

**PP-16**

**Value of targeted prostate biopsy using MRI-3DTRUS fusion for first round biopsy in men with normal DRE and PSA <20ng/ml**

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**Objective:** To determine whether the use of Magnetic Resonance - 3D Transrectal Ultrasound (MR-3DTRUS) fusion targeted biopsy (TAR) results in an improved detection of PCa compared to extended biopsy (EXT) for patients with no previous history of prostate cancer (PCa), normal DRE and PSA<20ng/ml.

**Material & Method:** 148 patients underwent multiparametric MRI (mpMRI) and fusion biopsy in an outpatient setting.

For each patient, the index suspicious area on mpMRI was delineated and graded by a radiologist using a Likert scale (1 to 5). MR-3DTRUS fusion biopsy was performed by a urologist using the UroStation device (Koelis, France). 12 systematic (EXT) and 2-to-3 Targeted (TAR) cores were obtained regardless of mpMRI findings.

Biopsy cores and MRI targets characteristics were determined. The detection rates of all PCa and of clinically significant PCa (Gleason≥3+4 or Gleason 6 with maximal cancer core length ≥ 4 mm for one core) were determined.

**Results:**

Patient characteristics:

Median age = 63.7 (48-81) years. Mean PSA = 7.7 (4-20) ng/ml. Mean prostate volume = 47.5 (18-1325) ml.

MRI target characteristics:

148 targets. Median size = 10 (3-25) mm. Median Likert grade = 4. Distribution according to Likert scale for grade 2 ,3 ,4 and 5 is 7%, 32%, 25% and 36%; respectively.

Per-Core analysis:

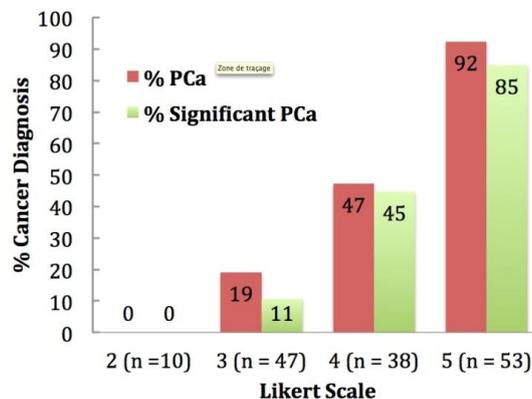
EXT and TAR cores are summarized in Table 1.

	EXT	TAR	p
<b>Number of cores</b>	1776	328	
<b>% (number) of + cores</b>	15.3% (272)	42.3% (139)	p<0.001
<b>% (number) of significant + cores</b>	11.1% (197)	37.8% (124)	p<0.001
<b>Mean Length (mm) of + cores</b>	6.0	8.5	p<0.001

**Table 1: Biopsy cores characteristics**

Per-Target analysis:

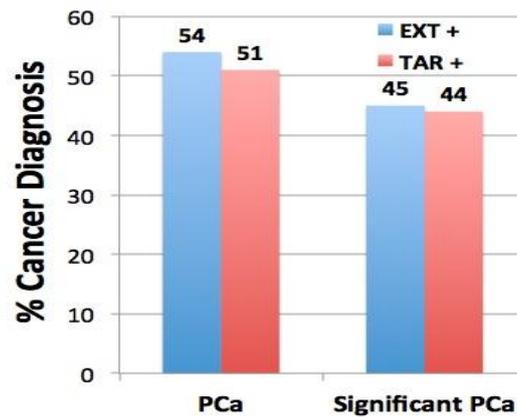
Per-Target analysis is summarized in Figure 1. We see an excellent correlation between the PCa detection rate and likert scale, proving the effectiveness of both mpMRI and MRI-3DTRUS fusion biopsy.



**Figure 1 : This per-target analysis shows the proportion of all cancers (red) and significant cancer (green) stratified by Likert grade on mpMRI. For example, 85% of the 53 targets grade 5 identified in the 148 patients had significant cancer detected in at least one of the targeted biopsy cores.**

Detection rates of all PCa and clinically significant PCa:

The detection rates of all PCa and of clinically significant PCa are summarized in Figure 2.



**Figure 2: Detection rate of EXT and TAR biopsy stratified by all PCa and Clinically significant PCa.**

**For example 44% of the patients have at least one targeted significant positive core.**

**Conclusion:** MR-3DTRUS fusion biopsy provides positive TAR cores with a more important length than EXT cores. Likert scale is a good tool to estimate the probability to get at least one positive TAR core. Detection rates between EXT (12 systematic cores) and TAR (2 or 3 targeted cores) seem equivalent, however a non-inferiority study may help to recommend only TAR biopsy.