

Slowing Mortality Gains in Multiple Myeloma Despite Novel Therapies: Global and SDI-Based Disparities From the GBD 2023 Study (1990–2023)

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INTRODUCTION

Despite major therapeutic advances in multiple myeloma (MM), including proteasome inhibitors, immunomodulatory drugs, anti-CD38 monoclonal antibodies, and more recently B cell maturation antigen (BCMA)-directed chimeric antigen receptor T-cell (CAR-T) therapies and bispecific antibodies, the extent to which these innovations have translated into population-level mortality benefits remains unclear.

AIM

To evaluate global and Socio-demographic Index (SDI)–stratified trends in multiple myeloma incidence and mortality from 1990 to 2023 using GBD 2023 data, and to determine whether the introduction of novel therapies (including proteasome inhibitors, immunomodulatory drugs, anti-CD38 antibodies, and BCMA-directed CAR-T/bispecific therapies) has translated into sustained population-level mortality reductions, particularly after 2015.

METHOD

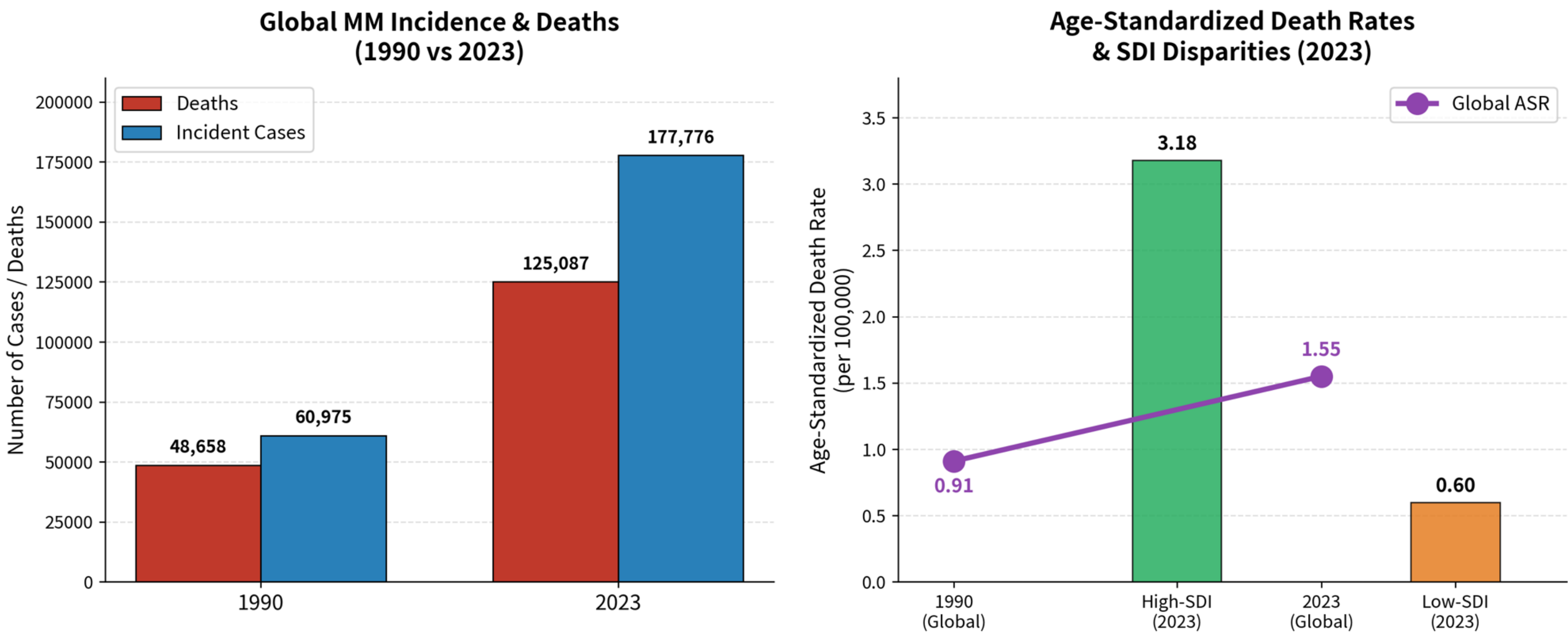
Incidence and mortality data were extracted from the Global Burden of Disease (GBD) 2023 Results Tool. Absolute numbers and age-standardized rates (ASR per 100000) were analyzed globally and across socio-demographic Index (SDI) quintiles from 1990 to 2023, with comparison of trends before and after 2015.

CONCLUSIONS

The global burden of MM continues to rise substantially. The slowing of mortality improvement after 2015, combined with persistent SDI-based disparities, indicates incomplete translation of recent therapeutic advances, including BCMA-directed cellular therapies, into equitable population-level benefits. These findings underscore the urgent need for improved early diagnosis and expanded access to novel therapies in lower-SDI settings, where the rising incidence of diagnosed cases is currently outpacing the infrastructure for advanced care.

RESULTS

Globally, MM deaths increased 157% from 48658 in 1990 to 125087 in 2023, and incident cases rose 191% from 60975 to 177776. The age-standardized death rate rose from 0.91 to 1.55 per 100000. While modest mortality improvements occurred in earlier decades, the rate of decline slowed notably after 2015 despite widespread adoption of novel immunotherapies. In 2023, the age-standardized death rate remained markedly higher in high SDI countries (3.18 per 100000) than in low-SDI countries (0.60 per 100000). Middle- and low-SDI regions showed faster increases in incidence but more limited mortality reduction.



Metric	1990	2023	Change
Global deaths	48,658	1,25,087	157%
Global incident cases	60975	1,77,776	191%
Age standardised death rates/ per 100,000 cases	0.91	1.55	Increased
High SDI ASR(2023)	-	3.18	-
Low SDI ASR(2023)	-	0.6	-

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