post resolution of CRS</li><li>• Repeated SUD 2 (7 days after resolution of CRS)</li><li>• No further CRS reported during time on treatment</li></ul> |

\*Data updated:  
March 6, 2026

# CAR-T Cell Therapy in Myeloma

Chimeric Antigen Receptor T Cells Engineered Against BCMA or GPRC5D



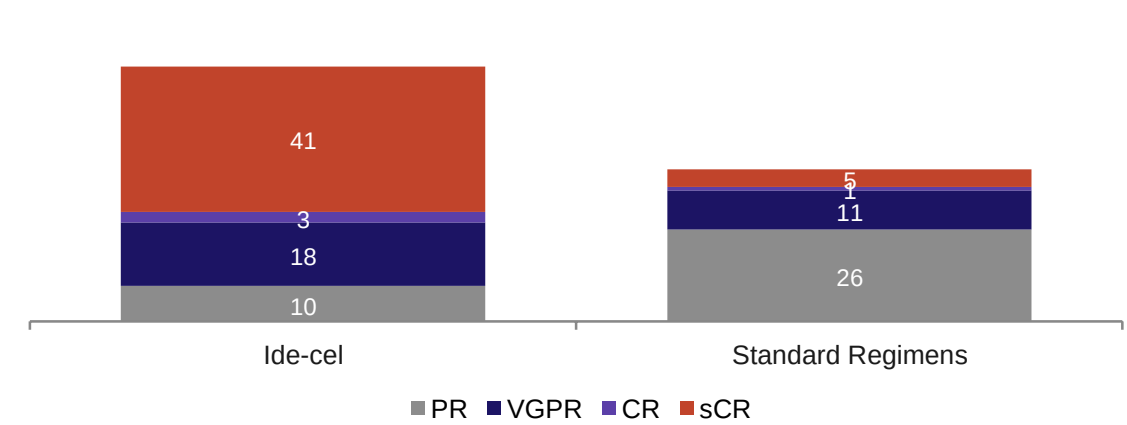
# CAR T-Cell Therapy Moving Earlier in R/R Multiple Myeloma

KarMMa-3 (Ide-cel) vs CARTITUDE-4 (Cilta-cel): Phase III Head-to-Head Trial Data

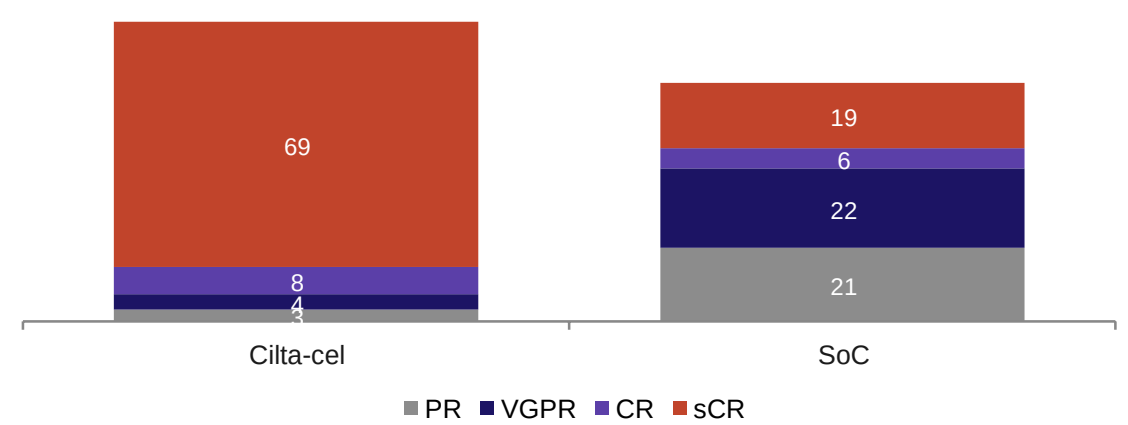
|                         | KarMMa-3 — Ide-cel (N = 254 treated)      | CARTITUDE-4 — Cilta-cel (N = 208 treated) |
|-------------------------|-------------------------------------------|-------------------------------------------|
| Enrollment criteria     | 2–4 prior LoT, refractory to last regimen | 1–3 prior LoT, refractory to lenalidomide |
| Triple-class refractory | 65%                                       | 14.4%                                     |
| ORR (95% CI)            | 71.0% (66–77)                             | 84.6% (176/208)                           |
| ≥ CR rate               | ~30%                                      | 76.9% (33.6-mo f/u)                       |
| Median PFS (95% CI)     | 13.8 mo (11.8–16.1)                       | NR (34.5–NE)                              |
| HR vs standard of care  | 0.49 (0.38–0.63)                          | 0.29 (0.22–0.39), P < .0001               |
| Median DoR / 30-mo PFS  | 16.6 mo (12.1–19.6)                       | 30-mo PFS: 59.4% vs 25.7% (SoC)           |
| CRS, %                  | 88.0%                                     | 76.1%                                     |
| Neurotoxicity, %        | 15.0%                                     | 20.5% (ICANS: 4.5%)                       |

