

Treatment of Locally Recurrent Prostate Cancer after Whole Gland Cryosurgery with Frameless Robotic Stereotactic Body Radiotherapy - Updated Results

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Abstract

Objectives: There are data validating the use of salvage cryotherapy as treatment for locally recurrent prostate cancer after radiation. There is a paucity of data examining the use of frameless robotic stereotactic radiotherapy (SBRT) as salvage for patients with recurrent disease after primary treatment with cryotherapy. The aim of this series is to present our experience using SBRT with a robotic linear accelerator in the treatment of patients with locally recurrent prostate cancer after cryotherapy.

Methods: We reviewed the records of 23 consecutive patients treated with SBRT for biopsy proven locally recurrent prostate cancer after cryotherapy. Patients were treated and followed at Winthrop University Hospital from 2011 to 2016. Patients were restaged to rule out metastatic disease prior to treatment. 2 patients received hormonal therapy for up to 6 months. Patients received a dose of 3500 cGy in 5 fractions of 700 cGy delivered over 5 consecutive days with 6 MV photons using a robotic linear accelerator. Treatment planning was done with a CT scan fused with an MRI scan. Dose was prescribed to the 83% to 87% isodose line, 5 mm beyond the capsule except posteriorly where the dose was prescribed to 3 mm beyond the capsule. Intrafraction motion was tracked in all patients using 4 gold markers.

Results: The median follow up was 30 months (range 12-72 months) with no patient lost to follow up. The median age was 72 years. The median pre-treatment PSA was 12.8 ng/ml. The median post-treatment PSA was 1.59 ng/ml. One patient relapsed in the pelvis. 2 relapsed distantly. All other patients remain controlled by ASTRO and Phoenix criteria. Temporary side effects at 3 weeks included dysuria and tenesmus. These side effects returned to baseline by 6 months in all patients. There have been no late side effects in any patient at the time of their last follow up.

Conclusions: Stereotactic body radiosurgery is a viable treatment option for patients with prostate cancer who have failed initial cryosurgery. All patients had minimal morbidity with significant reduction in their PSA level after treatment. 3 patients relapsed after salvage SBRT. The remaining 20 patients remain disease free both by ASTRO and Phoenix Criteria. Continued follow-up will be required to see if these results remain durable.

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Abstract

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