EP008 Determining the diagnostic value of PSMA-PET/CT imaging in patients with persistent high prostate specific antigen levels and negative prostate biopsies. The SESAME-study

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Bodar Y.J.L.[1], Koene B.P.F.[1], Meijer D.[1], Van Leeuwen P.J.[2], Nieuwenhuijzen J.A.[1], Van Moorselaar R.J.A.[1], Hendrikse N.H.[3], Oprea-Lager D.E.[3], Vis A.N.[1]

[1]Amsterdam University Medical Center, VU University, Dept. of Urology, Amsterdam, The Netherlands, [2]Netherlands Cancer Institute, Dept. of Urology, Amsterdam, The Netherlands, [3]Amsterdam University Medical Center, VU University, Dept. of Radiology and Nuclear Medicine, Amsterdam, The Netherlands

Introduction & Objectives: Patients with an elevated prostate-specific antigen (PSA), previous negative prostate biopsies and negative multiparametric Magnetic Resonance Imaging (mpMRI) are still at risk of having prostate cancer (PCa). Prostate-specific membranous antigen (PSMA) positive emission tomography/computed tomography (PET/CT) has been successfully introduced for (re)staging of PCa. The high specificity of PSMA PET/CT for PCa lesions might additionally be used to localize otherwise missed primary PCa. The aim of this study was to assess the diagnostic performance of PSMA PET/CT imaging to localize possible primary PCa in patients with yet undetected PCa with persistently high PSA-values, and to explore the potentially added value of PSMA PET/CT guided biopsies.

Materials & Methods: In this retrospective study, patients who underwent a PSMA PET/CT scan (either 18F-DCFPyL-PSMA or 68Ga-PSMA) for negative prostate biopsies and persistently elevated PSA-levels were evaluated. Patients were included if they either had a recent negative mpMRI score (PI-RADS 1-2) or if an mpMRI could not be performed due to contraindications (e.g. metallic implants, claustrophobia). According to local clinical practice, 2-4 cognitive targeted biopsies were taken in case of a suspicion for PCa in combination with systematic 10-12 core biopsies. The detection rate of PSMA PET/CT to localize PCa, and the accuracy of (possible) targeted biopsies were calculated.

Results: A total of 22 patients was included, and patients had a median PSA of 14.3 ng/mL (range 5.2-45.5). Local PSMA uptake in the prostate suspect for PCa was observed in 14/22 patients (63.6%). In 10/22 patients (45.5%), PSMA-targeted biopsies were performed based on a positive lesion, of which 1/10 (10.0%) had positive targeted biopsies for a Gleason 3 + 3 = 6 PCa. In another patient, the targeted biopsies were negative, yet the random biopsies were positive for a Gleason 3 + 3 = 6 PCa. The other 8 patients that received biopsy had inflammation as a histopathological result of biopsy.

Conclusions: In this study, the clinical value of PSMA PET/CT for patients with an elevated PSA, previous negative biopsies and a negative/ absent mpMRI was deemed low. A high rate of inflammation outcomes was noted at histopathologic assessment of the targeted prostate biopsies, therefore causing a high rate of false positive PSMA PET/CT outcomes.