

**P018** The true diagnostic accuracy of PSMA PET/CT for staging lymph node metastases in primary prostate cancer

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**Introduction & Objectives:** In patients with prostate cancer (PCa), the gold standard staging method for pelvic nodal disease is extended pelvic lymph node dissection (ePLND) and the diagnostic accuracy of other tests is therefore compared to ePLND. However, multiple factors, such as incomplete resection of pelvic lymph nodes may influence ePLND outcomes. The incidence of (positive) lymph node metastatic disease can therefore best be determined by adding the histopathological outcome of ePLND to the results of restaging PSMA PET/CT at biochemical recurrence of disease. The aim of this study was to create insight in the true diagnostic accuracy of prostate-specific membrane antigen (PSMA) positron emission tomography (PET)/CT for the detection of pelvic lymph node metastases.

**Materials & Methods:** Patients with a staging PSMA PET/CT who underwent robot-assisted radical prostatectomy (RARP) and ePLND in the Prostate Cancer Network Netherlands from August 2016 to December 2019 were included. A restaging PSMA PET/CT was performed in patients with rising prostate specific antigen (PSA) levels RARP. The absence or presence of PCa recurrence in lymph nodes within the pelvic lymph node dissection template on restaging PSMA PET/CT was reported. The diagnostic accuracy of preoperative PSMA PET/CT was calculated for pathology as a reference standard as well as a combination of histopathology and lymph node involvement on restaging PSMA PET/CT.

**Results:** 433 patients were included with a median follow up of 28 months. Using histopathology as reference standard, the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of PSMA PET/CT for the detection of lymph node metastases were 38%, 94%, 66% and 83%, respectively. Using both histopathology and lymph node involvement on restaging PSMA PET/CT as reference, the sensitivity, specificity, PPV and NPV were 37%, 95%, 75% and 78%, respectively.

**Conclusions:** The overall diagnostic accuracy did not change significantly between histopathology alone or a combination of histopathology and restaging PSMA PET/CT outcomes as reference. However, as the PPV of the staging PSMA PET/CT increased substantially, PSMA PET/CT is confirmed to be a reliable and accurate staging method in patients with PCa.