Long-term Trends in Leukemia-Related Mortality in the Elderly Population: A National Analysis from 1999-2020:

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Introduction

Leukemia is the second most common hematological malignancy worldwide, following non-Hodgkin lymphoma. Identifying demographic and geographic trends in leukemia is essential for guiding public health strategies. This study aims to characterize these trends to inform efforts to improve patient outcomes.

Methods

- Data from CDC WONDER identified leukemia cases using ICD-10 codes C91-C95 in adults aged above 65 years.
- Age-adjusted mortality rates (AAMRs) per 100,000 were calculated annually.
- Trends assessed via Joinpoint regression, estimating annual percent change (APC) with 95% confidence intervals (CI).
- Disparities were analyzed across age, sex, race/ethnicity, Hispanic origin, and geographic region.

Results

- Between 1999 and 2020, 452,642 leukemia-related deaths occurred. AAMR declined by 12%, from 54.09 in 1999 to 47.60 in 2020.
- The APC from 1999 to 2013 was -0.73 per year (CI: -0.88 to -0.47), accelerating to -1.94 from 2013 to 2018 (CI: -3.36 to -1.32).
- However, rates increased from 2018 to 2020 (APC: +2.74; CI: 0.43 to 4.43). The overall AAPC was -0.70 (CI: -0.85 to -0.58).
- The 65–74 age group saw the greatest decline (AAPC: -1.78; CI: -1.94 to -1.62), while the 75–84 group declined more slowly (AAPC: -0.55; CI: -0.82 to -0.39).
- The 85 years and above age group showed stable trends (AAPC: 0.11; CI: -0.15 to 0.25). Females showed a greater decline (AAPC: -1.11; CI: -1.25 to -0.97) than males (AAPC: -0.75; CI: -0.91 to -0.62).
- Racial disparities showed declines among Whites (AAPC: -0.66; CI: -0.81 to -0.50), American Indian/Alaska Natives (AAPC: -1.03; CI: -1.86 to -0.04), Blacks (AAPC: -1.23; CI: -1.44 to -1.00), and Asians/Pacific Islanders (AAPC: -0.59; CI: -1.07 to 0.05).
- Regionally, the West experienced the greatest decline (AAPC: -1.01; CI: -1.16 to -0.85), while the Midwest had the least (AAPC: -0.55; CI: -0.77 to -0.34).
- Metropolitan areas saw greater declines (AAPC: -0.74; CI: -0.93 to -0.60) than non-metropolitan areas (AAPC: -0.53; CI: -0.87 to -0.34).

CONCLUSION

Despite overall mortality decline, persistent demographic and regional disparities highlight the need for targeted public health interventions to address inequities and improve patient outcomes.

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