MM-217

Clinical Outcomes of Patients With Relapsed or Refractory Multiple Myeloma With and Without Extramedullary Disease

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Key Takeaway

Patients with RRMM with "true" EMD represent a population with significant unmet clinical need and have worse outcomes than patients without EMD, highlighting the need for more effective treatment strategies

Conclusions

Patients with EMD receiving available treatment options for MM had worse outcomes vs patients without EMD; patients with EMD were 87% less likely to respond to treatment, with rates of survival approximately half that seen in patients without EMD

Novel therapies, including dual-antigen targeting approaches, are currently being investigated for the treatment of patients with EMD

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Disclosures

NN is an employee and stockholder of Johnson & Johnson.

Introduction

- Extramedullary disease (EMD) is an aggressive form of multiple myeloma (MM)[1]
- Patients with EMD have poor outcomes, particularly those with "true" EMD (defined as soft tissue plasmacytomas noncontiguous with bone) who have worse outcomes vs patients with paramedullary plasmacytomas[1-4]
- There is no established standard of care for EMD, and treatment approaches are highly diverse[5]; this variability coupled with small sample sizes in existing studies creates imprecise estimates of treatment outcomes in patients with EMD

We report pooled outcomes of patients with and without EMD from relevant clinical studies based on a meta-regression analysis to increase precision estimates of treatment outcomes in this patient population

Methods

Meta-regression analysis of key outcomes[a]

- ORR was analyzed by Bayesian logistic regression, and DOR, PFS, and OS were analyzed by Bayesian Weibull regression
- EMD status at baseline was treated as a fixed effect and study/treatment was treated as a random effect
- Key prognostic factors, such as age, number of prior LOT, and ISS stage, were included as model adjustments
- Posterior distributions were used to estimate median and 95% CIs for the proportion of responders, median time to event, and survival curves
- ORR was reported as response rate with 95% CIs and compared with odds ratios
- DOR, PFS, and OS were reported as median months with 95% CIs and compared with hazard ratios

[a]Each response outcome was reported per the clinical study data and was defined according to IMWG criteria as described in each respective study protocol.
CI, credible interval; DOR, duration of response; IMWG, International Myeloma Working Group; ISS, International Staging System; LOT, line of therapy; ORR, overall response rate; OS, overall survival; PFS, progression-free survival.

Results

Figure 1: All clinical studies included in the meta-regression analysis defined EMD as soft tissue plasmacytomas noncontiguous with bone ("true" EMD)

Clinical studies included in meta-regression analysis[a]

MMY1003, NCT02852837 (phase 1)	PAVO, NCT02519452 (phase 1b)	SIRIUS, NCT01985126 (phase 2)
APOLLO, NCT03180736 (phase 3)	CANDOR, NCT03158688 (phase 3)	CASTOR, NCT02136134 (phase 3)
COLUMBA, NCT03277105 (phase 3)	LEPUS, NCT03234972 (phase 3)	POLLUX, NCT02076009 (phase 3)

- All studies included approved standard-of-care regimens and/or novel therapies, including daratumumab[b]
- All studies had to comprise US FDA-approved and NCCN-listed regimens for the treatment of RRMM

[a]All clinical studies were initiated between 2013 and 2019. [b]Details of daratumumab treatment or daratumumab-containing regimens received by patients are described in each of the respective study protocols.
FDA, Food and Drug Administration; NCCN, National Comprehensive Cancer Network; NCT, National Clinical Trial; RRMM, relapsed/refractory multiple myeloma; US, United States.

Overall, 158 patients with EMD and 2706 patients without EMD, with a median of 2 prior LOT, were included in the analysis. Baseline demographics, including age, number of prior LOT, and ISS stage, were comparable across clinical studies and across patients with and without EMD

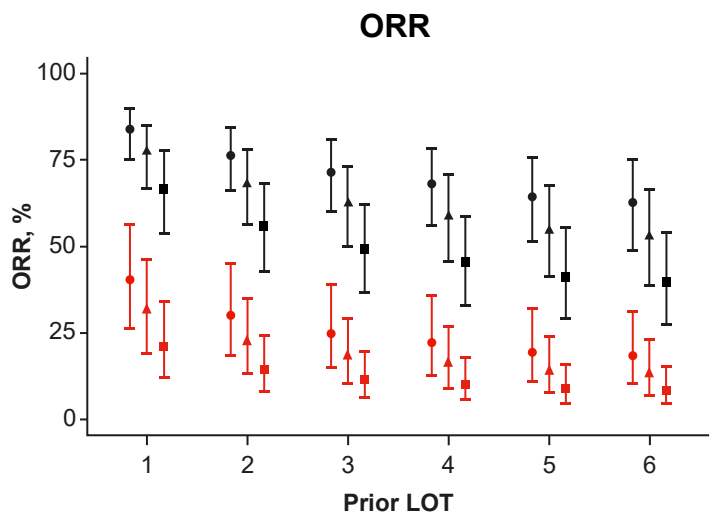
Table: Patients with EMD were 87% less likely to achieve response and had approximately twice the rate of disease progression or death, while pooled median DOR was comparable across patients with and without EMD

Characteristic	Patients with EMD n=158	Patients without EMD n=2706
ORR, % (95% CI)	20.7 (11.7–33.9)	66.2 (53.0–77.4)
Odds ratio (95% CI)	0.13 (0.09–0.20)	
PFS, median months (95% CI)	6.3 (4.2–9.5)	12.9 (8.8–18.8)
Hazard ratio (95% CI)	1.95 (1.63–2.32)	
OS, median months (95% CI)	21.0 (15.9–27.9)	39.0 (31.0–48.5)
Hazard ratio (95% CI)	1.87 (1.53–2.26)	
DOR,[a] median months (95% CI)	16.8 (10.3–27.4)	18.6 (13.3–25.6)
Hazard ratio (95% CI)	1.12 (0.73–1.63)	

[a]In total, 39 patients with EMD and 1824 patients without EMD achieved a ≥PR, respectively, and were included in DOR analysis. PR, partial response.

A meta-analysis of patients with EMD only (data not shown) supported the meta-regression analysis results, demonstrating robustness across both analyses

Figure 2: Following adjustment for baseline prognostic variables, similar results were observed for pooled ORR and pooled median PFS and OS; outcomes were generally better in patients without EMD vs with EMD and were worse in all patients with higher ISS stages and more prior LOT



References

1. Varettoni M, et al. *Ann Oncol* 2010;21:325-30. 2. Rosiñol L, et al. *Br J Haematol* 2021;194:496-507. 3. Pour L, et al. *Haematologica* 2014;99:360-4.
4. Beksac M, et al. *Haematologica* 2020;105:201-8. 5. Li Y, et al. *Transl Oncol* 2022;22:101465.

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