## KarMMa-3: Depth of Response

ORR 71% vs 42% (SRs)



## CARTITUDE-4: Depth of Response (33.6-mo f/u) ORR 84.6% vs 67.3% (SoC)



1. Rodriguez-Otero. NEJM. 2023;388:1002. 2. Ailawadhi. Blood. 2024;144:2389. 3. San-Miguel. NEJM. 2023;389:335. 4. Einsele. Lancet Oncol. 2026;27:254.



# Investigational CAR T-Cell Therapies in R/R MM

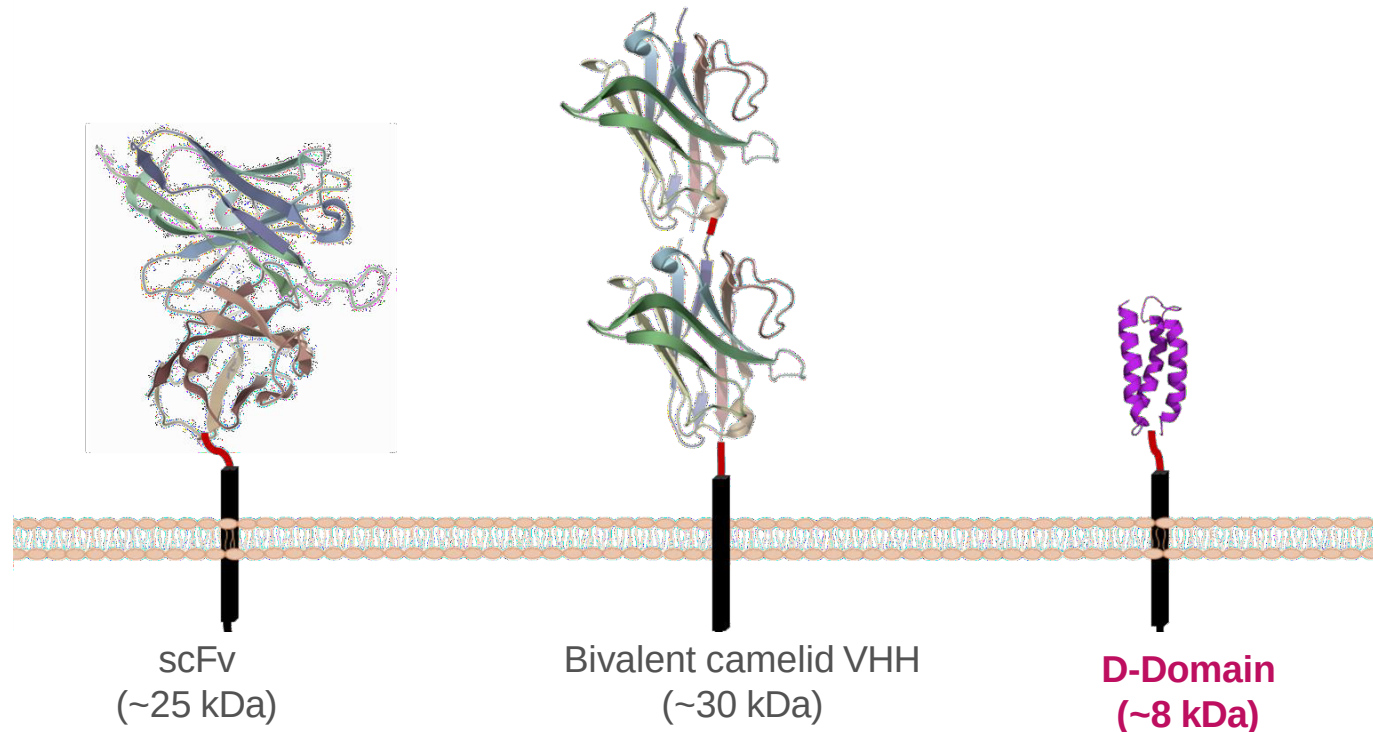
| Parameter                            | ARI0002h<br>CARTBCMA-HCB-01 <sup>1,2</sup><br>(n = 60) | AZD0120<br>PGC0008 <sup>3</sup><br>(n = 29) | Arlocabtagene autoleucel<br>NCT04674813 <sup>4</sup><br>(n = 84) | ESO-T01 <sup>5</sup><br>(n = 5)                                                               |
|--------------------------------------|--------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Phase                                | I/II                                                   | I/II                                        | I                                                                | I                                                                                             |
| Target (MoA)                         | BCMA                                                   | BCMA/CD19<br>dual targeting CAR T           | GPRC5D                                                           | In vivo anti-BCMA CAR T<br>(nanobody directed lentiviral vector<br>encoding an anti-BCMA CAR) |
| scFv origin                          | Humanized                                              | FastCAR                                     | Human                                                            | Human                                                                                         |
| Co-stim                              | 4-1BB                                                  | 4-1BB                                       | 4-1BB                                                            | 4-1BB                                                                                         |
| Specificity                          | Autologous                                             | Autologous                                  | Autologous                                                       | Allogeneic                                                                                    |
| Median age, yr (range)               | 58 (36-74)                                             | 57 (27-76)                                  | 63 (39-80)                                                       | 52 (52-68)                                                                                    |
| Median no. of prior lines            | 3                                                      | 5                                           | 5 (3-15)                                                         | 3 (3-5)                                                                                       |
| With HR cytogenetics, %              | 28                                                     | 90                                          | 42                                                               | 40                                                                                            |
| With EMD, %                          | 18                                                     | 28                                          | 45                                                               | 20                                                                                            |
| With triple-R, %                     | 67                                                     | NA                                          | 35 (penta)                                                       | --                                                                                            |
| ORR, %                               | 95                                                     | 93.1                                        | 87                                                               | 4/5 (80)                                                                                      |
| CR/sCR, %                            | 58                                                     | 82.8                                        | 53                                                               | 3/4 (60)                                                                                      |
| MRD-neg (10 <sup>-5</sup> ), n/N (%) | --                                                     | --                                          | --                                                               | 4/4 (100) by Day 60                                                                           |
| PFS, mo                              | 20                                                     | 38                                          | 18.3                                                             | Not reached                                                                                   |

