Surrogate end point for prostate cancer-specific mortality after radical prostatectomy or radiation therapy.

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Abstract

BACKGROUND: The relationship between prostate-specific antigen (PSA)-defined recurrence and prostate cancer-specific mortality remains unclear. Therefore, we evaluated the hypothesis that a short post-treatment PSA doubling time (PSA-DT) after radiation therapy is a surrogate end point for prostate cancer-specific mortality by analyzing two multi-institutional databases.

METHODS: Baseline, treatment, and follow-up information was compiled on a cohort of 8669 patients with prostate cancer treated with surgery (5918 men) or radiation (2751 men) from January 1, 1988, through January 1, 2002, for localized or locally advanced, non-metastatic prostate cancer. We used a Cox regression analysis to test whether the post-treatment PSA-DT was a prognostic factor that was independent of treatment received. All statistical tests were two-sided.

RESULTS: The post-treatment PSA-DT was statistically significantly associated with time to prostate cancer-specific mortality and with time to all-cause mortality (all P(Cox)<.001). However, the treatment received was not statistically significantly associated with time to prostate cancer-specific mortality after PSA-defined disease recurrence for patients with a PSA-DT of less than 3 months (P(Cox) =.90) and for patients with a PSA-DT of 3 months or more (P(Cox) =.28) when controlling for the specific value of the PSA-DT. Furthermore, after a PSA-defined recurrence, a PSA-DT of less than 3 months was statistically significantly associated with time to prostate cancer-specific mortality (median time = 6 years; hazard ratio = 19.6, 95% confidence interval = 12.5 to 30.9).

CONCLUSION: A post-treatment PSA-DT of less than 3 months and the specific value of the post-treatment PSA-DT when it is 3 months or more appear to be surrogate end points for prostate cancer-specific mortality after surgery or radiation therapy. We recommend that consideration be given to initiating androgen suppression therapy at the time of a PSA-defined recurrence when the PSA-DT is less than 3 months to delay the imminent onset of metastatic bone disease.

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