Health-Related Quality of Life in Transplant-Eligible Patients With Newly Diagnosed Multiple Myeloma: Data From the PERSEUS Trial of Subcutaneous Daratumumab Combined With Bortezomib, Lenalidomide, and Dexamethasone

Pieter Sonneveld[1], Meletios A Dimopoulos[2], Mario Boccadoro[3], Hang Quach[4], P Joy Ho[5], Meral Beksac[6], Cyrille Hulin[7], Elisabetta Antonioli[8], Xavier Leleu[9], Silvia Mangiacavalli[10], Aurore Perrot[11], Michele Cavo[12], Angelo Belotti[13], Annemiek Broijl[1], Francesca Gay[3], Roberto Mina[14], Inger S Nijhof[15], Niels WCJ van de Donk[16], Eirini Katodritou[17], Fredrik Schjesvold[18], Anna Sureda Balari[19], Laura Rosiñol[20], Michel Delforge[21], Wilfried Roeloffzen[22], Christoph Driessen[23], Annette Vangsted[24], Hermann Einsele[25], Andrew Spencer[26], Roman Hajek[27], Artur Jurczyszyn[28], Sarah Lonergan[1], Yanfang Liu[29], Jianping Wang[29], Emilie MJ van Brummelen[30], Veronique Vanquickelberghe[31], Anna Sitthi-Amorn[32], Carla J de Boer[30], Robin L Carson[32], Eva G Katz[29], Katharine S Gries[29], Jiaqi Song[33], Kai Fai Ho[34], Paula Rodríguez-Otero[35], Joan Bladé Creixenti[36], Philippe Moreau[37]

[1]Erasmus MC Cancer Institute, Rotterdam, Netherlands; [2]National and Kapodistrian University of Athens, Athens, Greece; [3]University of Torino, Torino, Italy; [4]University of Melbourne, St. Vincent's Hospital, Melbourne, Australia; [5]Royal Prince Alfred Hospital, Sydney, Australia; [6]Ankara University, Ankara, Turkey; [7]Hôpital Haut Lévêque, University Hospital, Pessac, France; [8]Careggi Hospital and University of Florence, Firenze, Italy; [9]CHU Poitiers, Poitiers, France; [10]Fondazione IRCCS Policlinico San Matteo, University of Pavia, Pavia, Italy; [11]Centre Hospitalier Université de Toulouse, Oncopole, Toulouse, France; [12]IRCCS Azienda Ospedaliero-Universitaria di Bologna, Seràgnoli Institute of Hematology, Bologna University School of Medicine, Bologna, Italy; [13]ASST Spedali Civili di Brescia, Brescia, Italy; [14]University of Torino and Azienda Ospedaliero-Universitaria (A.O.U.) Città della Salute e della Scienza di Torino, Torino, Italy; [15]St Antonius Hospital Nieuwegein, Netherlands; [16]Amsterdam University Medical Center, Vrije Universiteit Amsterdam, Amsterdam, Netherlands; [17]Theagenion Cancer Hospital, Thessaloniki, Greece; [18]Oslo Myeloma Center, Department of Hematology, Oslo University Hospital, Oslo, Norway; [19]Institut Català d'Oncologia - Hospitalet, IDIBELL, University of Barcelona, Barcelona, Spain; [20]Hospital Clínic de Barcelona, IDIBAPS, Barcelona, Spain; [21]University of Leuven, Leuven, Belgium; [22]University Medical Center Groningen, Groningen, Netherlands; [23]Kantonsspital St. Gallen, St. Gallen, Switzerland; [24]Rigshospitalet, Copenhagen, Denmark; [25]Universitätsklinikum Würzburg, Medizinische Klinik und Poliklinik II, Würzburg, Germany; [26]Alfred Health-Monash University, Melbourne, Australia; [27]University Hospital Ostrava and Faculty of Medicine, University of Ostrava, Ostrava, Czech Republic; [28]Jagiellonian University Medical College, Kraków, Poland; [29]Janssen Research & Development, Raritan, NJ, USA; [30]Janssen Research & Development, Leiden, Netherlands; [31]Janssen Research & Development, Beerse, Belgium; [32]Janssen Research & Development, Wayne, PA, USA; [33]Janssen Research & Development, Shanghai, China; [34]STAT-TU, Inc, Toronto, ON, Canada; [35]Cancer Center Clínica Universidad de Navarra, Cima, Pamplona, Spain; [36]Hospital Clinic Barcelona, Barcelona, Spain; [37]University Hospital Hôtel-Dieu, Nantes, France

