GOT20-0567

# Assessment of Burden of Disease in Terms of Health Related Quality of Life in Patients With Multiple Myeloma Not Eligible for Autologous Stem Cell Transplantation

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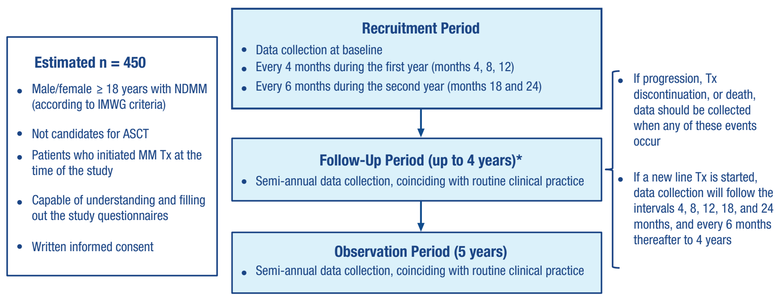
## Introduction

- The majority of patients with NDMM are > 65 years old and/or have poor physical function or multiple comorbidities. As a consequence, many of them are ineligible for standard Tx with high-dose chemotherapy and ASCT, which prevents them from receiving the substantial benefits that ASCT offers younger patients[1]
- Significant advances in MM management have improved outcomes and extended survival,[2] despite increased toxicity, in the elderly NDMM population.[3-6] How these clinical improvements are reflected in patients' lives is the current main focus of MM Tx, especially since patients are surviving longer
- QoL has become a relevant key performance indicator[7-8] and measure of Tx tolerability. Therefore, it is equally important to ensure these outcomes are sustained over the extended survival period[2, 8-10]
- Here, we present data on the impact of Tx on MM burden in terms of QoL and direct health costs derived for an increased demand for healthcare resources
- In an exploratory manner, we define the cutoff points for the valid GAH scale[11] to predict risk for Tx tolerability in this population

## Methods

- QoLMMBuS (NCT02946333) is an ongoing multicenter, observational study designed to collect prospective data from transplant-ineligible patients with untreated MM. Patients begin Tx for MM after they enroll in the study; enrollment began October 2016
- QoLMMBuS includes a recruitment period of 24 months, a follow-up period up to 4 years after the first patient enrolled, and an additional 5-year observation period to evaluate the onset of a second primary malignant neoplasm (**Figure 1**)
- The primary objective of the study is:
  - To evaluate the impact of several Tx regimens on disease burden in terms of QoL (based on HRQoL, EQ-5D-5L, QLQ-C30, QLQ-MY20), and MM-related direct healthcare resources and costs
- Secondary endpoints: ORR, TTP, PFS, OS

**Figure 1.** QoLMMBuS Study Design




* After the first patient included (November 25, 2016)

## Results

### Patients

- Data from 161 patients were analyzed for interim analysis at the cutoff date (November 2, 2018; **Table 1**)
- 81.7% of patients had an R-ISS of 2 or 3

### Treatment Exposure

- At data cutoff, 126/156 patients (80.8%) had received first-line Tx, 22 (14.1%) second-line Tx, and 8 (5.1%) third-line or later Tx
- Median first-line Tx duration was 4.8 months (range, 1.5-7.8 months)
- Bortezomib-based Tx was the most common first-line therapy (104/156, 68%; **Table 2**)

### Quality of Life

- A trend toward improvement was observed for QoL scales
- The global health status and emotional/role functions tended to improve at first-line Tx
- Dyspnea was the only single item that significantly improved (**Figure 2a** and **2b**)
- QLQ-MY20 disease-symptoms scores significantly decreased after 5 months
- QLQ-MY20 scores for future perspective were significantly higher at 5 months compared with baseline (**Figure 3**)

### Response

- ORR was 86.6% in the 67 response-evaluable patients, including 28.4% of patients who achieved a VGPR (**Table 3**)

### Progression-Free Survival and Overall Survival

- 31 patients progressed or died while they were receiving first-line Tx
- 24 patients died while being treated with first-line Tx
- With a median follow-up of 6.8 months, median PFS was 13.4 months and the median OS was NR (**Figure 4a** and **4b**)

