

Treatment of newly diagnosed MM Non-Transplant Eligible

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Disclosures

- **Thierry Facon**, University of Lille, CHU Lille, Service des Maladies du Sang, Lille, France
- Any compensation received was provided directly to CHU Lille
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 - Advisory boards: Janssen, Bristol Myers Squibb, Takeda, Sanofi, Roche, Karyopharm, Oncopeptides, Amgen

Frailty Concept and Assessment

Components of Frailty in Older Patients with Haematological Malignancies

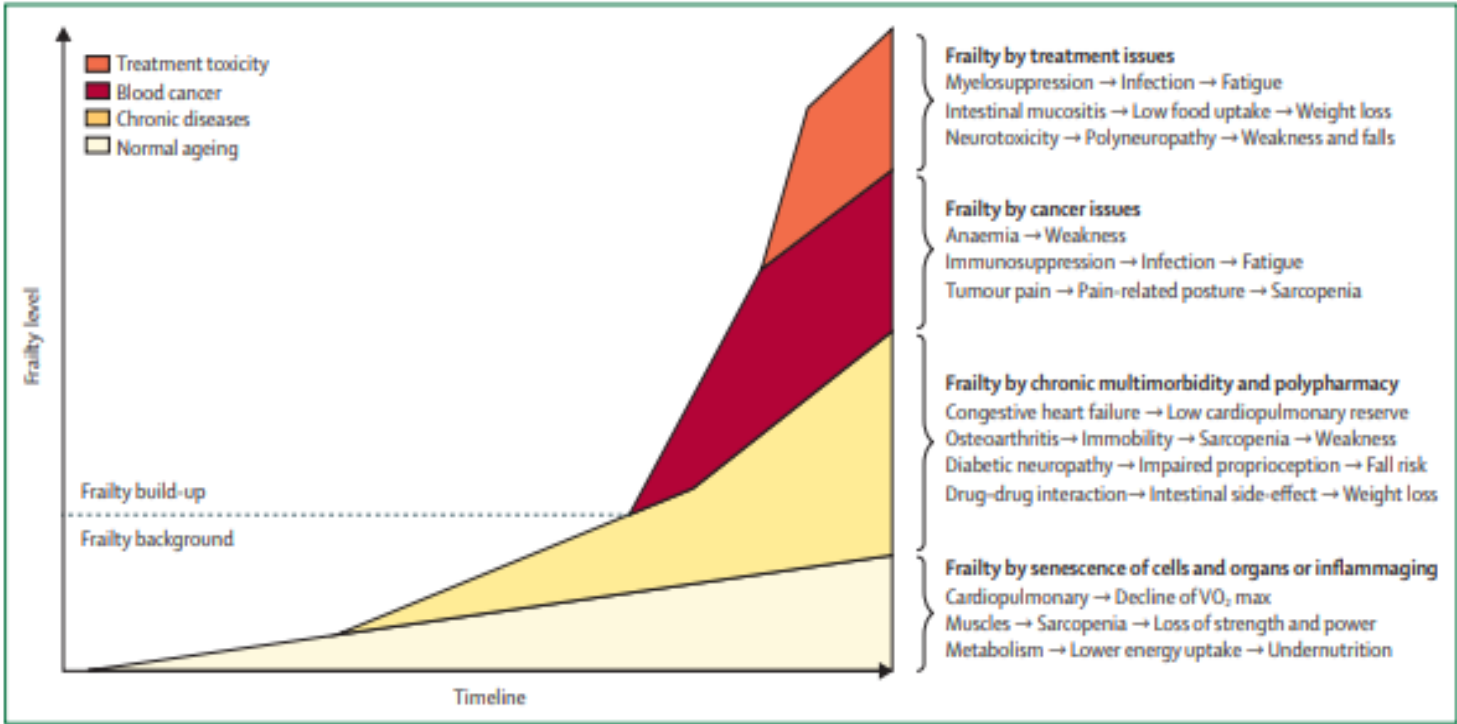
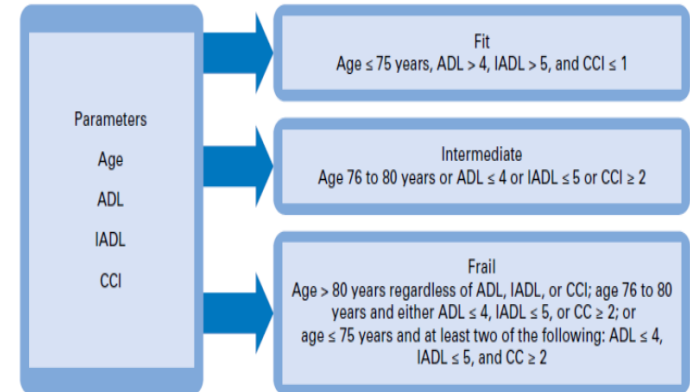
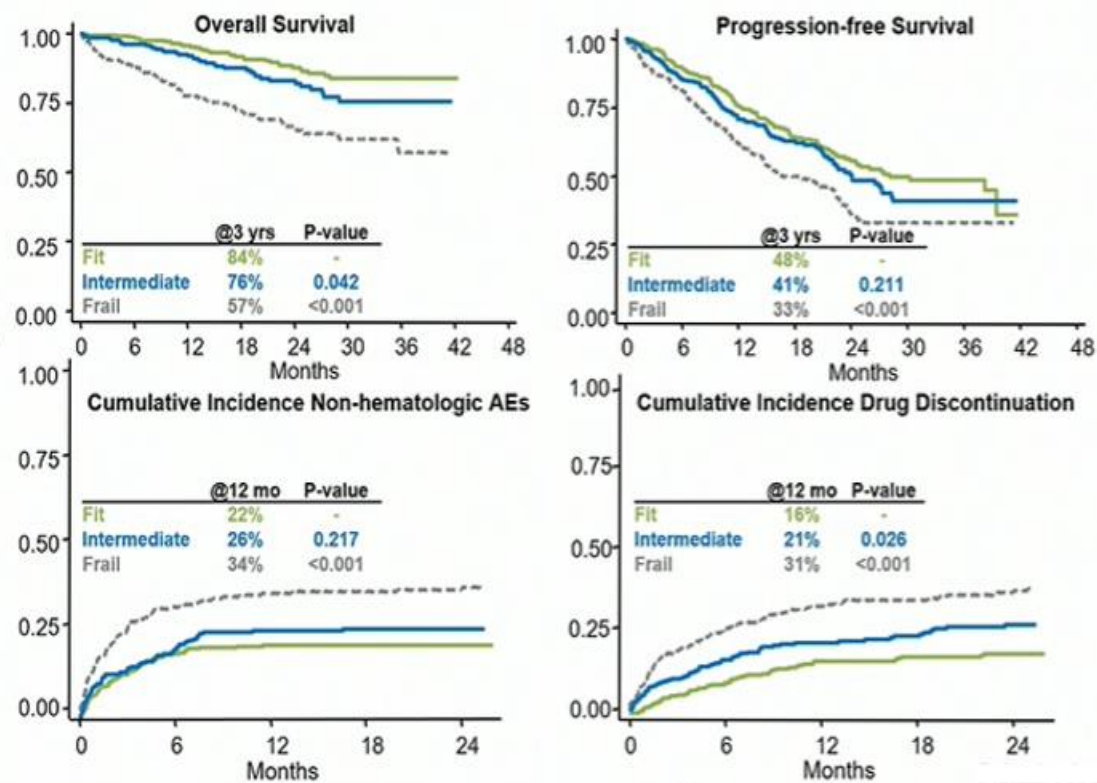


Figure 1: Components of frailty in older patients with haematological malignancies
Several examples of pathways to frailty are provided below each of the four scenarios.

