

## "Prostate Specific Antigen Nadir After Brachytherapy for Prostate Cancer Correlates With Prognosis of Men Who Recur"

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**INTRODUCTION AND OBJECTIVES:** Clinical factors associated with prognosis after failure are evaluated in this study of men with recurrent prostate cancer treated five or more years ago by brachytherapy.

**METHODS:** From 1992 - 1997, 1011 consecutive men with clinical stage T1-T2NxMo prostate cancer were treated by simultaneous irradiation: transperineal I-125 prostate seed implant followed by external beam irradiation. None received neoadjuvant hormones. Of this total, 149 recurred and are the subject of this report. The median pretreatment prostate specific antigen (PSA) was 10.3 ng/ml (range, 0.9 -88 ng/ml), 52% (77) had biopsy Gleason score 7 and 41% (61) had clinical stage T2b,T2c. Recurrence is defined by failure to achieve PSA nadir 0.2 ng/ml or a subsequent rise above this level. Dated from the time of recurrence, the median follow-up is 3 years (range, 0-8 years).

**RESULTS:** Overall, 40% (60 men) have received hormones for progressive disease and 14% (21) have developed hormone resistant disease including 12 who died due to prostate cancer. Distant metastases, local recurrence, both, and PSA failure alone was found in 23, 4, 3, and 119, respectively. None have been a candidate for local salvage treatment. According to PSA nadir group, the number (No.), median time to recur, percent given hormones for disease progression and percent with hormone resistant disease according to PSA nadir group is documented in the table.

<u>Nadir Group</u>	<u>No. (%)</u>	<u>Time to Recurrence (mos)</u>	<u>Hormones</u>	<u>Hormone Resistant</u>
0.2	37 (25%)	54	11%	0%
0.3-0.5	35 (24%)	30	20%	3%
0.6-1.0	34 (23%)	18	56%	24%
1.1-2.0	23 (15%)	24	61%	17%
>2.0	20 (13%)	12	85%	45%

With administration of hormones as an end-point, on multivariate analysis the PSA nadir is highly significant ( $P=0.001$ ), Gleason score is of lower significance ( $p=0.04$ ), pretreatment PSA and stage are not significant factors. With hormones resistant disease as an end-point, only PSA nadir achieved ( $p=0.003$ ) has significant prognostic value relative to these same factors.

**CONCLUSIONS:** The PSA nadir achieved after treatment with brachytherapy is the single most important factor associated with subsequent prognosis for non-surgically staged men who have recurrent prostate cancer.