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PROPENSITY SCORE MATCHED COMPARISON OF PARTIAL TO WHOLE GLAND CRYOTHERAPY FOR INTERMEDIATE-RISK PROSTATE CANCER: AN ANALYSIS OF THE COLD REGISTRY DATA

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Introduction: Patients with intermediate-risk prostate cancer constitute a unique group of patients in whom cure may be both necessary and possible. While there has been increasing interest in partial gland therapies to reduce the morbidity of treatment, randomized comparisons to whole gland therapies have been lacking. We aim to compare the oncological and functional outcomes of partial versus whole gland cryotherapy for intermediate-risk prostate cancer.

Methods: Men with intermediate-risk prostate cancer treated with primary prostate cryotherapy were selected from the Cryo On-Line Data Registry. Men treated with partial prostate ablation (targeted ablation, unilateral/ bilateral nerve-sparing ablations) were matched 1:1 to controls who had undergone whole gland cryotherapy using a propensity score approach. The propensity score was based on age, pre-biopsy serum prostate specific antigen level, biopsy Gleason score, clinical stage, prostate volume, use of neoadjuvant androgen deprivation and year of surgery. The outcomes analysed were biochemical progression free survival (BPFS) using the ASTRO and Phoenix criteria, the 12 month continence rate (defined as being pad-free) and sexual function at 12 months (defined as the ability to have sexual intercourse.

Results: A total of 1,749 men were identified, of whom 1,488 had undergone whole gland and 288 partial prostate cryotherapy. 200 pairs of men with complete outcome data at a mean follow-up of 30 months were analysed. The 2 and 5 year BPFS rate was 71.6% and 63.5% for whole gland vs. 81.0% and 74.6% for partial prostate ablation using the ASTRO criteria (p=0.0275) and 89.6% and 79.1% for whole gland vs. 79.8% and 68.5% for partial prostate ablation using the Phoenix criteria (p=0.0588). Of 198 pairs of men, the 12- month continence rate was identical at 95%. Of 154 pairs of men, the 12-month rate of successful intercourse was 26.6% for whole gland and 45.5% for partial prostate ablation (p=0.001). The rate of rectal fistula was 0.37% in the partial ablation group.

Conclusion: Biochemical progression free survival after partial prostate ablation is not significantly inferior to whole gland cryotherapy in the short to medium term and may result in better sexual function at 12 months.