Global Incidence and Mortality for Prostate Cancer: Analysis of Temporal Patterns and Trends in 36 Countries.

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Abstract

BACKGROUND: Prostate cancer (PCa) is a leading cause of mortality and morbidity globally, but its specific geographic patterns and temporal trends are under-researched.

OBJECTIVE: To test the hypotheses that PCa incidence is higher and PCa mortality is lower in countries with higher socioeconomic development, and that temporal trends for PCa incidence have increased while mortality has decreased over time.

DESIGN, SETTING, AND PARTICIPANTS: Data on age-standardized incidence and mortality rates in 2012 were retrieved from the GLOBOCAN database. Temporal patterns were assessed for 36 countries using data obtained from Cancer incidence in five continents volumes I-X and the World Health Organization mortality database. Correlations between incidence or mortality rates and socioeconomic indicators (human development index [HDI] and gross domestic product [GDP]) were evaluated.

OUTCOME MEASUREMENTS AND STATISTICAL ANALYSIS: The average annual percent change in PCa incidence and mortality in the most recent 10 yr according to join-point regression.

RESULTS AND LIMITATIONS: Reported PCa incidence rates varied more than 25-fold worldwide in 2012, with the highest incidence rates observed in Micronesia/Polynesia, the USA, and European countries. Mortality rates paralleled the incidence rates except for Africa, where PCa mortality rates were the highest. Countries with higher HDI (r=0.58) and per capita GDP (r=0.62) reported greater incidence rates. According to the most recent 10-yr temporal data available, most countries experienced increases in incidence, with sharp rises in incidence rates in Asia and Northern and Western Europe. A substantial reduction in mortality rates was reported in most countries, except in some Asian countries and Eastern Europe, where mortality increased. Data in regional registries could be underestimated.

CONCLUSIONS: PCa incidence has increased while PCa mortality has decreased in most countries. The reported incidence was higher in countries with higher socioeconomic development.

PATIENT SUMMARY: The incidence of prostate cancer has shown high variations geographically and over time, with smaller variations in mortality.

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KEYWORDS: Age-standardized rate; Incidence; Mortality; Prostate cancer; Temporal trend