P027 The diagnostic accuracy of Ga68 PSMA PET-CT on clinical lymph node staging before radical prostatectomy in patients with intermediate or high risk prostate cancer

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Introduction & Objectives: The aim of this study is to investigate the diagnostic role of Ga68 PSMA-PET on clinical lymph node (LN) staging in intermediate and high risk prostate cancer (PCa) patients undergoing radical prostatectomy (RP).

Materials & Methods: Between January 2015-August 2020, a total of 238 RPs were performed in our institution. Among them, 47 patients with intermediate and high risk PCa based on European Association of Urology (EAU) risk classification were determined to be evaluated with Ga68 PSMA-PET before RP. The retrospectively documented demographical, clinical and histopathological parameters were presented using descriptive statistics. The diagnostic accuracy of Ga68 PSMA-PET on clinical LN staging was investigated using sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV).

Results: Median age was 64 years and median PSA was 10 ng/ml. Twenty-one (44.7%) and 26 (55.3%) of patients were classified in EAU intermediate and high risk groups, respectively. None of the patients (0%) were reported to have distant metastasis in Ga68 PSMA-PET evalutaion. Among preoperatively suspected LN positive 4 patients in Ga68 PSMA-PET, 2 (50%) patients were pathologically confirmed at RP. Among 5 patients with pathological LN positivity in RP, 2 (40%) of them had suspection in Ga68 PSMA-PET. The sensitivity, specifity, PPV and NPV of Ga68 PSMA-PET on the prediction of clinical LN staging were 40%, 95.2%, 50% and 93.0%, respectively.

Table 1. 2x2 Table demonstrating the numbers of positive and negative LN in PSMA-PET evalution and RP specimen

	RP specimen (+)	RP specimen (-)	Total
PSMA-PET (+)	2	2	4
PSMA-PET (-)	3	40	43
Total	5	42	47

Table 2. The descriptive statistics of clinical and histopathological outcomes	
Parameter	Outcome
Age (year)	64 (48-79)
PSA (ng/ml)	10 (1.31-100)
Clinical T stage (n, %)	
T1c	11, 23.4
T2a	2, 4.3
T2b	18, 38.3
T2c	9, 19.2
T3	7, 14.9
EAU Risk Classifiaction (n, %)	
Intermediate	21, 44.7
High	26, 55.3
Grade Group in Prostate biopsy (n, %)	
Grade 1	2, 4.3
Grade 2	21, 44.7
Grade 3	9, 19.2
Grade 4	12, 25.5
Grade 5	3, 6.4
Ga68 PSMA-PET LN status(n, %)	
Positive	4, 8.5
Negative	43, 91.5
Grade Group in Radical Prosatectomy (n, %)	
Grade 1	0, 0
Grade 2	17, 36.2
Grade 3	11, 23.4
Grade 4	11, 23.4
Grade 5	8, 17.0
Pathologic Stage (n, %)	
Localised (pT2N0M0)	16, 34.0
Locally advanced (pT3-T4N0M0 or N1 with any pT)	31, 66.0
Radical prostatectomy (n, %)	
Positive	5, 10.6
Negative	42, 89.4
Total number of excised LN in RP (n)	419
Total number of positive LN in RP (n)	9

Conclusions: The preliminary report of this study revealed that the specifity and NPV values of Ga68 PSMA-PET on clinical lymph node staging before RP is higher in intermediate and high risk PCa. However, efforts should be taken to improve sensitivity and PPV.