### Safety

- Most SAEs were grade 3/4
- 6 patients experienced ≥ 1 grade 3/4 Tx-related toxicity, the most common were hematologic in 3 patients and only 1 reported case of febrile neutropenia

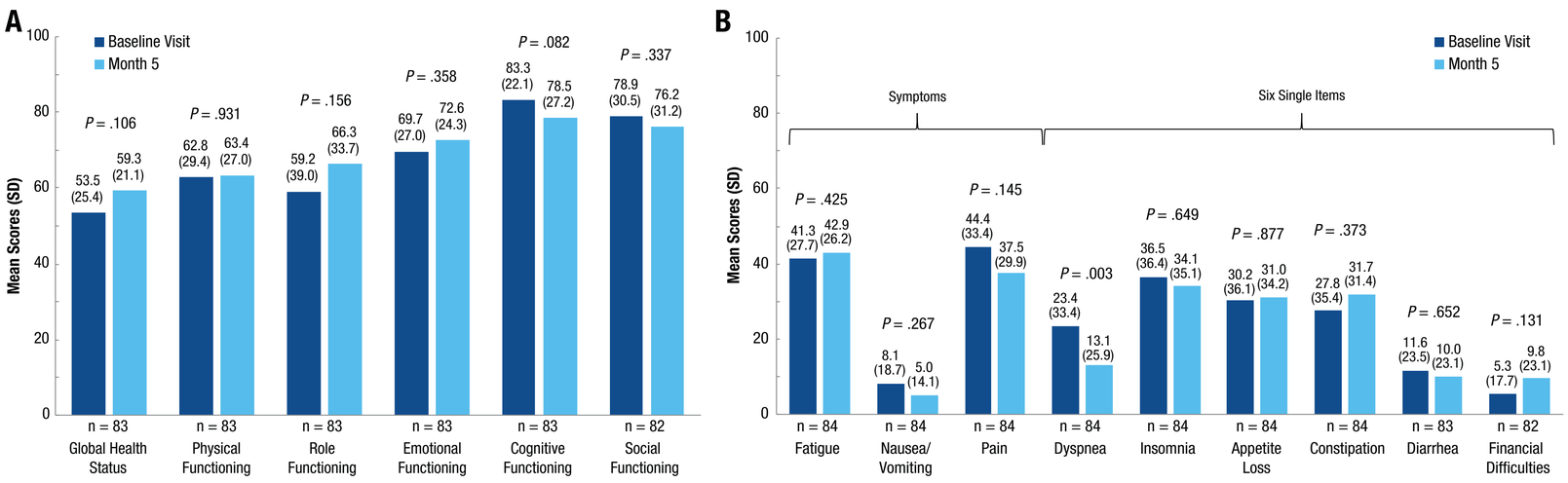
### GAH Scale Cutoff in Predicting Toxicity in Elderly NDMM Patients

- The mean GAH score was 56.4
- The optimal GAH score cutoff for high-risk of toxicity to first-line Tx was 42:
  - 68.9% of patients with a GAH score > 42 showed a high probability of experiment toxicity to Tx (73.1% to lenalidomide; 69.6% to bortezomib)

