TRENDS AND DISPARITIES IN SEPSIS-RELATED MORTALITY IN LYMPHOMA PATIENTS IN THE UNITED STATES BETWEEN 1999 AND 2020

D. GANDHI [1], W. AHMAD [2] and M. SAWALE[3]
1. Department of Internal Medicine, St Francis Medical Centre, Monroe, LA, USA
2. Al Tibri Medical College, Karachi, Pakistan
3. K. J. Somaiya Medical College, Mumbai, India

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Introduction

Sepsis is a major cause of morbidity and mortality among patients with lymphoma due to disease-related and treatment-induced immunosuppression. Despite advances in lymphoma care, little is known about long-term trends in sepsis-related mortality within this population in the United States. Understanding these patterns is crucial for guiding preventive and therapeutic strategies.

Methods

- Data Source: CDC WONDER Multiple Cause of Death database (1999–2020).
- Case Definition: Lymphoma (ICD-10: C81–C85, C88) with sepsis (ICD-10: A40–A41) listed as a cause of death.
- Measures: Age-adjusted mortality rates (AAMR) and crude death rates (CDR) per 100,000 persons.
- Trend Analysis: Temporal patterns in sepsis-related mortality were assessed using Joinpoint regression to estimate the average annual percentage change (AAPC) with corresponding p-values.
- Subgroup Analyses: Mortality trends were stratified by age, sex, race/ethnicity, and geographical distribution.

Objectives

To evaluate national trends and disparities in sepsis-related mortality among U.S. lymphoma patients between 1999 and 2020.

Conclusion

Sepsis-related mortality among lymphoma patients declined significantly from 1999–2020. However, persistent disparities exist:

Higher mortality in males, Hispanics, Blacks, and Northeastern residents.

Advanced age remains a major risk factor.

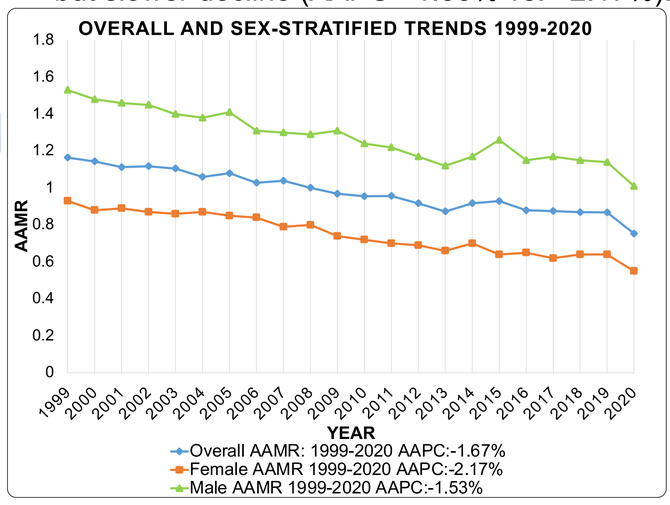
Implication: Targeted interventions are needed to address these disparities and reduce preventable sepsis-related deaths in vulnerable lymphoma populations.

References

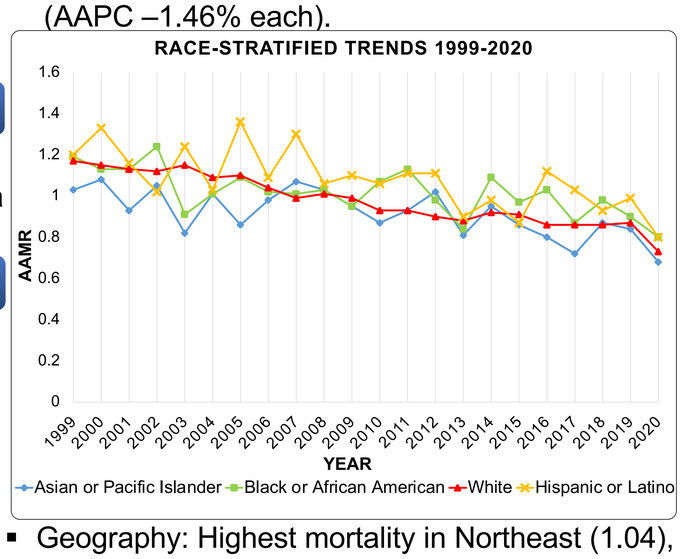
1. Centers for Disease Control and Prevention. CDC WONDER: Wide-ranging Online Data for Epidemiologic Research. Available from: https://wonder.cdc.gov/
2. Centers for Disease Control and Prevention. Underlying Cause of Death 1999–2020. Available from: https://wonder.cdc.gov/wonder/help/ucd.html
3. Joinpoint Trend Analysis Software. Joinpoint Regression Program, Version 4.9.0.0. Surveillance Research Program, National Cancer Institute. Accessed July 7, 2025. Available from: https://surveillance.cancer.gov/joinpoint/

Results

- Overall: 46,227 sepsis-related deaths in lymphoma patients.
- Trend: AAMR decreased from 1.16 (1999) to 0.75 (2020); AAPC = –1.67% ($p < 0.0001$).
- Sex: Males had higher AAMR (1.26 vs. 0.74) but slower decline (AAPC –1.53% vs. –2.17%).



- Race/Ethnicity:
- Hispanics: highest AAMR (1.06).
- Blacks: 0.99; Whites: 0.97; Asian/Pacific Islanders: 0.89; American Indian/Alaska Native: 0.54.
- Largest declines seen in Hispanics and Asians (AAPC –1.46% each).



- Geography: Highest mortality in Northeast (1.04), with greatest decline (AAPC –3.27%).
- Urban vs Rural: Metropolitan AAMR > Non-metropolitan (0.99 vs. 0.90).
- Age: Highest CDR in ages 75–84 (4.22) and ≥85 (3.57). Largest decline in 25–34 years (AAPC –3.39%).