1. Oliver-Caldes. ASH 2023. Abstr 1026. 2. de Larrea. ASCO 2024. Abstr 7544. 3. Du. ASCO 2023. Abstr 8005.  
 4. Bal. ASH 2024. Abstr 922. 5. An. Nat Med. 2026;32:1257.



# Anitocabtagene autoleucel (anito-cel/CART-ddBCMA)

Autologous BCMA-directed CAR T-cell therapy using a novel, D-Domain binder<sup>1,2</sup>



**Size**

**D-Domain Attributes:**  
**Non-Antibody Derived Synthetic Protein<sup>1,2</sup>**

Small D-Domain construct facilitates high transduction efficiency and CAR positivity<sup>2-4</sup> resulting in a low total cell dose

**Structure & Stability**

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

**Binding**

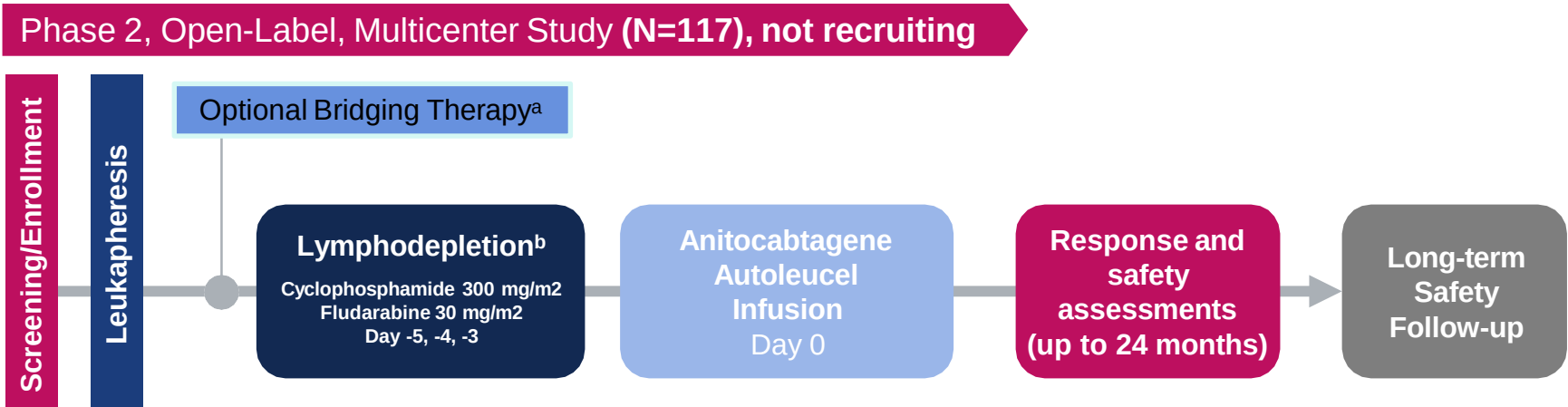
The D-Domain binder has a fast off-rate<sup>4</sup> and high CAR surface expression<sup>4</sup>. This combination may allow optimal tumor cell killing without prolonged inflammation

