Partial gland treatment of prostate cancer utilizing high-intensity focused ultrasound in the primary and salvage setting: a systematic review.

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Abstract

PURPOSE: Advances in prostate imaging, biopsy and ablative technologies have been accompanied by growing enthusiasm for partial gland ablation, particularly using high-intensity focused ultrasound (HIFU) for treating prostate cancer. The preservation of non-cancerous prostate tissue and minimizing damage to the neurovascular bundles and external urethral sphincter may improve functional outcomes.

MATERIALS AND METHODS: A systematic review was performed following the PRISMA guidelines using a combination of MeSH terms, free-text search, and review of relevant bibliographies using Medline and Embase from the inception of each database through October 10, 2016. We excluded studies performing exclusively whole-gland ablation, case reports, and series where treatment was followed by immediate resection.

RESULTS: Thirteen papers that enrolled a total of 543 patients were included. Eleven were performed in the primary setting and two in the salvage setting. The median follow-up ranged from 6 months to 10.6 years. Post-treatment erectile dysfunction and urinary incontinence occurrence varied from 0-48% and 0-50%, respectively, with definitions varying by study. In total there were 254 reported complications. Marked heterogeneity between studies limited the ability to pool results with regards to functional and oncologic outcomes. Seventy-six patients (14%) went on to receive further oncologic treatment.

CONCLUSIONS: Early evidence suggests that partial gland ablation is a safe treatment option for men with localized disease. Longer-term data are needed to evaluate oncologic efficacy and functional outcomes, and will aid in identifying the optimal candidates for therapy. Standardization of outcome definitions will allow for better comparison between studies and among treatment modalities.

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