Global Disparities in Multiple Myeloma Outcomes: Association Between Mortality-to-Incidence Ratios and Health System Indicators

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Introduction

- Multiple myeloma (MM) is a hematologic malignancy with rising global incidence.
- Survival outcomes vary significantly due to differences in healthcare infrastructure.
- The mortality-to-incidence ratio (MIR) is a validated proxy for survival in regions with limited survival data.
- This study investigates regional variation in MIRs and their relationship to health system capacity across WHO regions.

Aim / objectives

To evaluate global disparities in multiple myeloma (MM) outcomes by analyzing mortality-to-incidence ratios (MIRs) across World Health Organization (WHO) regions and exploring their association with key health system indicators, including physician density, healthcare spending, and access to care.

Methods

- Data sources:
  - MM incidence and mortality from GLOBOCAN 2022
  - Health system indicators:
    - Physician density (per 10,000 people)
    - Health expenditure (% of GDP)
    - Self-reported difficulty accessing healthcare
- WHO regions analyzed: Africa, Southeast Asia, Eastern Mediterranean, Americas, Europe, Western Pacific
- Approach: Descriptive comparison of MIRs and healthcare system metrics

Results

Africa & Southeast Asia:
- Highest MIRs (0.86)
- Lowest physician densities (2.6 and 7.0)
- High healthcare access difficulty (63% and 60.65%)

Eastern Mediterranean:
- MIR 0.83,
- Physician density 11.6
- Highest reported access difficulty (67.51%)

Americas:
- Lower MIR (0.51)
- High physician density (28)
- Stronger health system (expenditure 7.79% of GDP)

Europe:
- MIR 0.60
- Highest physician density (37.6)
- Highest health spending (8.29% of GDP)

Western Pacific:
- MIR 0.63
- Moderate physician density (23.2)
- Expenditure 5.94% of GDP

Summary

Regions with higher MIRs consistently show lower physician availability and limited healthcare investment.

These results highlight how systemic disparities, not disease biology alone, influence survival.

MIR is a practical tool for monitoring cancer outcomes where survival data is incomplete.

Conclusions

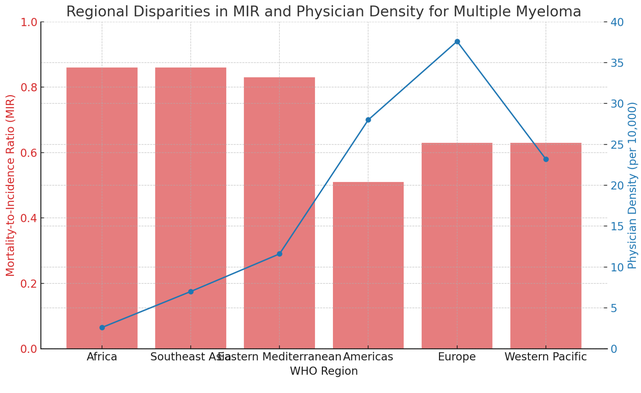
Profound inequities exist in MM outcomes between WHO regions.

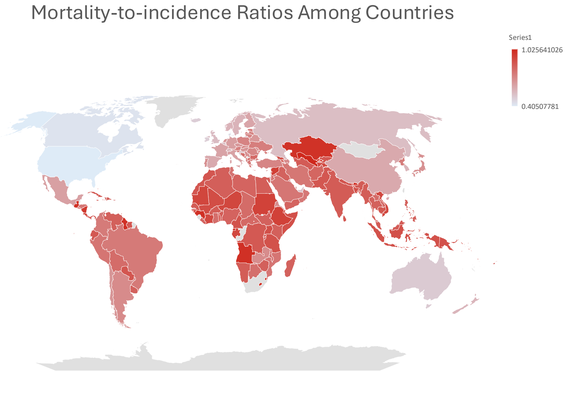
Enhancing global access to diagnostics, oncologic therapies, and medical workforce is critical.

Global strategies are needed to close survival gaps in cancer care.

References

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2. *World Health Organization. Global Health Observatory Data Repository. https://www.who.int/data/gho*





SOHO2025