24-Year Trends of Lymphoma Mortality: A Comparative Analysis of Hodgkin and Non-Hodgkin Lymphoma (1999-2023) in the United States

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Background

Hodgkin (HL) and Non-Hodgkin lymphoma (NHL) are the two types of lymphatic malignancies that affect thousands of people annually worldwide. NHL is more common, accounting for 4% of all cancers, and it is diagnosed by characteristic Reed-Sternberg cells. HL includes different types of blood cancers and is the eighth most common malignancy in the US, with 80,620 cases reported in 2024.

Aim

This study aims to investigate national trends of mortality among different age groups, sexes, and races for Hodgkin and Non-Hodgkin Lymphoma in the United States from 1999 to 2023.

Methods

Our study analyzed HL and NHL-related mortality data in the US from the CDC WONDER mortality database using ICD-10 codes C81 for HL and C85.9 for NHL from 1999 to 2023. Age-Adjusted Mortality Rates (AAMRs) per 1,000,000 individuals were computed and subjected to Joinpoint Regression analysis, which calculated Average Annual percent change (AAPC) in mortality.

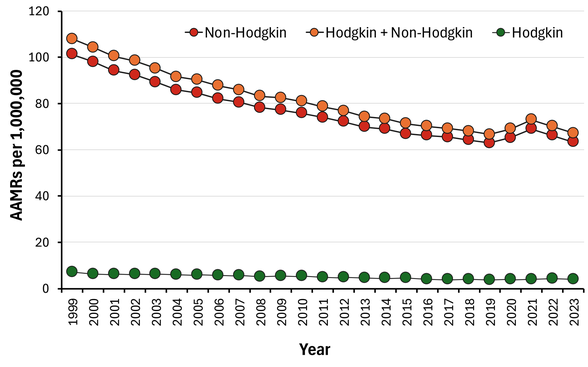
Discussion

Our analysis revealed an overall consistent decline in mortality due to HL and NHL from 1999 to 2023, with NHL accounting for 94% of all lymphoma-related deaths, reflecting its heterogeneous nature and aggressive subtypes compared to Hodgkin lymphoma (1). A segmented rise in NHL mortality during 2018-2021 is possible due to the indirect effects of COVID-19 (2). Moreover, males, NH white people, and the older population had higher mortality rates. Higher male mortality stems from occupational exposures and delayed care-seeking. Elevated white population mortality reflects higher NHL incidence rates, potentially from genetic and environmental factors. Age-related increases align with immunosenescence and the development of comorbidities (3). Geographical and regional disparities also persisted. These findings highlight the need for targeted public health strategies like enhanced screening, expanding rural healthcare access through telemedicine, to address these inequalities and improve outcomes, particularly due to NHL.

Results

From 1999-2023, lymphomas caused a total of 685,823 deaths in the US. The AAMR for HL in 1999 was 7.0 (95% CI: 6.7 to 7.3), which decreased to 3.99 (3.77 to 4.16) in 2023, demonstrating a decreasing trend [AAPC: -2.09% (-2.49 to – 1.84)]. The same trend was followed by NHL with an AAMR of 101 (100 to 102) in 1999, falling to 63 (62.6 to 64.1) in 2023 [AAPC: -1.92% (-2.03 to -1.82)]. AAMR increased with age. Males showed a higher AAMR compared to females for HL (6.41 vs 3.92) and NHL (100 vs 59.4). Racial distribution of NHL showed that White Americans had the highest AAMR (80.1), followed by Hispanics (60.2), Blacks (54.02), and Asian or Pacific Islanders (48.4). Black Americans showed the highest decline in mortality [AAPC: -1.89% (-2.32 to -1.48)] and Hispanics exhibited the lowest [AAPC: -1.19% (-1.58 to -0.796)]. Mortality associated with HL was the highest among White Americans and Asian Americans (AAMR:5.29), followed by Hispanics (5.05) and Blacks (4.23).

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Conclusion

Mortality by lymphomas has reduced over the past 24 years, while NHL has shown higher mortality rates. Males have been affected more than females. Among the racial groups, White Americans showed the highest mortality rates for both lymphomas.

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The authors declare no conflict of interest

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