RWD108

Digital poster

SCAN ME

Demographics, Clinical Characteristics, and Treatment Outcomes of Patients With Newly Diagnosed Multiple Myeloma in the US Across Social Determinants of Health

Health disparities among patients with multiple myeloma negatively impact treatment outcomes

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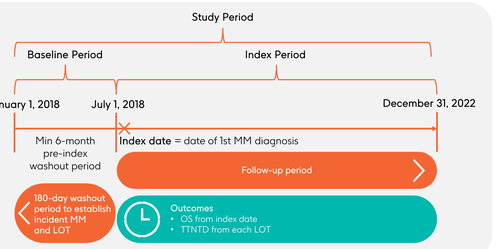
Aims

- This retrospective, observational study aimed to describe the baseline demographics, clinical characteristics, and treatment outcomes of patients with newly diagnosed multiple myeloma (NDMM) in the US, overall and by social determinants of health (SDoH) attributes.

Study design

- Patients were included in this study who:
  - were ≥18 years of age
  - had ≥2 non-ancillary claims with a diagnosis of MM ≥30 days apart during the index period (July 1, 2018, to December 31, 2022)
  - had ≥180 days of continuous enrollment for pharmacy and medical benefits prior to the index date
  - had no evidence of MM treatment in the 180-day washout period, including stem cell transplant, chemotherapy, proteasome inhibitors, immunomodulators, monoclonal antibodies (eg, anti-CD38, SLAMF7) and selective inhibitors of nuclear export
  - had no data quality issues, such as missing sex
  - had SDoH data available in Healthwise during the study period

Figure 1: **Study design and data sources**



Patient Characteristics (6-month baseline period)
- Clinical characteristics
- Demographics
- SDoH attributes:
  - **Urban location** (urban/non-urban)*
  - **Race/ethnicity** (White/non-White)
  - **Education** (High school/above high school)
  - **Likelihood of:**
    - **Having access to transportation**†
    - **Food insecurity**†
    - **Engaging in risky health behaviors**†‡

  Each based on certain factors (eg, demographics, socioeconomics, health status)
- **National Area Deprivation Index**†§
- **Level of healthcare needs**†¶
- **Ease of engagement in healthcare systems**†#

Data Sources (Deterministically linked through common patient token)

IQVIA PharMetrics® Plus
- US adjudicated claims database
- >210 million unique patients
- Pharmacy and medical coverage

Healthwise
- ≥70 health attributes and segmentation systems
- >265 million US adults
- Includes SDoH attributes and eight key propensities

US mortality data
- ≥40,000 sources including 30 million death records
- Covers 90% of deaths reported by the Centers for Disease Control and Prevention

*Urban: county size code A, B, or C. Non-urban: county size code D.
A: Any county located in the 25 largest US cities or their consolidated statistical urban areas
B: Any county not designated as an A County that has population over 150,000 or is part of a consolidated statistical area with population over 150,000
C: Any county or consolidated statistical area not designated as an A or B County that has population over 40,000
D: Any county statistical area not designated as an A, B, or C County.
†On a 5-point Likert scale of 1–2 (lowest), 3 (medium), 4–5 (highest). ‡Risky health behaviors included lack of health insurance, smoking, and heavy alcohol use. §Least disadvantaged (bottom 40%), highly disadvantaged (middle 20%), most disadvantaged (top 40%). ¶The variables were derived from the Healthwise pH Personas for Health segmentation system. #On a scale of 1–14 with 1–5 lowest ease of engagement, 6–8 medium, and 9–14 highest ease of engagement.

Demographics

Baseline demographics and clinical characteristics

Table 1: **Of the 4768 patients included, most were White, resided in an urban location, and were commercially insured**