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

This material is provided for scientific purposes on Janssen Science, and is not for promotional use

https://www.congresshub.com/ASH2024/Oncology/Daratumumab/Sonneveld

The QR code is intended to provide scientific information for individual reference, and the information should not be altered or reproduced in any way.

PERSEUS: Introduction

- In PERSEUS (NCT03710603), patients with TE NDMM received DVRd induction/consolidation therapy and DR maintenance therapy (DVRd-DR) or VRd induction/consolidation therapy and R maintenance therapy alone (VRd-R)[1]
  - In the primary analysis (47.5-month median follow-up), PFS (primary endpoint) was significantly improved with DVRd-DR vs VRd-R (HR, 0.42 [95% CI, 0.30–0.59]; *P*<0.001)
    - Median PFS was not reached in either arm; 48-month rates were 84.3% vs 67.7%, respectively
  - Addition of Dara was well tolerated with manageable side effects
- Maintaining HRQoL is also an important treatment goal for patients with MM[2]
- We report PROs in PERSEUS

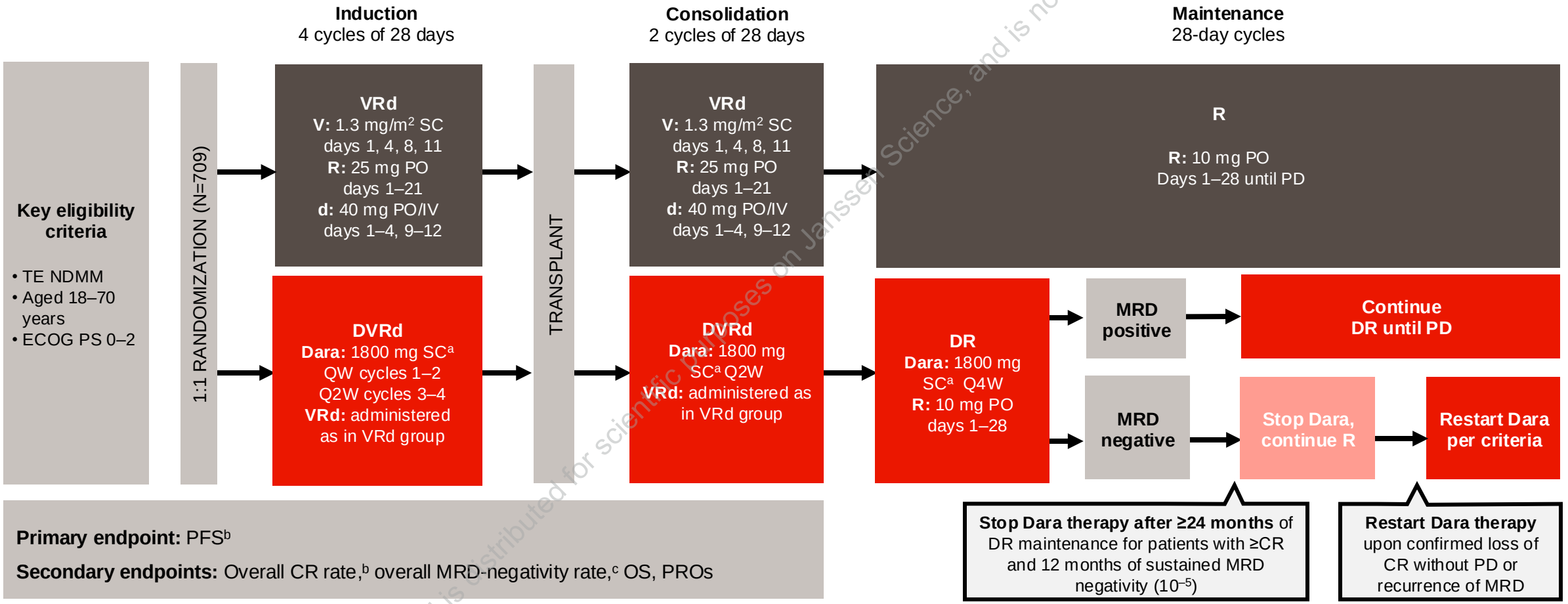
This material is distributed for scientific purposes on Janssen Science, and is not for promotional use