IMWG Frailty Score

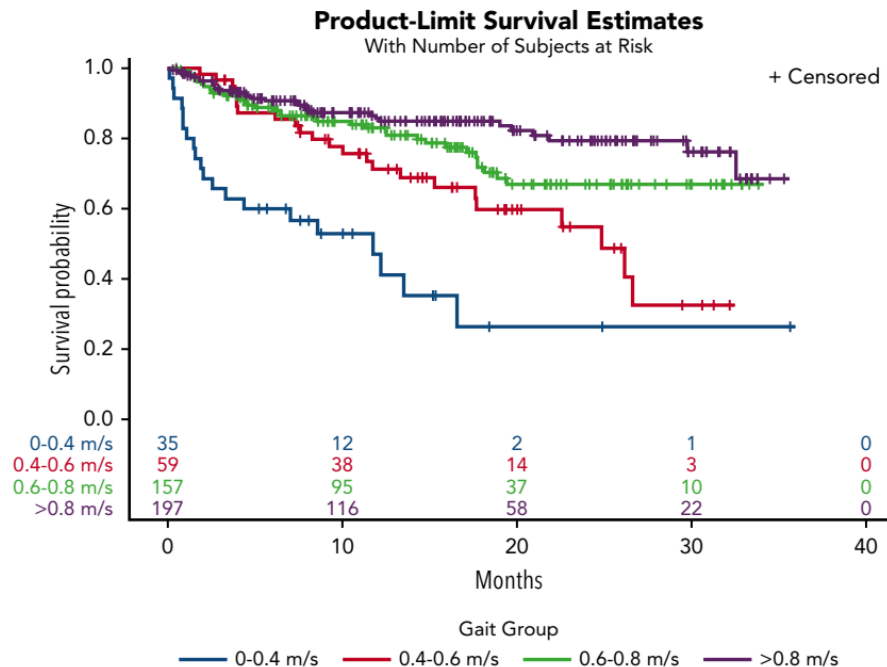


Various frailty assessment tools

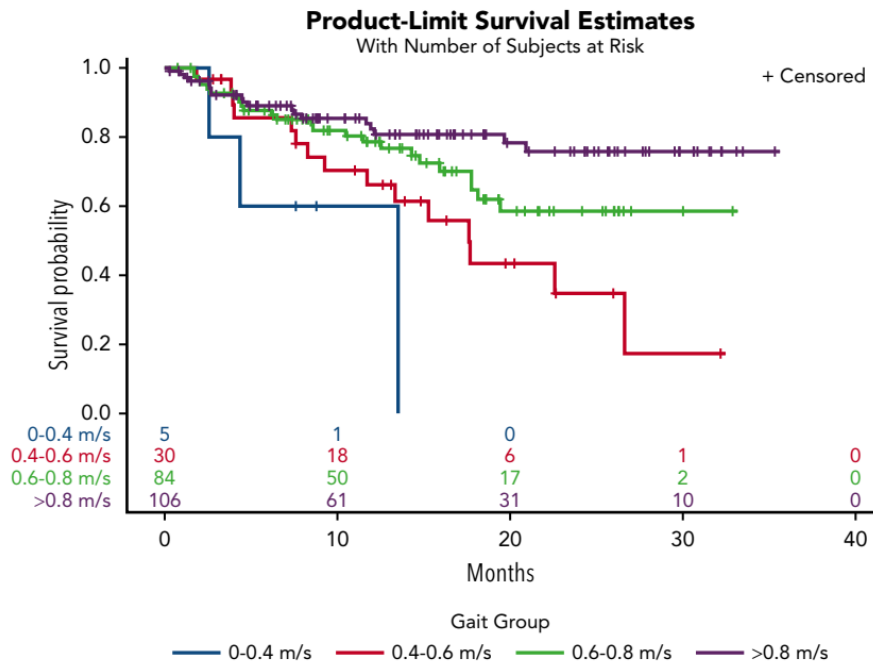
	IMWG frailty score	R-MCI	UKMRA MRP	Mayo risk score	Ancona Vulnerability Score	IFM simplified frailty scale
Biological / Clinical components	Age CCI	eGFR PFTs Frailty Age Cytogenetics	Age R-ISS CRP	Age NT- proBNP	CCI	Age CCI
Functionality tests	ADL IADL	PS (Karnofski)	PS (WHO)	PS (WHO)	PS (WHO)	ECOG
Population	Clinical trials	Clinical trials, real world	Clinical trials, real world	Real world	Real world	Clinical trials

Gait speed and survival outcomes in elderly patients with hematological malignancies

Survival by gait speed

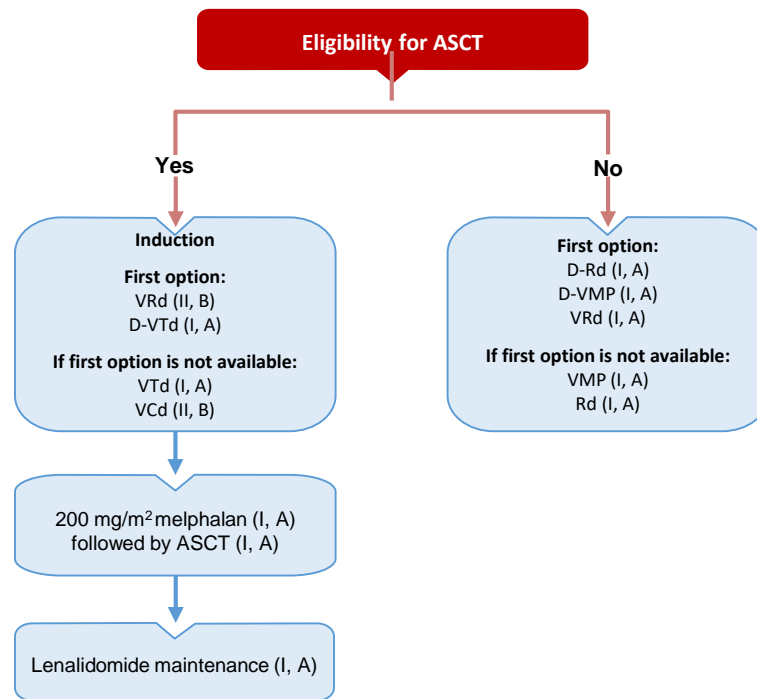


Survival by gait speed in patients with ECOG PS 0-1



Current Standards of Care

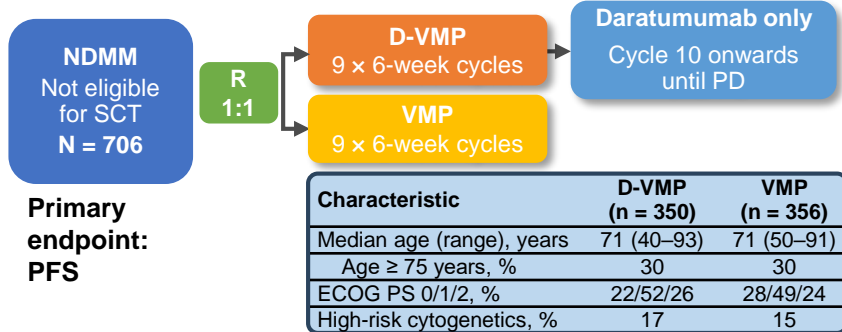
Current EHA-ESMO guidelines for the treatment of MM: frontline management of disease



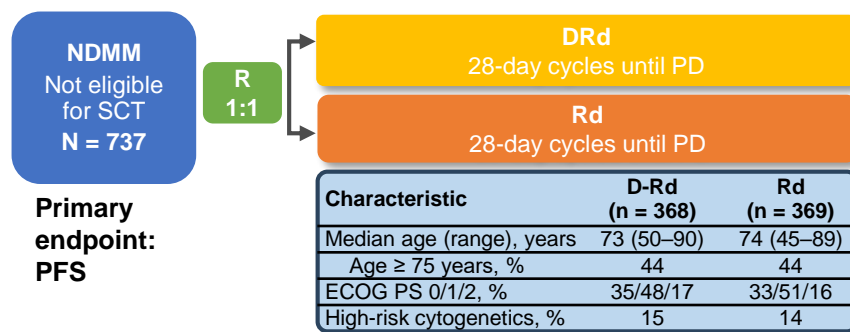
ASCT, autologous stem cell transplantation; D-Rd, daratumumab + lenalidomide + dexamethasone; D-VMP, daratumumab + bortezomib + melphalan + prednisone; D-VRd, daratumumab + bortezomib + lenalidomide + dexamethasone; D-VTd, daratumumab + bortezomib + thalidomide + dexamethasone; EHA, European Hematology Association; ESMO, European Society for Medical Oncology; Rd, lenalidomide + dexamethasone; VCd, bortezomib + cyclophosphamide + dexamethasone; VMP, bortezomib + melphalan + prednisone; VRd, bortezomib + lenalidomide + dexamethasone; VTd, bortezomib + thalidomide + dexamethasone.
Dimopoulos MA, et al. Ann Oncol. 2021;32:309-22.

Key study designs in non stem-cell transplantation NDMM

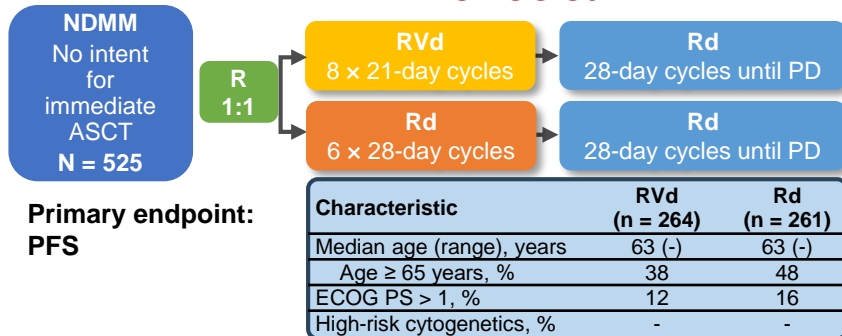
ALCYONE¹



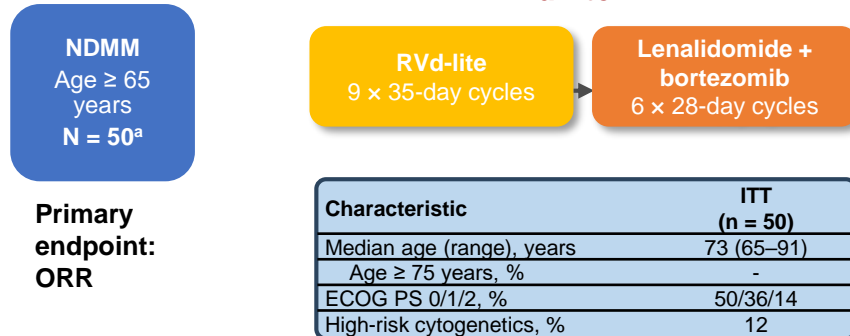
MAIA²



SWOG S0777³



RVd-lite^{4,a}



These charts are provided for ease of viewing information from multiple trials.

Direct comparison between trials is not intended and should not be inferred.

^a RVd lite is phase II, others phase III.

DRd, daratumumab, lenalidomide, low-dose dexamethasone; D-VMP; daratumumab, bortezomib, melphalan, prednisone; R, randomized; SCT, stem-cell transplantation.

1. Mateos MV et al. N Engl J Med 2018;378:518–28. 2. Facon T et al. N Engl J Med 2019;380:2104–15. 3. Durie BGM et al. Lancet 2017;389:519–27. 4. O'Donnell EK, et al. Br J Haematol 2018;182:222–30.

