Prostate specific antigen doubling time as a surrogate end point for prostate cancer specific mortality following radical prostatectomy or radiation therapy.

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Abstract

PURPOSE: A short posttreatment prostate specific antigen (PSA)-doubling time (DT) following radical prostatectomy or radiation therapy was evaluated as a surrogate end point for prostate cancer specific mortality (PCSM).

MATERIALS AND METHODS: Baseline, treatment and followup information was compiled on a cohort of 8,669 patients with prostate cancer treated with surgery (5,918) or radiation (2,751) from January 1, 1988 to January 1, 2002 for clinical stage T1c-4NxMo prostate cancer, forming the study cohort. Cox regression analysis was used to test whether Prentice criteria were violated in this cohort.

RESULTS: After PSA defined recurrence PSA-DT less than 3 months and the specific value of PSA-DT at 3 months or greater were statistically significantly associated with time to PCSM and with time to all cause mortality after PSA defined recurrence (each Cox p <0.001). Treatment received was not statistically significant associated with time to PCSM following PSA defined recurrence in patients with PSA-DT less than 3 months (Cox p = 0.90) and in patients with PSA-DT 3 months or greater (Cox p = 0.28). Furthermore, after PSA defined recurrence PSA-DT less than 3 months was statistically significantly associated with PCSM (HR 19.6, 95% CI 12.5 to 30.9).

CONCLUSIONS: Posttreatment PSA-DT appears to be a surrogate end point for PCSM following surgery or radiation therapy. We recommend that consideration should be given to enrollment onto a clinical trial and/or initiating androgen suppression therapy at the time of PSA defined recurrence when PSA-DT is less than 3 months to delay the imminent sequelae of metastatic bone disease.

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