

**P075** Prostate biopsy using micro-ultrasound and fusion biopsy of the prostate: True precision?

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**Introduction & Objectives:** The PRECISION study was able to show that sole targeted fusion biopsy is superior to systematic biopsy [1]. However, the combination of an MRI / US fusion biopsy with a systematic biopsy results in a maximized detection rate of significant carcinomas [2]. The use of a micro-ultrasound system with improved resolution allows the evaluation of additional tumor-related foci, offering the option of further optimizing fusion biopsy.

**Materials & Methods:** In the period from February 2018 to December 2018, 178 men with clinically suspected prostate cancer received transrectal prostate biopsy (primary and re-biopsy) with the ExactVu micro-ultrasound system with a 29 MHz probe. In 159 men there was an mpMRI with PI-RADS  $\geq 3$ . The real-time evaluation of the suspicious prostate foci was carried out according to the PRI-MUS (prostate risk identification using micro-ultrasound) score. All patients underwent targeted biopsy of the PRI-MUS lesion +/- a fusion biopsy of the MRI lesion as part of the 10-fold systematic biopsy.

**Results:** The detection rate of patients with mpMRI was 71%, that of patients without mpMRI was 68%. In 78 patients (49%) with mpMRI a clinically significant carcinoma (Gleason  $\geq 7$ ) was found, in the group without MRI the rate was 53% (10/19 patients). Micro-ultrasound upgraded the findings in 26% of cases compared to systematic biopsy. Furthermore, additional targeted biopsy of the micro-ultrasound targets detected high-risk carcinomas (Gleason  $\geq 8$ ) in 21 out of 159 patients (13%) with mMRI, which would have been missed by a single fusion biopsy. In patients with positive mpMRI fusion biopsy, an additional 16% (26/159) had upgrades to the Gleason score by micro-ultrasound. Only in 5 cases (3%), systematic biopsy alone (target biopsy MRI + micro-ultrasound negative) revealed evidence of significant prostate cancer.

**Conclusions:** The evaluation and targeted biopsy of tumor-specific lesions in micro-ultrasound leads to an improvement in diagnostic accuracy as a supplement to an MR fusion biopsy. To what extent this will allow a sole target biopsy (ultrasound + mpMRI), it will be examined in further studies.