PFS in Daratumumab TNE Studies

ALCYONE

FIGURE 1: PFS based on investigator assessment with D-VMP and VMP in the ITT population

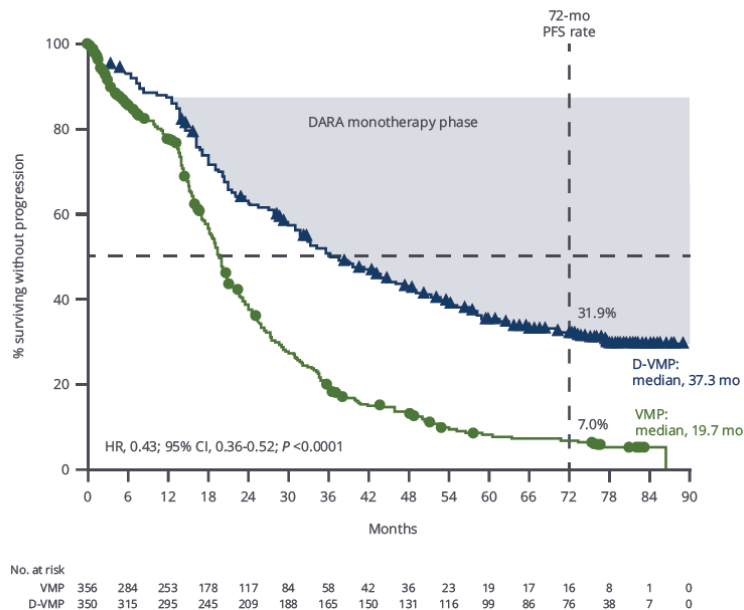
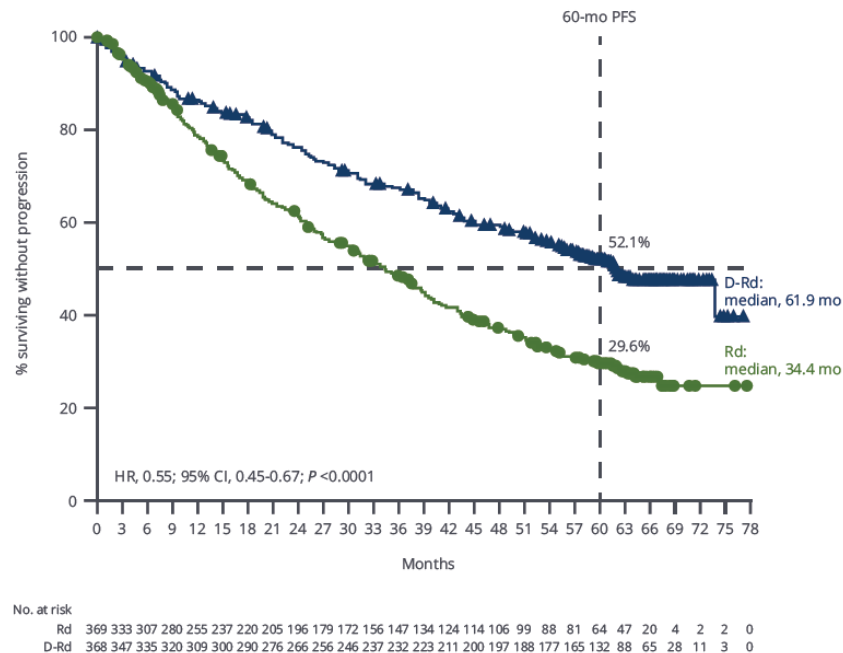
**MAIA**

FIGURE 1: PFS with D-Rd and Rd in the ITT population^a



ALCYONE

HR, 0.64; 95% CI, 0.52-0.79; $P < 0.0001$

72-mo OS rate

55.7% D-VMP: median, 82.7 mo

39.7% VMP: median, 53.6 mo

% surviving

Months

No. at risk																
VMP	356	324	311	291	268	242	216	197	167	148	133	124	112	70	15	0
D-VMP	350	327	318	301	288	275	258	244	227	205	183	170	162	112	24	0

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60-mo OS rate

66.7%

53.7%

D-Rd: median, NR

Rd: median, 64.1 mo

HR, 0.65; 95% CI, 0.52-0.80; $P < 0.0001$

% surviving

Months

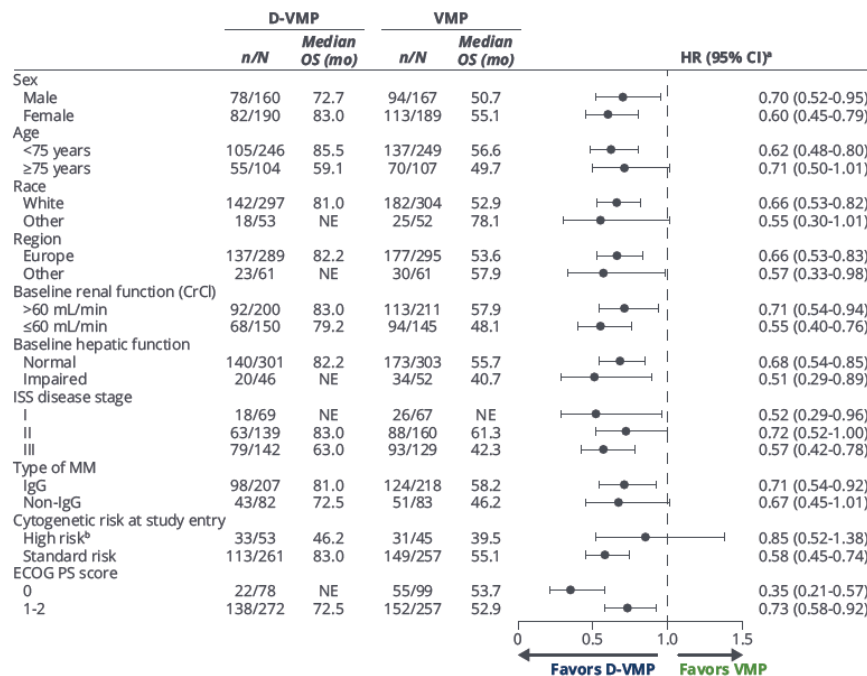
No. at risk		369	351	343	336	324	317	308	300	294	281	270	258	251	241	232	223	214	204	195	188	183	170	154	134	97	68	35	11	3	1	0
Rd		369	351	343	336	324	317	308	300	294	281	270	258	251	241	232	223	214	204	195	188	183	170	154	134	97	68	35	11	3	1	0
D-Rd		368	350	346	344	338	334	328	316	305	302	297	286	280	273	266	255	249	248	246	241	228	206	190	163	128	82	56	26	10	0	0

Kumar et al. ASH 2022

Analysis of OS in Pre-specified Patient Subgroups

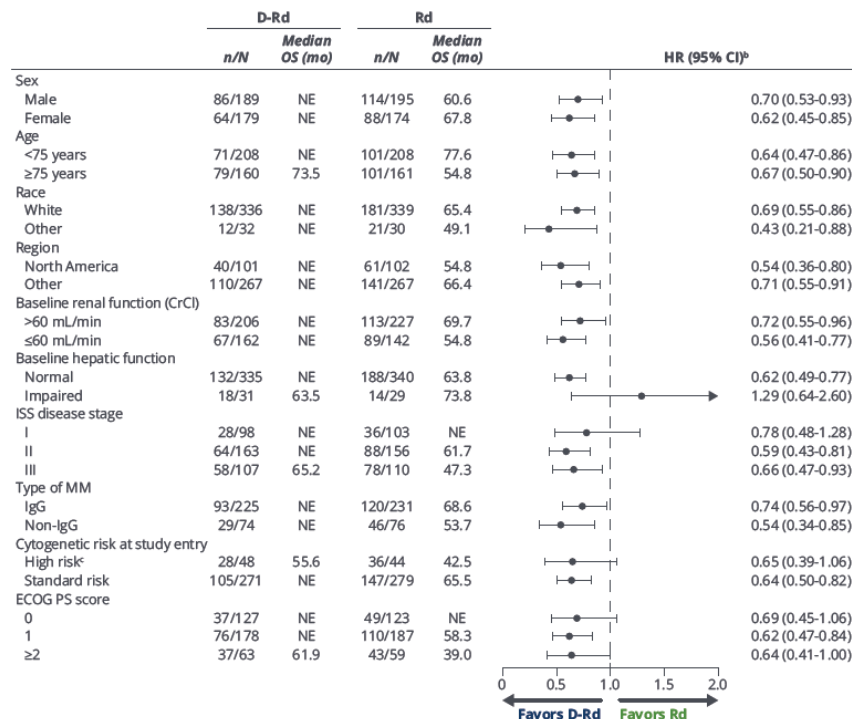
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FIGURE 3: Analysis of OS in pre-specified patient subgroups



MAIA

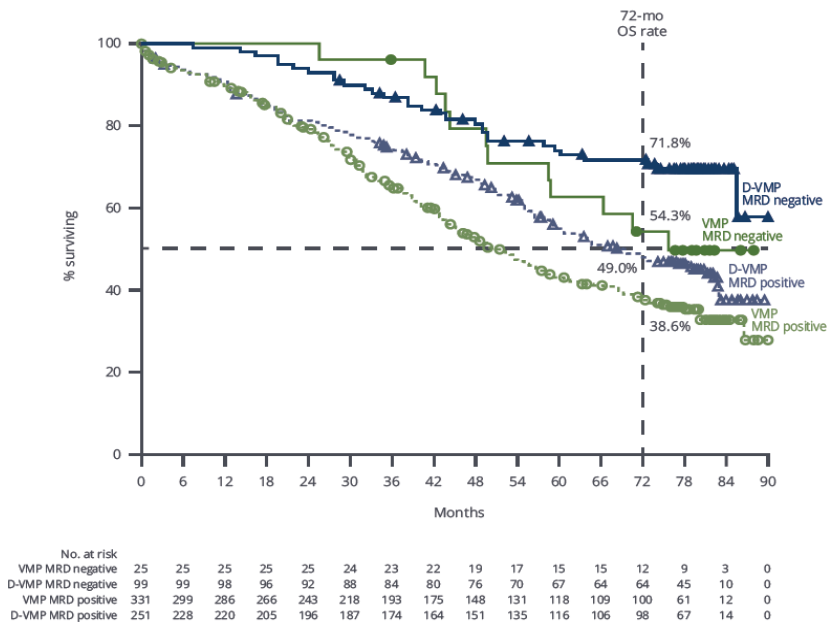
FIGURE 3: Analysis of OS in pre-specified patient subgroups^a



