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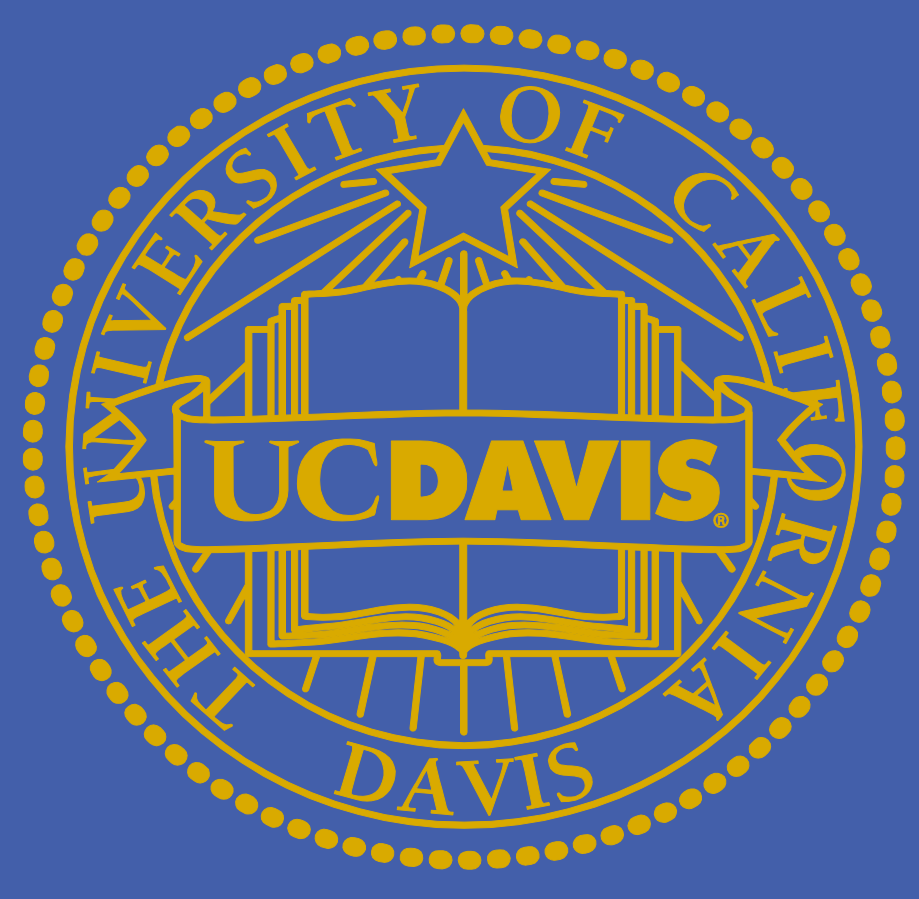
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