Tracking the Persistent Rise in Acute Myeloid Leukemia Mortality in Adults Aged 25 and Above: A 22-Year U.S. Population-Based Study (1999-2020)

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Introduction

Acute Myeloid Leukemia (AML) refers to a subtype of blood & bone marrow cancer characterized by rapid growth of abnormal white blood cells. These abnormal cells hinder the normal production of blood cells with manifestations such as fatigue, recurrent infections and frequent bleeding. However, population-level data on AML patients remains limited.

Aim

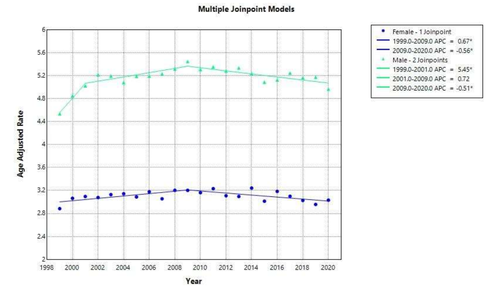
To analyze national mortality trends from AML among adults aged ≥25 in the United States (U.S.) from 1999 to 2020, with a focus on demographic and regional variables to highlight emerging disparities and trends.

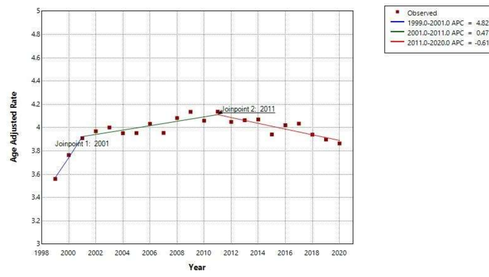
Methods

We analyzed CDC WONDER data (1999–2020) for adults aged 25 and older. Mortality cases were identified using ICD-10 codes for AML (C92.00). Age-adjusted mortality rates (AAMRs) per 100,000 people were categorized by gender, race/ethnicity, region, and urban-rural classification. Joinpoint regression calculated average annual percent change (AAPC) with 95% confidence intervals (CIs).

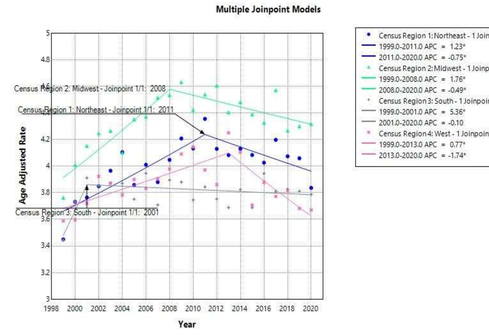
Results

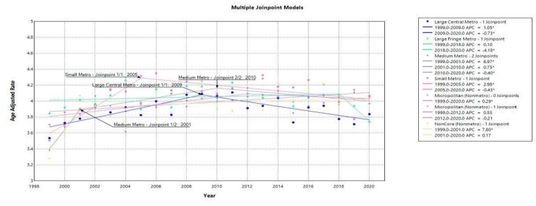
Between 1999 to 2020, 188,207 people died of AML in US adults aged ≥25. The overall AAMR increased from 3.56 (95% CI: 3.47 to 3.65) in 1999 to 3.864 (95% CI: 3.79 to 3.94) in 2020, with an AAPC of 0.409% (95% CI: 0.27 to 0.59). Males had consistently higher AAMR than females from 1999 (males: 4.538 vs. females: 2.884) to 2020 (males: 4.968 vs. females: 3.032). White population had the highest overall AAMR value (4.13), followed by non-Hispanic (NH) Black population (3.08), NH Asian population (2.83), Hispanic population (2.60 and lastly NH American Indian population (1.99). Geographically, the residents of Midwest had the highest AAMR (4.35), surpassing Northeast (4.0), West (3.86) and South (3.81), moreover, metropolitan areas had higher AAMR (4.01) than non- metropolitan areas (3.97). Large central metro had the highest AAMR (3.84) followed by large fringe metro (4.01), medium metro (4.02), small metro (4.109), micropolitan (3.99) and lastly non-core (3.94).





* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
Final Selected Model:2 Joinpoints.





Conclusion

Mortality rates for Acute Myeloid Leukemia (AML) in the US are still considerably rising, with around a 5-year survival rate of about 29%. Despite the progress in treatment methods, AML remains one of the top causes of death related to cancer, highlighting the importance of continued research and enhanced therapeutic approaches.

Key words

Acute Myeloid Leukemia, CDC Wonder, Epidemiology