

ASH 2023 Updates for Living with High Risk Myeloma Support Group

65th Annual Meeting & Exposition
San Diego, CA
December 8-11, 2023



AGENDA FOR TODAY'S MEETING



- What is ASH?
- Important Terminology
- How does the IMF get involved?
- Important ASH updates for the High Risk Myeloma population

- Roundtable Meet & Greet

ASH: American **S**ociety of **H**ematology

The largest professional society serving both clinicians and scientists around the world who are working to conquer blood diseases

- More than 18,000 members from nearly 100 countries
- Annual Meeting & Exposition held in December
- Both in-person & virtual options for attendees
- San Diego in 2023 for the 65th Annual Meeting & exposition; returning there in 2024

ASH 2023: 65th Annual Meeting & Exposition

- **More than 32,000 attendees**
 - 28,000 in person
 - 4,000 virtual
- **Total number of hematologic abstracts: 7,000**
- **Over 1,000 of them on Myeloma!**
 - Oral presentations: 136 + LBA (Late breaking abstract) + Plenary
 - Posters: about 850



Important Terminology: What does it all Mean?

- **Treatment responses in Myeloma (in simple terms)**
 - **SD**: Stable Disease (doesn't meet CR, VGPR, PR, or PD)
 - **MR**: Minimal Response (less than 50% reduction in plasma cells from baseline)
 - **PR**: Partial Response (50% or greater reduction in plasma cells from baseline)
 - **VGPR**: Very Good Partial Response (90% or greater reduction in plasma cells from baseline)
 - **nCR**: Near Complete Response (95% or greater reduction in plasma cells from baseline)
 - **CR**: Complete Response (absence of clonal cells in serum, less than 5% in marrow)
 - **sCR**: Stringent Complete Response (absence of clonal cells in marrow & serum)
 - **PD**: Progressive Disease (increase of at least 10% plasma cells in marrow or at least 25% in serum)
 - **Relapsed Disease**: The reappearance of signs and symptoms after a period of improvement, at least 60 days after treatment ended.
 - **Refractory Disease**: Disease that is no longer responsive to standard treatments. Patients who have progressive disease either during treatment or within 60 days following treatment

[**Link to Glossary of Myeloma Terminology**](#)

Important Terminology: What does it all Mean?

- **Clinical Trial Terms (in simple terms)**
 - **PFS** (Progression Free Survival): timepoint from initiation of treatment to recurrence of disease
 - **ORR** (Overall Response Rate): proportion of patients who have a partial or complete response to therapy; does NOT include SD
 - **MRD** (Minimal/measurable Residual Disease): aka Molecular Residual Disease; the name given to small numbers of cancer cells that remain in a patient either during or after treatment when the patient is in remission
 - **CTCAE** (**C**ommon **T**erminology **C**riteria to rate **A**dverse **E**vents):
 - Scoring system of 0-4
 - Allows standardized scoring of adverse events for comparison

[Link to Glossary of Terms for Clinical Trials](#)

Important Terminology: What does it all Mean?

- **Clinical Trials (in simple terms)**
 - **Phase 1:** To determine the appropriate dose for further evaluation
 - **Phase 2:** To determine whether an agent has activity against a specific cancer type
 - **Phase 3:** To determine whether a treatment is effective
 - **Phase 4:** Post FDA approval, various goals

Important Terminology: What does it all Mean?

- Phase 1 (in simple terms)

- First step in transforming laboratory research to clinical care-
"bench to bedside"
- Goals of Phase 1 trials:
 - Find a safe dosage
 - Decide how the agent should be administered
 - Observe how the agent affects the human body
- Average number of participants: 15-20

Important Terminology: What does it all Mean?

- **Phase 1 (in simple terms)**
 - **Endpoints (measurable goals)**
 - **DLT**-Dose Limiting Toxicity
 - Unacceptable toxic effects presumed to be related to the investigational drug
 - Protocol specific
 - Typically assessed during 1st cycle
 - Accurate grading of toxicities is VERY important
 - **MTD**-Maximum Tolerated Dose
 - Highest dose level at which $\leq 1/6$ patients experience DLT

Important Terminology: What does it all Mean?

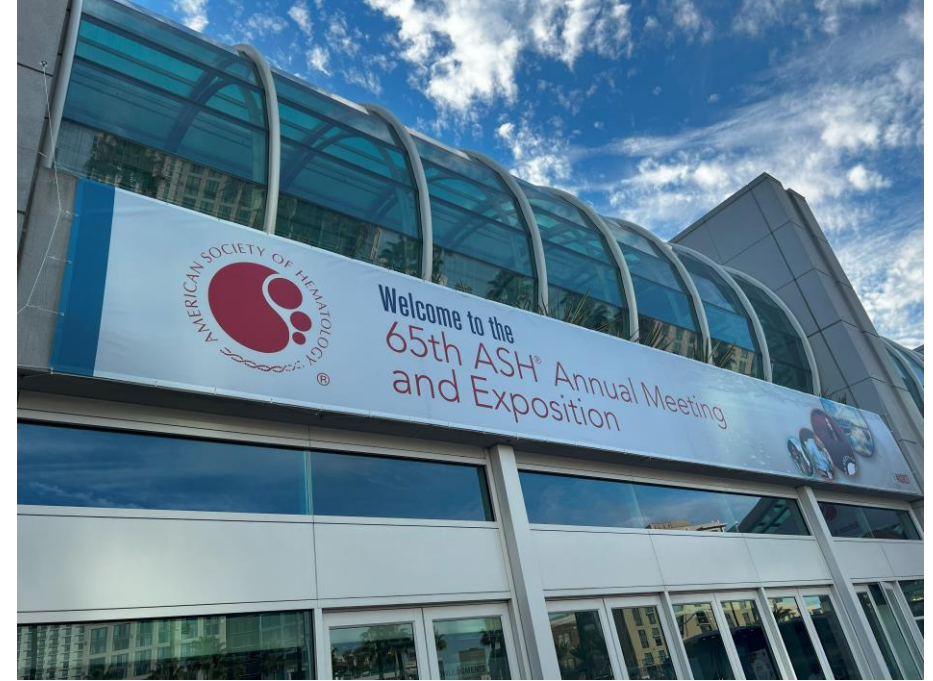
- Phase 2 (in simple terms)

- Designed to test the effectiveness of a drug in a larger population (usually > 100)
- Use the dose determined to be safe in Phase 1 trials
- Typically narrow the focus to people with diagnoses that are most likely to respond to therapy
- The treatment is assessed for effectiveness as well as additional safety data

Important Terminology: What does it all Mean?

