Disparities in Multiple Myeloma between Hispanics and Non-Hispanics – Real World Outcomes

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Abstract & Background

Multiple myeloma (MM) is the second most common hematologic malignancy in the US, constituting 1.8% of all new cases (SEER database). It is a heterogeneous disease influenced by sociodemographic factors, with poor overall survival (OS) in non-Hispanic Blacks and Whites (Pulte et al. 2014). However, clinical characteristics and outcomes of MM are not well understood in Hispanics, which represent one of the fastest-growing populations in the US.

We used data from the Texas Cancer Registry* to assess clinical characteristics and outcomes of MM for patients of Hispanic relative to non-Hispanic ethnicity. In our cohort, we found that Hispanic ethnicity associated with worse outcomes compared with Non-Hispanic White patients after controlling for age at diagnosis, gender, and treatment (P=0.001). Additional covariates associated with poor OS were increasing age (P =0.001), male sex (P =0.001), patients without transplants (P<0.023) and patients without private insurance (P=0.002), all demonstrating higher mortality rates.

Materials & Methods

The Texas Cancer Registry* was used to evaluate the differences between Hispanic and Non-Hispanic MM patients diagnosed between 1996 to 2016. Socio-demographic characteristics including ethnicity, gender, age, comorbidities, and primary payer were evaluated. Ethnicity was defined as Hispanic and Non-Hispanic, and race was defined as White, Black, American Indian and Asian/Pacific Islander. Statistical analysis was performed using SAS software. Hazard ratios (HR) for death and corresponding 95% confidence intervals (CI) were estimated using the Cox proportional hazards model.

Patient Characteristics

Hispanics were diagnosed with MM at a younger age than NH (mean (CI) - 65.2 (12.4) vs 68.0 (11.8), P<0.001). Hispanic ethnicity was associated with poor survival after controlling for age at diagnosis, gender, race, and treatment. Additionally, increasing age at diagnosis correlated with higher mortality (HR 1.66 in 51-65 years old (yo), HR 2.19 in 66-79 yo, and HR 3.38 in 80+ yo, P =0.001), while females (HR 0.86, P=0.001), transplant recipients (HR 0.91, P=0.023), and those with private insurance had better outcomes than uninsured or Medicare/Medicaid insured (HR 0.83, P=0.002).

	Non-Hispanic (n=22426)	Hispanic (n=5115)	P value
Age at Diagnosis, mean (SD)	68.0 (11.8)	65.2 (12.4)	<0.001
Age			<0.001
≤50	1928 (8.60%)	671 (13.12%)	
51-65	6811 (30.37%)	1833 (35.84%)	
66-79	9626 (42.92%)	1930 (37.73%)	
80+	4061 (18.11%)	681 (13.31%)	
Race			<0.001
White	16611 (74.07%)	5038 (98.49%)	
Black	5330 (23.77%)	30 (0.59%)	
American Indian	65 (0.29%)	5 (0.10%)	
Asian/Pacific Islander	420 (1.87%)	42 (0.82%)	
Transplant			<0.001
No	12954 (92.62%)	3248 (94.20%)	
Yes	1032 (7.38%)	200 (5.80%)	

Table 1 – Hispanic vs non-Hispanic patients with multiple myeloma (MM) from the Texas Cancer Registry (1996-2016).

Multivariable Analyses

Upon Multivariable analysis, we found that increasing age, male gender, NH Black, Hispanic White, and Hispanic American Indian were associated with poor survival. While private insurance and treatment with biologic response modifier correlated with improved outcomes.

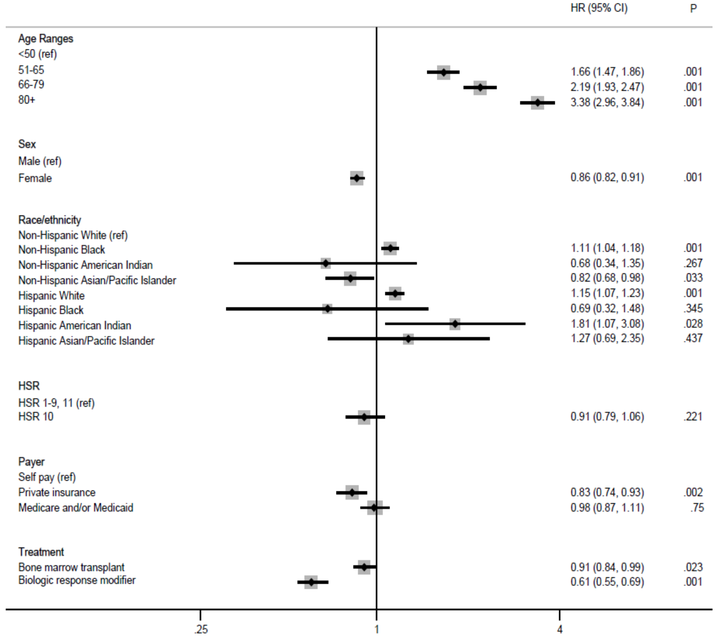


Figure 1 – Multivariable analyses revealed that Hispanic ethnicity correlates with worse outcomes in MM. The Forest Plot shows covariates that contribute to overall survival in MM (e.g. age, sex, ethnicity, health service region (HSR), primary payer, and treatment).

Overall Survival

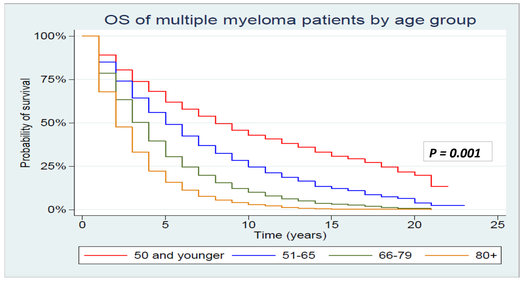


Figure 2 – Overall survival of MM patients by age

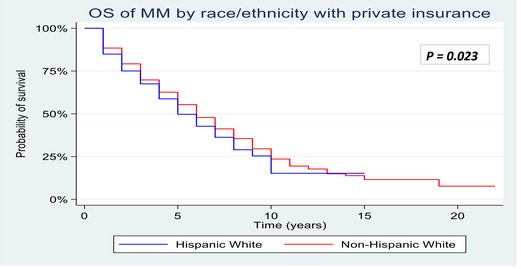


Figure 3 – Overall survival of MM patients by private insurance

To our knowledge, this is the largest analysis reporting outcomes of MM in Hispanics in the US. Altogether, these data highlight the need for improved access to equitable healthcare and clinical trials for Hispanics.

References

1. Pulte ED, et al. Survival of ethnic and racial minority patients with multiple myeloma treated with newer medications. Blood Adv. 2018.
2. Derman, B.A., et al. Sex differences in outcomes in multiple myeloma. Br J Haematol. 2021.
3. Gurbakhash, K. Multiple Myeloma in Hispanics Is Associated with Better Survival Than Non-Hispanic African Americans and Whites: Analysis from a Large Single Center Minority Rich Cohort. Blood 2018.

*Data obtained from the Texas Cancer Registry (TCR) was approved by the Institutional Review Boards at Texas Tech University Health Sciences Center at El Paso (E19045) and the TCR (19-006).