OS by MRD Status

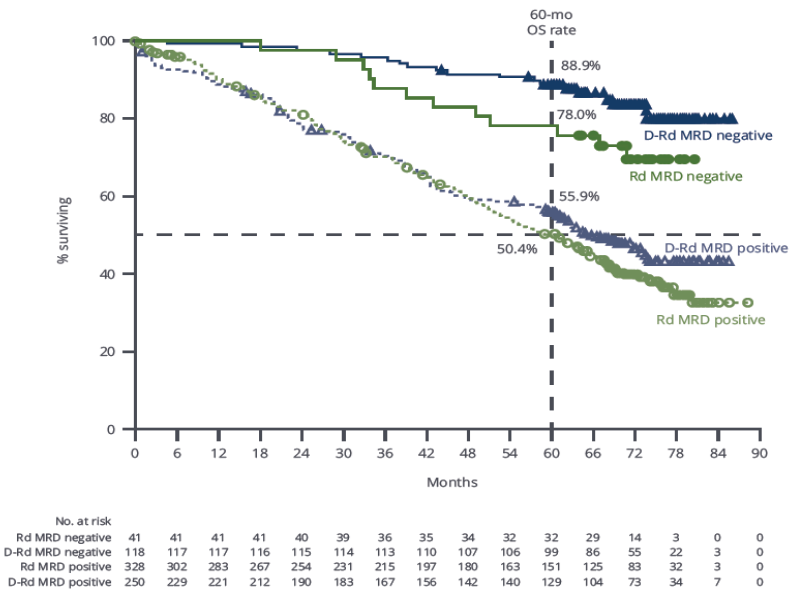
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FIGURE 4: OS by MRD status^a



MAIA

FIGURE 4: OS by MRD status^{a,b}

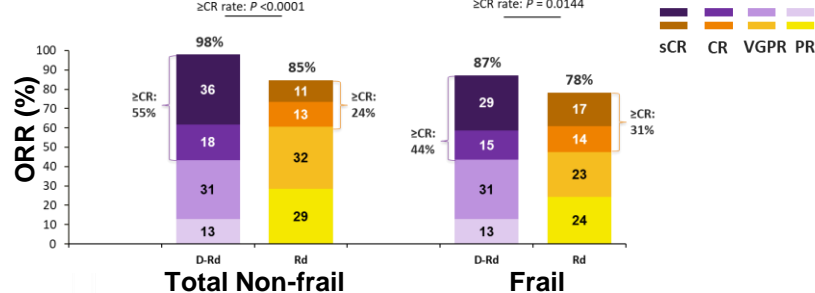


Daratumumab plus lenalidomide and dexamethasone (D-Rd) vs lenalidomide and dexamethasone (Rd) in transplant-ineligible newly diagnosed multiple myeloma (NDMM): frailty subgroup analysis of MAIA

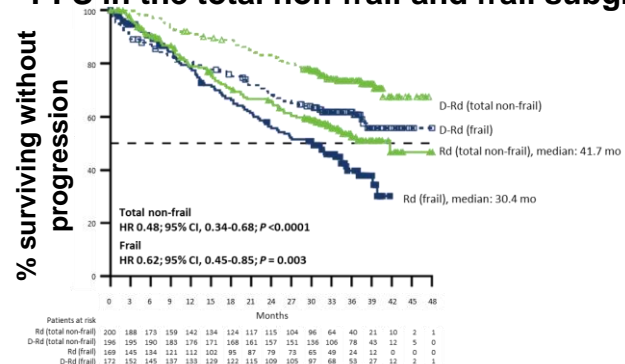
ORR and \geq CR rate

ORR: $P < 0.0001$
 \geq CR rate: $P < 0.0001$

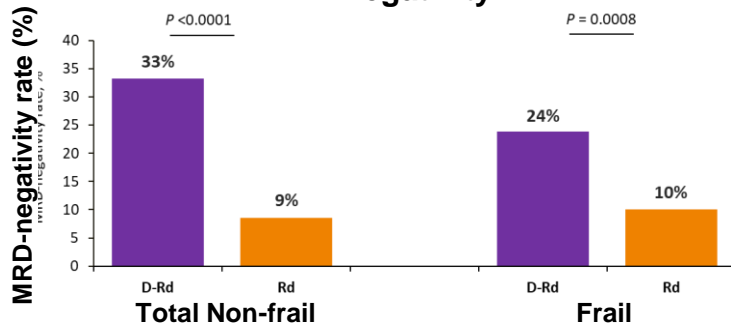
ORR: $P = 0.0265$
 \geq CR rate: $P = 0.0144$



PFS in the total non-frail and frail subgroups



MRD-negativity



Safety

	Total Non-frail (n=395)		Frail (n=334)	
n (%)	D-Rd (n=196)	Rd (n=199)	D-Rd (n=168)	Rd (n=166)
Patients with a TEAE with outcome of death	7 (4)	7 (4)	20 (12)	20 (12)
Patients with a serious TEAE	123 (63)	126 (63)	125 (74)	121 (73)
Treatment discontinuations due to TEAEs	13 (7)	31 (16)	17 (10)	32 (19)
Deaths	26 (13)	46 (23)	57 (34)	57 (34)

Our findings, although based on a retrospective assessment of frailty, support the clinical benefit of D-Rd in patients with transplant-ineligible NDMM enrolled in MAIA, regardless of frailty status

VRD- A SOC for those who do not have access to CD38 ?

SWOG 0777: PFS with RVd versus Rd

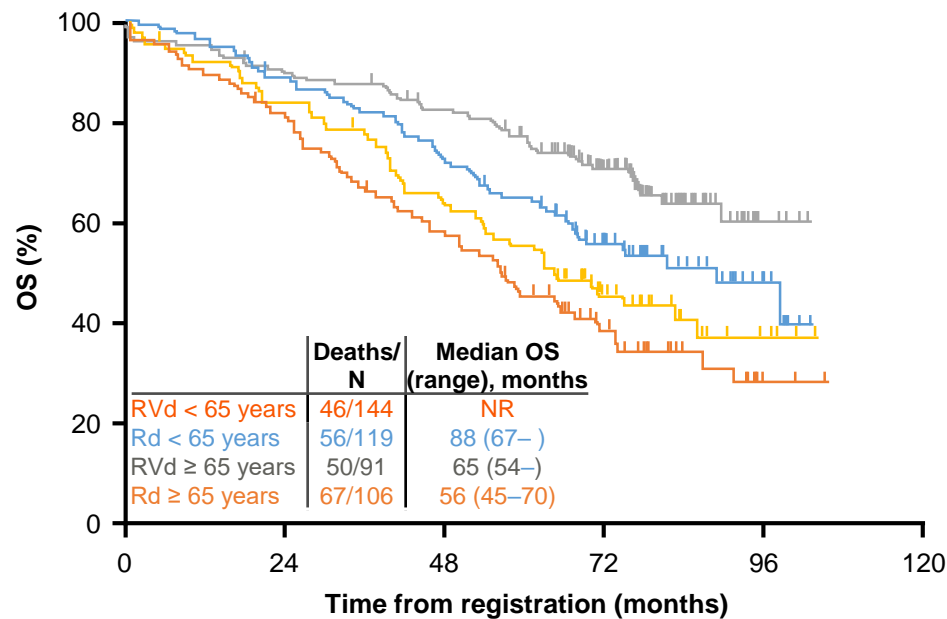
Median PFS (months)¹

Age (years)	RVd	Rd
< 65	48	34
≥ 65	34	24
> 75	34	17

Long term FU²

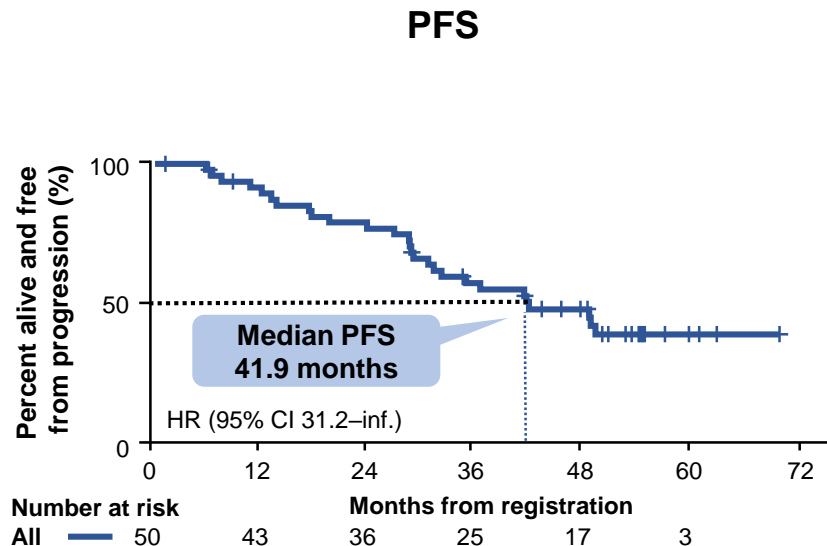
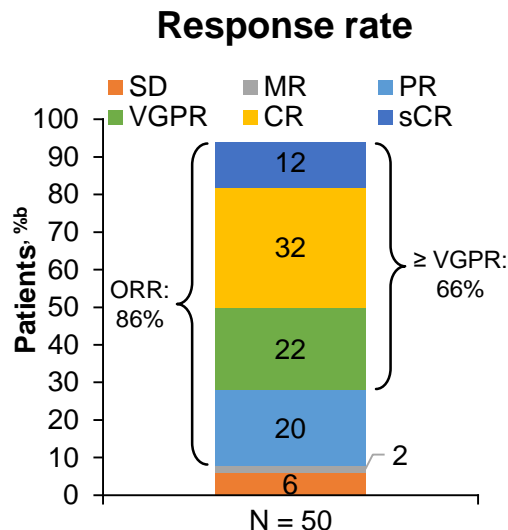
OS in pts ≥ 65 years: HR 0.769, p 0.168

OS by age¹



Modified RVd (RVd-lite) in TNE Patients

Baseline characteristics		N = 50
Median age, years (range)		73 (65–91)
ISS stage at diagnosis, %		
I		38
II		34
III		28
ECOG PS score, %		
0		50
1		36
2		14



≥ CR was 44% (ITT population; N = 50)
 ORR was 86%; ≥ VGPR was 66% for patients evaluable for response^a after 4 cycles (n = 46)
 Median TTR was 1.1 months

Grade 3 or 4 AEs of interest:
 • Peripheral neuropathy (2%), neutropenia (14%)

RVd-lite is Investigational only, not approved.