- Phase 3 (in simple terms)
 - Enroll more patients (hundreds/thousands)
 - Compare an investigational treatment to the current standard
 - Participants are usually randomized to the investigational or control group (no placebo-standard of care)
 - Conducted at multiple institutions around the country, including community settings

ASH 2023



- **How does the IMF get involved?**

Myeloma Voices at ASH 2023



Jack Aiello
Patient
(virtual)



Sheri Baker
Patient
(in-person)



Becky Bosley
Healthcare
(in-person)



Barbara Davis
Patient
(virtual)



Jessie Daw
Patient
(virtual)



Oya Gilbert
Patient
(in-person)



Carri Helman
Care Partner
(in-person)



Linda Huguelet
Patient
(in-person)



Diane Hunter
Patient
(virtual)



Teresa Miceli
Healthcare
(in-person)



Adrienne Moore
Patient
(virtual)



Michael Tuohy
Patient
(in-person)



Robin Tuohy
Care Partner
(in-person)



Jill Zitzewitz
Patient
(virtual)

Follow Support Group Leaders and read blogs about their experiences and impressions from attending ASH

ASH2023blogs.myeloma.org

ASH – Dr. Joe's & SG Leaders Facebook Live

JOIN US LIVE ON FACEBOOK

DECEMBER 11, 2023 7PM PST | 10PM EST



DR. JOSEPH MIKHAEL
IMF CHIEF MEDICAL OFFICER

AND THE SUPPORT GROUP
LEADER TEAM GO LIVE TO
DISCUSS KEY MYELOMA
RESEARCH TAKEAWAYS
FROM THE 2023 AMERICAN
SOCIETY OF HEMATOLOGY
MEETING.

JOIN US



[Replay available here](#)

ASH 2023: IMF WEBINARS

THE IMWG CONFERENCE SERIES:

"Making Sense of Treatment" — December 14, 2023 at 11 am PST / 2 pm EST



BRIAN G.M. DURIE, MD



MARÍA-VICTORIA MATEOS, MD, PhD



THOMAS MARTIN, MD



IMWG Conference Series 2023: Making Sense of Treatment

December 14, 2023

[Replay](#)

TOP MYELOMA RESEARCH PRESENTED AT ASH 2023

January 4, 2024 at 12 pm PST / 3 pm EST



BRIAN G.M. DURIE, MD
IMF CHIEF SCIENTIFIC OFFICER
CHAIRMAN OF THE BOARD



JESSIE DAW, PHD
MYELOMA PATIENT
ADVOCATE



MICHAEL TUOHY
MYELOMA PATIENT
ADVOCATE



[Replay](#)

ASH –Top Abstracts for HRMM



- 1- Phase 2 IFM 2018-04**
- 2- Frontline Therapy**
- 3- Early Relapse**
- 4- Late Relapse**
- 5- Patient Experience**

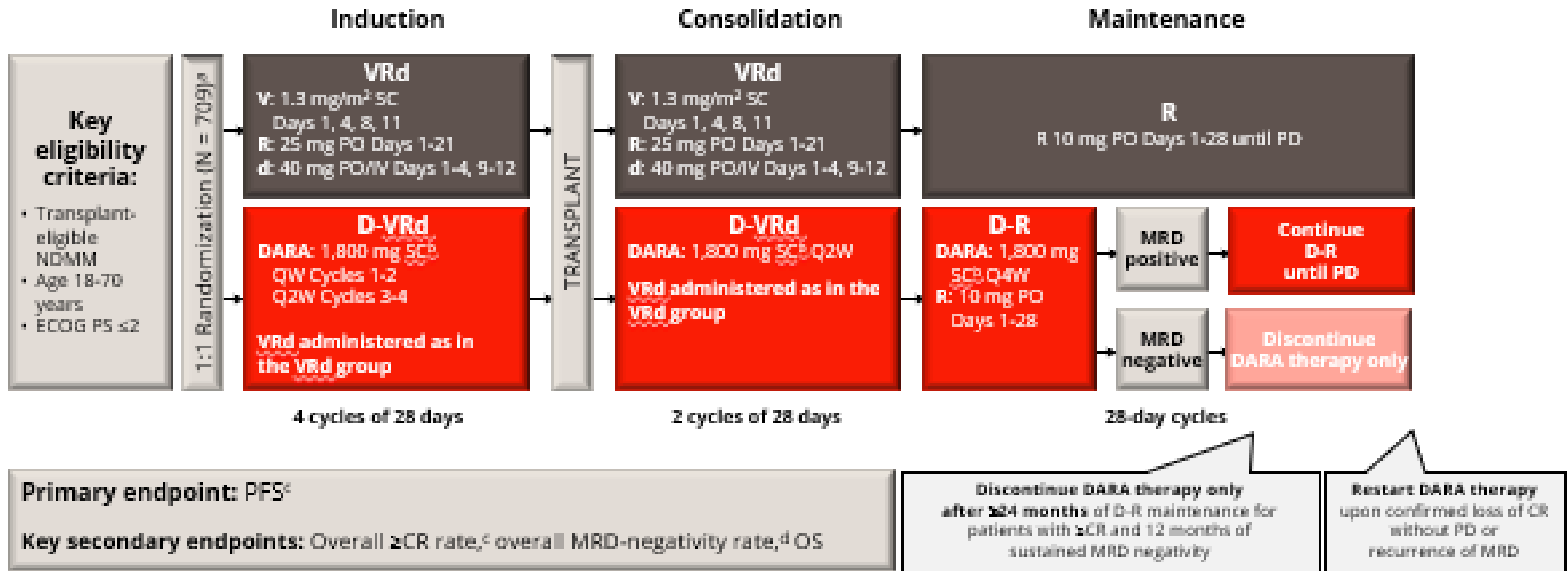
BONUS: New article & editorial by Emory Staff

Phase 2: IFM 2018-04

207 Daratumumab, Carfilzomib, Lenalidomide, and Dexamethasone Induction and Consolidation with Tandem Transplant in High-Risk Newly Diagnosed Myeloma Patients: Final Results of the Phase 2 Study IFM 2018-04

- Study background is based on 3 positive studies:
 - FORTE study that demonstrated high efficacy with favorable safety profile with KRd plus ASCT for TE-NDMM
 - CASSIOPEIA & GRIFFIN trials that showed adding Dara to frontline therapy improved response rate and PFS in TE-NDMM
 - EMN02 trial also showed improved outcomes for HR TE NDMM patients having double transplants
- IFM 2018-04 evaluated an intensive strategy with Dara-KRd induction (6cycles), ASCT, Dara-KRd consolidation (4 cycles), second ASCT, followed by Dara-Len maintenance for 2 years
- For this study, HRMM was defined by the presence of del17p, t(4;14), and/or t(14;16)
- Met primary endpoint of “feasibility”; also resulted in high MRD negativity rate AND high PFS

