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libro degli Abstracts e degli Autori

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5. #140: INITIAL TARGETED PROSTATE BIOPSY OF MEN WITH PI-RADS™ 4 OR 5 WHAT TO DO WHEN YOU GET NON MALIGNANT PATHOLOGICAL FINDINGS

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Objective

Prostate cancer is the most common non-cutaneous cancer in American men [1]. Since the implementation of prostate-specific antigen screening in the 1990s, urologists perform on men a non-targeted, template prostate needle biopsy in order to diagnose prostate cancer [2]. Standard template biopsy suffers from sampling error noted by the 30% risk of upgrading at the time of prostatectomy and considering that only 30% to 40% of men who undergo the procedure are diagnosed with prostate cancer [3]. Magnetic resonance imaging of the prostate (MRI) is an imaging modality that can allow for more accurate prostate biopsies. Advances in MRI technology have also led to techniques that allow fusion of MRI images on standard (US) ultrasound equipment [4]. Armed with the tools to direct the biopsy to a particular area, urologists expected better detection of more aggressive tumors and potentially a reduction in the number of negative MRI biopsies. However, in the recent article by the PRECISION group (Prostate Evaluation for Clinically Important Disease: Sampling Using Image Guidance or Not?), Randomized men obtained a prostate biopsy based on MRI results compared to a standard no MRI approach [5]. MRI only improved the clinically significant cancer detection rate by 12% (95% confidence interval, 4 to 20, e.g. 26% to 38%). While the result was statistically positive, we argue that a 38% detection rate is still quite weak. We consider other solid organ biopsies that typically achieve a detection rate greater than 90% [6]. Although MRI provides incremental benefits for improving cancer detection, in our practice we have seen a high rate of false positives that could affect the accuracy of prostate MRI.
Inflammation is known to mimic MRI prostate cancer lesions, for example chronic prostatitis or nodules after treatment with Calmette-Guérin bacillus [7,8,9]
A benign targeted prostate biopsy in the setting of a PI-RADS™ 4/5 presents a clinical dilemma. How to manage it? . We evaluated benign histological features on magnetic resonance imaging targeted prostate biopsy to determine if they predict the likelihood of missed cancer on subsequent biopsy.

Materials and Methods

Between decembre 2013 and December 2019, 89 men with benign biopsies after mpMR with PI-RADS 4/5 abnormalities was studied.
All patients underwent an enema before the procedure and antibiotics for less than 24 hours starting the morning of the procedure. We performed MRI fusion standard techniques using the Philips fusion biopsy system. A single surgeon (A.F.) performed biopsies at the same location in a surgery center . We performed standard scanning and segmentation with alignment before prostate biopsy attempt. We performed the biopsy of targeted lesions before a standard 12-core needle biopsy. A target lesion was biopsied three times (two sagittal and one transverse view), if there were more than one lesion, we took two cores of each lesion.

Results

We divided them into 5 groups for comparison to outcomes of clinical followup: inflammation (38%), stroma/glandular hyperplasia (9%), normal prostate tissue (28%), atypical small acinar proliferation/high grade prostatic intraepithelial neoplasia (9%) and cancer in adjacent systematic cores (16%).
Results: 89 patients with PI-RADS 4/5 abnormality prior to initial biopsy had no cancer on magnetic resonance imaging targeted prostate biopsy. On followup, 80 men underwent repeat magnetic resonance imaging: 13 (27%) had persistent PI-RADS 4/5 abnormalities, 21 (38%) had PI-RADS 2/3, 36 (35%) had PI-RADS 1. On repeat magnetic resonance imaging targeted prostate biopsy, cancer was found in 62.5% of men with PI-RADS 4/5 and 23% of men with PI-RADS 2/3. Histological groups on initial biopsy were not predictive of the likelihood of PI-RADS downgrade on repeat magnetic resonance imaging or cancer detection on repeat biopsy.

Discussions

The MRI fusion prostate biopsy is not without its limitations. There is a significant learning curve for the team over time, which included urologists, pathologists, radiologists and supporting staff [10]. Our data for this study do include our initial biopsy experience and may include missed targeted lesions. Guidelines continue to recommend performing the systematic biopsy along

with the targeted approach because an additional 15% of cancers are identified [11].
Our sample size is small and will need larger, prospective targeted studies on this topic to make more definitive statements regarding Pirads 4/5 no tumour but inflammation on fusion Bopsy and its appearance on multiparametric MRI (mpMRI)

Conclusion

Not detecting cancer on targeted prostate biopsy performed for PI-RADS 4-5 is very difficult to deal with, we suggest repeating the mpMRI after 6 months.
73% PI-RADS score is downgraded on repeat MRI. Persistence of PI-RADS 4/5 predicts a higher risk of cancer failure, warranting prompt re-biopsy. While histological findings such as inflammation may underlie some PI-RADS 4/5 abnormalities, on the other hand histology is a weak predictor of cancer on repeat biopsy.

