

Impact of Social Risk Factors on Access to First-Line Treatments Among Patients with Newly Diagnosed Multiple Myeloma in Florida

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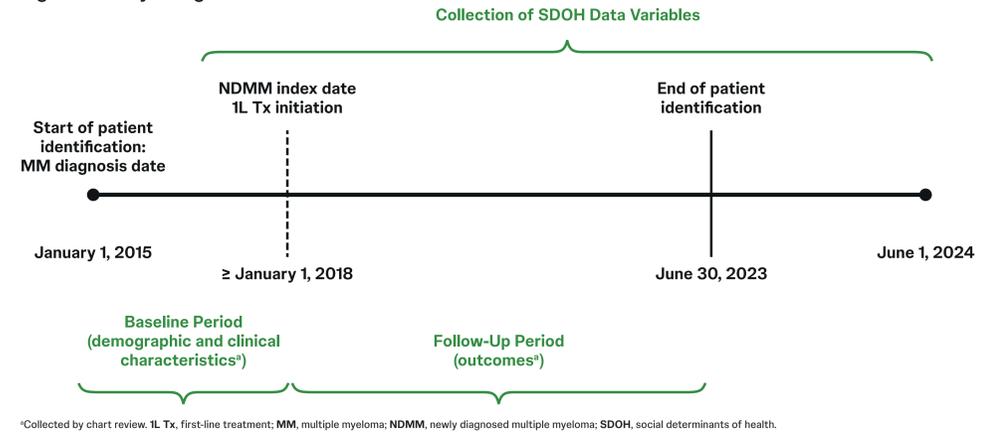
Introduction

- Despite advances in first-line treatment in multiple myeloma (MM), care gaps persist.¹⁻³
- There is a lack of validated measures of MM health inequities to inform and close clinical practice gaps.
- Assessing patient-level social risk factors provides community oncology practices with specific insights to help them identify differences among patient populations and inform areas for improving care gaps.
- The objective of this study was to determine whether access to and duration of first-line treatment among patients with newly diagnosed MM (NDMM) was impacted by demographic characteristics or social determinants of health (SDOH), including financial instability, healthcare accessibility, health literacy, and social support or isolation.

Methods

- This retrospective study used electronic health record data from Florida Cancer Specialists & Research Institute and contracted third-party SDOH data.
- Patients with NDMM aged ≥18 years who received first-line treatment between January 1, 2015, and June 1, 2024, were identified using an internal clinical algorithm and chart review (Figure 1).
- Patients with invasive malignancies (excluding plasmacytomas, non-melanomas, and carcinomas in situ) or who had received a stem cell transplant on or prior to the index date were excluded.
- Diagnosis date was determined via chart review for active MM diagnosis to ensure smoldering MM was not captured. The index date was the date of first-line treatment initiation on or after the diagnosis date.
- The relationship between patient characteristics and first-line treatment patterns (time to initiation and duration of treatment) with patient-level social risk factors (household income per adult ≤\$37,000, less than a college education, single marital status, rural community living, or non-White race) was assessed using log-rank tests.

Figure 1. Study Design



*Collected by chart review. 1L Tx, first-line treatment; MM, multiple myeloma; NDMM, newly diagnosed multiple myeloma; SDOH, social determinants of health.

Results

Patients and baseline characteristics

- A total of 457 patients were included, with a median follow-up of 26 months (interquartile range [IQR], 17–50).
- Mean age was 70.8 years, 42.5% were female, 82.7% were White, 10.3% were Black, and 8.8% were Hispanic (Table 1).
- Symptoms of MM included bony lytic lesions (67.4% of patients), anemia (58.2%), renal insufficiency (20.4%), and hypercalcemia (16.6%) (Table 1).
- Overall, 74.0% had ≥1 social risk factor (Table 2).

Outcomes

- The median duration of treatment was 14 months (IQR, 5–22).
- While duration of treatment did not differ substantially by urbanicity or educational attainment, differences were observed by marital status, income, and race (Figure 2):
 - Married patients had a shorter duration of treatment (17 months) versus single patients (19 months; $p=0.05$);
 - Patients with lower income had a shorter duration of treatment (14 months) versus those with higher income (19 months; $p=0.01$);
 - Black patients experienced a shorter duration of treatment (14 months) versus White patients (18 months; $p=0.08$).
- Overall, median time to treatment initiation was 13 days (IQR, 7–24) with little variation across social risk factors (Figure 3).

Table 1. Baseline Demographic and Clinical Characteristics

Characteristic	Patients (n=457)
Demographic	
Age, mean (SD)	70.8 (13.8)
Birth sex, female	194 (42.5)
Race	
White	378 (82.7)
Black or African American	47 (10.3)
Other	17 (3.7)
Missing	7 (1.5)
Ethnicity	
Hispanic or Latino	40 (8.8)
Not Hispanic or Latino	354 (77.5)
Missing	63 (13.8)
Smoking status	
Current smoker	31 (6.8)
Former smoker	196 (42.9)
Never	230 (50.3)
Alcohol consumption	
Current	271 (59.3)
Historic	19 (4.2)
None	163 (35.7)
Missing	4 (0.9)
Clinical	
Eligible for stem cell transplant	297 (65.0)
Frailty*	
Frail	288 (63.0)
Non-frail	108 (23.6)
Missing	61 (13.3)
ECOG performance status	
0	144 (31.5)
1	196 (42.9)
2	43 (9.4)
3	12 (2.6)
4	1 (0.2)
Missing	61 (13.3)
Cytogenetic risk status	
High risk	164 (35.9)
Standard risk	233 (51.0)
Missing	60 (13.1)
Stage	
I	143 (31.3)
II	117 (25.6)
III	130 (28.4)
Missing	67 (14.7)
Hypercalcemia^b	
	76 (16.6)
Renal insufficiency^b	
	93 (20.4)
Anemia^b	
	266 (58.2)
Bony lytic lesions^b	
	308 (67.4)