Frontline Therapy-PERSEUS Study Design



Transplant Eligible NDMM < 70 years of age:
Randomization to VRd>>ASCT>>VRd>>Rev maint VS.
D-VRd>>ASCT>>D-VRd>>D-R maint until MRD negativity

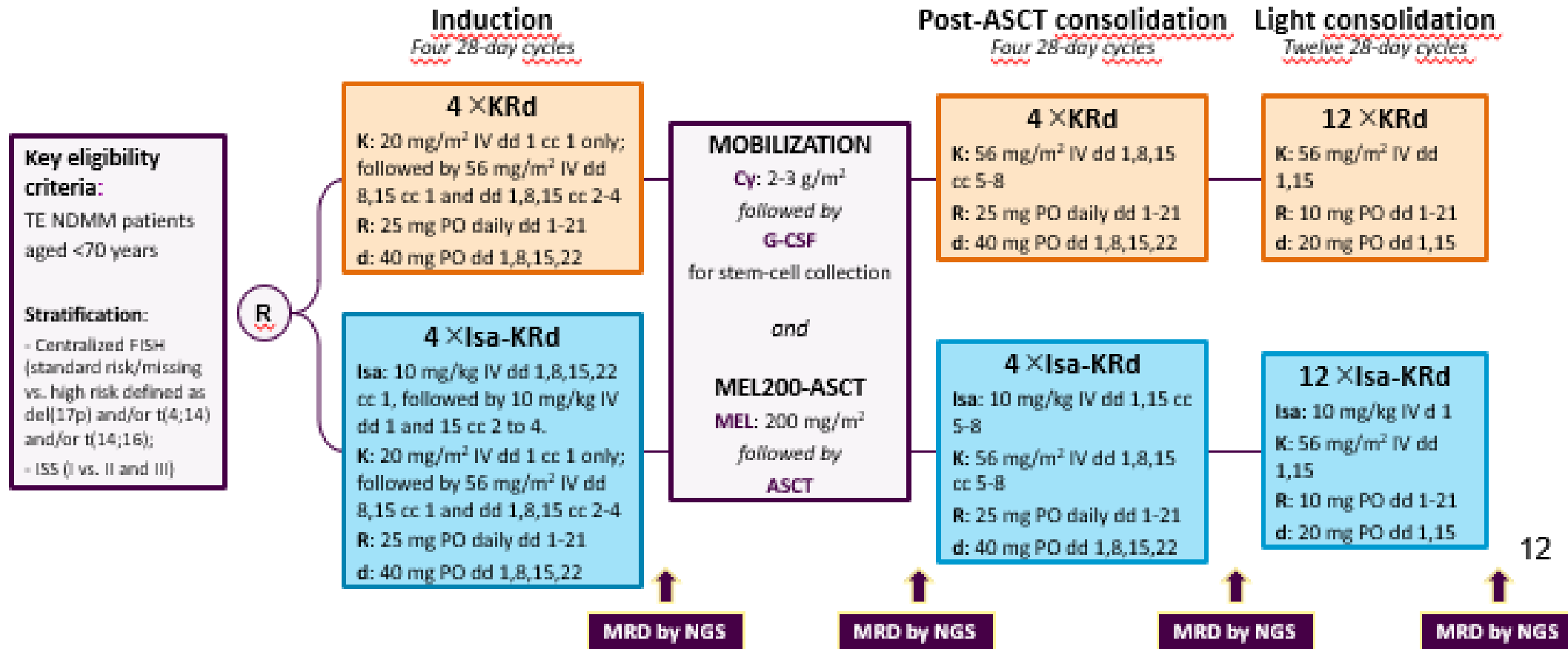
Frontline Therapy-PERSEUS Takeaways

- PFS from D-VRd arm at 48 months was **84.3%**; PFS from standard of care arm at same time interval was **67.7%**, resulting in a **58% reduction in the risk of progression** or death in patients receiving D-VRd
- Overall, across subgroups of patients, the **rate of CR or higher response was significantly higher** with D-VRd vs VRd (**87.9% vs 70.1%**)
- **Deep and durable MRD negativity** was achieved with D-VRd; **64%** of patients receiving maintenance in the D-VRd group discontinued Dara after achieving sustained MRD negativity per protocol
- Observed safety profile was consistent with the known safety profiles for Dara SQ and VRd

These randomized phase 3 results support D-VRd followed by D-R maintenance as a new Standard of Care for Transplant Eligible NDMM patients!



Frontline Therapy-IsKia Study Design



Transplant Eligible NDMM Patients < 70 Years of age:

4 cycles KRd induction>>ASCT>>4 cycles KRd consolidation>>12 cycles lower dose “light” consolidation KRd VS.

4 cycles Isa-KRd induction>>ASCT>>4 cycles Isa-KRd consolidation>>12 cycles lower dose “light” consolidation Isa-KRd


Frontline Therapy-IsKia Takeaways

- Isa-KRd **significantly increased MRD negativity**, as compared with KRd, after EACH treatment phase (Induction, Transplantation, Consolidation).
- Isa-KRd consistently increased MRD negativity in all subgroups of patients; **including high-risk and very high-risk disease**.
- 1 year sustained MRD negativity will be available in 2024
- Observed toxicity profile was “tolerable”, similar to that in previous reports.

With longer follow up, this trial can offer the opportunity to explore the correlation between depth of MRD negativity and PFS/OS.



Frontline Therapy-Key Takeaways

- Quadruplets are now the Standard of Care!
 - There are options with 2 monoclonal antibodies
 - Daratumumab
 - Isatuximab
 - There are options with 2 proteasome inhibitors
 - Bortezomib
 - Carfilzomib
 - The exact duration of the quad and the use of dual maintenance is still in question, but will likely be generally adopted
- 

