EVOLVING PATTERNS OF MULTIPLE MYELOMA MORTALITY IN THE UNITED STATES FROM 1990 TO 2020

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Introduction

Multiple myeloma (MM) is a plasma cell malignancy that poses a major health burden globally due to its substantial morbidity and mortality. Monitoring long-term mortality trends is essential for understanding the impact of evolving therapeutic strategies and for guiding healthcare policy in the United States.

Aim

To evaluate the temporal trends in multiple myeloma–related mortality in the United States from 1990 to 2020, with a focus on overall and gender-specific patterns.

Objectives

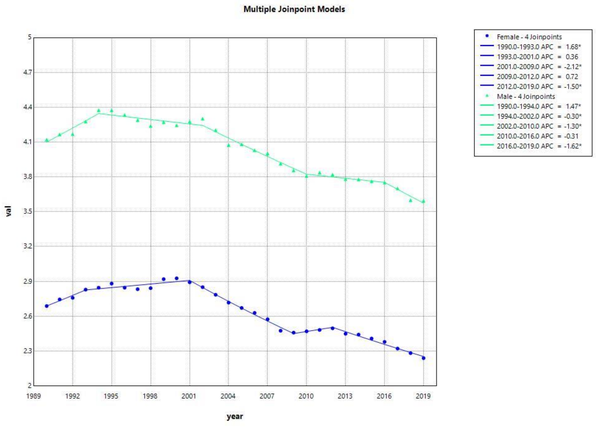
To analyze national MM mortality data using joinpoint regression to quantify annual and average annual percent changes (APC, AAPC), and to assess the influence of diagnostic and therapeutic advances on mortality trends over three decades.

Methods

Data: Age-standardized MM mortality rates from the Global Burden of Disease database (1990–2019).

Analysis: Joinpoint regression to calculate annual (APC) and average annual percent change (AAPC).

Subgroups: Overall and gender-specific trends.



Results

Overall: 398,575 estimated MM deaths in the US (1990–2019).

Trend: Mortality rose in early 1990s (APC 1.49%, P<0.001), stabilized (1994–2002), and declined significantly thereafter (APC -1.67% from 2002–2009; APC -1.64% from 2015–2019).

Females: Early increase (APC 1.68% from 1990–1993) followed by sustained declines (APC -2.12% from 2001–2009; APC -1.50% from 2012–2019). AAPC -0.47% (P<0.001).

Males: Early increase (APC 1.47% from 1990–1994) followed by declines (APC -1.30% from 2002–2010; APC -1.62% from 2016–2019). AAPC -0.66% (P<0.001).

Summary

- 398,575 MM deaths in the US (1990–2019).
- Mortality rose in early 1990s, then declined significantly.
- Both genders improved; decline steeper in males.

Discussion

- Declines reflect advances in therapy and diagnosis.
- Gender differences may relate to biology or healthcare access.
- Global comparisons could reveal further disparities.

References

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