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





# iMMagine-1 (phase 2): Anitocabtagene Autoleucel in Patients With RRMM<sup>1,2</sup>



| Key Eligibility Criteria                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Prior IMiD, PI, and CD38-targeted therapy</li><li>• Received ≥3 prior lines of therapy</li><li>• Refractory to the last line of therapy</li><li>• ECOG PS of 0 or 1</li><li>• Evidence of measurable disease</li></ul> <p>Target Dose of 115 x 10<sup>6</sup> CAR+ T cell</p> |

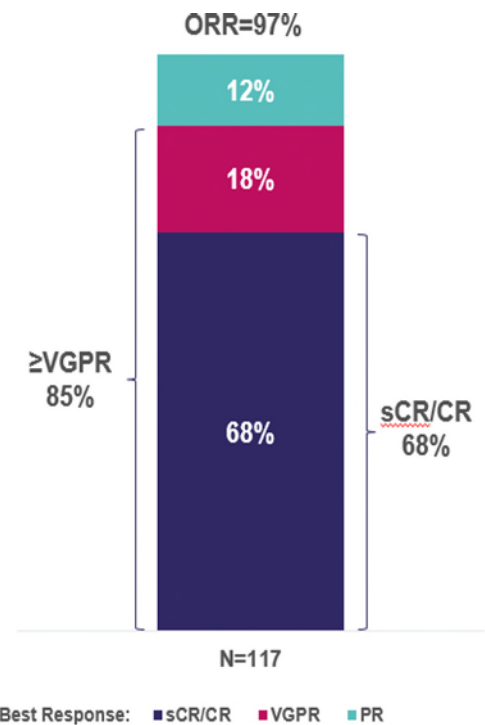
| Primary Endpoint                                                             | Select Secondary Endpoints                                                                                                                                     |                                                                                                                                             |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• ORR per 2016 IMWG criteria</li></ul> | <ul style="list-style-type: none"><li>• sCR/CR rate, per 2016 IMWG criteria</li><li>• ORR in patients limited to 3 prior LoT, per 2016 IMWG criteria</li></ul> | <ul style="list-style-type: none"><li>• MRD-negative</li><li>• Sustained MRD negativity</li><li>• DoR</li><li>• OS</li><li>• TEAE</li></ul> |

1. Hosoya H, et al. *Am Soc Clin Oncol Educ Book*. 2023;43:e389860. 2. Ahmed N, et al. *Front Oncol*. 2023;13:1206715. 3. Buonato JM, et al. *Mol Cancer Ther*. 2022;21(7):1171-1183. 4. Rotte A, et al. *Immuno-Oncology Insights*. 2022;3:13-24. 5. Snyder S, et al. *Adv Ther*. 2021;(38):4541-4555. 6. Adkins S et al. *J Adv Pract Oncol*. 2019;10(suppl\_3):21-28. 7. Dhakal B et al. *Hematologist*. 2024;21(3):202432. 8. Rendo MJ, et al. *Blood Lymphat Cancer*. 2022;12:119–136. 9. The EBMT/EHA CAR-T Cell Handbook. Accessed October 2024. <https://www.ncbi.nlm.nih.gov/books/NBK584164/>.

# iMMagine-1 (phase 2): Anitocabtagene Autoleucel in Patients With RRMM<sup>1,2</sup>

## Overall Response Rate and MRD Negativity (N=117)

Efficacy Evaluable Patients, N=117



- At a median follow-up of 12.6 months, ORR was 97% and sCR/CR rate was 68%
- 93% (n=70/75) of evaluable patients were MRD negative at minimum of 10<sup>-5</sup> sensitivity

|                                                    | Evaluable Patients | Months (min - max) |
|----------------------------------------------------|--------------------|--------------------|
| Median time to first response                      | 114                | 1.0 (0.9 – 13.4)   |
| Median time to MRD negativity of ≤10 <sup>-5</sup> | 70                 | 1.0 (0.9 – 6.4)    |