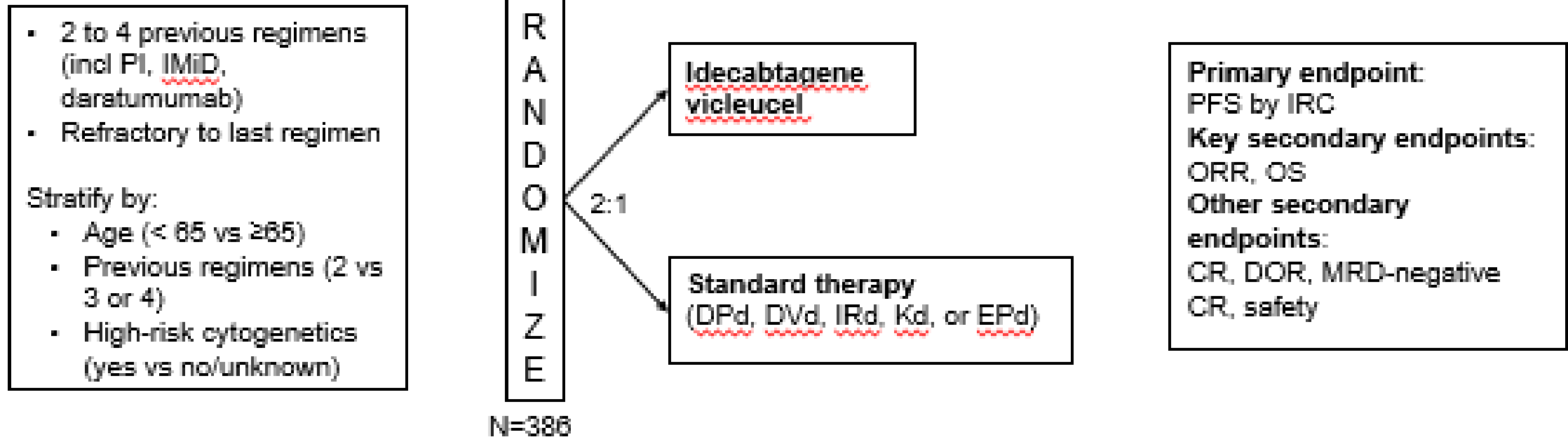
Early Relapse

KarMMa-3:
Ide-Cel vs
Standard
Therapy

Cartitude-2:
Cilta-Cel in
Early
Relapse

KarMMa-3: Ide-Cel vs Standard Therapy

Planned final PFS analysis, interim OS (median 30.9 months follow-up)



KarMMa-3: Ide-Cel vs Standard Therapy

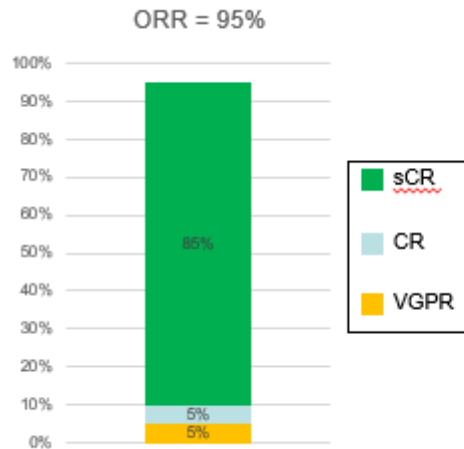
	<u>Ide-Cel</u> n=254	Standard Therapy n=132
PFS		
Median	13.8 months	4.4 months
18-month	41%	19%
ORR	71%	42%
<u>sCR</u>	41%	5%
CR	3%	1%
VGPR	18%	11%
PR	10%	26%
MRD-negative CR	35%	2%
OS	41.4 months	37.9 months

Cartitude-2: Cilta-Cel in Early Relapse

- Update results from phase 2 trial evaluating cilta-cel (median follow-up: 29.9 months)
- Data from 2 cohorts reported:
 - **Cohort A:** Lenalidomide-refractory after 1-3 LOT, including PI and IMiD
 - **Cohort B:** 1 prior LOT, including PI and IMiD, with PD \leq 12 months after ASCT or start of therapy
- Endpoints
 - Primary: MRD negativity by NGS or NGF (10^{-5})
 - Secondary: ORR, DOR, safety
 - Exploratory: PFS, OS

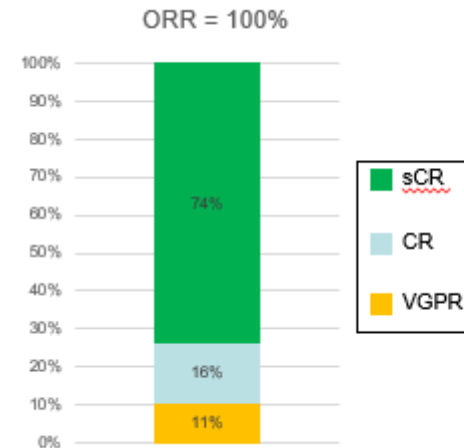
Cartitude-2: Cilta-Cel in Early Relapse

Efficacy in Cohort A



	Cohort A
MRD negativity (n=17)	100%
24-mo PFS	75%
24-mo OS	75%

Efficacy in Cohort B



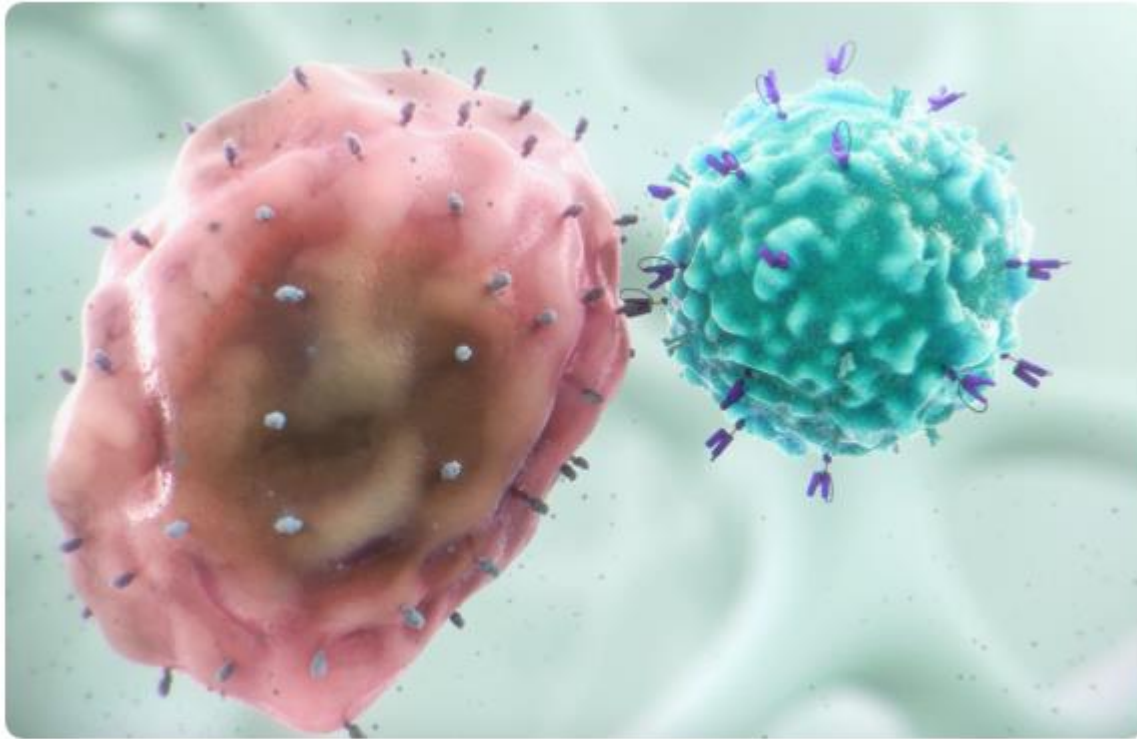
	Cohort B
MRD negativity (n=15)	93%
24-mo PFS	73%
24-mo OS	84%

