Comparison of perineal HistoScanning™ targeted prostate biopsy with transrectal systematic prostate biopsy: Impact on cancer detection

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Introduction & Objectives
This prospective study aimed to determine whether a limited biopsy approach with perineal HistoScanning™ guided ultrasound targeted biopsies (hs-bx) detects prostate cancer (pca) as well as transrectal gray scale ultrasound guided systematic biopsy (s-bx) with a larger number of biopsy cores.

Material & Methods
Biopsy results of 201 males suspicious for prostate cancer were included in the study. Preoperatively, each patient underwent histoscanning, defining 1 to 3 atypical prostatic regions. These regions were biopsied 3-fold each via the perineum (hs-bx). Subsequently, 14 systematic transrectal biopsies were taken (s-bx). The cancer detection rates of the 2 techniques were compared.

Results
Cancer was detected in 75 patients (37%), including 56 (27.8%) by hs-bx and in 59 (29.3%) by s-bx. Cancer was detected by hs-bx alone in 11 patients (5.4%) and by s-bx alone in 14 (6.9%). The overall cancer detection rate by patient was not significantly different for hs-bx and s-bx (p>0.21). The fraction of significant pca (gleason score > 3+3) detected by hs-bx was 53.5% (30 of 56) and 44% (26 of 59) for s-bx. The cancer detection rate per region biopsied for hs-bx (18% or 91 of 504 regions) was significantly better than for s-bx (9% or 245 of 2814 regions, p>0.0001). Hs-bx in a patient with cancer was 2.6-fold more likely to detect prostate cancer than s-bx.

Conclusions
Hs-bx detected as many cancers as s-bx with a smaller number of biopsy cores. The increased number and larger fraction of significant pca detected, by combining hs-bx and s-bx underlines the value and promise of innovative ultrasound techniques.