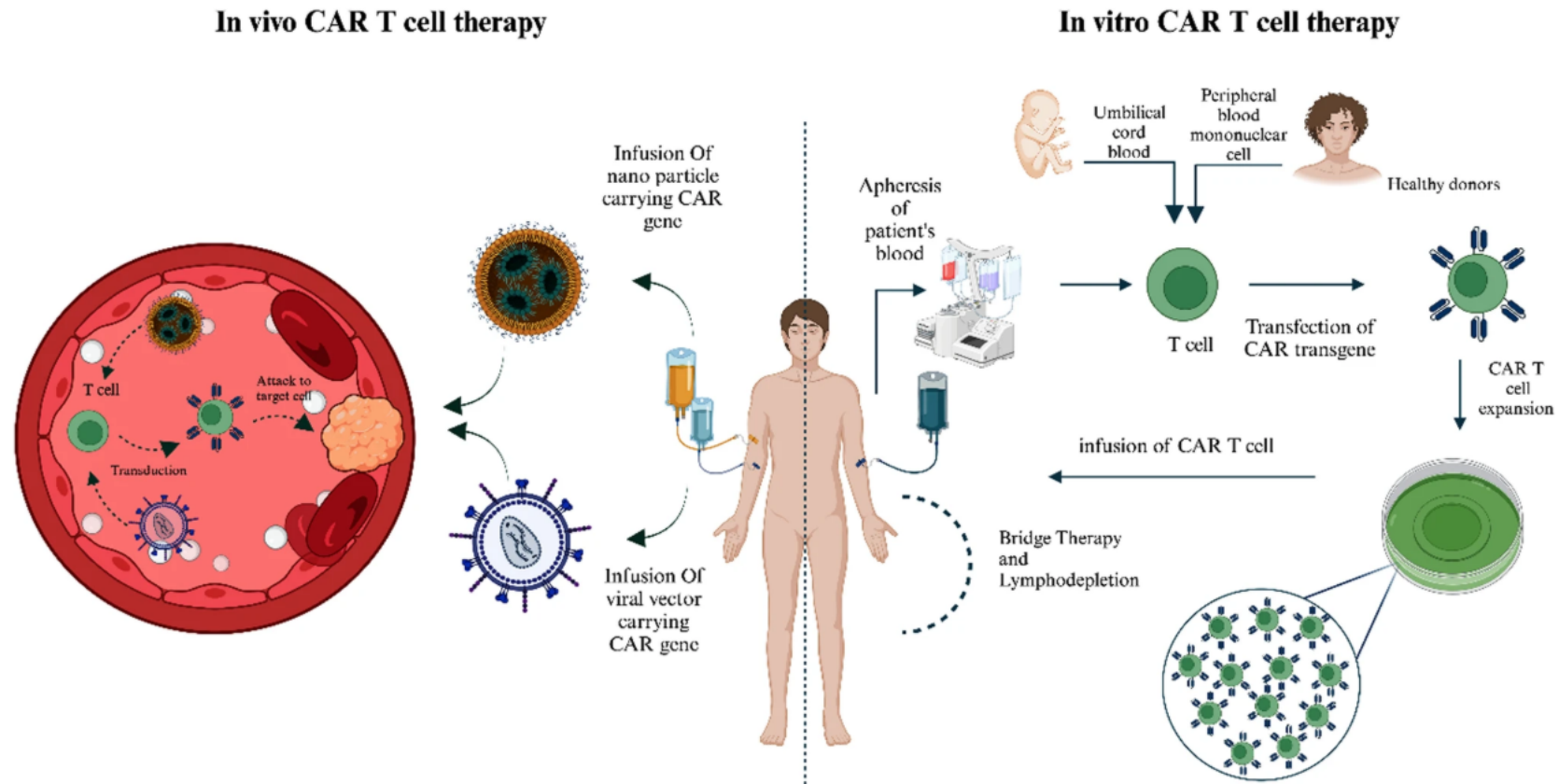
## PFS and OS Rates Estimated by Kaplan-Meier

| N=117    | PFS Rate (%)<br>(95% CI) | OS Rate (%)<br>(95% CI) |
|----------|--------------------------|-------------------------|
| 6-Month  | 91.9%<br>(85.0%, 95.7%)  | 96.6%<br>(91.1%, 98.7%) |
| 12-Month | 79.3%<br>(68.6%, 86.7%)  | 95.2%<br>(88.7%, 98.0%) |

Median follow-up of 12.6 months (range: 5 to 29 months)