^a The first 10 patients received bortezomib i.v. for cycle 1 only followed by s.c. administration; subsequent patients received bortezomib s.c.; ^b 6% of patients received < 4 cycles of therapy and were therefore not evaluable.

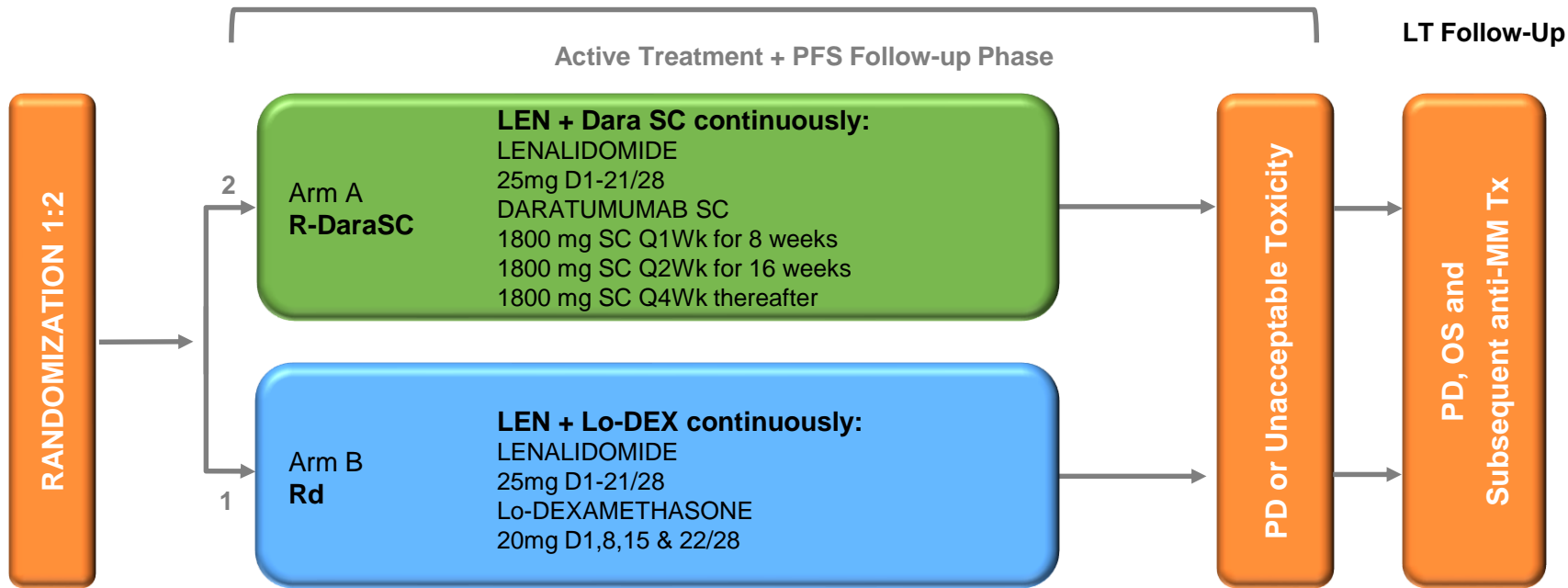
AE, adverse event; CR, complete response; d, dexamethasone; ECOG PS, Eastern Cooperative Oncology Group Performance status; ISS, International Staging System; MR, minimal response; ORR, overall response rate; PFS, progression-free survival; R, lenalidomide; sCR, stringent complete response; TTR, time to response; V, bortezomib; VGPR, very good partial response

O'Donnell EK et al. Br J Haematol 2018;182:222-30.

O'Donnell EK et al. ASH 2019; abstract 3178.

Discontinuation Strategies (1)

IFM 2017-03 for frail NDMM patients - A dexamethasone sparing study



Randomization will be stratified by International Staging System (I vs II vs III) and age (<80 vs ≥80)

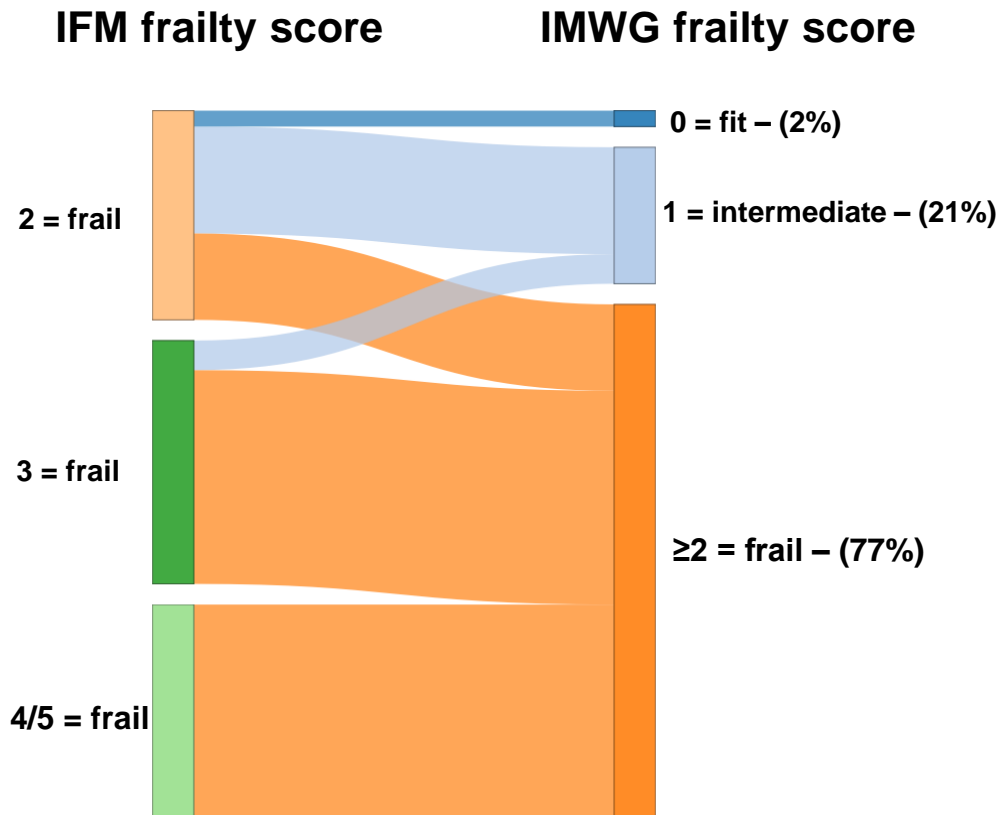
In Arm A low-dose dex (20mg/week) during Cycle 1 and 2 then methylprednisolone (with SC dara)

LT, long term; OS, overall survival; PD, progressive disease;
PFS, progression-free survival; Q, every; SC, subcutaneous; Tx, treatment

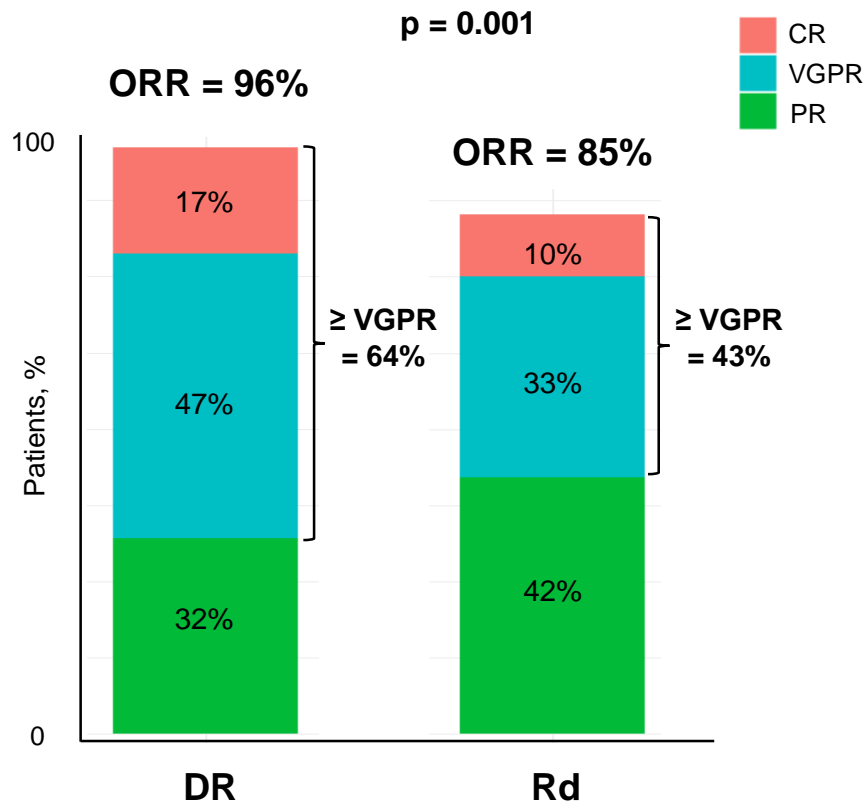
<https://clinicaltrials.gov/ct2/show/NCT03993912> Manier et al ASH 2022