### Direct Healthcare Costs of MM

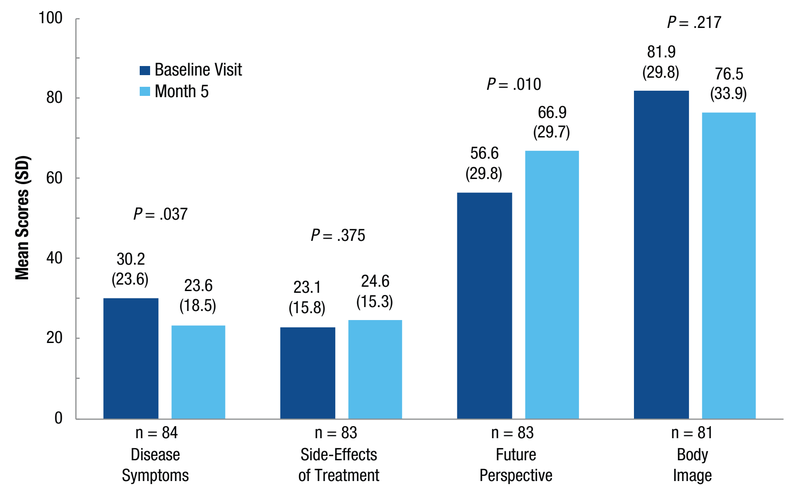
- 77.8% of patients had a doctor´s consult and 79.9% had outpatient visits. 154 pts required hospital admission (median 1 hospitalization per patient)
- The mean (SD) time of hospitalization per patient was 9.8 (16.9) days
- Mean direct cost of hospitalization per patient was 6,670.9 € (including hospitalization in ICU, hematology, oncology and others)
- Annual mean cost was 13,748 € per patient and around 48.5% of cost (6,670.9 €) was related to hospitalizations in ICU, hematology, or other units

**Figure 2.** EORTC QLQ-C30 Scores Reflecting Function and Symptoms in Patients With MM




A high score for functional scales and for Global Health Status/QoL represent better functioning ability or HRQoL, whereas a high score for symptom scales and single items represents significant symptomatology.

**Figure 3.** EORTC QLQ-MY20 Scores Reflecting 4 MM-Specific HRQoL Domains




A high score for Disease Symptoms and Side Effects of Treatment represents a high level of symptomatology or problems, whereas a high score for Future Perspective and Body Image represents better outcomes.

**Table 1.** Baseline Demographics and Clinical Characteristics

| Characteristic | N = 161 |
|---|---|
| **Median age at consent, years (range)** | 77.6 (73.9-82.6) |
| **Sex, n (%)** | |
| Male | 72 (44.7) |
| Female | 89 (55.3) |
| **ECOG ≤ 2, n (%)[a]** | 117 (88.6) |
| **R-ISS, n (%)[b]** | |
| I | 26 (18.3) |
| II | 67 (47.2) |
| III | 49 (34.5) |
| **Cytogenetics, n (%)** | |
| High risk[c] | 29 (18.0) |
| Standard risk | 17 (29.8) |
| **Comorbidities, n (%)** | |
| Cardiovascular | 117 (72.7) |
| Endocrine dysfunction | 66 (41.0) |
| Lung dysfunction | 25 (15.5) |
| Renal | 28 (17.4) |

[a] Data available from 132 patients; [b] Data available from 142 patients. [c] Chromosome 1 aberrations and/or del(17p) and/or translocation t(14;16).

**Table 2.** Treatment Regimens

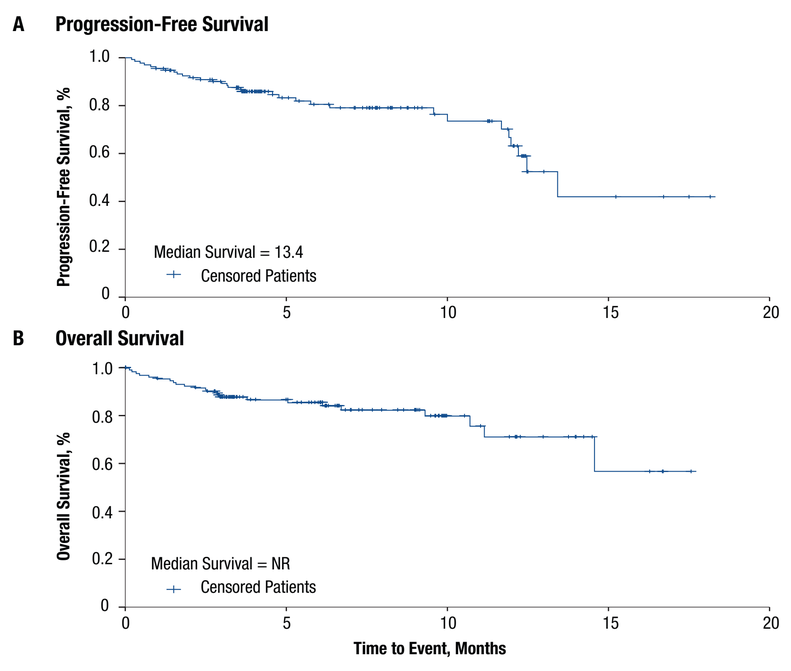
| Regimen | n = 156; n (%) |
|---|---|
| **Bortezomib/melphalan/prednisone** | 73 (46.8) |
| **Lenalidomide/low-dose dexamethasone** | 48 (30.7) |
| **Bortezomib/dexamethasone** | 17 (6.9) |
| **Bortezomib/cyclophosphamide/dexamethasone** | 5 (3.2) |
| **Bortezomib/melphalan/dexamethasone** | 3 (1.9) |
| **Bortezomib/dexamethasone/thalidomide** | 2 (0.8) |
| **Bortezomib/prednisone** | 2 (0.8) |