Dara, daratumumab; DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; HR, hazard ratio; HRQoL, health-related quality of life; MM, multiple myeloma; NDMM, newly diagnosed multiple myeloma; PFS, progression-free survival; PRO, patient-reported outcome; R, lenalidomide; TE, transplant eligible; VRd, bortezomib, lenalidomide, and dexamethasone.

1. Sonneveld P, et al. *N Engl J Med* 2024;390:301-13. 2. Snowden JA. *Br J Haematol* 2011;154:76-103.

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

PERSEUS: Study Design[1]



[a]Co-formulated with rHuPH20 (2000 U/mL; ENHANZE® drug delivery technology, Halozyme, Inc., San Diego, CA, USA). [b]Response and disease progression were assessed using a computerized algorithm based on IMWG response criteria. [c]MRD was assessed using the clonoSEQ assay (v.2.0; Adaptive Biotechnologies, Seattle, WA, USA) in patients with ≥VGPR post-consolidation and at the time of suspected ≥CR. Overall, the MRD-negativity rate was defined as the proportion of patients who achieved both MRD negativity (10^{-5} threshold) and ≥CR at any time. CR, complete response; d, dexamethasone; Dara, daratumumab; DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; ECOG PS, Eastern Cooperative Oncology Group performance status; IV, intravenous; MRD, minimal residual disease; NDMM, newly diagnosed multiple myeloma; OS, overall survival, PD, progressive disease; PFS, progression-free survival; PO, orally; PRO, patient-reported outcome; Q2W, every other week; Q4W, every 4 weeks; QW, weekly; R, lenalidomide; SC, subcutaneous; TE, transplant eligible; V, bortezomib; VGPR, very good partial response; VRd, bortezomib, lenalidomide, and dexamethasone. 1. Sonneveld P, et al. *N Engl J Med* 2024;390:301-13.

The material is distributed for scientific purposes on Janssen Science, and is not for promotional use

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

PERSEUS: PRO Assessments

- PROs were assessed using the following instruments:
  - EORTC QLQ-C30
  - EORTC QLQ-MY20
  - EQ-5D-5L
- Higher scores indicate improved overall HRQoL and worsened disease symptoms

This material is distributed for scientific purposes on Janssen Science, and is not for promotional use

EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer quality of life questionnaire core 30; EORTC QLQ-MY20, European Organisation for Research and Treatment of Cancer quality of life questionnaire multiple myeloma module 20; EQ-5D-5L, EuroQol 5-Dimension 5-Level; HRQoL, health-related quality of life; PRO, patient-reported outcome.

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

PERSEUS: Baseline PRO Scores Were Well Balanced

- In the ITT population, 355 patients were randomized to DVRd-DR and 354 to VRd-R; baseline characteristics were well balanced[1]
- Baseline PRO scores were well balanced
- Median follow-up was 47.5 months (range, 0–54.4)
- At maintenance cycle 34, 254 patients in the DVRd-DR arm and 164 in the VRd-R arm remained on study

	DVRd-DR (n=355)	VRd-R (n=354)
EORTC QLQ-C30, mean (SD)[a]		
GHS	64.2 (23.1)	65.2 (23.7)
Physical functioning	74.2 (27.1)	74.8 (25.6)
Pain	32.8 (30.4)	33.5 (30.6)
Fatigue	31.7 (24.7)	33.5 (25.4)
EQ-5D-5L, mean (SD)[a]		
VAS	69.3 (21.6)	69.0 (22.3)
EORTC QLQ-MY20, mean (SD)[a]		
Disease symptoms	23.4 (19.6)	25.9 (22.1)

