Real-World Pain Symptom Trajectory Among Multiple Myeloma Patients Under Remote Symptom Monitoring With Electronic Patient-Reported Outcomes (ePRO)

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OBJECTIVES

- Multiple Myeloma (MM) is a cancer where patients often experience pain due to osteolytic lesions.
- Many patients receive treatment long-term, and symptom burden and quality of life are important to consider for patient well-being.
- In this study, we used electronic patient-reported outcomes (ePRO) through a remote symptom monitoring program in MM patients experiencing variable levels of pain.

METHODS

- MM patients over age 18 currently on treatment were enrolled in the Carevive PROmPT® remote symptom monitoring program from March 1, 2021 to October 30, 2022.
- All patients received baseline and weekly surveys assessing domains across symptom burden, physical function, frailty status, and overall health indicators.
- Fourteen unique symptoms were assessed using items derived from the Patient-Reported Outcomes Version of the Common Technology Criteria for Adverse Events (PRO-CTCAE). Patients were followed through 16 weeks.

To learn more about ePRO and symptom monitoring, visit Carevive's website

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RESULTS

49 A total of 49 patients were included in analysis.

4.5 For these patients, the average number of symptoms reported was 4.5, compared to 2.1 for those without baseline pain.

Both those with and without baseline pain experienced a reduction in average number of symptoms over time.

68.6 They were primarily male (63%) and White (80%) with a mean age of 68.6.

33% Nearly one-third of patients (n=13) reported baseline pain, which was severe in four cases.

1 However, those with baseline pain, on average, experienced at least one other co-occurring symptom throughout follow-up.

Baseline Descriptive Characteristics by Patients with Initial General Pain and Patients with No Initial General Pain

Variable	All Patients (n=49)	Initial General Pain (n=13)	No Initial General Pain (n=36)
Demographic			
Female, no. (%)	18 (37)	5 (38)	13 (33)
Mean = S.E. age, year	68.6 ± 1.23	69.0 ± 2.39	68.5 ± 1.45
Race, no. (%)			
White	39 (80)	10 (77)	29 (81)
Black / African American	9 (18)	2 (15)	7 (19)
Asian	1 (2)	1 (8)	0 (0)
Ethnicity, no. (%)			
Hispanic or Latino	2 (4)	0 (0)	2 (6)
Not Hispanic or Latino	39 (80)	9 (69)	30 (83)
Not Specified	8 (16)	4 (31)	4 (11)
Clinical			
Geriatric Assessment [i.e., frailty], no. (%)			
Fit	25 (51)	7 (54)	18 (50)
Intermediate	13 (27)	2 (15)	11 (31)
Frail	11 (22)	4 (31)	7 (19)
Asthma, no. (%)	7 (14)	1 (8)	6 (17)
Cardiovascular Accident or Transient Ischemic Attacks, no. (%)	6 (12)	2 (15)	4 (11)
Congestive Heart Failure, no. (%)	5 (10)	1 (8)	4 (11)
Diabetes Mellitus, no. (%)	10 (20)	4 (31)	6 (17)
Emphysema, no. (%)	2 (4)	0 (0)	2 (6)
Kidney Issues, no. (%)	4 (8)	1 (8)	3 (8)
Myocardial Infarction, no. (%)	2 (4)	1 (8)	1 (3)
Peripheral Vascular Disease, no. (%)	0 (0)	0 (0)	0 (0)
Rheumatoid Arthritis, Lupus and/or Polymyalgia Rheumatica, no. (%)	4 (8)	2 (15)	2 (6)
Stomach and/or Peptic Ulcers, no. (%)	3 (6)	1 (8)	2 (6)
Leukemia or Polycythemia Vera, no. (%)	3 (6)	1 (8)	2 (6)
Mean + S.E. total comorbidities, no.	1.0 ± 0.14	1.2 ± 0.37	1.0 ± 0.14

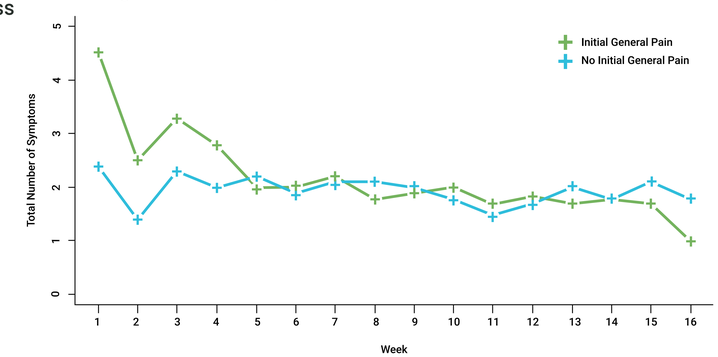
S.E. = standard error, no. = number.

Total Number of Patient-Reported Symptoms for MM Patients Across all Unique Patient-Weeks

Symptom	N (%)
Fatigue	172 (31%)
General Pain	147 (27%)
Numbness / Tingling	125 (23%)
Constipation	105 (19%)
Muscle Pain	98 (18%)
Diarrhea	93 (17%)
Decreased Appetite	84 (15%)
Anxiety	75 (14%)
Nausea	71 (13%)
Insomnia	68 (12%)
Shortness of Breath	64 (12%)
Sadness	46 (8%)
Vomiting	13 (2%)
Mouth / Throat Sores	12 (2%)

Numbers are presented as the total number of times a symptom was reported across all unique patient-weeks.

Average Number of Symptoms per Week



CONCLUSIONS

- This study highlights the importance of monitoring and addressing pain in MM patients, as pain at baseline may be associated with a higher symptom burden during treatment.
- This study also demonstrates the feasibility of ePROs and remote symptom monitoring in real-world clinical practice for assessing symptom burden and monitoring patient quality of life.