

# Diagnostic efficacy of $^{18}\text{F}$ -rhPSMA-7.3 PET imaging for N-staging in Intermediate and High-Risk Prostate Cancer patients validated by histopathology

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## Introduction:

- $^{18}\text{F}$ -labeled PSMA ligands offer longer half-life, larger batch production and higher PET image resolution due to lower positron range of  $^{18}\text{F}$  positrons compared to  $^{68}\text{Ga}$ -PSMA PET
- radiohybrids offers labelling with different radiometals and show negligible urinary excretion
- $^{18}\text{F}$ -rhPSMA-7 comprises four isomers,  $^{18}\text{F}$ -rhPSMA-7.3 was selected as lead rhPSMA compound for clinical development

## Objective:

- to investigate  $^{18}\text{F}$ -rhPSMA-7.3 PET for primary LN staging in patients with intermediate and high-risk PCa
- results were compared to morphological imaging and validated by histopathology

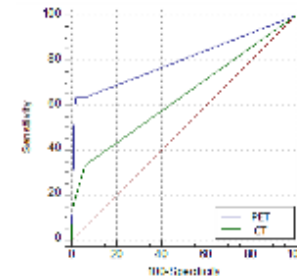
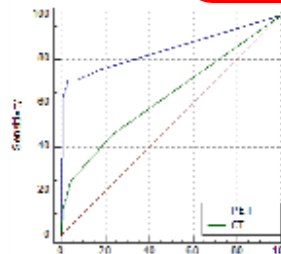
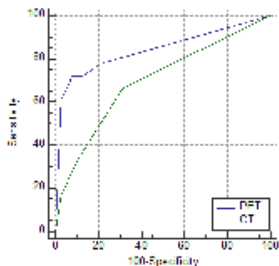
## Material and Methods:

- Retrospective analysis of patients who received  $^{18}\text{F}$ -rhPSMA-7.3 PET/CT for primary PC staging before curative RP with ePLND was performed
- For PET and morphological (CT) datasets, a template-based image analysis using a 5-point scale was used to determine the presence of lymph node metastases. Imaging results were compared with histological findings

Patient-based analysis	CT	<sup>18</sup> F-rhPSMA-7.3 PET
	Estimate (%)	Estimate (%)
Sensitivity	33.3	81.3
Specificity	89.5	87.5
Accuracy	71.4	85.7
AUC (p<0.05)	0.697 (0.073)	0.842 (0.061)

R/L-based analysis	CT	<sup>18</sup> F-rhPSMA-7.3 PET
	Estimate (%)	Estimate (%)
Sensitivity	25.0	70.8
Specificity	95.5	96.6
Accuracy	80.4	91.1
AUC (p<0.001)	0.631 (0.061)	0.843 (0.053)

Template-based analysis	CT	<sup>18</sup> F-rhPSMA-7.3 PET
	Estimate (%)	Estimate (%)
Sensitivity	15.2	63.6
Specificity	99.3	97.9
Accuracy	90.6	94.4
AUC (p<0.001)	0.639 (0.043)	0.801 (0.045)



### Conclusion:

- <sup>18</sup>F-rhPSMA-7.3 PET is superior to CT alone (pt.-based: AUC 0.842 vs. AUC 0.697, p<0.05)