[a]Range scores was 0–100 (after linear transformation for EORTC scales).
DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer quality of life questionnaire core 30; EORTC QLQ-MY20, European Organisation for Research and Treatment of Cancer quality of life questionnaire multiple myeloma module 20; EQ-5D-5L, EuroQol 5-Dimension 5-Level; GHS, global health status; ITT, intent to treat; PRO, patient-reported outcome; QoL, quality of life; R, lenalidomide; VAS, visual analogue scale; VRd, bortezomib, lenalidomide, and dexamethasone.
1. Sonneveld P, et al. *N Engl J Med* 2024;390:301-13.

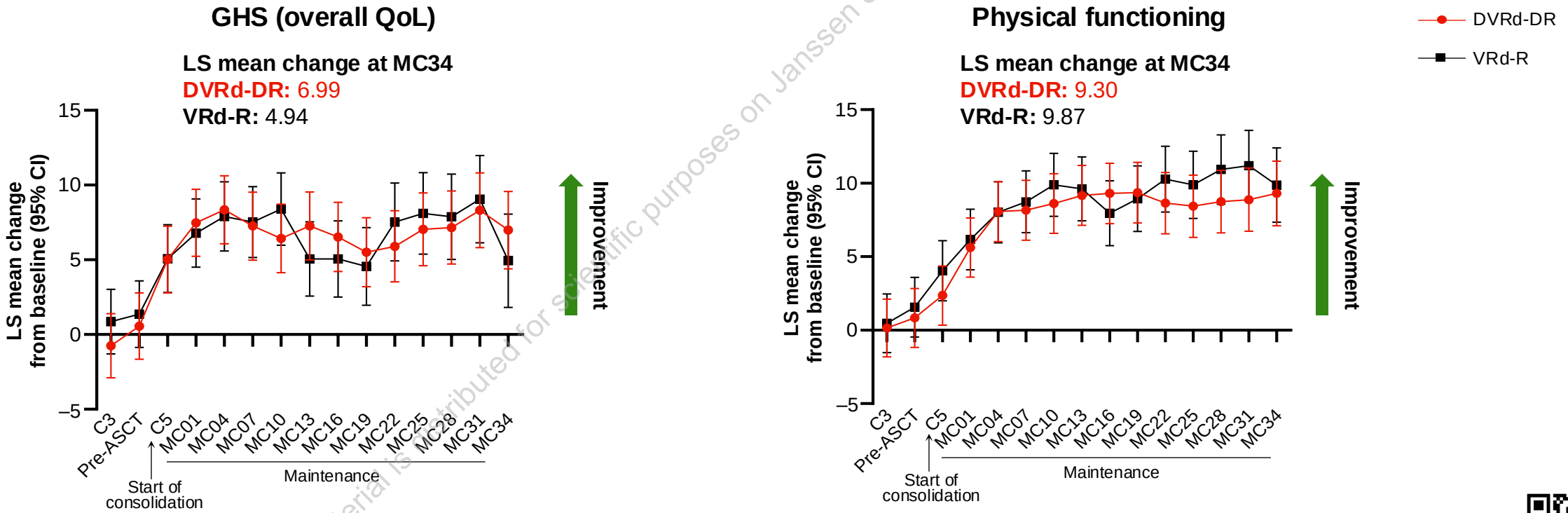
This material is distributed for scientific purposes on Janssen Science, and is not for promotional use

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

PERSEUS: Improvements in HRQoL Were Sustained and Comparable Between Arms

- LS mean changes from baseline in PRO scores showed improvements for EORTC QLQ-C30 GHS and physical functioning that were apparent by start of maintenance and sustained through MC34

LS mean change in scores from baseline over time



ASCT, autologous stem cell transplant; C, cycle; DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer quality of life questionnaire core 30; GHS, global health status; HRQoL, health-related quality of life; LS, least squares; MC, maintenance cycle; PRO, patient-reported outcome; QoL, quality of life; R, lenalidomide; VRd, bortezomib, lenalidomide, and dexamethasone.

