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**Long-term outcomes for patients with prostate cancer having intermediate and high-risk disease, treated with brachytherapy and supplemental conformal radiation**

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**Abstract: Introduction:**

There remains a widespread perception that brachytherapy-based regimens are ill advised for pts having higher risk of extracapsular disease extension (ECE).

**Methods:**

321 consecutive pts having intermediate and high-risk disease were treated between 1/92 and 2/97 by one author (M.D.). Pts were stratified according to NCCN guidelines (intermediate risk: T2B to T2C or, Gleason 7 or PSA 10.1-20; high risk:  $\geq$ T3A, or Gleason 8-10 or PSA above 20). 157 pts had intermediate-risk; 164 pts had high-risk disease. This included 218 pts having Gleason score 7 or greater with 52 pts having Gleason 8-10; 203 pts having PSA above 10 with 78 pts having PSA >20; 141 pts with clinical stage T2C, and 127 pts with clinical stage T3. Elevated Prostatic Acid Phosphatase (PAP) was analyzed independently (79 pts). Pts received pelvic 3-dimensional conformal radiation (3D CRT) followed by a Palladium (Pd)-103 boost using generous brachytherapy margins. 143 pts received neoadjuvant or adjunctive hormonal therapy (median duration 4 months, max 6 months). Biochemical failure was defined using ASTRO consensus definition, nadir +2 and PSA>0.2 at last follow-up. The non-failing pts follow-up was 1-16 years (median 10.5 years). Biochemical data and the majority of original biopsy slides were independently re-reviewed at the University of Washington. (K.W. and L.T. respectively).

**Results:**

Overall actuarial freedom from biochemical progression at 16 years was 82% (89% intermediate, 74% high-risk disease, respectively). Absolute risk of failure decreased progressively, falling to 1% beyond 6 yrs after treatment. All failing pts had saturation prostate biopsies without evidence of local recurrence. Predictors of failure included Gleason score (p=0.01), and PSA (p=0.03). Elevated PAP (p<0.001) was most predictive. Hormonal therapy did not affect the failure rates (p=0.04) although most pts receiving hormones had multiple higher risk features. Morbidity was limited to RTOG grade 1-2 urinary and GI symptoms.

**Conclusions:**

The evidence from this pt group strengthens the rationale that brachytherapy-based regimens are durable and may be a desirable option for such pts.