

High Intensity Focused Ultrasound Treatment for Recurrent Histologically Proven Localized Prostate Cancer: Initials Results

Introduction and Objective: Local relapse after External Beam Radiation (EBRT) or Brachytherapy (BT) for localized PCa has been reported in 30–40%. Current salvage therapy alternatives include radical prostatectomy, BT, cryotherapy and high-intensity focused ultrasound (HIFU). HIFU is a minimally invasive ablation technique using ultrasound waves to ablate the prostate.

Materials and Methods: From April 2006 to Sept 2011, 66 patients with histologically confirmed recurrent localized PCa after EBRT or BT were submitted to HIFU (Sonablate®500). Patients' clinical stages were $\leq T2$, and all PSA levels were ≤ 10 ng/ml. Pre-HIFU Gleason scores were ≤ 8 and there was no evidence of distant metastasis with both CT and bone scan. PSA levels, IPSS and IIEF-5 questionnaires were assessed at 45, 90, 180 days and 12 months. TRUS-guided biopsy was done at 180 days post-HIFU. Biochemical failure was defined according to the Phoenix criteria (nadir + 2 ng/mL).

Results: Mean age was 68.01 (± 5.27) year and the mean PSA was 4.7 (± 2.96) ng/ml. Mean prostate volume was 25.59 (± 10.5) cc. Pre HIFU IPSS and IIEF median scores were 7.44 (± 4.68) and 9.2 (± 8.15) respectively. The Gleason score was ≤ 6 in 16.7% cases, 7 in 48.5% and 8 in 15.2%. The Gleason score was difficult to determine in 19.7% of cases. Fifty-four patients (81.8%) had EBRT and 12 (18.2%) had BT. Twenty-two (33.3%) patients had androgen deprivation pre HIFU. Mean follow-up was 31.66 months (± 18.71). At follow-up, 19 (28.8%) patients had evidence of persistent or recurrent PCa by TRUS-guided Biopsy. Progression Free Survival at 5 years was 43.9%. At 6 Month Post-HIFU, median IPSS and IIEF scores were 11.01 (± 8) and 6.09 (± 7.1). The median PSA value at 45, 90, 180 days and 12 months were 0.75, 0.74, 1.05 and 1.55 ng/mL respectively. Complications were uncommon and include persistent stress urinary incontinence 2 (3%), rectourethral fistula 2 (3%), and urinary retention 3 (5%).

Conclusion: Our initials results of salvage HIFU after radiotherapy in PCa showed a low rate of complications and acceptable oncologic results. Salvage HIFU is a promising treatment option, especially for suboptimal candidates for salvage prostatectomy. Further prospective multicenter controlled trials are needed to confirm the results.

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