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Trends and Disparities Myelodysplastic Syndrome and Diabetes Mellitus Related Mortality in the United States: 1999-2020

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INTRODUCTION

Myelodysplastic syndrome (MDS) and diabetes mellitus (DM) may share potential risk factors and interact at multiple biological and epidemiologic levels. We assess mortality trends among U.S. adults and disparities in DM-related deaths among patients with MDS.

AIM

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

METHOD

We procured data using CDC WONDER for adults aged ≥25 using ICD-10 codes D46 and E10-14 from 1999 to 2020. Age-adjusted mortality rates (AAMRs) per 100,000 individuals were designated as per demographic and regional distribution, and Joinpoint regression analysis was performed to calculate annual percent changes (APCs) stratified by year, sex, race, urbanization, and geographic region with 95% confidence intervals (CIs) and statistical significance $p < 0.05$.

RESULTS

Total Deaths: 16,048 deaths in the U.S. were attributed to MDS alongwith DM among U.S. adults (9,626 males; 6,422 females).
Overall Trend: The AAMR increased from 0.25 (95% CI: 0.22 to 0.27) in 1999 to 0.38 (95% CI: 0.35 to 0.40) in 2011 (APC: 3.43*), decreased to 0.31 (95% CI: 0.29 to 0.34) by 2018 (APC:–3.94*), and rose again to 0.39 (95% CI: 0.36 to 0.41) in 2020 (APC: 13.10*).
Gender: AAMR was higher in males, 0.50 (95% CI: 0.49 to 0.51), compared to females, 0.23 (95% CI: 0.23 to 0.24).
Race: White individuals had the highest AAMR, 0.34 (95% CI: 0.33 to 0.35), followed by Hispanics, 0.33 (95% CI: 0.31 to 0.35); American Indians, 0.30 (95% CI: 0.24 to 0.37); Asians, 0.29 (95% CI: 0.27 to 0.32); and Black individuals, 0.26 (95% CI: 0.25 to 0.28)
Regional Level: AAMR in states ranged from highest (0.47) in Ohio to lowest (0.2) in New York, while among census regions, the Midwest showed the highest mortality (AAMR: 0.39) and the South showed the lowest mortality (AAMR: 0.29). The highest AAMR was observed in micropolitan areas, decreasing progressively with urbanization, with the lowest rates in large metro areas.

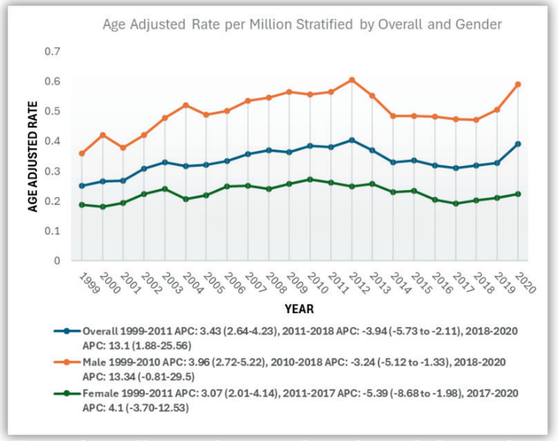


Fig 1. Overall mortality trends and trends by gender

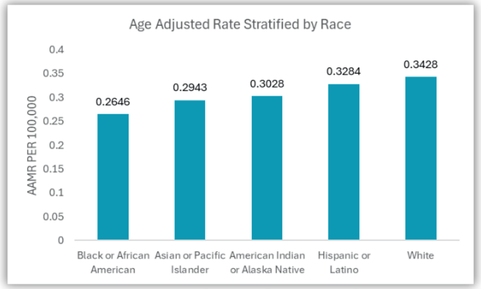


Fig 2. Age adjusted mortality rate stratified by race

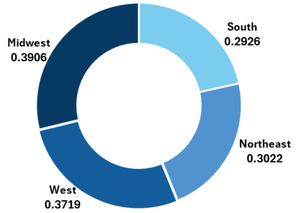


Fig 3. Age adjusted mortality rate stratified by census regions

CONCLUSIONS

The changing patterns in MDS- and DM-related deaths, especially among menandwhite individuals, point to ongoing health inequalities. The current rise in mortality and regional differences reveal the need for equal access to care, early detection, and community-focused approaches to better support those most at risk

KEYWORDS

Myelodysplastic syndrome (MDS), Diabetes Mellitus (DM), CDC wonder database

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