

Visually Directed Primary HIFU for Treating Localized Prostate Cancer

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Objective

High intensity focused ultrasound (HIFU) has been used for the primary treatment of organ-confined prostate cancer (PCa). Visually Directed HIFU™ has been proposed as a standard for the conduct of therapy for the Sonablate® 500 device allowing the user to adapt energy deposition based on immediate feedback from real-time ultrasound changes. This study aimed to evaluate the outcomes in a cohort who had primary HIFU treatment using PSA nadir as a surrogate for oncological effectiveness.

Materials and Method

Between February 2005 and May 2006, 155 men with presumed organ-confined disease treated with HIFU were included. All were treated under general anaesthetic in a single session. Patients were stratified using D'Amico's risk categories. The percentage of men achieving a PSA nadir 0.2ng/mL or unrecordable (<0.05ng/ml) in each risk group was analysed. 43 men were included in the low-risk group, 52 men in the intermediate-risk group and 22 men in the high-risk group.

Results

Median age was 65 years (range 47-88 years) whilst mean follow-up was 11 months (range 6-18). 48 (31%) had hormonal therapy for 3 months prior to HIFU as cytoreduction. In the low-intermediate group, 68% (83/122) achieved a PSA nadir of 0.2ng/ml and two-thirds of these were unrecordable. Overall, when including the high-risk category this did not change the achievement of this robust PSA level with 67% (104/155) achieving a PSA nadir of 0.2ng/mL and almost two-thirds of this group achieving unrecordable levels (<0.05ng/mL). Only men who had a rising PSA were biopsied post-HIFU (31/155). Overall, 8% (12/155) had positive biopsies. 8/12 had successful redo- HIFU, 3/12 are on surveillance for insignificant, low volume disease and 1/12 is on hormones.

Conclusion

Visually Directed HIFU™ in men with localised PCa can achieve the accepted robust PSA nadir of 0.2ng/ml at 3-6 months post-treatment whilst most of this group achieve unrecordable levels. This data demonstrates the efficacy of this treatment modality in terms of PSA kinetics. Overall, 'no evidence of disease' was seen in 92% of men. Further analysis will evaluate long -term clinical outcome.