Late Relapse

New CAR-T
Approaches

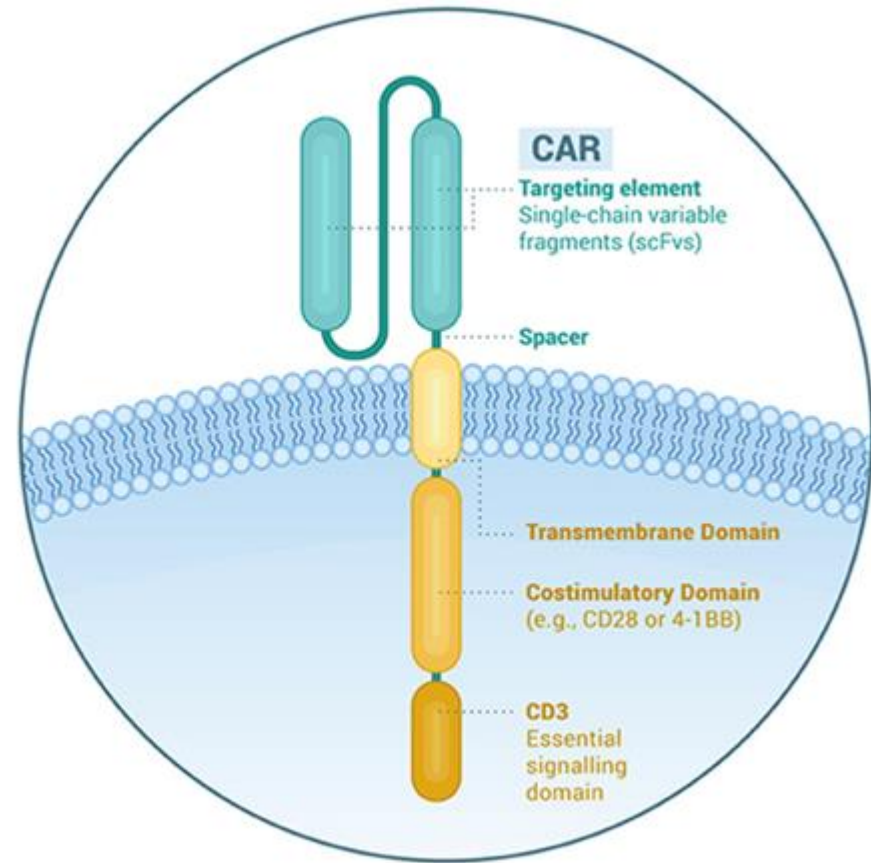
Bispecific
Antibodies-
Evolving
Landscape

Late Relapse: CAR-T Current Landscape



Myeloma Cell

CAR T Cell



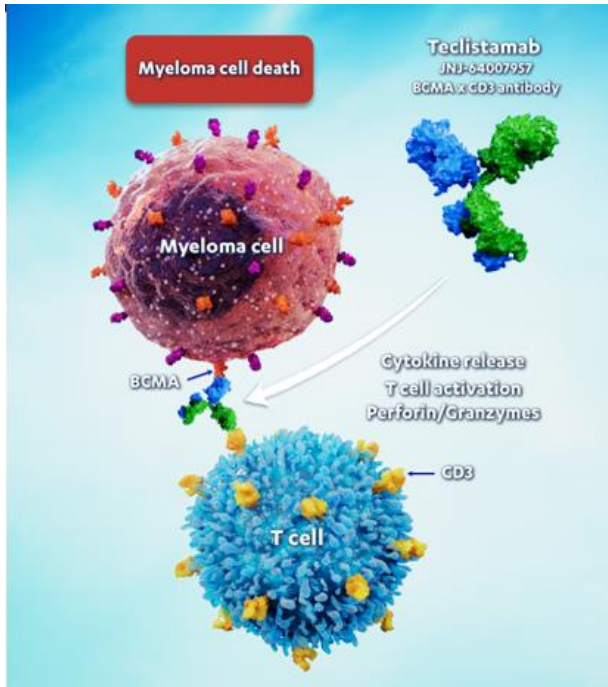
Both currently approved CAR-T products, Carvykti & Abecma are both BCMA Targets

Late Relapse: CAR-T Evolving Landscape

	Approved CAR-T cells		Academic	Alternative manufacturing	Human scFv		Allo-CAR	GPC5D	
	Ide-cel KarMMa ¹ (n = 128)	Cilta-cel CARTITUDE-1 (n = 97) ^{2,3}	ARI0002h ⁴ (n = 30)	P-BCMA-101 PRIME ^{5,6} (n = 53)	CT053 ⁶ LUMMICAR (n = 24)	CT103A ⁷ (n = 79)	ALLO-715 UNIVERSAL ⁸ (n = 43)	MCARH 109 ⁹ (n = 17)	OriCAR -017 ⁹⁰ (n = 13)
Phase	II	Ib/II	I/II	I/II	I	I/II	I	I	I
Target	BCMA	BCMA	BCMA	BCMA	BCMA	BCMA	BCMA	GPC5D	GPC5D
scFv	Chimeric mouse	Chimeric Llama	Humanized	Chimeric mouse	Human	Human	Human	Human	Humanized Bi-epitopic
Co-stim	4-1BB	4-1BB	4-1BB	4-1BB	4-1BB	4-1BB	4-1BB	4-1BB	4-1BB
Specificity	Auto	Auto	Auto	Auto-piggyBac	Auto	Auto	Allo CD52 & TCR KO	Auto	Auto
Age, (range)	61 (33-78)	61 (56-68)	61 (36-74)	60 (42-74)	62 (33-76)	57 (39-70)	64 (46-77)	60 (38-76)	64 (58-68)
# of lines	6	6	4	8	NA	5	5	6	5.5
HR cytog, %	35	24	33	NA	NA	34	37	76	60
EMD, %	39	13	20	NA	NA	13	21	47	40
Triple-R, %	84	88	67	60	NA	17	91	94	15
ORR, %	81	98	100	67	87	95	71	71	100
CR/sCR, %	39	82	63	NA	NA	68	25	25	60
PFS	12.2 m	34.9 m	53%@18 m	NR	NR	NR	NR	NR	NR

