

Association of Prostate Specific Antigen Doubling Time and Prostate Specific Membrane Antigen PET Findings in Biochemically Recurrent Prostate Cancer

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Background: PSMA PET scans have increased sensitivity in detecting prostate cancer relative to conventional imaging, though the prognostic significance of these findings in biochemical recurrence (BCR) are unknown. This report investigates the relationship between findings on PSMA PET scan and prostate specific antigen (PSA) doubling time (DT), a known prognostic indicator in BCR and selection criteria for therapy based on phase 3 data.

Methods: NCT05588128 is a prospective trial involving serial PSMA PET scans for patients with BCR. Eligible patients have a PSA ≥ 0.5 ng/mL, testosterone ≥ 100 ng/dL, and negative conventional imaging. This preliminary analysis measures associations between PSMA PET and PSA DT at enrollment for each participant.

Results: 130 patients had a median PSA of 1.95 ng/ml (range: 0.5-71.7) and PSA DT of 10.6 months (range: 1.2-132). 83% of participants had evidence of PSMA+ disease on the baseline PET, including >80% of patients with PSA DT greater than 1 year, a known indicator of indolent disease. The presence and location of distant findings did not significantly correlate with PSA DT, though isolated prostate/prostate bed recurrence was associated with longer PSA DT.

Conclusions: PSA DT is an established tool to select BCR patients for therapy, however these data demonstrate that even patients with PSA DT consistent with indolent disease can have multiple PSMA findings, raising questions about the role of PSMA PET to drive therapeutic decisions in BCR. These data inform clinical practice and could limit overtreatment of indolent BCR.

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