

PP37

INTRAPROSTATIC EFFICACY ANALYSIS OF ABLATHERM HIFU BASED ON OVER 15,000 BIOPSY CORES: IMPLICATION FOR FOCAL THERAPY

S. Thueroff¹, C. Chaussy

Department of Urology, Klinikum Harlaching, Munich, Germany

Department of Urology, University Regensburg, Regensburg, Germany

Introduction & Objectives: Aim of the study was to compare the intraprostatic spatial distribution of prostate cancer lesions before and after primary single session whole gland therapy with high intensity focused ultrasound (HIFU) and to identify potential application limitations which would be critical for focal therapy.

Methods: The prostate was subdivided into 6 main spatial areas: Apex/Mid/Base each Right/Left to allow for topographic quantification and analysis. For each staging and follow up biopsy core 2 criteria were registered in a prospective database: position = spatial/topographic intraprostatic location and tumor involvement within the core. Tumor involvement was quantified by a Tumor Volume Score: 0 points: no PCa in biopsy; 1 point: 1-3 mm, 2 points: 4-6 mm, 3 points: >6 mm PCa in biopsy. Data were analyzed from patients with localized PCa (T1 -T3b) who underwent primary whole gland HIFU with Ablatherm and had both, pre-treatment and follow-up histology. 1,299 patients representing 15,588 staging and control biopsies after HIFU were included.

Results: At diagnosis the average number of **positive PCa affected cores/prostate** was mean 2.91 compared to 1.08 for follow-up biopsy. The **PCa tumor volume score** was mean 5.16 (median 4.0) at diagnosis and 1.75 (median 1.0) at follow up ($p < 0.001$). Staging preference for primary PCa was in the mid-lateral portion, less apical and basal cancer was found in the biopsies. PCa prostatic lobe distribution was symmetric right left at staging and follow up. Spatial intraprostatic PCa post-HIFU distribution in cases of PCa recurrence was homogenous and symmetrically distributed over all prostatic areas without significant spatial variation.

Conclusions: Ablatherm HIFU has no spatial efficacy variation. This disproves the recent theory that HIFU may have a right left inconsistency in efficacy. It also confirms sufficient conductive heat transfer to distribute a therapeutic dose through to the external sphincter when using a 3.5 mm safety margin.

Source of Funding: Lingen Foundation Cologne, Harlachinger Krebshilfe e.V. Munich