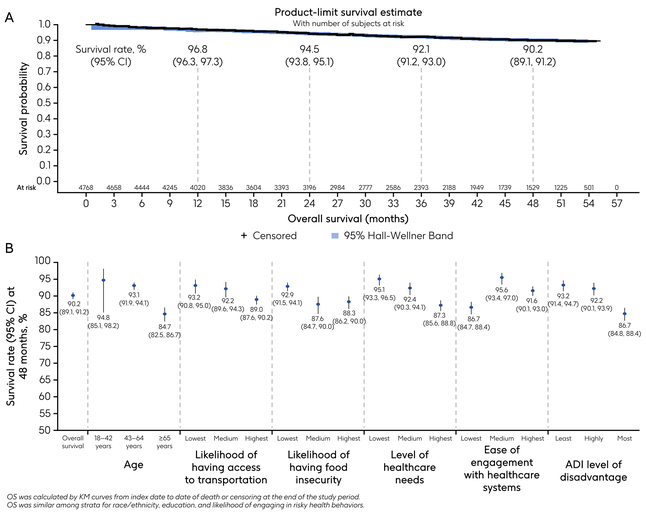
Characteristic, n (%)	Patient population (N=4768)
Age group, years	
18–42	134 (2.8)
43–64	2963 (62.1)
≥65	1671 (35.1)
Sex	
Female	2112 (44.3)
Male	2656 (55.7)
Geographic region	
West	540 (11.3)
South	1816 (38.1)
Midwest	1452 (30.5)
Northeast	960 (20.1)
Payer type	
Commercial/self-insured	3888 (81.5)
Medicare advantage	862 (18.1)
Medicaid	15 (0.3)
Unknown	3 (0.1)
Race/ethnicity*	
N and % non-missing	3983 (83.5)
White	3351 (84.1)
Non-White	632 (15.9)
Education	
N and % non-missing	3959 (83.0)
High school	1805 (45.6)
Above high school	2154 (54.4)
Urban location	
N and % non-missing	4489 (94.1)
Urban	3900 (86.9)
Non-urban	589 (13.1)
Having access to transportation	
N and % non-missing	4768 (100)
Lowest likelihood	875 (18.4)
Medium likelihood	774 (16.2)
Highest likelihood	3119 (65.4)
Having food insecurity	
N and % non-missing	4768 (100)
Lowest likelihood	2129 (44.7)
Medium likelihood	936 (19.6)
Highest likelihood	1703 (35.7)
Engaging in risky health behaviors	
N and % non-missing	4768 (100)
Lowest likelihood	391 (8.2)
Medium likelihood	2510 (52.6)
Highest likelihood	1867 (39.2)
pH Personas for Health	
N and % non-missing	4768 (100)
Level of healthcare needs	
Lowest needs	1145 (24.0)
Medium needs	1160 (24.3)
Highest needs	2463 (51.7)
Ease of engagement in health systems	
Lowest engagement	1837 (38.5)
Medium engagement	784 (16.4)
Highest engagement	2147 (45.0)
ADI level	
N and % non-missing	4594 (96.4)
Least disadvantaged	1408 (30.6)
Highly disadvantaged	1184 (25.8)
Most disadvantaged	2002 (43.6)

*Racial groups were clustered by White and non-White due to low numbers in the individual racial groups

Results

Treatment outcomes: Overall survival

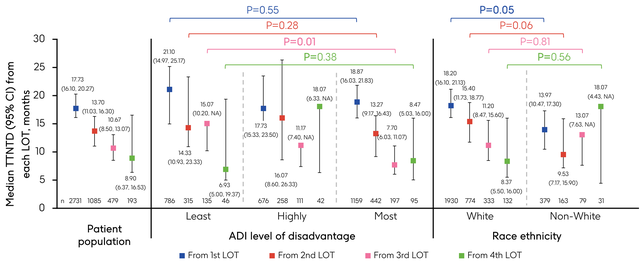
Figure 2: **OS rate at 12 months follow-up was 96.8% and remained >90% by 48 months (A). Shorter OS was associated with older age, the highest likelihood of having access to transportation, having food insecurity, the highest level of healthcare needs, the lowest levels of engagement with health systems, and living in the most disadvantaged areas (B)**



OS was calculated by KM curves from index date to date of death or censoring at the end of the study period.
OS was similar among strata for race/ethnicity, education, and likelihood of engaging in risky health behaviors.

Treatment outcomes: Time to next treatment or death

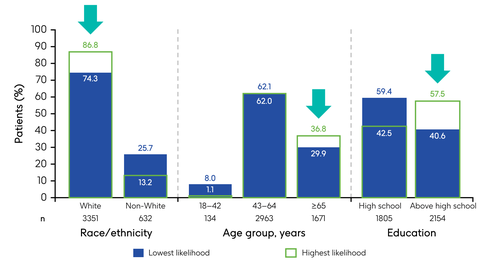
Figure 3: **Overall, TTNTD decreased with each subsequent LOT and was shortest among patients from disadvantaged areas from third LOT and those who were non-White from first LOT**



TTNTD was calculated by KM curves from LOT start date to the day before start of next LOT, date of death, or CE.
TTNTD from each LOT across other SDoH variables were similar.

