

**PP-32**

**Salvage regional low-dose-rate brachytherapy for local recurrence of prostate cancer after definitive radiotherapy**

**H. Sasaki, M. Kido, K. Miki, H. Takahashi, M. Aoki, S. Egawa**

*Jikei University School of Medicine, Tokyo, Japan*

**Purpose:** To characterize local recurrence of prostate cancer and address the effect of salvage regional brachytherapy, defined by prostatic biopsy, after primary 125-iodine low-dose-rate brachytherapy (LDR-BT) with or without external beam radiotherapy (EBRT) in Japanese men.

**Patients and Methods:** Between 2005 and 2011, a total of 616 consecutive patients had undergone LDR-BT based therapy for clinically localized prostate cancer at Jikei University Hospital. Median initial PSA was 12.0 ng/ml (range, 6.8 to 34.0). Median D90 and median V100 were 136.7Gy (range, 123.9 to 189.9) and 89.7% (range, 84.6 to 99.1) at initial LDR-BT, respectively. Biochemical recurrence (BCR), defined by any level above prostate specific antigen (PSA) nadir +2 ng/ml, occurred in 45 (7.3%) patients at a median of 30 months (range, 11 to 93) after initial LDR-BT. Twenty patients subsequently underwent transperineal template prostatic biopsy, and 8 had positive cores at the base of the prostate or at the seminal vesicles. These 8 patients had under-dosed area identified at initial LDR-BT, corresponding to the positive biopsy sites. Seven of them confirmed to have only localized recurrence underwent salvage regional LDR-BT. The under-dosed area corresponding to the positive biopsy sites was treated. The remaining patient was opted for surveillance.

**Results:** Median PSA nadir level of the 8 patients with biopsy proven local recurrence after initial LDR-BT was 0.75 ng/ml (range, 0.39 to 2.06). Seven patients tolerated the salvage regional brachytherapy well and showed a decrease in PSA levels at follow-up. Two patients later showed biochemical and clinical progression after 11 and 13 months after salvage LDR-BT, while remaining patients showed still decreasing PSA levels. Time to BCR in the 2 patients who showed disease progression was shorter than in other patients (18 and 27 months). No significant genitourinary (GU) and gastrointestinal (GI) toxicity was encountered in these patients.

**Conclusions:** Eight (40%) of 20 patients who had undergone prostatic biopsy after LDR-BT were diagnosed to have isolated local recurrence of prostate cancer. Although its treatment effect is controversial, salvage regional LDR-BT for biopsy-proven localized prostate cancer recurrence is rationale, technically feasible and safe. Optimal patient selection is of utmost importance for the long-term success. Larger studies with longer follow-up are warranted.