Statewide Burden of Multiple Myeloma in the United States of America and its Trend from 1990-2021: A Benchmarking Systematic Analysis for the Global Burden of Disease Study 2021

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Background

Multiple Myeloma (MM) is the 11th leading cause of cancer-related deaths in the United States (US). This significant mortality rate underlines the grave impact of MM on public health economically, mentally, and physically. This study seeks to provide a comparative and consistent estimation of the burden of MM in the US, representing the first comprehensive assessment of its kind in the last three decades including the first two years of the COVID-19 pandemic.

Methodology

Using global burden of disease study 2021 methodology, we estimated MM incidence, prevalence, deaths, disability-adjusted life years (DALYs), years lived with disability (YLDs) by age, sex, year and location from 1990-2021 across the US.

Conclusion

Deaths due to MM accounted for 2.47% of all cancer causalities in 2021. This highlight underscores the necessity to reassess healthcare policies and optimize resource allocation to improve MM management, particularly in the face of persistent healthcare challenges despite improvements in management.

Results

From 1990-2021, the overall prevalence increased from 15,616 (95% uncertainty interval: 14,917-16,103) to 30,694 (28,513-32,089), deaths rose from 10,682 (10,011-11,063) to 17,370 (15,720-18,340), while DALYs increased from 229,849 (220,674-235,777) to 335,912 (313,409-350,498).

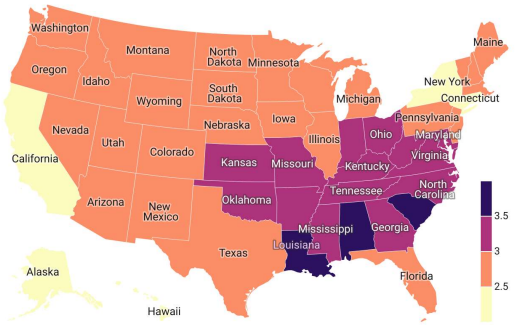
The highest total percentage of change (TPC) in age-standardized incidence rate (ASIR) increased in Missouri by 6% (-11% - 22%), followed by Kansas by 5% (-12%- 25%) from 1990-2021. In terms of mortality rate (ASMR), the highest TPC observed in Oklahoma by 2%, followed by Missouri and Kansas by 1%, while remaining states observed a decrease. In terms of YLDs rate (ASYLDR), the highest TPC observed in Georgia by 19%. In 2021, the highest ASIR observed in Louisiana by 4.23 (3.57-5), followed by ASMR in the District of Columbia by 3.7 (3.17-4.42) per 100,000.

In terms of age, 70-74 years old observed the highest incidence count by 3,109, followed by deaths in 75-79 by 2,968, DALYs in 70-74 years by 59,517.

In terms of gender, overall MM burden was observed in males, TPC in incidence male vs female (87% vs 52%), deaths (77% vs 48%), DALYs (56% vs 34%).

ASMR, Multiple Myeloma, USA, 2021

Per 100,000 population



ASIR, Multiple Myeloma, USA, 2021

Per 100,000 population

