"Prostate Cancer Treated By Simultaneous Radiotherapy: I-125 Prostate Implant Followed By External-Beam Radiation"

A.K. Levinson, F.A. Critz, V.D. Griffin

J Urol 159:63, 1998

INTRODUCTION AND OBJECTIVES: The gold standard for treatment of early stage prostate cancer is radical prostatectomy. Radiotherapy treatment alternatives should be rigorously evaluated by long follow-up and an undetectable posttreatment PSA.

METHODS: From 1984-1994, 572 men with stage T1T2N0 prostate cancer were treated by an I-125 prostate implant (median 12,000 cGy) followed by external-beam radiation (4,500 cGy). Median pre-treatment PSA was 7.7 ng/ml (range, 0.3-188 ng/ml). Median follow-up is 4.5 years (range, 3-13 years). Disease freedom is defined as men who achieve and maintain a post radiation PSA of <=0.5 ng/ml. Treatment failure is defined as men who nadir >0.5 ng/ml or whose PSA subsequently rose above this level.

RESULTS OBTAINED: Overall, the Kaplan-Meier 5 and 10 year disease-free survival rate is 79% and 67%, respectively. The 10 year disease-free survival rate for men with PSA <=4.0 ng/ml is 93% and 86% for men with PSA 4.1-10.0 ng/ml. At 8 years posttreatment, 64% of men with pre-treatment PSA 10.1-20-0 ng/ml are disease free and 25% of men with pre-treatment PSA >20.0 ng/ml are disease free. Of 306 men with minimum 5 year follow-up (range, 5-13 years), 69% (210/306) are disease free. By multivariate analysis, pre-treatment PSA is the single most important pre-treatment prognostic indicator.

CONCLUSION: The ten year disease-free survival rates after simultaneous radiation are comparable to contemporary radical prostatectomy series. In the absence of prospective randomized trials, comparing irradiation and surgical treatment results is hazardous. However, these hazards are reduced by using similar posttreatment PSA endpoints to define disease freedom. Whether other radiation techniques can produce comparable results when evaluated by posttreatment PSA criteria of <=0.5 ng/ml after 10 year follow-up is unknown.