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Smoking and adverse outcomes at radical prostatectomy.

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Abstract

BACKGROUND:

Multiple large epidemiologic studies have examined the relationship between smoking and prostate cancer incidence and mortality only to arrive at contradictory results. In this series, we studied the effect of smoking on pathologic outcomes and biochemical recurrence in a cohort of men undergoing radical prostatectomy.

METHODS:

We identified 630 men who underwent radical prostatectomy between 1989 and 2005 who had detailed smoking histories. There were 321 smokers and 309 nonsmokers. Pathologic outcomes included prostate weight, volume of cancer, volume of high grade cancer, margin status, seminal vesicle involvement, extraprostatic extension, perineural invasion, angiolymphatic invasion, and the presence of nodal metastasis. Biochemical recurrence was defined as a postoperative PSA ≥ 0.1 ng/ml. Univariate analysis and multivariate linear and Cox regression were used to study the impact of smoking on these outcomes.

RESULTS:

The volume of cancer (2.54 vs. 2.16 ml, $P = 0.016$) and the volume of high grade cancer (0.58 vs. 0.28 ml, $P = 0.004$) were greater in smokers compared with nonsmokers. Smoking independently predicted greater volumes of cancer and high grade cancer in multivariate analysis. Heavy smokers (≥ 20 pack-year history) had a greater risk of biochemical recurrence on univariate survival analysis. Smoking also predicted a greater risk of biochemical recurrence on Cox regression, the magnitude of which was approximately 1% per pack-year smoked.

CONCLUSIONS:

Smoking is associated with adverse pathologic features and a higher risk of biochemical recurrence in men undergoing radical prostatectomy. If confirmed by additional studies, smoking history may need to be included into risk assessment models.

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