The effect of age at diagnosis on prostate cancer mortality: A grade-for-grade and stage-for-stage analysis.


Abstract

OBJECTIVE: To evaluate the effect of advancing age on cancer-specific mortality (CSM) after radical prostatectomy (RP).

MATERIALS AND METHODS: Overall, 205,551 patients with PCa diagnosed between 1988 and 2009 within the Surveillance Epidemiology and End Results (SEER) database were included in the study. Patients were stratified according to age at diagnosis: \( \leq 50 \), 51-60, 61-70, and \( \geq 71 \) years. The 15-year cumulative incidence CSM rates were computed. Competing-risks regression models were performed to test the effect of age on CSM in the entire cohort, and for each grade (Gleason score 2-4, 5-7, and 8-10) and stage (pT2, pT3a, and pT3b) sub-cohorts.

RESULTS: Advancing age was associated with higher 15-year CSM rates (2.3% vs. 3.4% vs. 4.6% vs. 6.3% for patients aged \( \leq 50 \) vs. 51-60 vs. 61-70 vs. \( \geq 71 \) years, respectively; \( P < 0.001 \)). In multivariable analyses, age at diagnosis was a significant predictor of CSM. This relationship was also observed in sub-analyses focusing on patients with Gleason score 5-7, and/or pT2 disease (all \( P \leq 0.05 \)). Conversely, age failed to reach the independent predictor status in men with Gleason score 2-4, 8-10, pT3a, and/or pT3b disease.

CONCLUSIONS: Advancing age increases the risk of CSM. However, when considering patients affected by more aggressive disease, age was not significantly associated with higher risk of dying from PCa. In high-risk patients, tumor characteristics rather than age should be considered when making treatment decisions.

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KEYWORDS: Age at diagnosis; Cancer-specific survival; Competing-risks; Prostate cancer; Radical prostatectomy

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