1. Kaur et al. Updated Results from iMMagine-1. European Hematology Association (EHA) 2025, Abstract S201

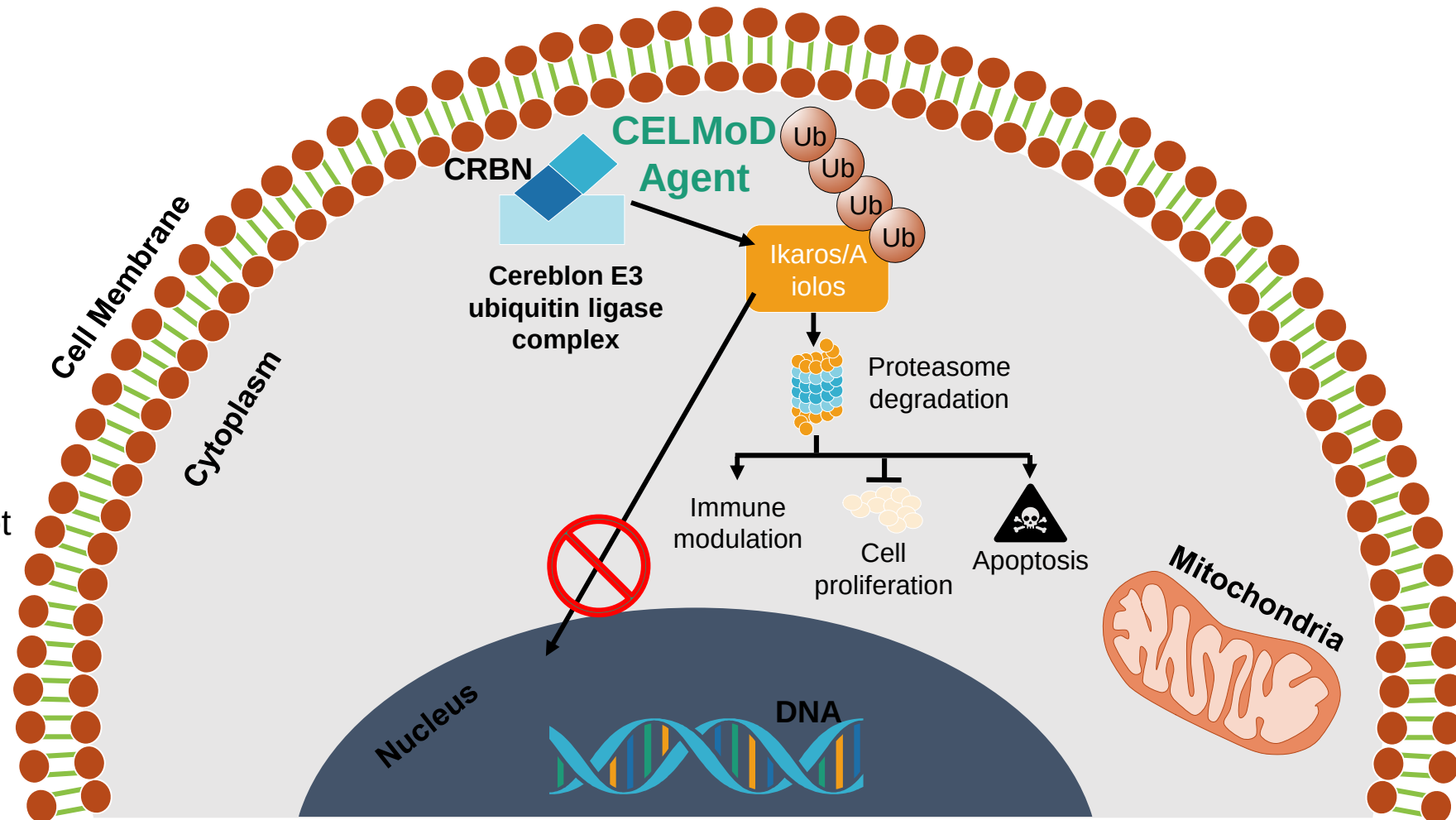
# Next Gen CARs



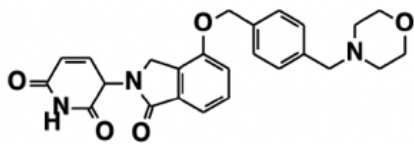
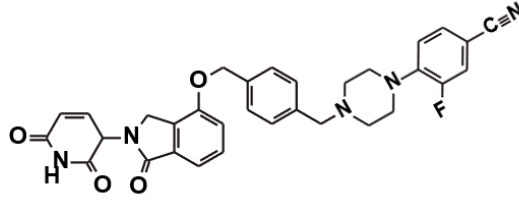
**State of the art in CAR-based therapy: In vivo CAR production as a revolution in cell-based cancer treatment**

# Protein Degradation in MM

- The ubiquitin-proteasome system forms a primary means for cellular protein degradation
- The ubiquitin ligase enzyme complex is a component of this system and tags proteins for proteasomal degradation with ubiquitin
- IMiD agents and novel CELMoD agents alter the target protein-binding properties of CRBN to promote interaction with protein substrates that otherwise would not be candidates for degradation
- CELMoD agents bring ligase and target proteins into proximity to start protein degradation by the ubiquitin-proteasome system

