Hemi-gland Cryoablation of Prostate Cancer: MRI-guided Biopsy for Evaluation and Follow-up

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Introduction

• Cryotherapy was the first of the prostate focal therapies, but follow-up via MRI-guided biopsy has not been reported1-3.

• Hemi-gland treatment, readily achievable with cryotherapy, offers the potential for effective margins of ablation.

Objective

• To study the safety and cancer-control of hemi-gland cryoablation, using MRI-guided biopsies before and after treatment.

Materials & Methods

• 25 men with clinically significant prostate cancer (csCaP) were subjects of this open-label IRB-approved study (Table 1).

• MRI-guided targeted and systematic biopsy (fusion, Artemis) confirmed the lesion to be only unilateral and prostate volume <60 cc.

• Hemi-gland freezing was achieved via 14ga needles (2-3) inserted trans-perineally under US guidance, using two cycles of argon gas cooling (Galil/BTG) and a urethral warming catheter (Fig. 1).

• All patients were treated under general anesthesia in the UCLA surgi-center and discharged the same day with an indwelling Foley catheter.

• All patients underwent follow-up MR fusion biopsy at 6 months (Fig. 2).

Results

• Cryotherapy was completed satisfactorily in all 25 cases in < 90 minutes (room time) with no intra-operative complications.

• Ipsilateral biopsy (avg 10 cores) revealed no cancer in 20/25 (80%) and microfocal residual in 2 (Fig. 3). 3 were failures.

• Repeat MRI showed disappearance of the MRI target in 17/22 (77%) men.

• PSA and PSAD decreased 6 months post-operatively (Fig. 4).

• Treatment complications included one case of transient urinary retention; no incontinence was noted.

• At 6 months, IPSS and EPIC-26 scores were unchanged; median IIEF-5 scores decreased from 17.0 to 13.5, respectively. Of 12 men with erections adequate for intercourse initially, 10 maintained function and 2 were not sexually active.

Hemi-gland cryoablation for intermediate risk prostate cancer is well-tolerated and, when evaluated at 6 months by MRI/US fusion biopsy, has an apparent cure rate of 80%.

Acknowledgments

• Source of Funding: NIH (RO1 158627), Jean Perkins Foundation, and UCLA CTSI (UL1TR000124).

• Dr. Marks is a co-founder of Avenda Health.

References

