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Trends and Disparities in Heart Failure Related Mortality Among U.S. Adults With Myelodysplastic Syndrome, 1999-2020

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INTRODUCTION

Patients with myelodysplastic syndromes (MDS) face a higher risk of cardiovascular problems like heart failure (HF), which is a major contributor to mortality and morbidity. Future strategies should address cardiovascular risk as both a disease factor and a guide for treatment.

AIM

The aim of this study is to assess the temporal, racial, sex-based, and regional disparities in mortality due to heart failure associated with MDS in the US from 1999 to 2020.

METHOD

We obtained data for U.S. adults aged ≥25 using CDC WONDER spanning 1999 to 2020 with ICD-10 codes D46 and I50. Age-adjusted mortality rates (AAMRs) per 100,000 individuals were categorized as per demographic and regional distribution, and Joinpoint regression analysis was performed to calculate annual percent changes (APCs) with 95% confidence intervals (CIs) and statistical significance $p < 0.05$.

RESULTS

Overall Trend: 26,121 HF- and MDS-related deaths occurred among US adults aged ≥25 (14,860 males; 11,261 females). The AAMR increased from 0.25 (95% CI: 0.22–0.27) in 1999 to 0.51 (95% CI: 0.47–0.54) in 2007 (APC: 1.92*), decreased to 0.52 (95% CI: 0.49–0.55) by 2018 (APC: –0.96*), and rose again to 0.59 (95% CI: 0.57–0.62) in 2020 (APC: 6.70).
Gender: Mortality trends more prevalent in males, showing an initial decline followed by a significant rise from 2014 (AAMR: 0.79) to 2020 (AAMR: 0.88) with an APC of 1.29*, while females showed more variable trends from 2007 to 2018 (AAMR: 0.42 to 0.33) with an APC of -1.18* and then an increase from 2018 to 2020 with an APC of 11.57.
Races: White adults had higher AAMRs (0.58) than American Indian (0.36), Black adults (0.28), Asian (0.26), and Hispanics (0.26).
Urbanization: AAMRs were higher for non-metro (0.40) than metro areas (0.35).
Regional level: The mortality rates in the Midwest with AAMR 0.65 is worth concerning, followed by the West (0.59), the Northeast (0.53), and the South (0.46). Moreover, mortality rates in New York, Wisconsin, and Florida were most affected among states.

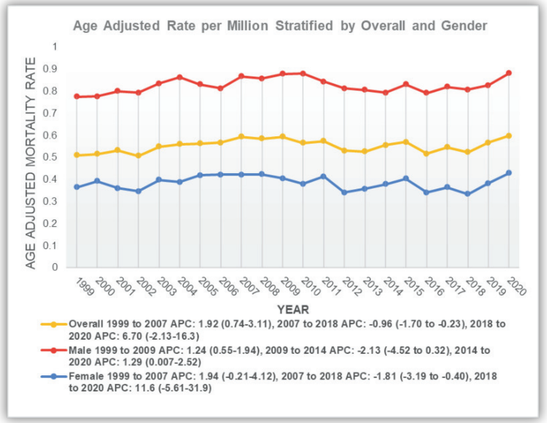


Fig 1. Overall mortality trends and trends by gender

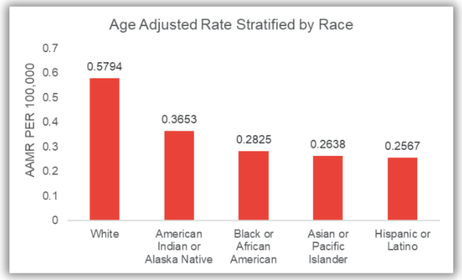


Fig 2. Age adjusted mortality rate stratified by race

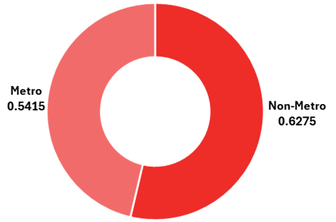


Fig 3. Age adjusted mortality rate stratified by urbanization

CONCLUSIONS

This study highlights HF- and MDS-related mortality disparities among patients in the U.S., with higher AAMRs in males, the White population, metro areas, the Midwest region, and states like New York, Wisconsin, and Florida, underscoring the urgency for region- and demographic-specific public health strategies

KEYWORDS

Myelodysplastic syndrome (MDS), Heart Failure (HF), CDC wonder database

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