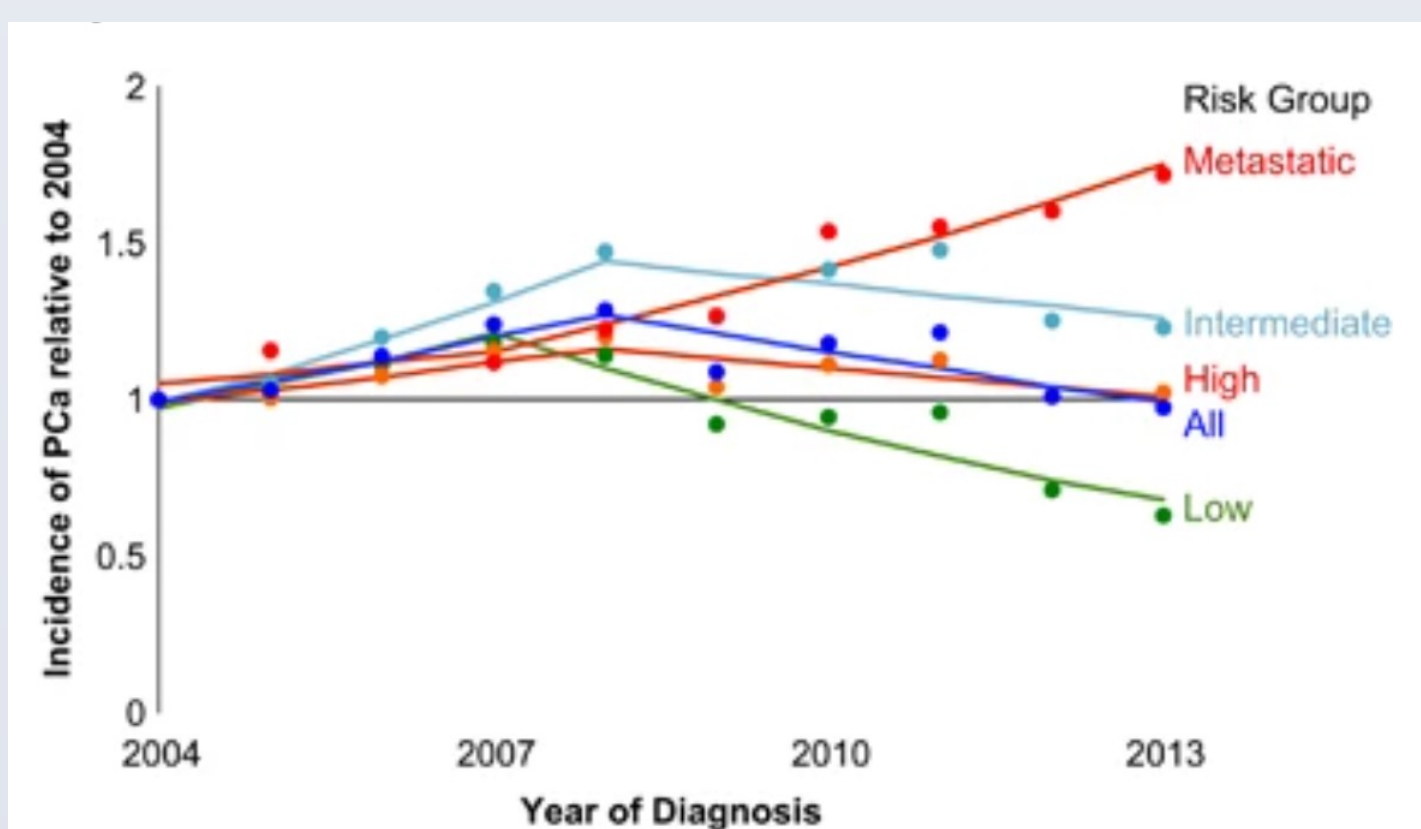
MRI Targeted Biopsies: The Value of Obtaining On and Off-Target Biopsy Cores for the Detection of Prostate Cancer



