00382 Comparing Cognitive Versus Software Fusion in Transperineal MRI-targeted Biopsies for Re-classifying Low-risk Prostate Cancer Before Active Surveillance – A Single Centre Experience

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Aims: To compare the utility and performance of both cognitive-fusion and software-fusion MRIguided targeted transperineal prostate biopsy in re-classifying patients with "low-risk" prostate cancer for active surveillance.

Methodology: We prospectively collected data from a cohort of 234 patients undergoing transperineal MRI-US fusion targeted prostate biopsy from Jan 2015 to Dec 2017. All patients had saturation biopsy in addition to targeted biopsy. We identified 30 patients who had low risk prostate cancer as defined by the D'Amico's criteria diagnosed on initial TRUS prostate biopsy who underwent repeat biopsy (software group). This group was compared with a previous prospective cohort of 19 low-risk prostate cancer patients who underwent restaging cognitive-fusion MRI-guided transperineal biopsy (Cognitive group). Paired T-test was used to compare means and Chisquare test was used for proportions.

Result: There were no significant differences in patient demographics between the 2 cohorts with respect to age, racial distribution and PSA at diagnosis. 5/18 (27.7%) of patients in the cognitive group and 11/30 (36.7%) of patients in Fusion group were reclassified to D'Amico intermediate risk (p=0.53). If saturation biopsy were omitted, 20% of patients with significant disease would have been missed in both groups. Detection rate of significant disease was higher for both targeted and saturation biopsy in the Fusion group (12.1% vs 6%, p=0.005; 5% vs 2%, p=0.007 respectively). Analysis based on MRI detected lesions shows a higher significant cancer detection rate in the Fusion group for PIRADS 4 (2.6% vs 0%, p=0.07) and PIRADS 5 (33.3% vs 18.2%, p=0.02) lesions.

Conclusion: Detection rate of significant disease is twice as high for software-fusion targeted biopsy. A compared to cognitive alignment. Combining saturation biopsy and MRI-US fusion targeted biopsy may be the optimal approach to re-classify patients as significant disease can be missed by targeted biopsy alone.