

Moderated Poster Poster, Podium & Video Sessions

MP28-06: A Novel Serum Based Multiplexed 21 Autoantibody Assay to Predict High-grade Prostate Cancer at Initial Biopsy

📅 Saturday, May 13 ⌚ 7:00 AM - 9:00 AM 📍 Location: BCEC: Room 253AB

Presenting Author



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Introduction: Autoantibodies against peptides derived from prostate-cancer tissue have demonstrated utility in prostate cancer detection (New England Journal of Medicine: 2005;353:1224-35). Indeed, a commercially available test for prostate cancer detection, APIFINY®, measures 8 such markers. We assessed the performance of a novel serum based multiplexed autoantibody assay using all 8 APIFINY® markers along with an extended set up 13 new markers (21 markers total) plus standard of care (SOC) (PSA and age) vs. SOC alone for discriminating prostate cancer risk on biopsy as well as detecting high-grade prostate cancer on biopsy (Gleason Score (GS) 7 or greater).

Methods: We compared the autoantibody assay with biopsy outcomes in 268 patients at risk of prostate cancer from two academic and one community clinical sites in the United States undergoing prostate biopsy. Eligible participants included cancer-free men, 40 years or older, scheduled for an initial or repeat prostate biopsy.

Results: Among the 268 men (median age 62.4 yrs; median PSA 5.4 ng/mL), the autoantibody assay plus SOC showed better discrimination between prostate cancer from no cancer (AUC 0.73, 95%CI 0.67-0.79) vs. SOC alone (AUC 0.55, 95%CI 0.49-0.62) ($P < 0.0001$). Discrimination was high for separating GS7 or greater from GS6 and patients negative on biopsy (AUC 0.74, 95% CI 0.68-0.80) compared to SOC alone (AUC 0.61, 95% CI 0.54-0.68) ($p < 0.001$). Finally, for discrimination between GS7 or greater from GS 6 among patients who had positive biopsies, the autoantibody assay + SOC (AUC 0.83, 95% CI 0.76-0.90) was better than SOC alone (AUC 0.71, 95% CI 0.63-0.80) ($p = 0.001$). A test developed with these biomarkers detected GS 6 or higher with 95.0% sensitivity and 25.2% specificity. For detected GS7 or higher test with 95% sensitivity, and 24.4% of unnecessary biopsies would have been avoided, missing only 4.9% of patients with GS7 disease.

Conclusions: This expanded serum based multiplexed autoantibody assay can accurately identify patients with prostate cancer and can identify patients with high grade disease better than the current SOC (age and PSA).

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