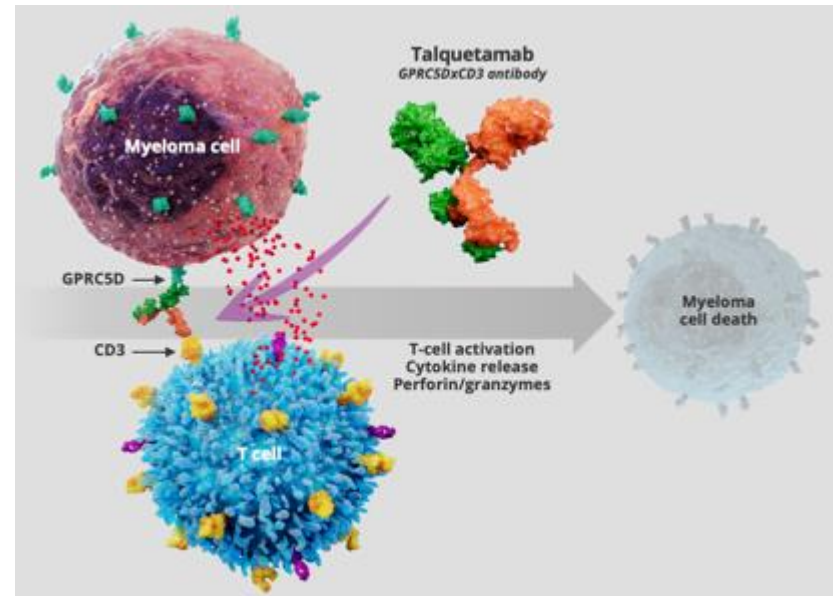
These are all evolving types of CAR-T currently in clinical trials; different targets (GPC5D), alternative manufacturing (FAST CAR), different sources (Allo-CAR), and human vs animal derived.

Late Relapse: Bispecifics Current Landscape

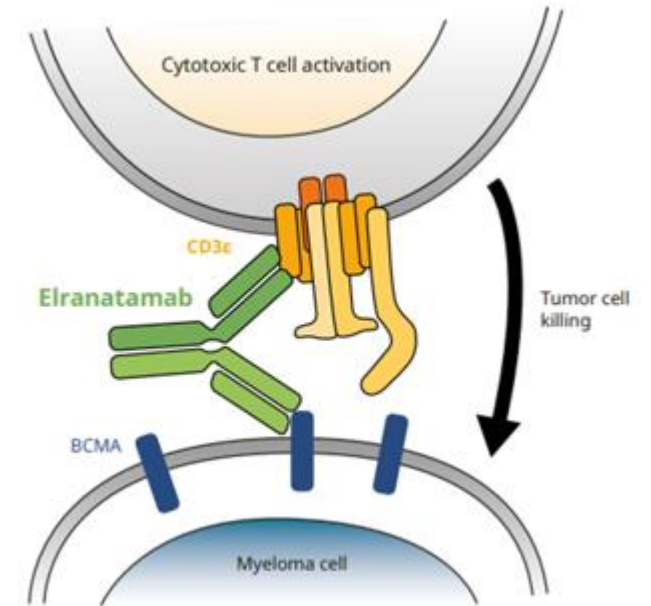


Teclistamab-1st in class
(BCMA Target)

Currently FDA Approved Bispecifics



Talquetamab-1st in class
(GPRC5D Target)



Elranatamab-2nd in class
(BCMA Target)

**ALL three bispecific antibodies
have a response rate of about 65-75%!**

Late Relapse: Bispecifics Evolving Landscape

- **Can we change dosing to improve patient's quality of life?**
 - MonumenTAL-1: Less Frequent / Lower Intensity Dosing of Talquetamab
 - Suggests that reduced or less frequent dosing after achieving PR or greater response, did not adversely affect outcomes
- **Can we add another drug to a regimen with a bispecific to increase benefit?**
 - MonumenTAL-2: Talquetamab + Pomalidomide
 - Only Phase 1b so far, but many participants are triple to penta-refractory
 - Would be instrumental in these patients with difficult disease, as long as side effect profile isn't increased
- **Can we increase the targets from two to three? (Trispecifics)**
 - HPN217 is a BCMA-targeting T cell engager plus binds to albumin for half-life extension
 - Designed to increase the therapeutic window
- **Can we study new targets?**

Late Relapse: Bispecifics Evolving Landscape



Yet another promising new target, CD70 is appearing to be a highly promising cellular therapeutic strategy; especially in high-risk patients after BCMA CAR-T relapse!

Bispecific Antibody	Teclistamab (JNJ-64007957)	Elranatamab (PF-06863135)	Linvoseltamab (REGN5458)	ABBV-383	Alnuctamab BMS-93269	HPN217
Structure/Function	Humanized antibody	Humanized antibody	<u>Veloci-Bi[®]</u> platform fully human antibody	Low CD3 affinity fully human antibody	Humanize antibody 2 BCMA + 1 CD3	<u>Trispecific</u> 50kDa (albumin)
Treatment	Weekly SC	Weekly SC	Weekly IV	IV q3w	<u>Qwk</u> -> Q4wk SQ	Q2wk IV
Patients	n= 165	n= 123	n= 252	n= 220	n= 68	n= 97
Median prior lines	5	5	5	5	4	6
Triple-class refractory	78%	100%	81%	80%	63%	78%
ORR at RP2d	63%	61%	64%	60-64%%	65%	63%%
RP2D (n)	1.5 mg/kg SC (n=165)	76 mg SQ (n=123)	200 mg IV (n=58)	40 to 60 mg IV (n=55 n=61)	30 mg SQ (n=26)	12 mg (n=19)
PFS	11.3 mos (8.8-17.1)	17.2 mos (9.8-NE)	NR	13.7 or 11.2 mos	NR	NR
DOR	18.4 mos (14.9-NE)	69% @ 18 mos	89% @ 6 mos	70% and 66% @ 12 mos	NE	NR
Median f/u AEs, (All/(Gr 3+);	14.1 mos /23 mos	17.6 mos	3.2 mos		4.6 mos	
CRS	72% (0.6%)	58% (0%)	44% (1%)	43-70% (0-2%)	53% (0%)	30 (2%)
Infections	80% (55%)	70% (41%)	54% (29%)	(22%)	34% (9%)	59% (25%)
Neutropenia	72% (66%)	50% (50%)	25% (23%)	56-71% (25-34%)	37%(32%)	40% (34%)
Anemia	52% (37%)	49% (37%)	36% (31%)	41-43% (13-31%)	38%(25%)	44% (34%)
Thrombocytopenia	40% (21%)	32% (24%)	18% (6%)	38-55% (13-33%)	24%(9%)	28% (18%)
Neuro	Neurotoxicity 15%	NR/ PN?	ICANS 2% (1%)	3-5% (0-2%)	ICANS 3 (0%)	21% (0%)
# Deaths	(0.1)	25 (11 due to PD)	NR	NR	1	5(2 due to PD)
Hypogamma/IVIg	68/(41 due to PD) 72%/146%	75%/40%	NR	NR		

