Focal cryotherapy delivers similar oncological control with significantly improved erectile function recovery rates over a whole gland approach
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Introduction and Objectives: The refinement in the localization of prostate cancer tumor foci through MRI and transperineal template−mapping biopsies has led to an increased interest in lesion−directed focal prostatic cryoablation. However, there is a lack of data comparing the outcomes of whole−gland (WG) to focal (FT) ablation. The aim of our study was to assess oncological and functional outcomes between WG and FT cryoablation after having matched patients for pre−operative characteristics.

Methods: We matched with a 1:1 ratio 317 men who underwent FT with 317 who underwent WG treatment in the Cryoablation Online Data (COLD) Registry between 2007−2013. All patients were low−risk according to the D'Amico risk groups and matched according to age at surgery. Only pre−operatively potent men were included in the study. Primary outcomes were biochemical recurrence (BCR) free−survival defined according to the Phoenix criteria and assessed by Kaplan−Meier curves. Secondary outcomes were erectile function (ability to have intercourse with or without erectile aids), urinary continence, urinary retention and fistula rates at 6, 12 and 24 months after the procedure.

Results: Median age at the time of the procedure was 66.5 yrs (SD 6.6 yrs). Of the men who underwent a post procedure biopsy, WG 30% (n=95) and FT 17% (n=55), the positive biopsy rates were 11.6% and 14.5%, respectively. Using the Phoenix criteria we examined BCR−free survival at 60 months, no significant difference was found between the WG 80.1% and FT 71.3% cohorts. Erectile function data at 24 months was available for 172 WG and 160 FT treated men. Recovery of erection was achieved in 46.8% and 68.8% of patients in the WG and FT cohorts, resp (p=0.001). Urinary function data at 24 months was available for 301 WG and 306 FT patients, continence rates were 98.7% and 100% resp. Comparable rates of urinary retention at 6, 12 and 24 months was reported in 7.3%, 1.9% and 0.6% resp in the WG arm, and in 5%, 1.3% and 0.9% resp in the FT arm. One fistula was reported in each group.

Conclusions: Among potent men with low-risk prostate cancer, FT seems to deliver similar oncological control with significantly improved erectile function recovery rates over a WG approach. Urinary continence rates were excellent for both approaches. Urinary retention and fistula rates were infrequent and similar between the two treatment groups. While FT shows promising short−term results, future validation studies are needed to evaluate the long term oncological outcomes in comparison with prostatectomy and radiation therapies.