IFM 2017-03 – Patients characteristics

Characteristics	DR group (N=199)	Rd group (N=94)
Median age (range) - yr	81 (68-92)	81 (68-90)
Age category – no. (%)		
65 to < 70 yr	2 (1%)	2 (2%)
70 to < 75 yr	30 (15%)	13 (14%)
75 to < 80 yr	49 (25%)	19 (20%)
≥ 80 yr	118 (59%)	61 (65%)
Sex - no. (%)		
Female	101 (51%)	48 (51%)
Male	98 (49%)	46 (49%)
ECOG – no. (%)		
0	21 (10%)	9 (10%)
1	93 (46%)	47 (50%)
2	86 (44%)	38 (40%)
Charlson – no. (%)		
≤ 1	113 (58%)	57 (61%)
> 1	87 (42%)	37 (39%)
IFM frailty score – no. (%)		
≤ 1	0	0
2	57 (29%)	35 (37%)
3	81 (41%)	26 (28%)
4	44 (22%)	24 (26%)
5	17 (9%)	9 (10%)



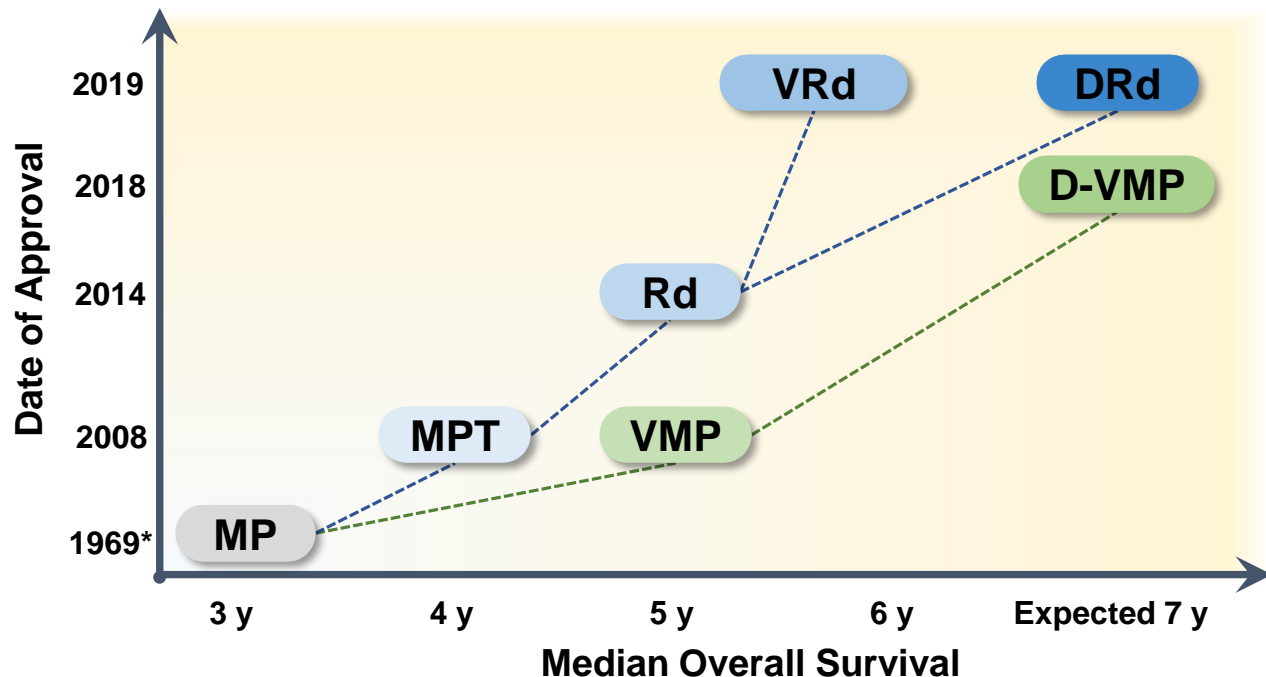
IFM 2017-03 – Best response rate



IFM 2017-03 – Most common grade ≥ 3 AEs

	DR group (n=199) Grade ≥ 3	Rd group (n=94) Grade ≥ 3	P value
All grade ≥ 3 AEs, % (n)	82% (164)	68% (64)	0.010
SAE, % (n)	55% (109)	63% (59)	0.21
Hematologic, % (n)	55% (109)	26% (24)	<0.0001
anemia	11% (21)	2% (2)	0.010
neutropenia	46% (91)	18% (17)	<0.0001
thrombocytopenia	9% (18)	3% (3)	0.089
Infection, % (n)	13% (26)	18% (17)	0.29
non-COVID infections			
pneumonia	3% (5)	7% (7)	0.060
COVID	5% (9)	4% (4)	1
	DR group (n=199)	Rd group (n=94)	P value
Treatment discontinuation for AE, % (n)	14% (27)	16% (15)	0.65

Treatment Landscape and Perspective in Newly Diagnosed Transplant-Ineligible Patients: Regimens, Date of Approval (EMA), and Overall Survival



Treatment perspectives New drugs/strategies/studies

- Dara-/Isa-VRd[†]
- New IMiDs/CELMoDs
- Bispecific antibodies
- CAR-T cells

Some key remaining topics

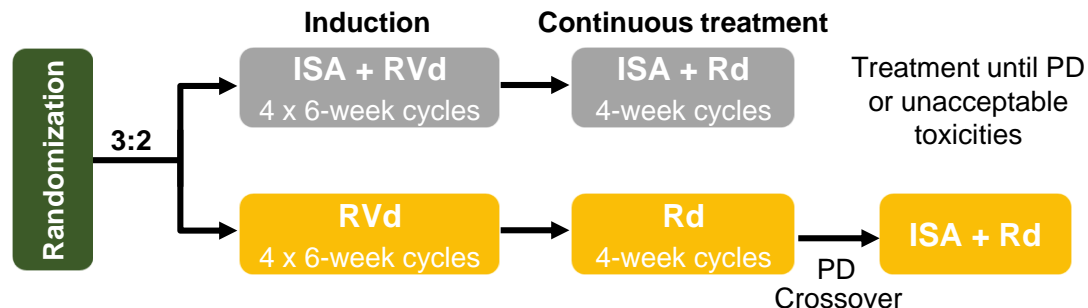
- Infection
- Role of MRD
- Continuous or fixed-duration therapy

*Publication date, not an approval date; [†]NCT03319667 and NCT03652064.

CAR-T, chimeric antigen receptor T cell; Dara, daratumumab; DRd, daratumumab-lenalidomide-dexamethasone; D-VMP, daratumumab plus bortezomib-melphalan-prednisone; EMA, European Medicines Agency; IMiD, immunomodulatory drug; Isa, isatuximab; MP, melphalan-prednisone; MPT, melphalan-prednisone-thalidomide; MRD, minimal residual disease; Rd, lenalidomide-dexamethasone; VMP, bortezomib-melphalan-prednisone; VRd, bortezomib-lenalidomide-dexamethasone.

IMROZ (EFC12522) and CEPHEUS (MMY3019): study designs

IMROZ¹: NDMM patients ineligible for HDT-ASCT (N = 440)



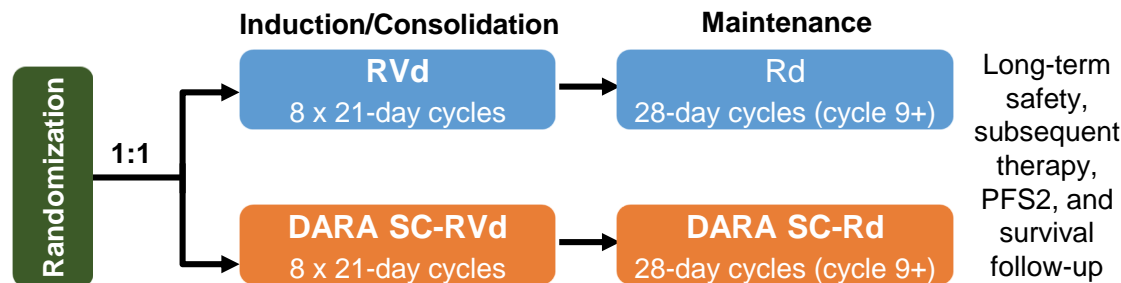
Primary endpoint:

- PFS (40 months vs 62.5 months)

Secondary endpoints:

- OS, PFS2
- ORR, CR
- Safety, QoL
- MRD

CEPHEUS²: phase 3 study of DARA SC-RVd vs RVd in transplant-ineligible FLMM (N = 360)



Primary endpoint:

- MRD

Secondary endpoints:

- PFS, OS
- Durable MRD
- ORR, VGPR, CR
- PFS2

No cross-trial comparison is intended with this data.