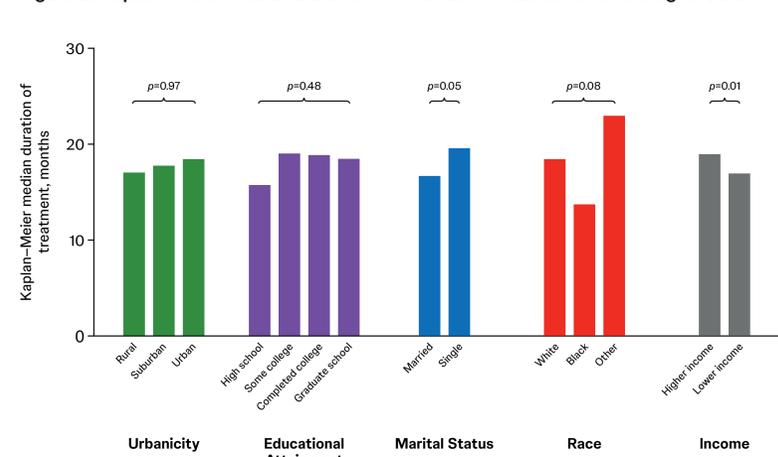
Data are shown as n (%) unless otherwise stated. *Calculated based on adapted frailty score algorithm.¹ ^bCriteria were confirmed via chart review. ECOG, Eastern Cooperative Oncology Group; SD, standard deviation.

Table 2. Baseline Social Determinants of Health

SDOH Category	Social Needs-Based Category	Variables	Values	Patients (n=457)
Social	Social support (e.g., social isolation)	Marital status	Married	313 (68.5)
			Single	143 (31.3)
			Missing	1 (0.2)
Social/healthcare	Accessibility to healthcare	Urbanicity	Rural	164 (35.9)
			Suburban	191 (41.8)
			Urban	101 (22.1)
			Missing	1 (0.2)
			Education	Educational barriers
Some college	86 (18.8)			
Completed college	138 (30.2)			
Graduate school	52 (11.4)			
Missing	65 (14.2)			
Economic	Financial strain	Household income per adult*	Median (IQR)	\$38,000 (\$23,000–\$67,000)
			≤\$22,000	113 (24.7)
			\$22,001–\$37,000	111 (24.3)
			\$37,001–\$66,000	117 (25.6)
			>\$66,000	115 (25.2)
			Missing	1 (0.2)

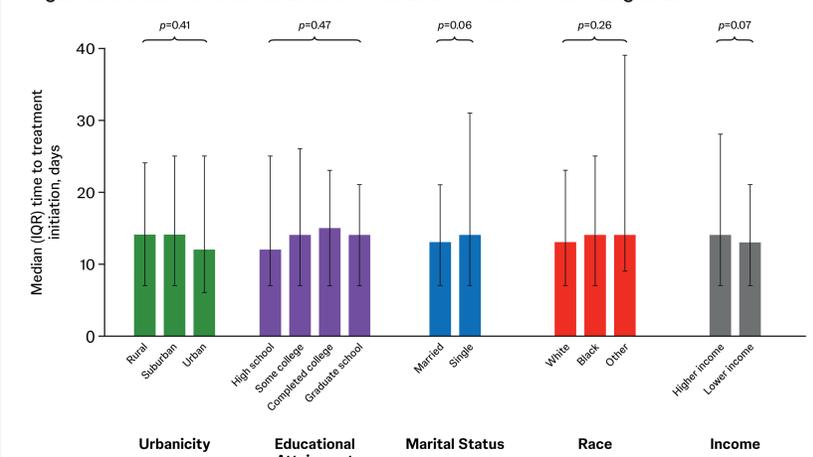
Data are shown as n (%) unless otherwise stated. *Total household income divided by the number of adults in the household. IQR, interquartile range; SDOH, social determinants of health.

Figure 2. Kaplan–Meier Median Duration of First-Line Treatment According to SDOH



p-values are calculated by a log-rank test. SDOH, social determinants of health.

Figure 3. Median Time to Initiation of First-Line Treatment According to SDOH



IQR, interquartile range; SDOH, social determinants of health.

Conclusions

- Patients with lower income had significantly shorter treatment durations than patients with higher income.
- Marital status may influence treatment duration, but further research is needed to clarify its role and potential changes over time.
- Median time to first-line treatment was consistent across SDOH factors, likely reflecting Florida Cancer Specialists' commitment to timely care.
- These results may inform healthcare quality improvement, resource deployment, and initiatives to address care gaps.

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Disclosures

KB and HJS are employees and equity holders of Johnson & Johnson, a publicly traded company. GF, AW, and HG are employees of Florida Cancer Specialists & Research Institute.

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