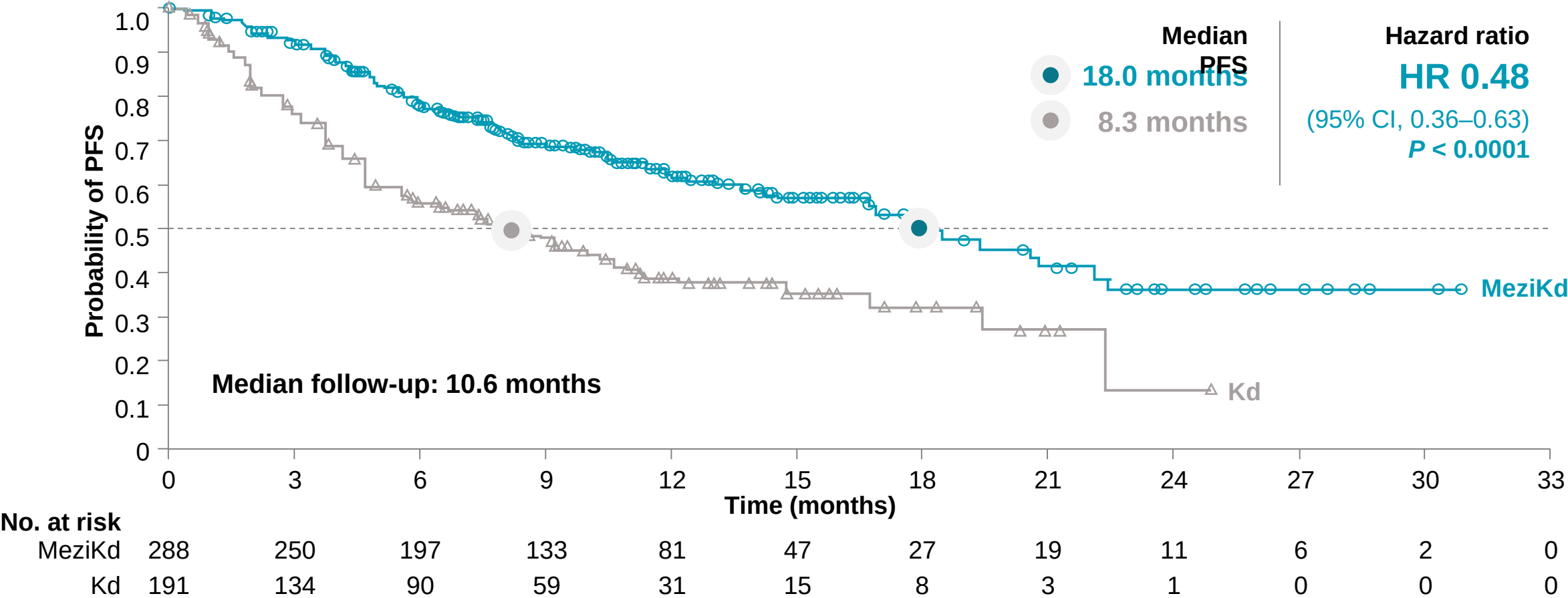


# Chemical Structures and Relative Preclinical Properties of IMiDs,

| Immunomodulatory drugs                                                                                                                                                   |              | Iberdomide                                                                                                                                                                                                                                                        | Mezigdomide                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lenalidomide                                                                                                                                                             | Pomalidomide |                                                                                                                                                                                |                                                                                                                                                                                |
|                                                                                        |              |                                                                                             |          |
|                                                                                        |              |                                                                                             |          |
|                                                                                        |              |                                                                                             |          |
|                                                                                       |              |                                                                                           |       |
|   |              |    |    |
|   |              |    |    |

