

USING MRI APPARENT DIFFUSION COEFFICIENT (ADC) VALUES TO REDUCE OVER-DIAGNOSIS AND OVER-BIOPSY OF SUSPECTED PROSTATE CANCER

Megan Celyn Morris, Marcus Tyyger, Bashar Al-Qaisieh, Catherine Parchment-Smith, Jonathan Timothy Smith

INTRODUCTION

- Prostate cancer (PCa) over-diagnosis causes unnecessary biopsies and anxiety for patients with low-grade disease.
- ADC from diffusion-weighted MRI may distinguish clinically significant (CS) from insignificant (CI) disease pre-biopsy.

METHODS



COHORT

- Retrospective study
- Single UK centre
- January 21 to June 25
- Query PCa patients



CLASSIFICATION

Post-biopsy:

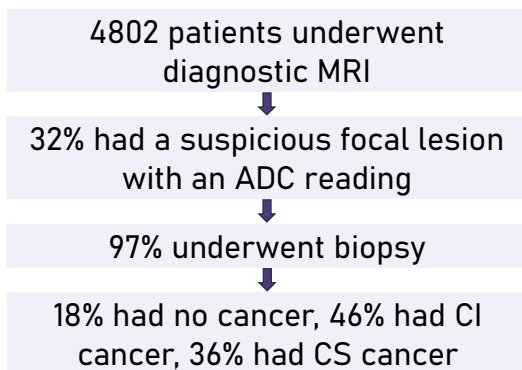
- No cancer
- CI: ISUP ≤ 2
- CS: ISUP ≥ 3



ANALYSIS

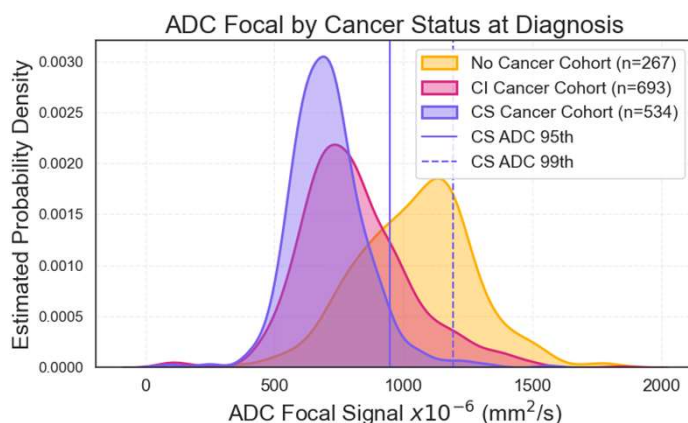
Anonymised data from hospital records:
• ADC | ISUP

RESULTS AND DISCUSSION



ADC cut-off for biopsy ($\times 10^{-6} \text{ mm}^2/\text{s}$)	950	1190
% of patients without cancer spared	67%	25%
% of patients with CI cancer spared	22%	6%
% of patients with CS cancer missed	5%	1%

Potential ADC cut-off values for biopsy determined from distribution of CS disease ADC values (95th and 99th percentile) – see figure.



Higher ADC values of suspicious focal lesions were associated with a lower likelihood of clinically significant prostate cancer.

ADVICE

Consider ADC thresholds alongside other clinical parameters when referring patients for biopsy.



Leeds Cancer
Centre

Contact: megan.morris21@nhs.net



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