

High Intensity Focused Ultrasound (HIFU) failure following use as “salvage” treatment following failed External Beam Radiation Therapy

“My” Take Home Message in reading the abstract is that HIFU as salvage therapy following failed EBRT could be considered a preferred salvage therapy than surgical extract of the still present prostate gland. Side effects of salvage HIFU are noted, but the conclusion in the abstract indicates there could be side effects of more difficult nature with rather using salvage surgical removal of the still present prostate gland following EBRT.

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High-Intensity Focused Ultrasound in Radiorecurrent Prostate Cancer

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TAKE-HOME MESSAGE

- This retrospective study evaluated the effectiveness and harms of high-intensity focused ultrasound (HIFU) following radiation for clinically localized prostate cancer. At a median follow-up of 3 years, investigators found that 60% of men suffered recurrence following salvage HIFU with risk directly associated with

D'Amico risk strata. While the majority of patients reported satisfactory functional results following salvage HIFU, 8% experienced bladder neck stricture and 2% had rectourethral fistula.

- There remains a relatively high risk of recurrence following salvage HIFU, particularly among men with intermediate- and high-risk disease. HIFU may serve a role in well-selected individuals following definitive radiation therapy, and these data may be used to guide expectations following treatment.

– Matthew Resnick, MD, MPH, MMHC

abstract

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OBJECTIVE

To assess short- to medium-term cancer control rates and side effects of focal salvage high- intensity focused ultrasound (HIFU).

MATERIALS AND METHODS

A retrospective registry analysis identified 150 men who underwent focal salvage HIFU (FS-HIFU) (Sonablate 500) between November 2006 and August 2015. Metastatic disease was excluded by nodal assessment on the pelvic MRI, a radioisotope bone scan and positron-emission tomography (PET) imaging (choline-18F-fluorodeoxyglucose PET or choline PET-CT). In our current clinical practice, metastatic disease must be excluded by both choline PET and bone scan. Localization of cancer was carried out using multiparametric MRI of the prostate (T2-weighted, diffusion-weighted and dynamic contrast-enhanced imaging) with systematic or template prostate mapping biopsies. The primary outcome was a composite failure incorporating biochemical failure (BCF) and/or positive localized or distant imaging results and/or positive biopsy and/or systemic therapy and/or metastases/prostate cancer-specific death. The secondary outcome was BCF using the Phoenix-ASTRO definition (prostate-specific antigen [PSA] nadir + 2 ng/mL). We used Kaplan-Meier analysis and Cox proportional hazards regression to quantify the effect of the determinants on the endpoints.

RESULTS

The mean (standard deviation [sd]) patient age at focal salvage HIFU was 69.8 (6.1) years and the median (interquartile range [IQR]) PSA pre-focal salvage HIFU was 5.5 (3.6-7.9) ng/mL. The median (IQR) follow-up was 35 (22-52) months. Patients were

classified as having low- 2.7% (4/150), intermediate- 39.3% (59/150) and high-risk disease 41.3% (62/150) according to D'Amico classification, prior to focal salvage HIFU. Composite failure occurred in 61% of patients (91/150) and BCF occurred in 51.3% (77/150). The Kaplan-Meier composite endpoint-free survival (CEFS) rate at 3 years was 40% (95% confidence interval [CI] 31-50) for the entire group. Kaplan-Meier estimates of CEFS were 100%, 49% and 24% at 3 years in the low-, intermediate- and high-risk groups pre-salvage HIFU, respectively. The Kaplan-Meier biochemical disease-free survival (BDFS) rate at 3 years was 48% (95% CI 39-59) for the entire group. Kaplan-Meier estimates of BDFS were 100%, 61% and 32% at 3 years in the low-, intermediate- and high-risk groups pre-salvage HIFU, respectively. Complications included urinary tract infection (11.3%; 17/150), bladder neck stricture (8%; 12/150), recto-urethral fistula after one HIFU procedure (2%; 3/150) and osteitis pubis (0.7%; 1/150).

CONCLUSION

Focal salvage HIFU conferred a relatively low complication and side effect rate. CEFS and biochemical control in the short to medium term were reasonable, especially in this relatively high-risk cohort, but still low compared with current whole-gland salvage therapies. Focal salvage therapy may offer disease control in men at high risk whilst minimizing additional treatment morbidities.