Prospective analysis of high intensity focused ultrasound (HIFU) treatment of localised prostate cancer – oncological and quality of life outcomes

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INTRODUCTION

• High-intensity focused ultrasound (HIFU) is a minimally invasive treatment option for localised prostate cancer.
• There is increasing evidence to suggest HIFU as a clinically effective treatment that preserves quality-of-life (QoL).1,2
• HIFU is available as treatment for prostate cancer around the world including Europe, North America, United Kingdom and Japan.3
• However, criticism has been levied at the relative lack of long-term evidence.4

AIM

• To evaluate the oncological and QoL outcomes of HIFU whole-gland ablation for localised prostate cancer, by a single urologist in private practice.

METHOD

• Study design: Prospective long-term study of men with localised prostate cancer, treated with HIFU at a private urology practice (2007-2015).
• Procedure: Mini-TURP pre-HIFU. Transrectal prostate ablation performed under general anaesthesia with Sonablate-500® (Sonacare Medical®).
• Data collection: Clinicopathological and QoL data recorded at specific time intervals. QoL outcomes measured on validated questionnaire tools.
• Data analysis: SPSS software utilised for Kaplan-Meier survival curves.
• Primary outcome: Failure-free survival (FFS): “no transition to any of the following: (1) local salvage therapy (surgery or radiotherapy), (2) systemic therapy, (3) metastases, or (4) prostate cancer-specific mortality.”1
• Secondary outcomes: Oncological – overall survival (OS), cancer-specific survival (CSS), Metastases-free survival (MFS); QoL – urinary function, incontinence, erectile function, rectal toxicity

RESULTS

• 70 men were treated in the study.
• Median follow-up of 83.4 months (7 years).
• FFS at 5 and 7 years were 78.2% and 71.2% respectively.
• OS at 5 and 7 years was 96.4%.
• CSS at 5 and 7 years was 100%.
• Median 64.7 months before salvage treatment or repeat HIFU
• Incontinence: median MUDI scores at 0, 12 and 24 months were 35 (30-43), 33 (29-41) and 32 (29-46) respectively.
• Urinary function: median IPSS scores at 0, 12 and 24 months were 7 (3-10), 3 (2-9) and 4 (1-7) respectively.
• Erectile function: in men with normal erectile function at baseline, mean IIEF-5 score declined 37% from 23.5 (±1.6) to 14.7 (±3.6) at 12 months, stable at 16.2 (±9.0) at 24 months.
• Bowel toxicity: median RTOG score was 0 throughout study

CONCLUSIONS

1. At median follow-up of 7 years, HIFU is an effective, minimally invasive and safe option for the treatment of localised prostate cancer.
2. HIFU has comparable oncological outcomes to common treatment standards, including radical prostatectomy and radiation therapy.
3. In contrast, HIFU has a lower impact on QoL: preservation of baseline urinary function and continence, and no rectal toxicity.
4. Reduction in erectile function is approximate to nerve-sparing prostatectomy

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REFERENCES