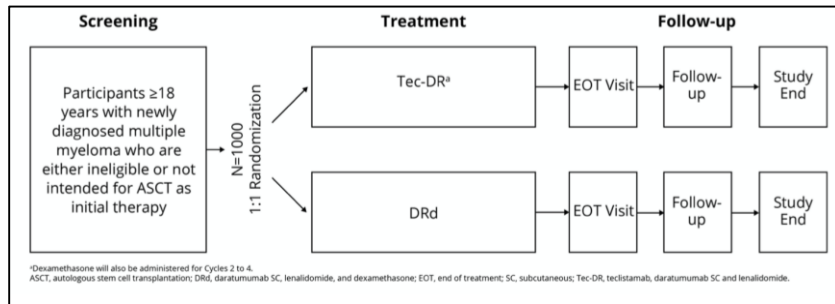
CR, complete response; d, dexamethasone; HDT-ASCT, high-dose therapy and autologous stem cell transplantation; ISA, isatuximab; MRD, minimal residual disease; ORR, overall response rate; OS, overall survival; PFS, progression-free survival; QoL, quality of life; R, lenalidomide; SC subcutaneous; VGPR, very good partial response; V, bortezomib

1. Available from: <https://clinicaltrials.gov/ct2/show/NCT03319667>. Accessed June 2019.

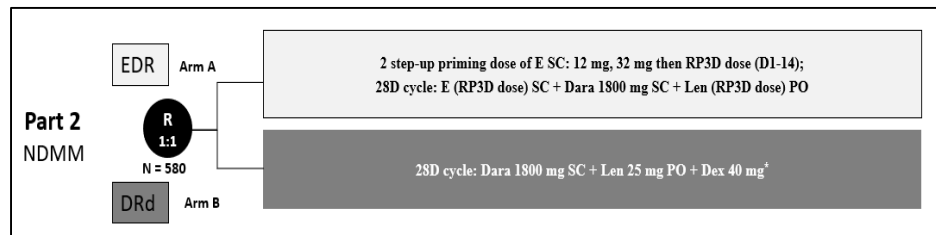
2. Available from: <https://clinicaltrials.gov/ct2/show/NCT03652064>. Accessed June 2019.

Frontline immunotherapies for TNE MM Patients

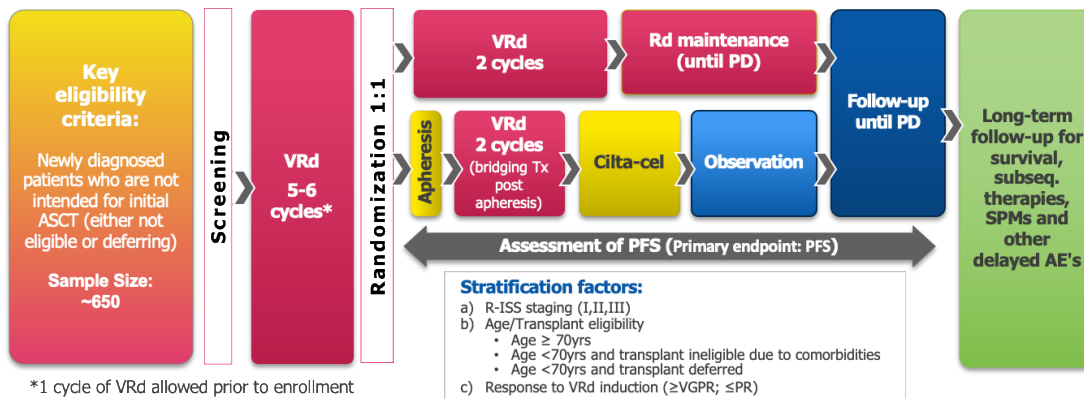
MajesTEC-7



MagnetisMM-6



CARTITUDE-5



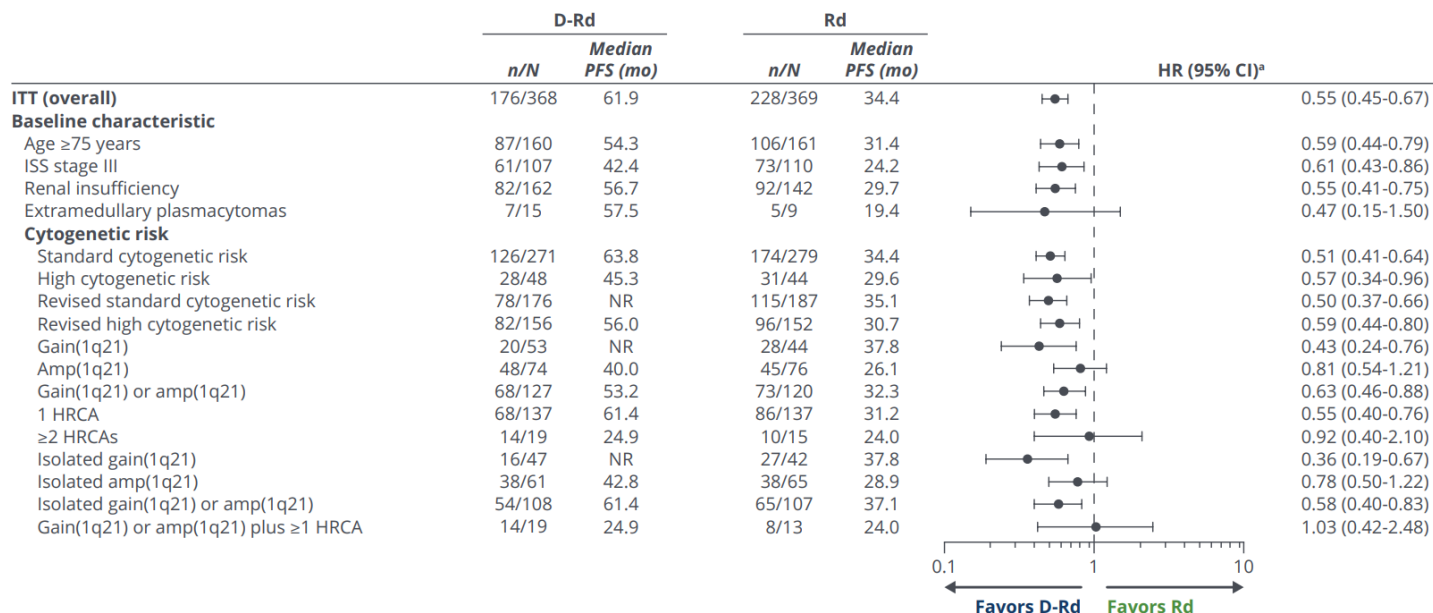
Conclusion

- CD38 Abs- containing regimens are now SOC for elderly patients with NDMM.
- DRd is currently the most effective regimen and has an acceptable safety profile including for frail patients
- VRD remains a SOC if there is no access to CD38 Abs.
- Excluding patients from receiving CD38 Abs-based immunotherapy because of age and/or frailty is questionable because CD38 Abs are effective, manageable, and improve QoL.
- Planned/Ongoing studies investigating CART and Bispecific Abs

MAIA - Subgroup Analysis of PFS

- A total of 737 patients were randomly assigned to either D-Rd (n = 368) or Rd (n = 369) and were included in the intent-to-treat (ITT) population
- Most subgroups had a similar number of patients in each treatment arm
- After a median follow-up of 64.5 months, PFS favored D-Rd versus Rd in most subgroups (**Figure 1**)

FIGURE 1: Subgroup analysis of PFS in the ITT population

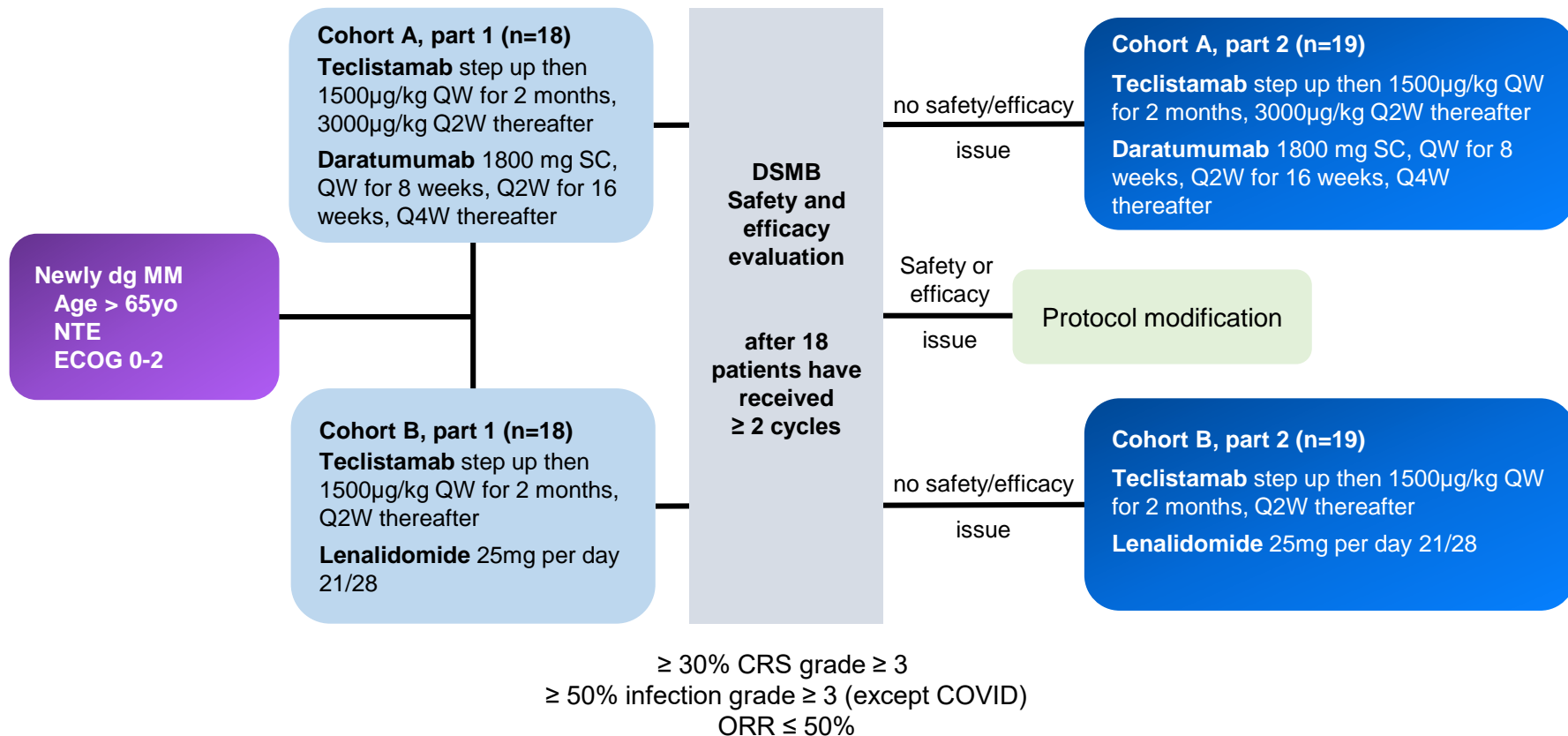


PFS, progression-free survival; ITT, intent-to-treat; D-Rd, daratumumab plus lenalidomide/dexamethasone; Rd, lenalidomide/dexamethasone; HR, hazard ratio; CI, confidence interval; ISS, International Staging System; NR, not reached; HRCA, high-risk cytogenetic abnormality.