Patient Experience Examples at ASH

- **Quality of Life**
 - Clinical Trials like KarMMA and CARTITUDE
- **CAR-T Experience**
 - Outpatient Use
 - Wearable devices for monitoring
 - Videos to educate patients
- **DOWN WITH DEX!**
 - Oral abstracts
 - Poster abstracts

Patient Experience: Poster Abstracts (Dex)

Dialing Down the Dex: Reviewing the Role of Dexamethasone in the treatment of Multiple Myeloma

Susan Harding, NP, Joseph Mikhael, MD, MEd, FRCPC
HonorHealth Research Institute (HRI), Scottsdale, AZ



HONORHEALTH

Introduction/Background

Historically, with limited options for the treatment of multiple myeloma, dexamethasone was a necessary therapeutic partner to treat the disease. Although dexamethasone demonstrates initial efficacy, especially at robust dosing, it also demonstrates significant and problematic toxicity over time. With the exponential increase in number of effective myeloma therapies, the role of ongoing dexamethasone has not been formally addressed in many treatment practices. In our consultancy practice, we have noted many myeloma patients remain on dexamethasone 40 mg weekly as part of long-term treatment, often despite steroid-induced adverse effects. The advanced practice provider can help identify patients who may benefit from dexamethasone dose reduction. We have developed a strategy of dose reduction to reconcile initial efficacy and long-term toxicity of dexamethasone in this patient population.

Supporting Evidence

Palluaer et al (JCO: IM13 Trial): Studied low-dose dex in combination with lenalidomide (len) versus high-dose dex plus len in the induction setting to show non-inferiority

- Induction lenalidomide + high dose dex (40 mg days 1-3, 9-13, 17-20, every 28 days) versus lenalidomide + low dose dex (40 mg weekly)
- Low-dose dex arm = better short-term overall survival & lower toxicity in newly diagnosed MM
- Set the current standard for reducing dex to 40 mg weekly

Laporta et al (NCT01219960): Prospective, phase II RCT showed the feasibility of stopping dex with similar efficacy outcomes but better toxicity outcomes

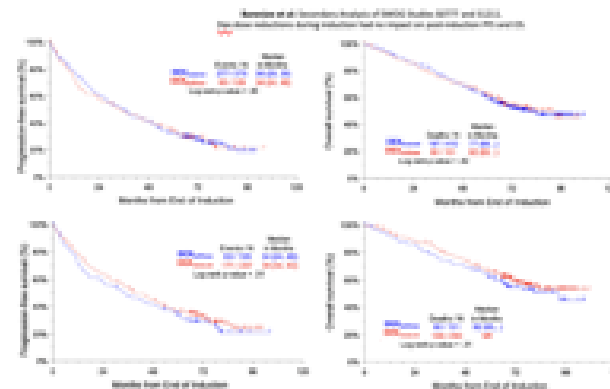
- Induction dex (20 mg/day x 21) and dex (20 mg days 1, 8, 15, & 22) followed by len maintenance (20 mg/day for 21 days) + continuous len (20 mg/day x 21) and dex (20 mg days 1, 8, 15, & 22)
- Dose/schedule-adjusted len prolonged EFS in elderly intermediate-fit pts
- Induction dex induced progression-free and overall survival similar to standard continuous len

Merley et al (JCO: 03 Trial): Evaluated dex sparing regimen with daratumumab and lenalidomide in frail patients with newly diagnosed MM

- Daratumumab + lenalidomide limiting dex 30 mg weekly for 2 cycles, showed superiority over lenalidomide + dex 30 mg weekly (ongoing)
- Improved outcomes with contemporary therapy despite stopping dex

Banerjee et al: Secondary Analysis of EWOG Studies 00777 and 12111

- Over half of patients required dex reductions below a starting dose of 40 mg weekly
- Dex dose reductions during induction had no impact on post-induction PFS and OS, even in the subset of patients who required significant dose reductions



Hypothesis:
Myeloma patients do not require more than 6 months of dexamethasone after starting combination therapies

Methods: Dexamethasone Dose De-escalation Protocol

1. Assess 40 mg versus 20 mg weekly starting dose
2. Limit starting dose to 2 to 3 months
3. Then taper dose each month over the course of 3 to 4 months
4. Plan to stop dexamethasone at 6 months
5. Regular assessments for toxicity and de-escalate sooner if clinically indicated

This strategy can be adopted for most long-term myeloma treatment plans and can be adjusted in circumstances such as transplant eligible induction therapy, for supportive care needs, or if significant initial dexamethasone toxicity.

Dexamethasone Toxicity

Insomnia		
Emotional lability/Mood changes		
Anxiety		
Hyperglycemia		
Hypertension		
Swelling		
Weight Gain		
Atrial Fibrillation		
Increased appetite		
GI side effects		
Headaches		
Increase infection risk		
Decreased bone density		
Muscle atrophy		
Cataracts		
Blurred Vision		

Conclusion

Limiting the role of dexamethasone can reduce steroid induced toxicity and allow patients to continue long-term myeloma treatment with improved quality of life. This topic has clearly been on the mind of myeloma experts as studies are increasingly being designed to limit the role of dexamethasone. Our experience provides background for future studies to better define the scope of dexamethasone in the treatment of multiple myeloma and limit toxicity when possible.

