9th International Symposium on
Focal Therapy and Imaging in prostate & kidney cancer
June 23-25, 2016
Washington Duke Inn Hotel, Durham NC, USA
Presented by: Duke University School of Medicine
In collaboration with:

PP35

HEMI-GLAND BRACHYTHERAPY FOR LOCALIZED PROSTATE CANCER

K. Saito, Y. Matsuoka, N. Numao, K. Hayashi, K. Toda, M. Ito, M. Inoue, S. Yoshida, M. Yokoyama, J. Ishioka, Y. Fujii, R. Yoshimura, K. Kihara

Tokyo Medical and Dental University, Tokyo, Japan

Background: Focal therapy for prostate cancer could lead to better preservation of genitourinary function with adequate treatment in appropriately selected patients. Brachytherapy could be applicable as a form of focal therapy as it enables meticulous adjustment of the treatment area and dose intensity. We have performed hemi-gland low dose rate brachytherapy as a focal therapy in unilateral prostate cancer patients selected based on extended prostate biopsy and MRI findings. Here, we report the mid-term results and follow-up biopsy findings.

Patients & Methods: Patients selected for hemi-gland brachytherapy met the following criteria: proven unilateral cancer, i.e., positive cores of cancer within a unilateral lobe as shown by extended prostate biopsy and no cancerous lesions in the contralateral lobe as shown by MRI; clinical stage T2a or less; Gleason score (GS) 7 or less; maximum cancer length less than 10 mm; PSA value less than 20 ng/ml. The target lobe was treated up to the midline as defined based on the urethra location using implanted I125 seeds delivering a dose of 160 Gy under real-time ultrasonographic guidance. After treatment, patients were followed with serial PSA and MRI. Genitourinary symptoms were assessed according to the International Prostate Symptom Score (IPSS), and International Index of Erectile Function - 5 (IIEF-5). Follow-up transperineal 18-core biopsy was performed more than 12 months after treatment. The protocol was approved by our institution's ethical committee.

Results: Among patients, who met entry criteria, desiring to treat the cancer with focal therapy, 25 patients received hemi-gland brachytherapy with a median follow-up period of 31 months (range 2 to 60). Median age was 69 years (range 58 to 81) with median prostate specific antigen 7.4 ng/ml (range 4.8 to 16.4). Of these patients, 52% were considered low-risk and 47% were considered intermediate-risk. After treatment, no severe acute complications including urinary retention were observed. IPSS values showed slight worsening at 3-6 months after the treatment but recovered at 12 months. Sexual function did not change significantly as assessed by IIEF-5. In all men having intercourse, the ejaculation was preserved. No biochemical failure according to Phoenix's definition was observed. Follow-up MRI showed no evidence of residual or new lesions in any patients. Of the 21 patients who were followed for more than 12 months after treatment, 14 underwent control biopsy; one GS 3+3 caner core was found in the treated lobe in one patients. In the contralateral lobe, cancer was detected in six patients. However, none of these contralateral lobe cancers was clinically significant. One patient with GS 3 + 3 cancer measuring 6mm in the contralateral lobe subsequently received the second focal therapy with anterior quadrant fashion to preserve ejaculation that was confirmed to be spared thereafter. All patients are still alive except two, who died from unrelated causes at 15 and 18 months, respectively.

Conclusions: Hemi-gland brachytherapy as a form of focal therapy for prostate cancer yielded good cancer control in treated areas with better preservation of genitourinary function. Focal brachytherapy is a good treatment modality for carefully selected localized prostate cancer.