

MP34-10 Characterising prostate ductal adenocarcinoma: morphometry and clinical outcomes

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INTRODUCTION & OBJECTIVES

Ductal adenocarcinoma is a rare variant of prostate cancer, demonstrating a more aggressive phenotype than conventional acinar adenocarcinoma. Morphometric variables, including distance from the urethra and tumour volume, remain unclear in present literature.

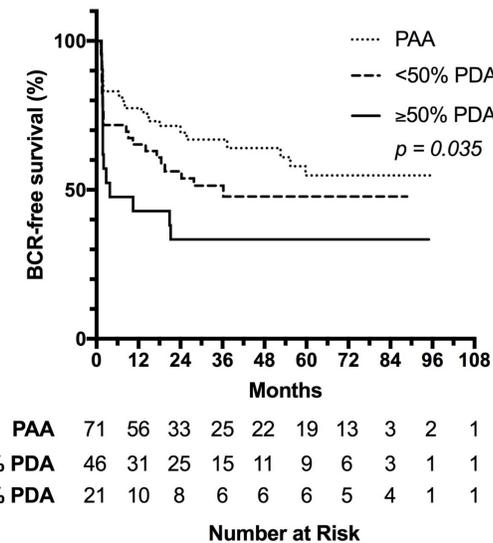
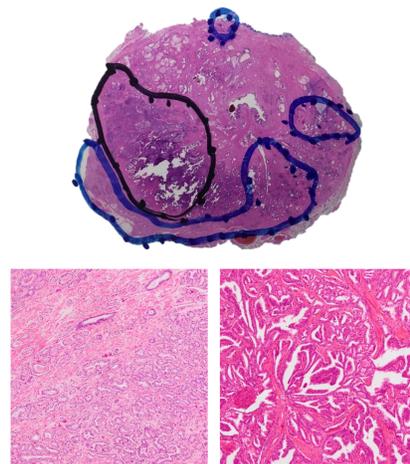
This study aimed to examine the relationship between morphometry and clinical outcomes, particularly biochemical recurrence, and to further characterise the morphometry of ductal tumours.

MATERIALS & METHODS

A comparative cohort study of ductal and Gleason 8+ acinar adenocarcinoma patients who had undergone radical prostatectomy between February 2007 and February 2017 was conducted. Ductal and acinar foci were outlined under direct microscopy and morphometric measurements taken. Clinical data were then compared with these findings and analysed using Cox multivariate regression.

KEY POINTS

- **≥50% ductal more than doubles risk of BCR compared to Gleason 8+ acinar**
- **Cannot ignore %ductal!**



Cox regressions of predictive factors for biochemical recurrence (BCR)

	Univariate		Multivariate*		Multivariate†	
	HR (95%CI)	p-value	HR (95%CI)	p-value	HR (95%CI)	p-value
Age at presentation, per year	0.984 (0.946–1.023)	0.41	0.990 (0.950–1.031)	0.63	0.992 (0.951–1.033)	0.69
PSA, per ng/mL	1.016 (1.005–1.027)	0.006	1.010 (0.996–1.025)	0.15	1.010 (0.996–1.025)	0.17
PTI, per 1%	1.032 (1.014–1.050)	< 0.001	1.024 (1.004–1.045)	0.02	1.023 (1.003–1.044)	0.03
PAA			1 (reference value)		1 (reference value)	
PDA:						
%DA, per 10%	1.128 (1.050–1.213)	0.001	1.132 (1.051–1.219)	0.001	–	–
%DA <50%	1.482 (0.845–2.599)	0.17	–	–	1.425 (0.805–2.522)	0.22
%DA ≥50%	2.291 (1.194–4.394)	0.01	–	–	2.216 (1.121–4.381)	0.02

*%DA as a continuous variable
 †%DA stratified into less than 50% and greater than or equal to 50%
 PTI = percent tumour involvement
 PDA = prostate ductal adenocarcinoma
 %DA = percent ductal adenocarcinoma

RESULTS

68 ductal and 72 acinar adenocarcinomas were included. Ductal tumours were located further from the periphery by 0.3 mm ($p = 0.02$), and involved 5% more prostate area ($p = 0.02$). Ductal proportions were reported in 52.7% of cases and identified in another 5% initially labelled as acinar-only. Risk of biochemical recurrence increased per 10% ductal components (HR 1.129, 95%CI 1.023–1.246, $p = 0.02$), and was substantially higher in tumours with ductal components greater than 50% (HR 2.226, 95%CI 1.110–4.464, $p = 0.02$).

CONCLUSIONS

This is the first study to demonstrate a significant relationship between the proportion of ductal components and clinical outcomes independent of percent tumour involvement. Our findings suggest that more aggressive management strategies are required for patients with higher ductal proportions.