

Extreme Hypofractionation Utilizing Stereotactic Body Radiation Therapy is Well Tolerated in Elderly Prostate Cancer Patients

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INTRODUCTION: Stereotactic body radiation therapy (SBRT) delivers large radiation doses to the prostate while minimizing exposure to adjacent normal tissues. Large fraction sizes may increase the risks of functional decrements. Elderly men may be at increased risk for these toxicities due to poor baseline function and hence limited reserve. **OBJECTIVES:** This study reports patient reported outcomes following SBRT for clinically localized prostate cancer in the elderly.

METHODS: Between December 2008 and February 2012, 179 consecutive hormone naive elderly patients (> 70 yo) with clinically localized prostate cancer were treated with 35-36.25 Gy SBRT in 5 fractions utilizing the CyberKnife Radiosurgical System (Accuray). Quality of life (QOL) was assessed via the EPIC-26 questionnaire at baseline and at 1, 3, 6, 12, 18, 24, 30 and 36 months following the completion of treatment. EPIC scores range from 0 - 100 with lower values representing worsening symptoms.

RESULTS and CONCLUSIONS: The EPIC urinary obstructive/irritative scores declined at 1-month post SBRT (mean change from baseline, -7.9) before returning to baseline at three months post-SBRT (mean change from baseline, -0.4). The EPIC urinary incontinence scores declined slowly over the three years following treatment without recovery (mean change from baseline, -6.6). This decline was statistically significant ($P < 0.05$) but not clinically significant (MID=8.8). EPIC Bowel scores transiently declined at 1-month post SBRT (mean change from baseline, -8.5) and then experienced a second more protracted decline over the next three years without recovery (mean change from baseline, -4.5). Bowel declines at one month and three years were statistically significant ($p < 0.05$) but only the change at 1 month was clinically significant (MID=6.4).

In the first three years following treatment, the impact of SBRT treatment on patient reported outcomes was minimal. SBRT for clinically localized prostate cancer should not be deferred in older men due to concerns of increased morbidity.

Keywords: Prostate cancer, SBRT, CyberKnife, EPIC, elderly, survivorship