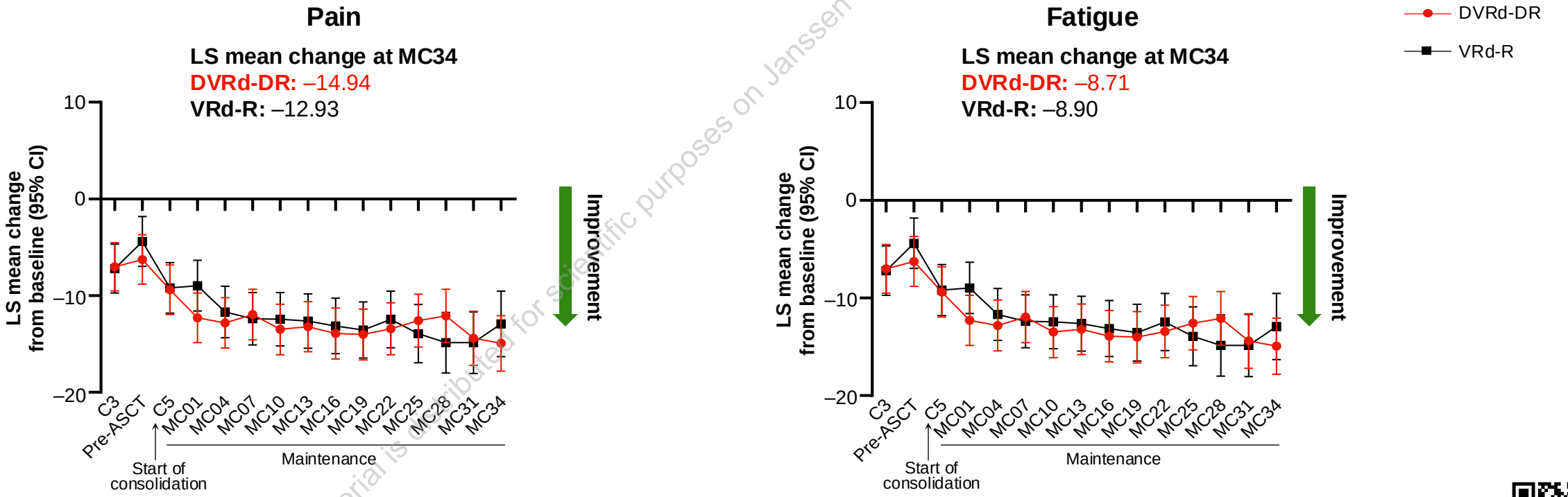
This material is distributed for scientific purposes on Janssen Science and is not for promotional use

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

PERSEUS: Improvements in HRQoL Were Sustained and Comparable Between Arms

- LS mean changes from baseline in PRO scores showed improvements for EORTC QLQ-C30 pain and fatigue that were apparent by start of maintenance and sustained through MC34