References

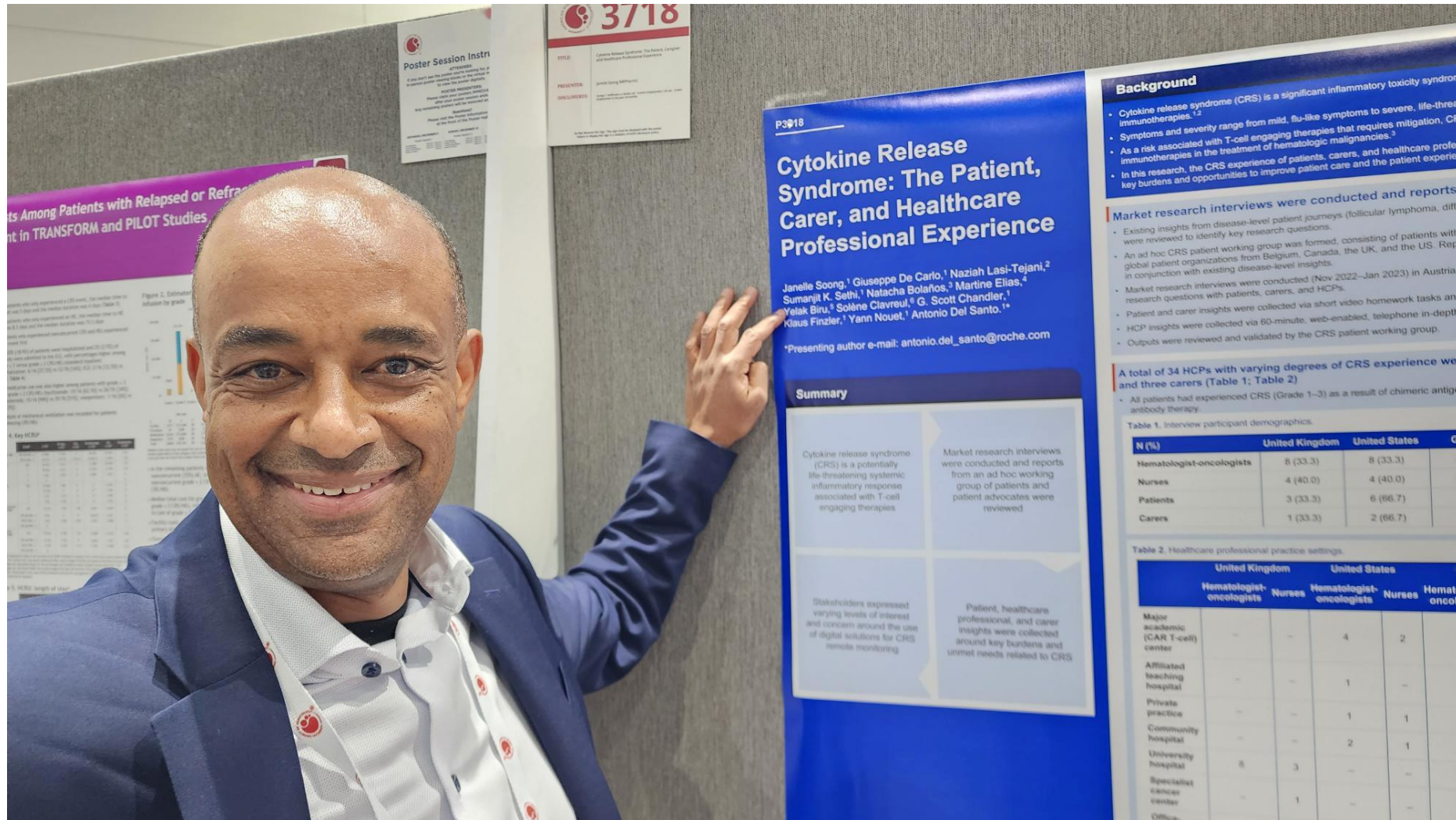
Banerjee et al. (2018). Impact of Dexamethasone Dose De-escalation in Patients with Newly Diagnosed Multiple Myeloma (EWOG 00777 and 12111). *Journal of Clinical Oncology*, 36(15), 1650-1657.

Laporta et al. (2016). Dexamethasone Sparing Regimen with Lenalidomide in Frail Patients with Newly Diagnosed Multiple Myeloma. *Journal of Clinical Oncology*, 34(24), 3497-3504.

Merley et al. (2018). A Dexamethasone Sparing Regimen with Daratumumab and Lenalidomide in Frail Patients with Newly Diagnosed Multiple Myeloma. *Journal of Clinical Oncology*, 36(24), 3497-3504.

Palluaer et al. (2015). Dexamethasone Sparing Regimen with Daratumumab and Lenalidomide in Frail Patients with Newly Diagnosed Multiple Myeloma. *Journal of Clinical Oncology*, 33(24), 3497-3504.

Our President & CEO Yelak Biru as a co-author!



GMMG-CONCEPT trial: isatuximab, carfilzomib, lenalidomide, and dexamethasone (Isa-KRd) in transplant-eligible (TE) and transplant-ineligible (TNE) patients with high-risk-NDMM

Patients: 125 HRNDMM patients defined as ISS stage II/III combined with del17p, t(4;14), t(14;16), or >3 1q21 copies

Study Design: Multicenter, phase II study

- Transplant-eligible (TE): Isa-KRd x 6 cycles → Melphalan ASCT → Isa-KR maintenance x 26 cycles
- Transplant-ineligible (TIE): Isa-KRd x 8 cycles → Isa-KR maintenance x 26 cycles

Endpoints:

- Primary endpoint:
 - MRD negativity: 67.7% (TE) and 54.2% (TNE) of patients
 - 81.8% of TE reached MRD negativity at any time point.
 - MRD negativity was sustained for ≥1 year in 62.6% of patients
- Secondary endpoint:
 - Progression Free Survival: With a median follow-up of 44 (TE) and 33 (TNE) months, median PFS was not reached in either arm

Drs. Nooka, Kaufman, and Lonial Editorial

1) How do we measure and compare outcomes for a heterogeneous group of patients?

- Not all high-risk features are equal
 - Isolated 1q amp does not carry the same risk as del17p or the combination of amp 1q and del17p
 - \geq two high-risk cytogenetic abnormalities does not carry the same risk as 1
- Need to narrow patient selection

2) What is the optimal end point for measuring success in high-risk disease?

- MRD as a surrogate end point for PFS in HRMM remains a challenge
- PFS should remain the primary goal with a focus on validating the surrogacy of MRD in a better-defined group of patients

3) What is an acceptable toxicity and death rate?

- Stakes are higher for HRMM \rightarrow willing to accept a higher toxicity rate, particularly among younger patients
- 4 issues remain with Carfilzomib (dosing, schedule, cardiac toxicities, use in elderly)

4) How to optimally define TIE for global use?

- Definition remains ambiguous
- Numeric age \rightarrow more dependence on physiologic assessment
- DETERMINATION: group that achieved the maximal PFS benefit from early transplant were patients with HRMM (mPFS, ASCT v no ASCT: 55 v 17.1 months).

- **Jury still out remains out in terms of the optimal approach for managing a more uniformly defined group of HRMM.**

- **Data from the current study supports the use of CD38 mAB as part of the induction therapy**

- **Emphasis on continuous maintenance therapy with at least a triplet**

Final Thoughts...

Thank You!

