AbstractID: 1785 Title: Permanent Interstitial Brachytherapy for Clinically Organ-Confined High-Grade Prostate Cancer with a Pretreatment PSA < 20 ng/mL

To determine the effect of biopsy Gleason score 8 and 9 histology on biochemical outcome following a permanent prostate brachytherapy approach that includes multiple periprostatic seeds and supplemental external beam radiation.

46 consecutive T1c-T2b patients with Gleason score 8 and 9 prostate cancer who were either hormone naïve (33 patients) or received cytoreductive (\leq 6 months) hormonal therapy (13 patients) underwent brachytherapy. The median patient age was 69.7 years with a median pretreatment PSA of 7.7 ng/mL. The median follow-up was 58 months. Forty-five of the patients were implanted with Pd-103 and 44 received supplemental external beam radiation therapy (45 Gy). Biochemical success was defined by either a PSA \leq 0.4 ng/mL following a nadir or by the ASTRO consensus definition. Clinical, treatment and dosimetric parameters (day 0 D₉₀ and V_{100/150/200}) were evaluated.

The actuarial 7-year biochemical disease-free survival was 84.8% using either a PSA \leq 0.4 ng/mL or the ASTRO consensus definition. The median postimplant PSA was < 0.1 ng/mL for both the hormone naïve and hormonally manipulated patients. The utilization of hormonal therapy of \leq 6 month duration resulted in a statistically non-significant improvement in biochemical outcome (92.3% versus 81.8%). When stratified by pretreatment PSA, 87.9% of patients with a pretreatment PSA \leq 10 ng/mL and 76.9% with a pretreatment PSA > 10 ng/mL remained biochemically free of disease. In multivariate analysis, none of the clinical, treatment, or dosimetric parameters predicted for outcome.