LS mean change in scores from baseline over time



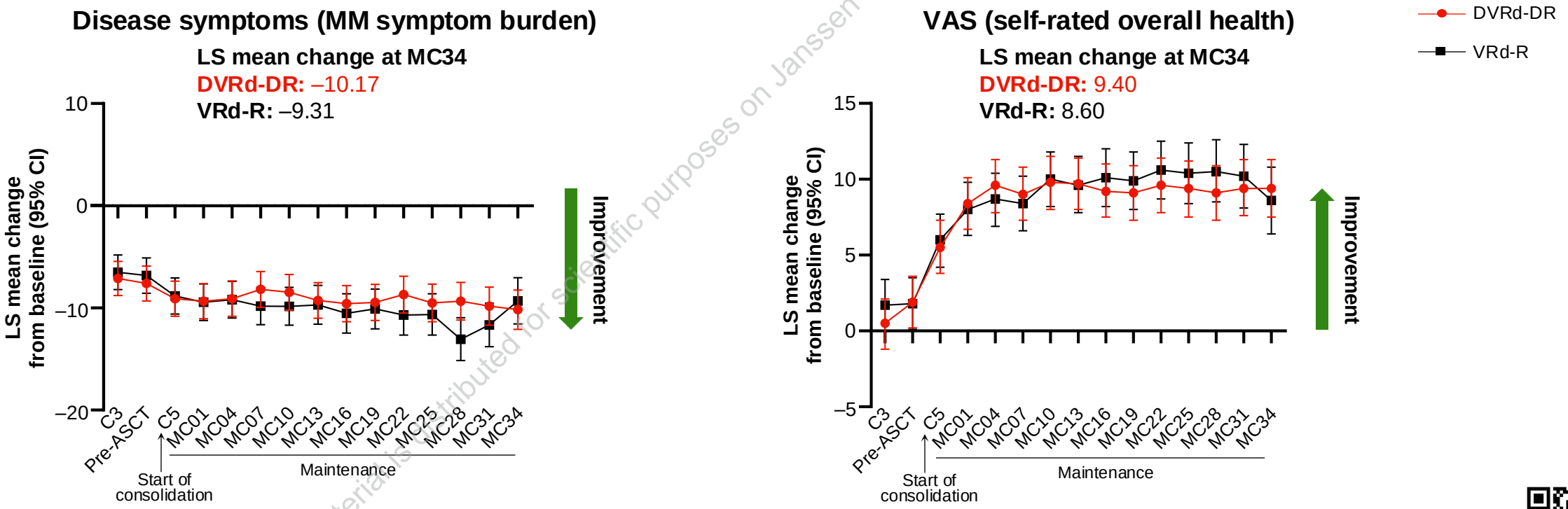
ASCT, autologous stem cell transplant; C, cycle; DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer quality of life questionnaire core 30; HRQoL, health-related quality of life; LS, least squares; MC, maintenance cycle; PRO, patient-reported outcome; QoL, quality of life; R, lenalidomide; VRd, bortezomib, lenalidomide, and dexamethasone.

This material is distributed for scientific purposes on Janssen Science, and is not for promotional use

PERSEUS: Improvements in HRQoL Were Sustained and Comparable Between Arms

- LS mean changes from baseline in PRO scores showed improvements for EORTC QLQ-MY20 disease symptoms and EQ-5D-5L VAS that were apparent by start of maintenance and sustained through MC34

LS mean change in scores from baseline over time



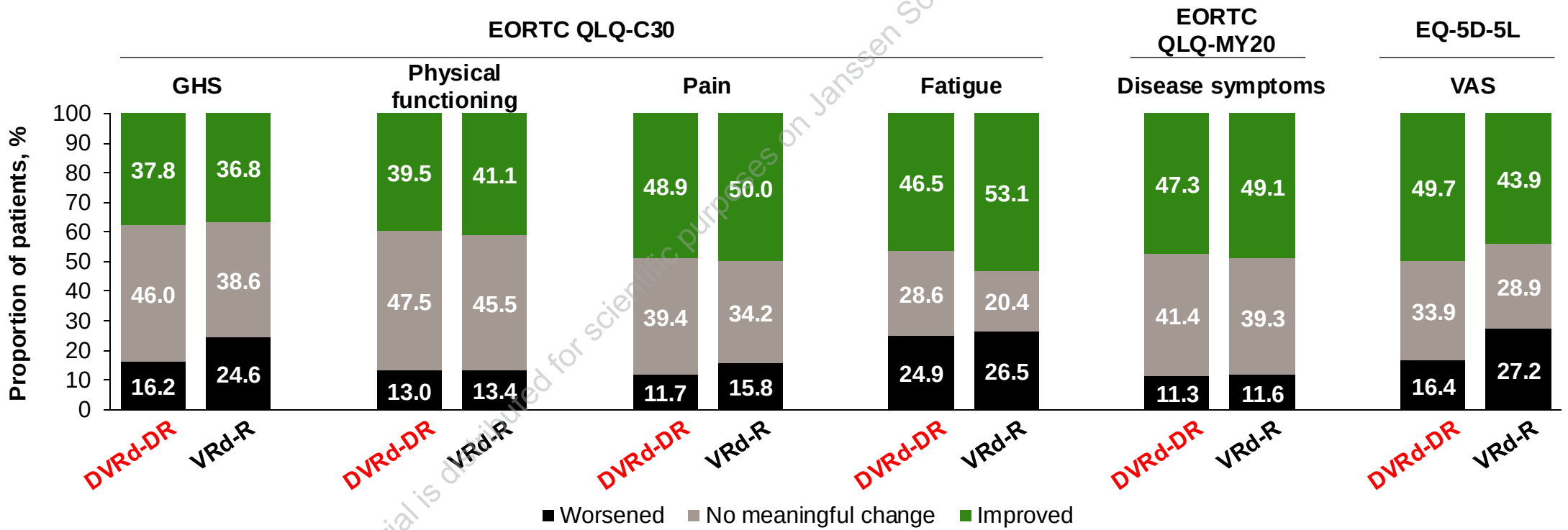
ASCT, autologous stem cell transplant; C, cycle; DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; EORTC QLQ-MY20, European Organisation for Research and Treatment of Cancer quality of life questionnaire multiple myeloma module 20; EQ-5D-5L, EuroQol 5-Dimension 5-Level; HRQoL, health-related quality of life; LS, least squares; MC, maintenance cycle; MM, multiple myeloma; PRO, patient-reported outcome; QoL, quality of life; VAS, visual analogue scale; R, lenalidomide; VRd, bortezomib, lenalidomide, and dexamethasone.