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6. #139: PI-RADS™ 3-4-5 AND VALUE OF PSA DENSITY IN COMBINATION FOR THE ACCURACY OF PROSTATE CANCER PREDICTION

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Objective

Prostate cancer (PCa) is the third leading cause of cancer death among men worldwide [1]. The introduction of prostate-specific antigen (PSA) in selecting men for prostate biopsy leads to earlier detection of prostate cancer (PCa) and, perhaps, a reduction in PCa-specific mortality [2]. However, there has been a steady rise in the detection of low-grade PCa (commonly referred to as over-diagnosis) and subsequent overtreatment [3]. This problem is attributable to the poor sensitivity and specificity profile of PSA. This is particularly the case in a PSA gray zone (4–10.0 ng/ml), at which 65–70% of men have a negative biopsy result [4]. Men with indolent disease who undergo treatment may experience complications without reducing their risk of dying from PCa [5].
Nowadays, the growing availability of Multiparametric magnetic resonance imaging (mp-MRI) and increased standardisation has increased the role of prostate MRI in detecting of prostate cancer 6]. Prostate Imaging Reporting and Data System version 2 (PI-RADS v2), which was released online in the form of a 55-page document in December 2014, the overall five-point scale used in PI- RADS v2 is not designed for every cancer but for high-grade prostate cancer (HGPCa) that may require further work-up or target biopsy [7]. Therefore, the aim of this study was to develop a model combining prostate mp-MRI with traditional clinical risk factors that could be used to identify patients accurately with HGPCa (Gleason score ≥ 7) on reduction of unnecessary prostate biopsies in PSA gray zone.

Materials and Methods

A total of 104 consecutive men with suspicion of prostate cancer underwent multiparametric magnetic resonance imaging first, followed by transrectal systematic and magnetic resonance imaging-transrectal ultrasound fusion guided biopsy. We performed logistic regression analyses to test different clinical factors as predictors of significant prostate cancer and build nomograms. To simplify these nomograms for clinical use patients were stratified into 3 prostate specific antigen density groups, including group 1-less than 0.07, group 2-0.07 to 0.15 and group 3-greater than 0.15 ng/ml/ml. We calculated after stratification the negative predictive value of a PI-RADS (Prostate Imaging Reporting and Data System) Pirads score of 3. Significant prostate cancer was defined as a Gleason score of 3 + 4 or greater. High grade prostate cancer was defined as a Gleason score of 4 + 3 or greater.

Results

Overall 45 men were diagnosed with significant prostate cancer, including 18 with a Gleason score of 4 + 3 or greater. On ROC curve analyses the predictive power of the developed nomogram for significant prostate cancer showed a higher AUC than that of PI-RADS alone (0.79 vs 0.75, p <0.001). The negative predictive value of harboring significant prostate cancer increased when prostate specific antigen density was 0.15 ng/ml/ml or less in men with unsuspicious magnetic resonance imaging from 79% up to 89% . In the repeat biopsy setting the negative predictive value of significant prostate cancer increased from 83% to 93%. The negative predictive value to harbor high grade prostate cancer increased from 92% up to 98% in the entire cohort.

Discussions

The justification for PSAD evaluation was elaborated in some previous study, where it was stated that such marker is better predictor for PCa then PSA level particularly with 4–10 ng/ml [8, 9]. In contrast, our adjusted-PSAD has higher AUC than previous studies. Traditionally, PSA "density," whereby the PSA value is divided by the prostate volume, estimated from either DRE or TRUS. MRI provides soft-tissue contrast resolution superior to that of transrectal ultrasound so that it can be used for more accurate estimation of prostate volume [10, 11]. It is not surprising that the adjusted-PSAD increased the predictive ability of HGPCa and also became a significant predictor for HGPCa.

Conclusion

Using prostate specific antigen density combined with multiparametric magnetic resonance imaging improved the negative predictive value of PI-RADS scoring [12]. The addition of PSAD improves the predictive performance of PI-RADS in men without known prostate cancer. A PSAD threshold of 0.15 can help to minimize the number of missed clinically significant prostate cancer cases in men with a PI-RADS score of 3 or lower who decide to defer biopsy. By increasing the probability of ruling out significant prostate cancer approximately 20% of unnecessary biopsies could be avoided safely.

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7. #209: 18F-PSMA PET/CT IN THE ASSESSMENT OF EARLY BIOCHEMICAL RECURRENCE IN PROSTATE CANCER PATIENTS RADICALLY TREATED

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Objective

The aim of this prospective study was to investigate the diagnostic accuracy of 18F-PSMA PET/CT compared to image prostate cancer patients (pts) with biochemical relapse and negative/equivocal conventional imaging

Materials and Methods

214 patients with biochemical recurrent prostate cancer (Pca) have been enrolled . Our cohort included PCa pts with a Gleason score ranging from 6 to 10. Patients were initially treated with either radical prostatectomy (RP – 192 patients), or external beam radiotherapy (RT – 98 patients), or brachytherapy (BT – 5 patient) A serum PSA value was between 0.2 and 1.0 ng/ml and negative / equivocal conventional imaging (CT-MRI) was present at enrollment. Patients were off hormonal and radiation therapy for at least 6 months. 18F-PSMA 1007 was prepared according to national regulations, good radiopharmaceutical practice (GRP)