**Table 3.** Response Rates

| Response | n = 67; n (%)[a] |
|---|---|
| **ORR** | 58 (86.6); (95% CI, 75.5-93.3) |
| **sCR** | 1 (1.5) |
| **CR** | 12 (17.9) |
| **VGPR** | 19 (28.4) |
| **PR** | 26 (38.8) |
| **SD** | 8 (11.9) |
| **PD** | 1 (1.5) |

[a] Response assessment not available in 94 patients.

**Figure 4.** Progression-Free Survival and Overall Survival (n = 156)




## Conclusions

- Despite the limitation of a short follow-up, QoLMMBuS study results suggest that an early and effective Tx could improve the QoL of elderly patients with NDMM, adding an important value to the clinical and safety measures in their management
- QoL findings tended to improve in general, but the impact of first-line Tx regimens on general health status and physical, role, and emotional functioning appears to be modest
- Dyspnea significantly decreased from baseline, whereas nausea/vomiting and pain did not change significantly
- Severe MM-related symptoms and future perspective domain were also improved from baseline
- Most patients achieved their best response with first-line Tx, so these QoL improvements probably occurred following the onset of response
- Long-term data of QoLMMBuS will explore if the gained QoL is maintained or further improved through prolonged or adapted Tx regimens
- The use of GAH scale, which covers the essential domains in the oncology geriatric assessment, enables identification of elderly patients with NDMM at risk for Tx tolerability
- The results of the GAH scale together with patient reported measures of QoL could be used in the real-world setting to guide clinical decisions when individualizing Tx

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## Acknowledgments

We thank the patients who participated in this study, the staff members at the study sites who cared for them, and the representatives of the sponsors who were involved in data gathering and analyses.

## Abbreviations

ASCT, autologous stem cell transplant; CR, complete response; ECOG PS, Eastern Cooperative Oncology Group performance status; GAH, Geriatric Assessment in Hematology; IMWG, International Myeloma Working Group; MM, Multiple myeloma; NDMM, newly diagnosed MM; NR, not reached; ORR, overall response rate; OS, overall survival; PD, progressive disease; PFS, progression-free survival; PR, partial response; QoL, quality of life; R-ISS, Revised-International Staging System; SD, stable disease; sCR, stringent CR; SAE, serious adverse event; TTP, time to progression; Tx, treatment; VGPR, very good partial response.

## Disclosures

ODS: advisory boards for Celgene, A Bristol-Myers Squibb Company; grants from Celgene, A Bristol-Myers Squibb Company; study financial support from Hospital Universitari Son Espases; AD: personal fees from Celgene, A Bristol-Myers Squibb Company; JDLR: grants from Celgene, A Bristol-Myers Squibb Company; consultancy from Amgen, Celgene, A Bristol-Myers Squibb Company, Janssen, Takeda; AL: grants from Celgene, A Bristol-Myers Squibb Company; GL: personal fees from Celgene, A Bristol-Myers Squibb Company; MVM: personal fees from Celgene, A Bristol-Myers Squibb Company, Janssen, Takeda, Amgen, GSK, Abbvie, Pharmamar, EDIO, Adaptive, Sanofi. The remaining authors have nothing to disclose.

Presented at the EAHP; March 25-27, 2020; Gothenburg, Sweden

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