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Intro

- Prostate cancer affects up to 11% of men over their lifetime
- PSA screening has poor specificity and sensitivity
- Standard technique for prostate bx: transrectal ultrasonography and either a transrectal or transperineal needle approach + 12-core sampling
- Prostate MRI can visualize aggressive prostate cancer, help decide the need for prostate biopsy
- MRI can also assist performing a more efficient targeted biopsy



Incidence of prostate cancer

Methods and Objectives

- Retrospectively examined pts who underwent a prostate mpMRI followed by transrectal bx
- On and off target cores taken with MRI lesions targeted using the integrated fusion assist targeting system.
- Primary outcome: determination of the percentage of highest-grade lesions that were on-target, stratified by PIRADS score

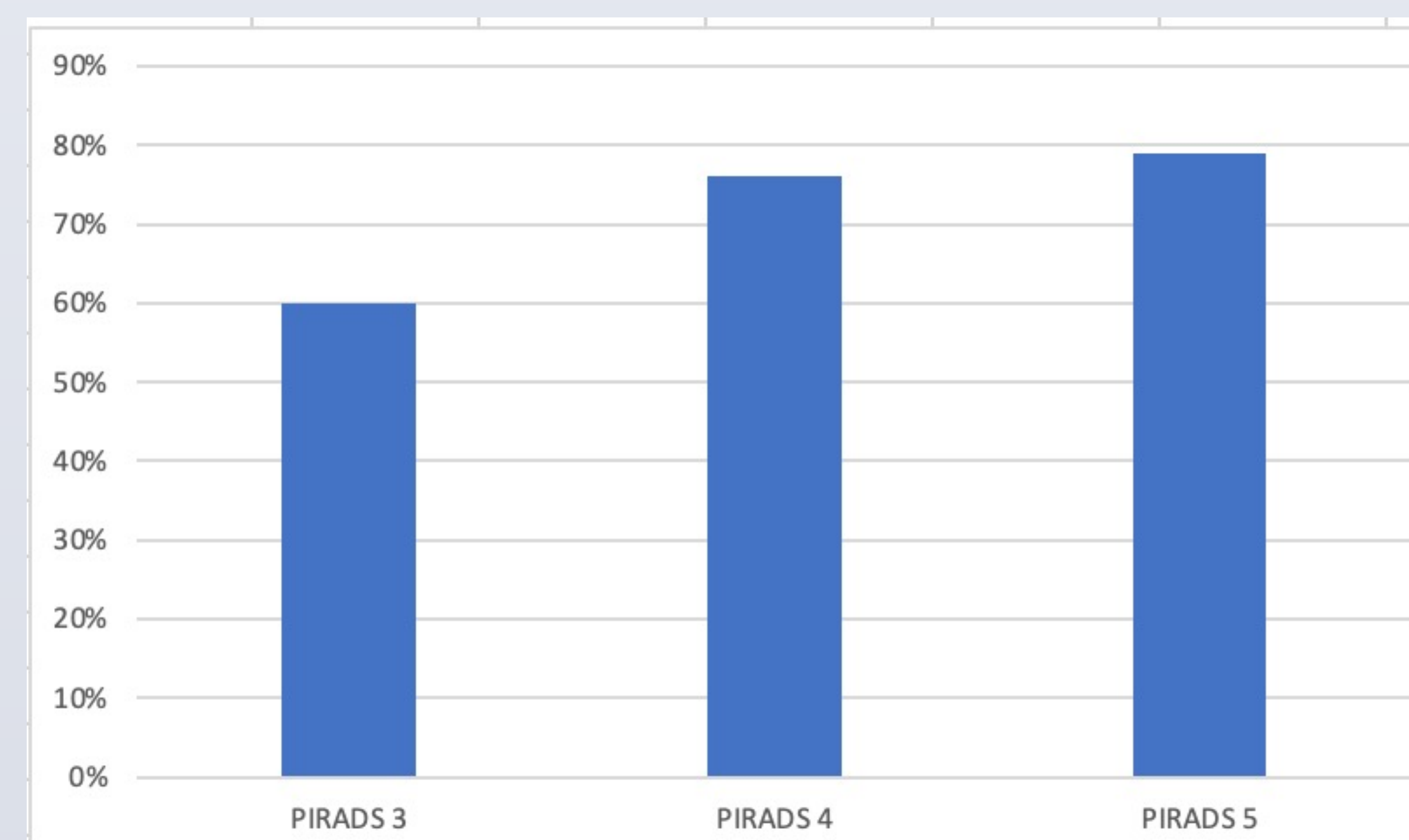
Results

- Out of 51 patients, 15 had either a negative MRI (PIRADS 1 or 2) or no MRI
- Out of the 5 patients who had a PIRADS 3 lesion on MRI, the highest-grade lesion was on-target 60% of the time
- The other 40% of lesions were benign
- Out of the 17 patients who had a PIRADS 4 lesion, the highest-grade lesion was on-target 76% of the time.
- The other 24% of lesions were benign
- Out of the 14 patients who had a PIRADS 5 lesion, the highest-grade lesion was on target 79% of the time.
- The other 21% of lesions were off-target or benign.

(Table 1) Patient Characteristics

Demographics	Overall N = 51
Race, n (%)	
White	36 (71%)
African American/Black	5 (10%)
Asian	1 (2%)
Other	6 (12%)
Declined to State	3 (6%)
Ethnicity, n (%)	
Not Hispanic or Latino	45 (88%)
Hispanic or Latino	3 (6%)
Declined to State	3 (6%)
Family history, n (%)	
Yes	10 (20%)
No	41 (80%)
Other Characteristics	
Average age (years)	66.3
Average PSA density (ng/ml ²)	0.2
Average PSA (ng/ml)	9.59
Average Prostate Volume (ml)	59.88

(Figure 1) Percentage of Highest-Grade Lesions that were On-Target, Stratified a Certain PIRADS Score



Conclusions

- In patients with PIRADS 4 or 5 lesions, the highest-grade biopsy lesion was on-target at least 76% of the time.
- Obtaining only on-target biopsy lesions would allow for fewer biopsy cores, which could decrease the risk of pain, bleeding, and even infection.
- Findings are consistent with other series describing technology for MRI lesion targeting.

Further Directions

- Expand of cohort to include more patients who underwent bx with this new US machine
- Further evaluate the effectiveness of the new machine in guiding biopsies

References

- Weiner, A., Matulewicz, R., Eggener, S. et al. Increasing incidence of metastatic prostate cancer in the United States (2004-2013). Prostate Cancer Prostatic Dis 19, 395-397 (2016). <https://doi.org/10.1038/pcan.2016.30>