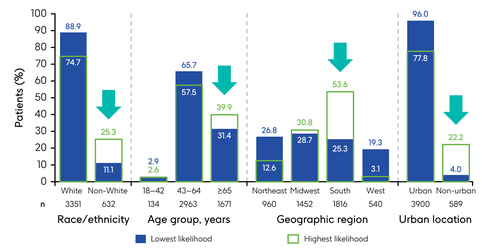
Demographics and SDoH

Figure 4: **Patients with the highest likelihood of having access to transportation were more likely to be White, ≥65 years old, and have above high school as their highest education level**



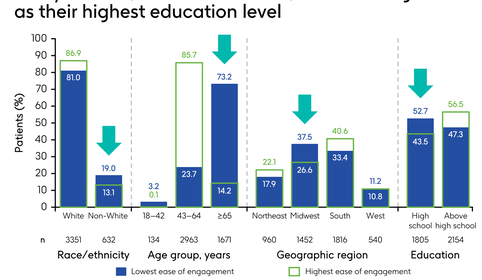
Significant differences are reported based on SMD of ≥0.1

Figure 5: **Patients with the highest likelihood of having food insecurity were more likely to be ≥65 years old, non-White, from the South, and live in a non-urban area**



Significant differences are reported based on SMD of ≥0.1

Figure 6: **Patients with the lowest ease of healthcare system engagement were more likely to be non-White, ≥65 years old, from the Midwest, and have high school as their highest education level**



Significant differences are reported based on SMD of ≥0.1

Background

- SDoH are non-medical factors, including the circumstances people are born into and grow up, work, and live in, and their age, that influence health outcomes.[2]
- SDoH are reported to have an important influence on health inequities, accounting for 30–55% of health outcomes.[2]
  - Lower socioeconomic position is associated with poorer health.[2]
- From observations in other cancers, SDoH are expected to impact treatment access and outcomes for patients with MM.[3]
- Previous studies have assessed differences in race, urbanicity, and sex among patients with MM, showing that some groups, such as patients who are Black, have worse outcomes than non-Hispanic White patients.[4,5]
- A deeper understanding of the impact of SDoH on treatment access and outcomes in MM is needed. Understanding and addressing disparities in SDoH is fundamental for effective disease management and improving outcomes.

Conclusions

This study provides evidence of health disparities in patients with MM and the impact of these disparities on treatment outcomes.

Multiple SDoH attributes were associated with poorer outcomes, including patients living in the most disadvantaged areas who had both shorter OS and TTNTD.
- While patients with the highest likelihood of access to transportation had lower OS, this may be confounded by other SDoH factors, such as also having the highest level of healthcare needs, and reverse causality bias.
- A limitation of retrospective claims data is survival bias; OS was analyzed in patients not requiring a continuous enrollment period after the index date to reduce the effect of this bias.

These results show that there is a high unmet need to address such disparities to improve MM treatment outcomes in disadvantaged populations.

Abbreviations

ADI, Area Deprivation Index; CD, cluster of differentiation; CE, censored event; CI, confidence interval; KM, Kaplan-Meier; LOT, line of therapy; MM, multiple myeloma; NA, not available; NDMM, newly diagnosed multiple myeloma; OS, overall survival; SDoH, social determinants of health; SLAMF7, signaling lymphocyte activation molecule family 7, receptors also known as CS1/CRACC/CD319; SMD, standardized mean difference; TTNTD, time to next treatment or death

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Acknowledgments

This study was funded by GSK (Study 221213)

Writing assistance was provided by Kellie McDonald, PhD, of Fishawack Indicia Ltd, part of Avalere Health, and funded by GSK

Disclosures

NB, **NK**, **AB-S**, and **SM** are employees of GSK and hold stocks/shares in GSK. **JM**, **ZZ**, **TH**, **QP**, and **C-CC** are employees of IQVIA.

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