(50-175 mg) and Versed (3-12 mg). Local anesthetic was given with a mixture of 1% Lidocaine, 0.25% Marcaine, 1:100,000 Epinephrine, and 4% Sodium Bicarbonate neutralizing solution (20-120 cc). Local anesthesia was given to a 5 x 5 cm perineal area to a depth of 10 cm under TRUS guidance. The implants were placed under mobile multi-plane prostate template (Radiation Therapy Products Prostate Template) guidance using from 3 to 4 planes, and 12 to 22 needles. Needle spacing was 1.0 cm. The implant procedure included sigmoidoscopy and cystoscopy.

**Results:** Between 2002 and 2009, 467 TRUS guided prostate implants were performed under local anesthesia. Median implant time was 45 minutes (range : 30 to 150 minutes). HDR treatment was given using the Nucletron afterloading system. The implant volume received 2,250 cGy in 3 fractions prescribed to the 100% Isodose line, given over 24 hours. Urethral dose points (12-16) were followed, and limited to $\leq$ 105% of the prescription dose. The procedure was well tolerated, with all patients having completed the procedure. Three patients developed respiratory suppression, and required reversal with Narcan. All recovered uneventfully. Otherwise, there have been no acute complications to date.

**Conclusions:** TRUS interstitial implant of the prostate under local anesthesia is feasible. Implant time, complications, cost, and scheduling convenience, compare favorably to general or spinal anesthetic technique.

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## 2353 Preliminary Results in Prostate Cancer Patients Treated with High Dose Rate Brachytherapy and Intensity Modulated Radiation Therapy (IMRT) vs. IMRT Alone

R. B. Wilder, G. A. Barme, R. F. Gilbert, R. E. Holevas, L. I. Kobashi, R. R. Reed, R. S. Solomon, N. L. Walter, L. Chittenden, K. M. Tokita

*Cancer Center of Irvine, Irvine, CA*

**Purpose/Objective(s):** To analyze preliminary results with high dose rate (HDR) brachytherapy and intensity modulated radiation therapy (IMRT) vs IMRT alone for prostate cancer.

**Materials/Methods:** Between October 2003 and August 2008, 281 patients with early-stage prostate cancer underwent HDR brachytherapy to 2,200 cGy in 4 fractions bid and IMRT to 5,040 cGy ($n = 239$) in 28 fractions or IMRT alone to 7,920-8,100 cGy in 44-45 fractions ($n = 42$).

**Results:** Median follow up was 1.9 years. Patients treated with HDR brachytherapy and IMRT had a lower National Comprehensive Cancer Network (NCCN) recurrence risk ($p = 0.05$) and a lower likelihood of having diabetes mellitus ($p = 0.04$) than patients treated with IMRT alone. There was no significant difference in terms of the percentage of patients receiving hormonal therapy by radiotherapy treatment group ($p = 0.77$). There have been 2 recurrences in intermediate-risk patients and 2 recurrences in high-risk patients. The 2-year biochemical disease-free survival (bDFS) rates using the Phoenix consensus definition in low-risk, intermediate-risk, and high-risk patients treated with HDR brachytherapy and IMRT are 100%, 98% (95% confidence interval (CI) 94-100%), and 97% (95% CI 92-100%), respectively. The 2-year bDFS rates in low-risk, intermediate-risk, and high-risk patients treated with IMRT alone are 100%, 100%, and 67% (95% CI 13-100%), respectively. There was no significant difference in bDFS between treatment groups when groups were stratified by NCCN recurrence risk ($p = 0.71$). Similarly, there was no significant difference in bDFS between treatment groups when only the high-risk subgroup of patients was examined ($p = 0.28$). In low-risk patients, the presence of bilateral positive core biopsies did not affect bDFS ($p = 1.00$). The 2-year rates of at least National Cancer Institute Common Terminology Criteria for Adverse Events v3.0 grade 2 gastrointestinal toxicity for HDR brachytherapy and IMRT vs IMRT alone were 14% (95% confidence interval (CI) 8-20%) vs 7% (95% CI 0-16%), respectively ($p = 0.32$). The 2-year rates of at least grade 2 genitourinary toxicity for HDR brachytherapy and IMRT vs IMRT alone were 16% (95% CI 9-23%) vs 5% (95% CI 0-14%), respectively ($p = 0.30$). At 2 years post-irradiation, erectile function had worsened in 12% (95% CI 7-17%) vs 9% (95% CI 0-21%) of men treated with HDR brachytherapy and IMRT vs IMRT alone, respectively ($p = 0.34$). There was no significant difference in acute toxicity ($p = 0.09$) or late toxicity ($p = 0.32$) by treatment group.

**Conclusions:** HDR brachytherapy and IMRT yielded similar short-term bDFS and toxicity to IMRT alone. As a result, we continue to base treatment on physician and patient preference.

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## 2354 Analysis of Impact of Hormonal Therapy on Prostate Cancer Patients Receiving High-dose IMRT: Long Term Follow-up

S. Vora, W. W. Wong, K. Wharton, G. A. Ezzell, S. E. Schild

*Mayo Clinic Arizona, Scottsdale, AZ*

**Purpose/Objective(s):** The impact of androgen deprivation therapy (ADT) on patients receiving high dose IMRT is not well understood. Randomized trials comparing external beam irradiation (EBRT) plus ADT with EBRT alone suggested survival benefits for the combined modality treatment for (pts) with intermediate or high risk diseases. However, these studies used EBRT dose of about 70Gy. This retrospective review evaluated the impact of ADT in 288 patients who received either high-dose IMRT or high-dose IMRT in combination with hormonal therapy.

**Materials/Methods:** A retrospective review of all patients with localized prostate adenocarcinoma treated with high-dose IMRT was conducted. Eligible patients had a minimum of two years of follow-up Patients received 5 or 7 field IMRT delivering 75.6 or 77.4 Gy to the prostate and 50.4 Gy to the seminal vesicles. Transabdominal ultrasound was used to reduce risk for geographic miss. ADT consisted of leuprolide only. Biochemical control rates were calculated according to the ASTRO-Phoenix consensus definition. Risk groups were designated on the basis of presence or absence of pretreatment PSA level 10 ng/ml or less, stage T1-2 and Gleason Score $\leq$ 6. Median follow-up was 62 months (range 3.9 - 98.9 mo).

**Results:** Of 288 pts, 102 received hormonal therapy as part of treatment (31 neoadjuvant+concurrent, 52 neoadjuvant+concurrent+adjuvant, 5 concurrent+adjuvant, 14 adjuvant only). Median duration of ADT was 12 months. The 3 and 5 yr biochemical control rates (BCRs) were 91.8% and 85.2% (with any ADT) and 95.5% and 87.4% (without ADT) ($p = 0.71$). The 5-year BCRs by risk groups were low risk: 85.7%($n = 9$) with ADT, 93.4%($n = 90$) without ADT ($p = 0.87$); intermediate risk: 93%($n = 55$) with ADT,