

Real-World Evidence of First-Line Therapy in Transplant Eligible Multiple Myeloma Patients

Insights from the CIMMA study

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Conclusions
Our findings indicate that VRd and VTd are the prevalent regimens in NDMM TE patients, highlighting the need to incorporate innovations such as quadruplet and maintenance therapies (e.g., PERSEUS: DVRd+DR) to enhance survival and quality of life in MM patients. Notably, cardiovascular comorbidities are common among these patients, including younger individuals, underscoring the importance of careful regimen selection. Cardiovascular comorbidities were more prevalent in patients receiving VRd, and both regimens exhibited high rates of hematological toxicity. Sustained RWE efforts, bolstered by advanced NLP and ML methodologies that extract data from EHRs, will ensure treatment strategies remain both effective and adaptable to the evolving landscape of MM care. These methodologies provide crucial insights into treatment patterns and outcomes in this ever-changing environment.

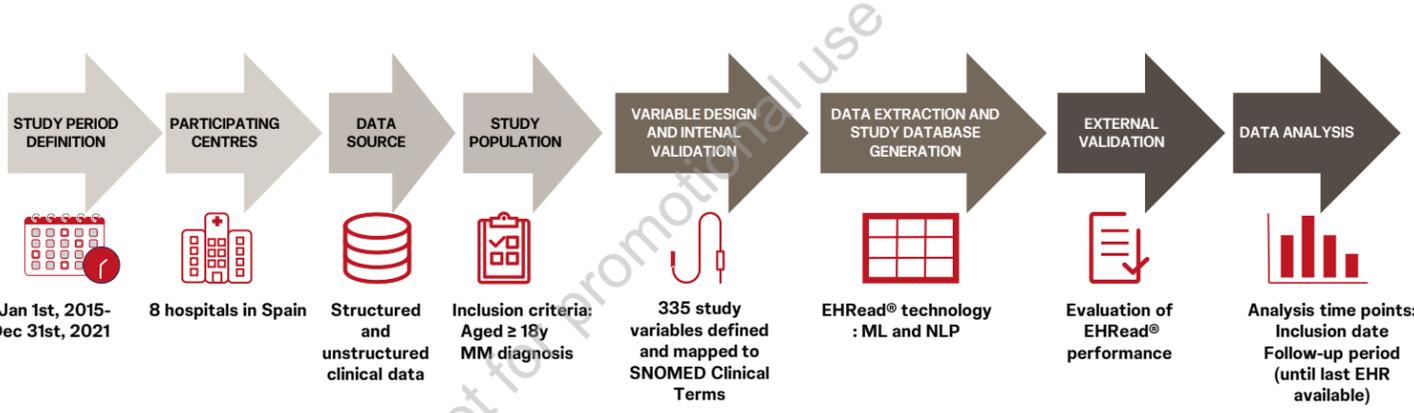
Key Takeaway
• Although VRd and VTd were classically effective for NDMM TE patients, novel strategies like PERSEUS have recently significantly improved clinical outcomes.
• Among the 226 NDMM TE patients identified between 2015 and 2021, VRd and VTd regimens were the most common registered treatments, with similar efficacy and safety profiles.
• Our results emphasize the benefits of the use of NLP and ML to analyze EHRs, uncovering critical insights into NDMM TE treatment patterns in Spain.

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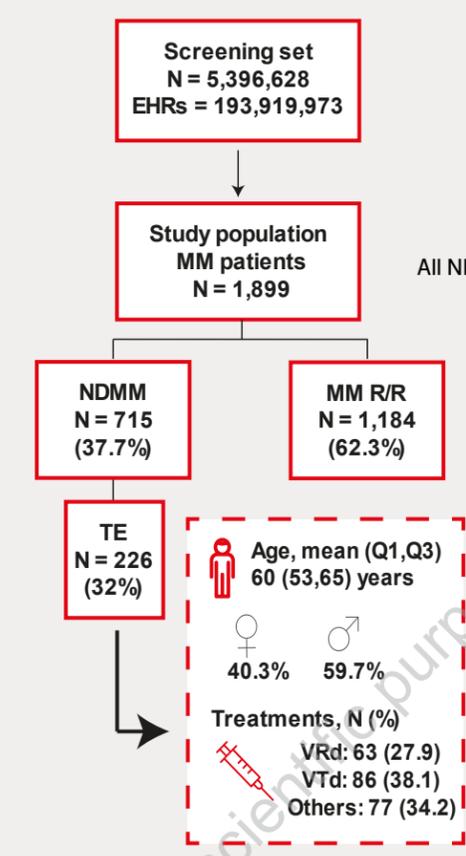
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Introduction
The CIMMA study is an initiative to address the challenges of real-world evidence in the rapidly evolving field of monoclonal gammopathies, focusing in demographic and clinical characteristics, treatment patterns, effectiveness outcomes and potential adverse events variables. Front line treatment in newly diagnosed multiple myeloma (NDMM) transplantation eligible (TE) patients remain challenging due to its impact on patient's outcomes. This substudy aims to assess the most common treatment regimens for these patients employing natural language processing (NLP) and machine learning (ML) techniques to extract clinical information from patients' electronic health records (EHRs).

