intermediate risk, and 9% were high risk. In accordance with NCCN practice guidelines, reduced pelvic supplemental beam was used in 20% of patients while 25% received hormone therapy. PSA relapse was defined according to ASTRO consensus definition. The median followup was 42 months (3–97 months).
Results: The five-year relapse-free survival was 89% for the entire group; 97% for low risk patients, 80% for intermediate risk, and 50% for high risk. Acute urinary retention occurred in 3%. Erectile function was maintained in 76%.
Conclusions: Our experience suggests that hybrid interactive Mick prostate brachytherapy is safe and effective in the treatment of prostate cancer. Optimal definition and treatment for high risk prostate cancer patients will require further study.

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Efficacy of neoadjuvant bicalutamide and dutasteride as a cytoreductive regimen prior to prostate brachytherapy

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Purpose: To evaluate the cytoreductive effectiveness of combined neoadjuvant bicalutamide and dutasteride prior to brachytherapy for clinically localized prostate cancer.
Methods and Materials: Between April 2003 and May 2005, 31 patients opted for cytoreduction with bicalutamide (50 mg daily) and dutasteride (0.5 mg daily). Prior to the initiation of medical therapy and at 3 months (90 ± 5 days), all patients underwent a transrectal ultrasound volumetric study of the prostate gland and ellipsoid volume determinations of the prostate gland and transition zone. Variables analyzed included pre- and post-treatment prostate and transition zone volumes and changes in width, height and length of the prostate gland and transition zone. A multivariate analysis was performed to identify predictors for prostate gland and transition zone volume reduction.
Results: Prior to the initiation of bicalutamide and dutasteride, the mean prostate volume was 54.3 cm^3 by planimetric summation and 49.7 cm^3 by ellipsoid volume calculation. Following a 3-month course of combination medical therapy, the average prostate volume was 36.1 cm^3 (33.6% reduction) and 32.5 cm^3 (34.6% reduction) by volumetric and ellipsoid volume determinations, respectively. Bicalutamide and dutasteride resulted in 39.8% reduction in transition zone volume (20.8 cm^3 versus 12.4 cm^3). In terms of width, height and length, the prostate gland and transition zone dimensions decreased on average from 11.4% to 19.9%.
Conclusions: Prostate gland and transition zone volume reductions following a 3-month course of neoadjuvant bicalutamide and dutasteride are comparable to previous reports of volume reduction using LHRH agonist with or without an anti-androgen.

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Interstitial high-dose-rate (HDR) brachytherapy + IMRT vs. HDR monotherapy for early stage prostate cancer

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Purpose: Transrectal ultrasound (TRUS)-guided interstitial implant for prostate cancer using high-dose-rate (HDR) + external beam radiation therapy (EBRT) technique has been reported with results comparing favorable to surgery, Low-dose-rate (LDR) brachytherapy $\pm$ EBRT, EBRT, and intensity modulated radiation therapy (IMRT). The role of supplemental EBRT in brachytherapy is controversial. We compare our results of HDR + IMRT vs. HDR monotherapy.
Methods and Materials: Between 1997 and 2006, 274 patients with T1 and T2 localized prostate cancer underwent TRUS guided interstitial implant. There were no Gleason score or PSA exclusions. After discussion of treatment options, 109 patients elected HDR Implant + IMRT and 165 patients underwent HDR monotherapy. No patient received Hormonal Blockade. Median Gleason Score was 7 (range: 4 to 10). Median PSA was 9.8 (0.60 to 39.8). IMRT treatment volume included the prostate + seminal vesicles + 2 cm margin. Implant treatment volumes ranged from 42 cm^3 to 196 cm^3. Implant treatment volume included the prostate and seminal vesicles. In patients who received IMRT + HDR, 45 Gy in 25 fractions was given via IMRT and 16.5 Gy in 3 fractions via HDR. Our protocol for HDR alone, has called for two HDR Implants. The treatment volume received 22.5 Gy in 3 fractions prescribed to the 100% Isodose line, given over 24 hours. A 2nd implant was performed 4 weeks later, delivering a further 22.5 Gy in 3 fractions, bringing the final dose to the prostate to 45 Gy in 6 fractions. Urethral dose points (12–16) were followed, and limited to $\leqslant$105% of the prescription dose.
Results: The treatment groups were comparable with respect to T-Stage, Gleason Score, and PSA. With a median followup of 66 months (range: 6 months to 120 months), the overall PSA disease-free survival (DFS) was 89.4% (245/274). In patients undergoing IMRT + HDR Implant, PSA DFS was 89.0% (97/109) vs. 89.7% (148/165) for patients undergoing HDR alone ($p = 0.6$). Urinary stress incontinence has occurred in 2.6% (7/274). RTOG late bladder toxicities were: 0% Grade 4, 0% Grade 3, and 3.3% (9/274) Grade 2. RTOG late rectal toxicities were: 0.4% (1/274) Grade 4, 0% Grade 3, 3.6% (10/274) Grade 2, and 4.7% (13/274) Grade 1. RTOG late rectal toxicity was higher in patients undergoing HDR + IMRT with 14.7% (16/109) of patients experiencing Grade 2 and 1 symptoms, vs. 4.2% (7/165) receiving HDR alone ($p \leqslant 0.01$).
Conclusions: We have observed no significant difference in PSA DFS in patients undergoing HDR monotherapy vs. HDR + IMRT. Complications were similar, though RTOG Grade 1 and 2 late toxicity was higher in patients receiving HDR + IMRT. By omitting IMRT, rectal complications may be reduced.

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False positive rate of the ASTRO and Houston biochemical failure definitions in a group of prostate brachytherapy patients with a five-year minimum followup

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Purpose: A description of the false positive rate of the ASTRO and Houston biochemical failure (bF) definitions in a cohort of patients treated with brachytherapy with at least 5 years of PSA followup and where PSA bounces were managed conservatively.
Methods and Materials: Two hundred ten patients were followed prospectively for a minimum of 5 years to allow PSA bounces to resolve in most cases. Ninety patients experienced a PSA bounce (42.9%), and were managed conservatively in that no salvage treatment was initiated unless the post treatment PSA exceeded the initial PSA. These patients were then assessed for bF with both the ASTRO consensus and Houston definitions.
Results: The median followup was 74 months. The median pre-treatment PSA was 6.6 ng/mL. The biopsy Gleason scores were distributed as follows: 87.6% Gleason 6, 11.4% Gleason 7, and 1.0% Gleason 8. The overall biochemical relapse free survival (bRFS) at 5 and 7 years, respectively, was 85.7% and 85.7% for the ASTRO definition and 96.2% and 82.1% for the Houston definition. Of the 90 patients experiencing a PSA bounce, 9 (10%) qualified for bF according to the ASTRO definition and 6 (6.7%) met the criteria for bF according to the Houston definition. Two (2.2%) of the patients were classified as a bF by both definitions.
Conclusions: Since bF often initiates salvage therapy, none of the bF definitions presented here have an acceptable false positive rate when applied to conservatively managed prostate brachytherapy patients with a 5-year minimum followup.