This material is distributed for scientific purposes on Janssen Science, and is not for promotional use

PERSEUS: Proportions With Clinically Meaningful Improvements in PROs Comparable Between Arms

- Similar proportions of each arm reported clinically meaningful[a] improvement and worsening across PRO instruments

Proportions of patients with clinically meaningful changes from baseline at MC34



[a]Clinically meaningful changes were defined as ≥10-point changes on EORTC scales and 7 points for EQ-5D-5L VAS.[1-3] DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer quality of life questionnaire core 30; EORTC QLQ-MY20, European Organisation for Research and Treatment of Cancer quality of life questionnaire multiple myeloma module 20; EQ-5D-5L, EuroQol 5-Dimension 5-Level; GHS, global health status; MC, maintenance cycle; PRO, patient-reported outcome; R, lenalidomide; VAS, visual analogue scale; VRd, bortezomib, lenalidomide, and dexamethasone. 1. Kvam AK, et al. *Eur J Haematol* 2011;87:330-7. 2. Sully K, et al. *Eur J Haematol* 2019;103:500-9. 3. Pickard AS, et al. *Health Qual Life Outcomes*. 2007;5:70.

This material is distributed for scientific purposes on Janssen Science, and is not for promotional use

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA

PERSEUS: Conclusions

- Quadruplet therapy with DVRd plus DR maintenance provides durable improvements in overall HRQoL, MM symptoms, and functioning; these HRQoL data are consistent with the efficacy and safety of this regimen
- HRQoL improvements are comparable to those seen with VRd-R, indicating no detriment to HRQoL with the addition of Dara during induction, consolidation, and maintenance phases
- In both treatment arms, GHS, physical functioning, and pain and fatigue symptoms improved through maintenance, and the PRO benefits were sustained over time

Together with favorable efficacy data, these HRQoL data support DVRd-DR as a new standard of care for TE NDMM

This material is distributed for scientific purposes of Janssen Science, and is not for promotional use

Dara, daratumumab; DR, daratumumab and lenalidomide; DVRd, daratumumab, bortezomib, lenalidomide, and dexamethasone; GHS, global health status; HRQoL, health-related quality of life; MM, multiple myeloma; NDMM, newly diagnosed multiple myeloma; PRO, patient-reported outcome; R, lenalidomide; TE, transplant eligible; VRd, bortezomib, lenalidomide, and dexamethasone.

Presented by P Sonneveld at the 66th American Society of Hematology (ASH) Annual Meeting; December 7–10, 2024; San Diego, CA, USA