^aHR and 95% CI from a Cox proportional hazards model with treatment as the sole explanatory variable. HR <1 indicates an advantage for D-Rd.

IFM 2021-01 – study design

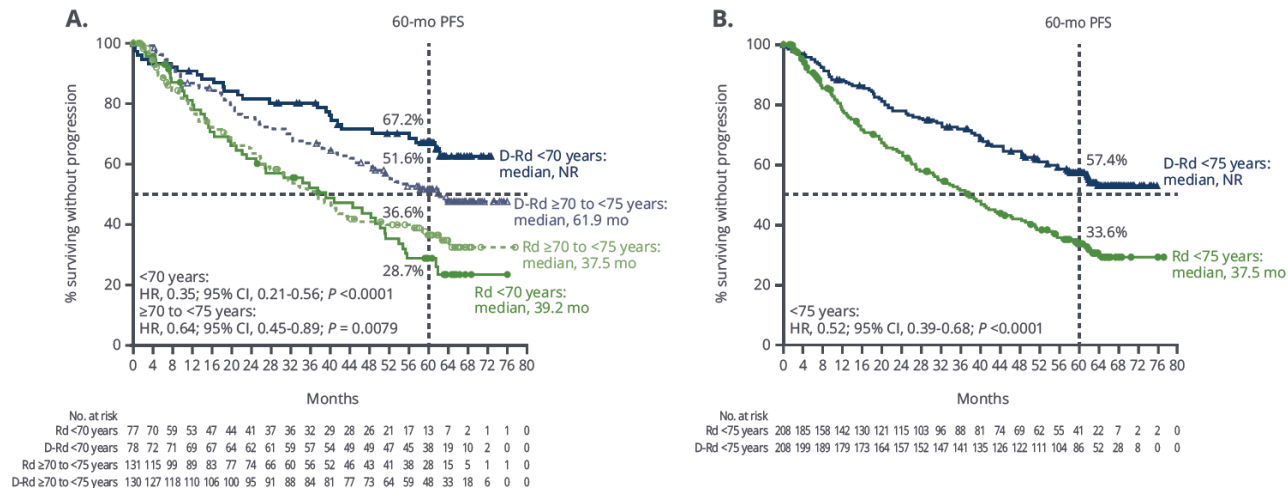
Phase 2



PFS in MAIA, patients < 70 y

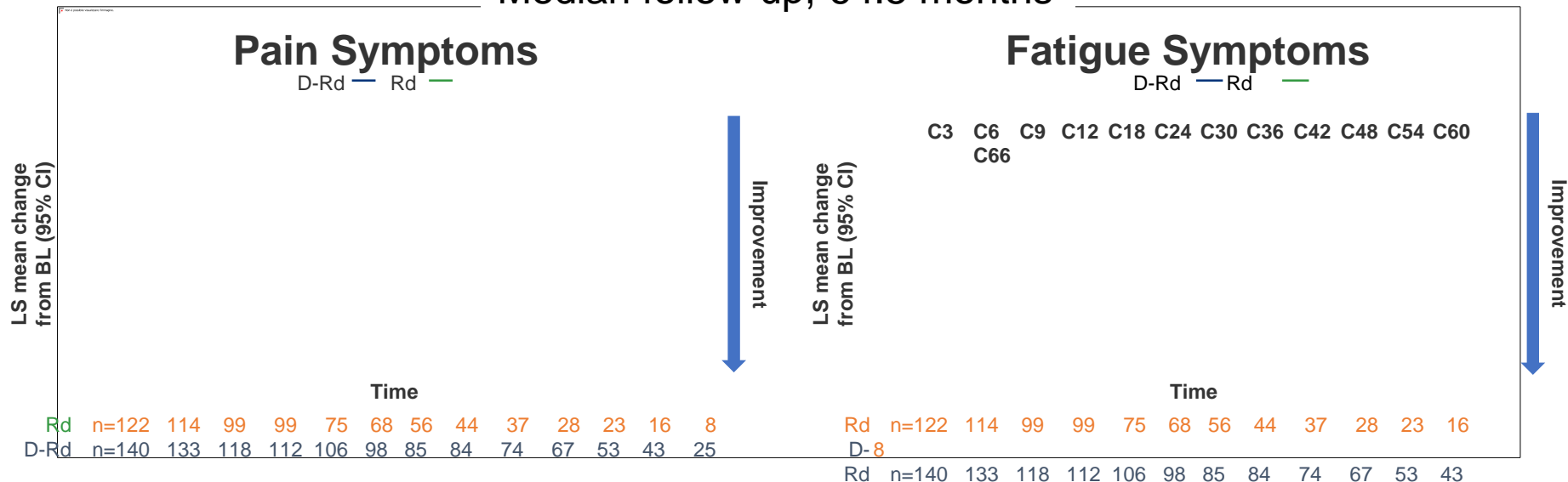
- The PFS benefit of D-Rd versus Rd was most pronounced in the subgroup of patients aged <70 years

FIGURE 1: PFS with D-Rd and Rd for (A) subgroups of patients aged <70 years and ≥70 to <75 years and (B) the overall subgroup of patients aged <75 years



MAIA: LS Mean Change From Baseline in EORTC QLQ-C30 Scores Over Time in Frail TNE Patients With NDMM

Median follow-up, 64.5 months



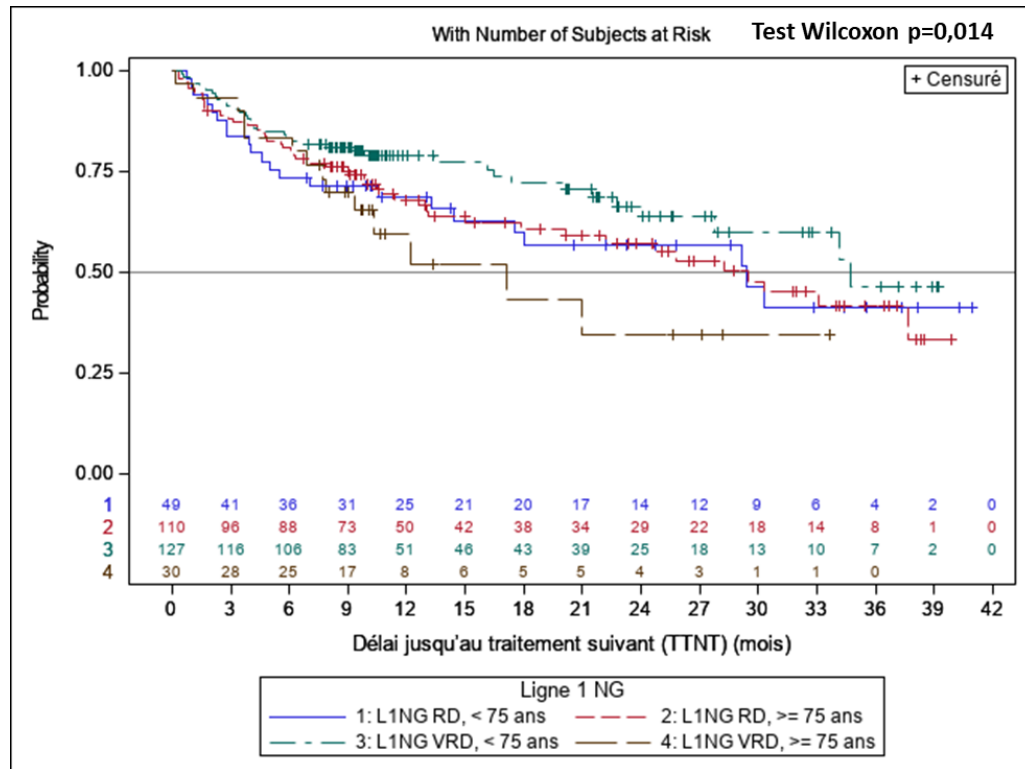
More patients remained on D-Rd vs Rd after cycle 42

- Patients treated with D-Rd showed large reductions in pain from baseline (≥ 20 -point change)
- Pain symptoms improved more with D-Rd vs Rd

- Fatigue moderately improved with D-Rd and Rd
- The triplet regimen D-Rd did not increase fatigue

VRd or Rd in L1 – TNT according to age

RWE – IFM real life registry



TNT median, months

- Rd
 - 29.4 mo. [14,4-ND] < 75 y (n=50)
 - 29.5 mo. [20,1-ND] ≥ 75 y (n=110)
- VRd
 - 34.7 mo. [27,8 ND] <75 y (n=127)
 - 17.1 mo. [9,3-ND] ≥ 75 y (n=30)