Predictors of prostate cancer-specific mortality after radical prostatectomy or radiation therapy.

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Abstract

PURPOSE: We evaluated predictors of prostate cancer-specific mortality (PCSM) after prostate-specific antigen (PSA) failure after radical prostatectomy (RP) or radiation therapy (RT).

PATIENTS AND METHODS: A total of 1,159 men with clinically localized prostate cancer treated with RP (n = 498) or RT (n = 661) developed PSA failure, and they formed the study cohort. Competing risk regression analyses were used to evaluate whether previously identified predictors of time to metastasis, including post-treatment PSA doubling time (PSA-DT), Gleason score, and interval to PSA failure, could also predict time to PCSM after PSA failure. The cumulative incidence method was used to estimate PCSM after PSA failure.

RESULTS: A post-RP PSA-DT of less than 3 months (hazard ratio [HR], 54.9; 95% CI, 16.7 to 180), a post-RT PSA-DT of less than 3 months (HR, 12.8; 95% CI, 7.0 to 23.1), and a biopsy Gleason score of 8 to 10 (HR, 6.1; 95% CI, 3.4 to 10.7) for patients treated with RT were significantly associated with PCSM. Post-RP estimated rates of PCSM 5 years after PSA failure were 31% (95% CI, 17% to 45%) v 1% (95% CI, 0% to 2%) for patients with PSA-DT of less than 3 months v > or = 3 months. Post-RT estimated rates of PCSM 5 years after PSA failure were 75% (95% CI, 59% to 92%) v 35% (95% CI, 24% to 47%) for patients with a biopsy Gleason score of > or = 8 v < or = 7, respectively, and PSA-DT of less than 3 months; these rates were 15% (95% CI, 0.8% to 28%) v 4% (95% CI, 1% to 6%), respectively, for patients with a PSA-DT > or = 3 months.

CONCLUSION: Patients at high risk for PCSM after PSA failure can be identified based on post-RP PSA-DT or post-RT PSA-DT and biopsy Gleason score. These parameters may be useful in identifying patients for a randomized trial evaluating hormonal therapy with or without docetaxel.