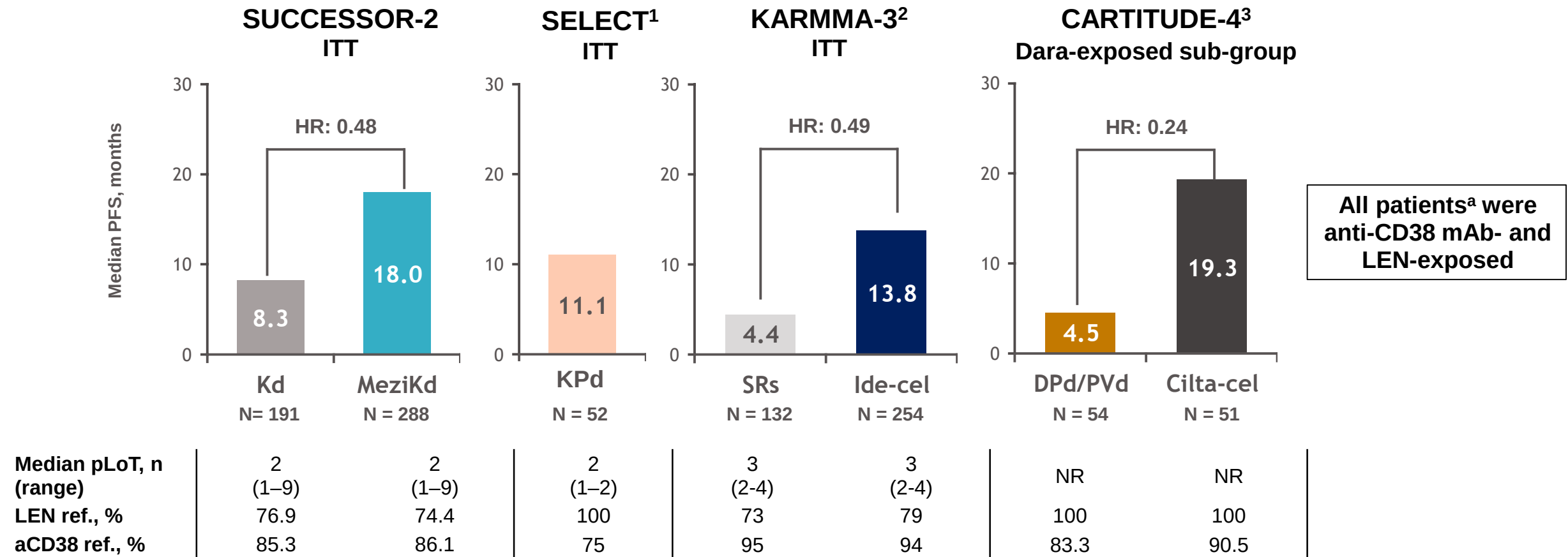


Mezigdomide, carfilzomib, and dexamethasone vs carfilzomib and dexamethasone in relapsed/refractory multiple myeloma: results from the phase 3 SUCCESSOR-2 trial



In anti-CD38 mAb- and LEN-exposed patients who had received  $\geq 1$  prior LOT (range 1–9), MeziKd significantly reduced the risk of progression or death by 52%

MeziKd; Contextualization of Clinical Benefit seen in SUCCESSOR 2 for Anti-CD38 mAb- and LEN-exposed RRMM Patients across multiple settings



Trials are not intended for direct comparison. Side-by-side data are presented solely to summarize information.  
<sup>A</sup> 77% of patients received prior anti-CD38 mAb in the SELECT trial. pLoT, prior lines of therapy; SRs, standard of care regimens; NR, not reported

1. Perrot A, et al. *Leuk Lymphoma* 2024;65(6):833-842; 2. Ailawadhi S, et al. *Blood* 2024;144(23):2389-2401; 3. Einsele H, et al. *Lancet Oncol* 2026;27(2):254-268.

# KEY TAKEAWAYS

*Immune-based therapy is reshaping every line of myeloma care.*

01

## Treatment algorithm & high-risk disease

Anti-CD38 quadruplets (Dara/Isa-VRd) anchor frontline induction, and the 2025 IMS/IMWG consensus unifies high-risk disease — an IgH translocation now counts only alongside a co-occurring 1q/1p lesion.

02

## Bispecific antibody therapy

Off-the-shelf BCMA and GPRC5D bispecifics drive deep, durable responses; MajesTEC-3 establishes Tec-Dara as a new standard after ≥1 prior line, with IVIG prophylaxis central to managing infection risk.

03

## CAR-T cell therapy

BCMA CAR-T (cilta-cel and ide-cel) is moving into earlier relapse with a marked PFS advantage over standard of care, while next-generation constructs such as anito-cel advance in trials.

04

## Emerging therapies

CELMoDs (mezigdomide, iberdomide) and novel combinations such as MeziKd extend meaningful options for anti-CD38– and lenalidomide-exposed relapsed/refractory myeloma.





# Ongoing Clinical trials at COH Atlanta

- **A Phase 3, Randomized, Open-Label Study to Compare the Efficacy and Safety of Anitocabtagene Autoleucel Versus Standard of Care Therapy in Participants With R/R MM**
- **A Phase 3 Randomized Study Comparing Teclistamab in Combination with Daratumumab SC and Lenalidomide (Tec-DR) and Talquetamab in Combination with Daratumumab SC and Lenalidomide (Tal-DR) versus Daratumumab SC, Lenalidomide, and Dexamethasone (DRd) in Participants with Newly-Diagnosed MM Who are Either Ineligible or Not Intended for Autologous Stem Cell Transplant as Initial Therapy**
- **First-in-Human, Open Label Study Evaluating Safety, Tolerability, PK and Preliminary Efficacy of ABBV-438 in Adult Subjects With Relapsed or Refractory Multiple Myeloma (R/R MM)**
- **A Phase III, Multicenter Study to Evaluate Treatment with AZD0120 versus ASCT in Transplant Eligible Newly Diagnosed Multiple Myeloma Patients (DURGA-6)**
- **Testing the Utility of Whole Genome Sequencing in Immunotherapy Exposed Multiple Myeloma Patients**
- **Retrospective and prospective database study designed to collect data from patients receiving immunotherapies at participating International Myeloma Working Group sites globally.**
- **A Multicenter Prospective Observational Cohort Study Evaluating the Impact of Cancer-Directed Treatment and Medication Use, including Cannabis Use, in Multiple Myeloma Patients**



# Questions

# Thank You

[cityofhope.org](http://cityofhope.org)