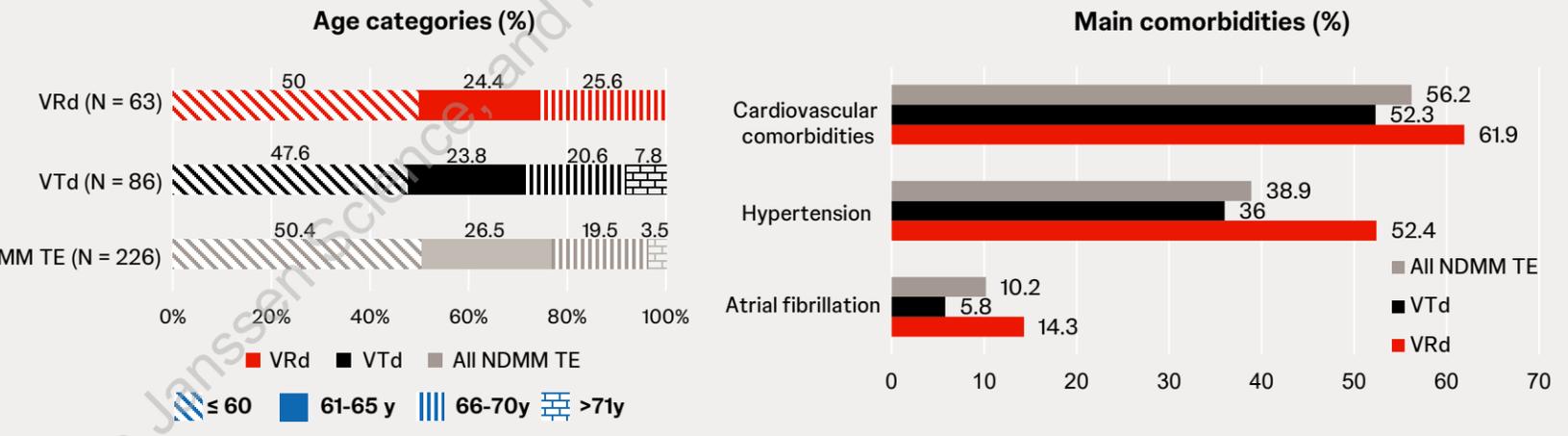
Methods
Multicenter, retrospective, and observational study based on the secondary use of data included in the EHRs of adult NDMM TE patients from the following centers: H. La Paz, H. La Fe, H. Puerta de Hierro, H. Son Espases, H. Infanta Sofía, H. Infanta Leonor, HM hospitals and H. Fundación Alcorcón.



1. Study population Flow Chart



2. NDMM TE patients demographics and clinical characteristics at diagnosis



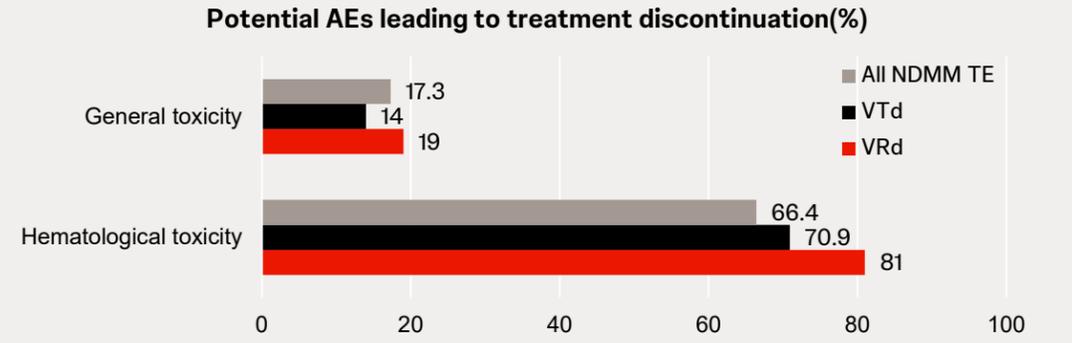
	NDMM TE		
	VRd (N=63)	VTd (N=86)	All NDMM TE (N=226)
ECOG, N (%)	25 (39.7)	22 (25.6)	73 (32.3)
ECOG 0-1	20 (80.0)	16 (72.8)	55 (75.4)
ISS Stage, N (%)	41 (65.1)	68 (79.1)	166 (73.5)
ISS Stage I	23 (56.1)	59 (86.8)	130 (78.3)
Creatinine, N (%)	61 (96.8)	80 (93.0)	213 (94.2)
Median (mg/dl) (Q1,Q3)	0.9 (0.7, 1)	0.9 (0.7, 1.1)	0.9 (0.7, 1.1)

3. NDMM TE patients' response rates

	VRd (N=63)	VTd (N=86)	All NDMM TE (N=226)
ORR*	42.9%	44.2%	36.7%
>CR	19%	22.1%	16.8%
MRD status	38.1%	45.3%	37.6%
MRD negativity#	11.1%	12.8%	8.4%

*partial response or better. # Measured at any point post-treatment initiation

4. Discontinuation rates and main adverse events



Abbreviations:

RWE: Real-World Evidence; NDMM: Newly Diagnosed Multiple Myeloma; TE: Transplantation Eligible; NLP: Natural Language Processing; ML: Machine Learning; EHR: Electronic Health Records; MM: Multiple Myeloma; VRd: bortezomib, lenalidomide, and dexamethasone; VTd: bortezomib, thalidomide, and dexamethasone; ORR: Overall Response Rate; MRD: Minimal Residual Disease.

Multiple Myeloma

