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A prospective comparative study of ^{18}F -PSMA-1007 PET-CT for primary staging of high-risk prostate cancer using strict validation criteria - high sensitivity and limited specificity for bone lesions

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INTRODUCTION, MATERIAL AND METHODS

- Computed tomography (CT) and bone scintigraphy are the imaging modalities currently used for primary metastasis staging of prostate cancer
- The objective was to compare standard staging modalities with potentially more accurate imaging modalities in primary detection of metastasis in high-risk prostate cancer:
 - ^{99m}Tc -HMDP single-photon emission CT-CT
 - 1.5T whole-body magnetic resonance imaging using diffusion-weighted imaging (WBMRI)
 - ^{18}F -prostate-specific membrane antigen-1007 positron emission tomography (PSMA PET-CT).

RESULTS AND CONCLUSIONS

- Compared to other imaging modalities studied PSMA PET-CT had superior sensitivity for distant metastasis detection and the highest inter-reader agreement
- In 12/79 cases false positive oligometastatic bone disease was reported only by PSMA PET-CT.
- Despite the high false positive rate for bone lesions, PSMA PET-CT outperformed all other imaging methods studied for primary detection of distant metastasis in high-risk PCa.