Trends in Chronic Lymphocytic Leukemia (CLL) Mortality: A 25-Year U.S. Population-Based Analysis (1999-2023)

H. Tahir[1], MZ. Anwar[2], A. Chitkara[3].
[1]Internal Medicine, University of South Dakota, Sioux Falls, SD, United States; [2]Internal Medicine, Lady Reading Hospital, Peshawar, KPK, Pakistan; [3]Hematology/Oncology, Sidney Kimmel Comprehensive Cancer Center, Thomas Jefferson University, Philadelphia, United States

Introduction

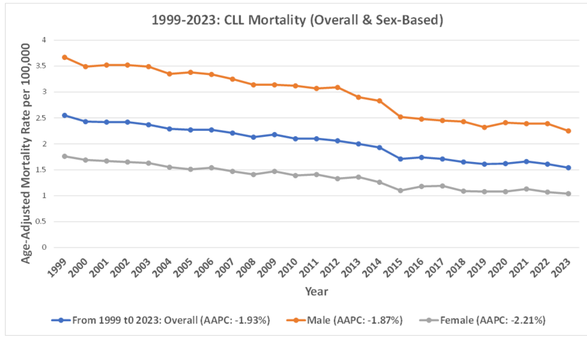
- CLL is the most common leukemia among adults in the United States. While targeted therapies have improved survival, real-world mortality trends across demographics remain less explored, highlighting the need for monitoring national mortality patterns to assess treatment impact and disparities.

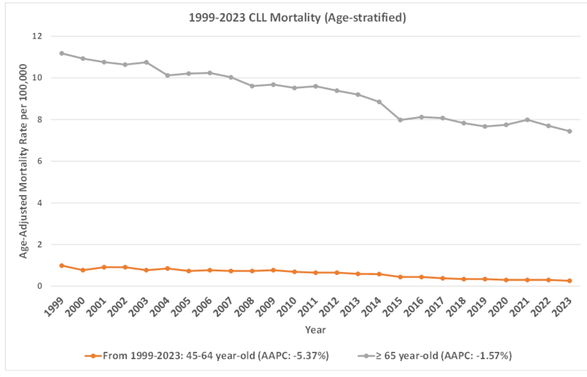
Methods

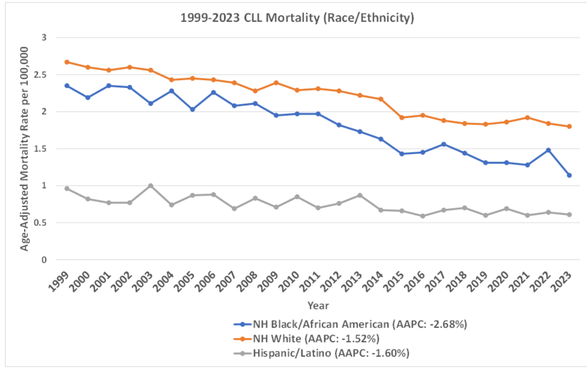
- Data: CDC WONDER database,1999-2023, adults ≥ 25 years with CLL as the Underlying Cause of Death.
- Measure: Age-adjusted mortality rates (AAMRs) per 100,000.
- Variables: Sex, Age, Census Regions, Race/Ethnicity.
- Analysis: Joinpoint regression to calculate Average Annual Percent Changes (AAPCs) with 95% CI.

Results

- Total deaths (1999-2023): 110,263; average AAMR: 2.02; AAPC: -1.93%.
- Sharpest reduction: 2013-2016 (APC: -5.51%)
- Sex: Males had a higher average AAMR than females (2.95 vs 1.36). Females saw a steeper mortality decline (AAPC: -2.21%) compared to males (AAPC: -1.87%).
- Age-stratified: The average AAMR in older adults (≥ 65 years) was 9.25, in middle-aged adults (45-64 years) was 0.60, and in younger adults (25-44 years) was 0.023. Steepest decline in 45-64-year-old adults (AAPC: -5.37%).
- Census Region: Average AAMR; Midwest (2.30), South (1.97), Northeast (1.96), and West (1.87).
- Race: Average AAMR; non-Hispanic (NH) White (2.21), NH Black/African American (1.82), Hispanic (0.74), and NH Asian/Pacific Islander (0.37).







Conclusion

CLL-related mortality has declined in the United States over the past two decades, with the sharpest reductions observed between 2013 and 2016, likely due to the uptake of novel targeted therapies. Despite overall improvements, persistent disparities by sex, age, race, and region highlight the need for continued monitoring and equity-focused interventions to ensure uniform benefit from advances in care.