



# The Prognostic Significance of Variant Prostate Cancer Histology after Robotic Radical Prostatectomy: A Multi-center 5-year Cohort Study

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## Introduction

To investigate the prognostic significance of variant histology (e.g. ductal, intraductal, cribriform) in patients with prostate cancer treated with robotic radical prostatectomy.

## Patients and Methods

We included 5005 consecutive robotic radical prostatectomy cases performed in 2016-2020 from PWH and 6 international centers (in Italy, Spain, UK, Japan and Taiwan).

The median age was 66(61-70), median PSA 7.1ng/mL(5.1-11), median prostate size 40g(30-55). The median follow-up was 2.8years

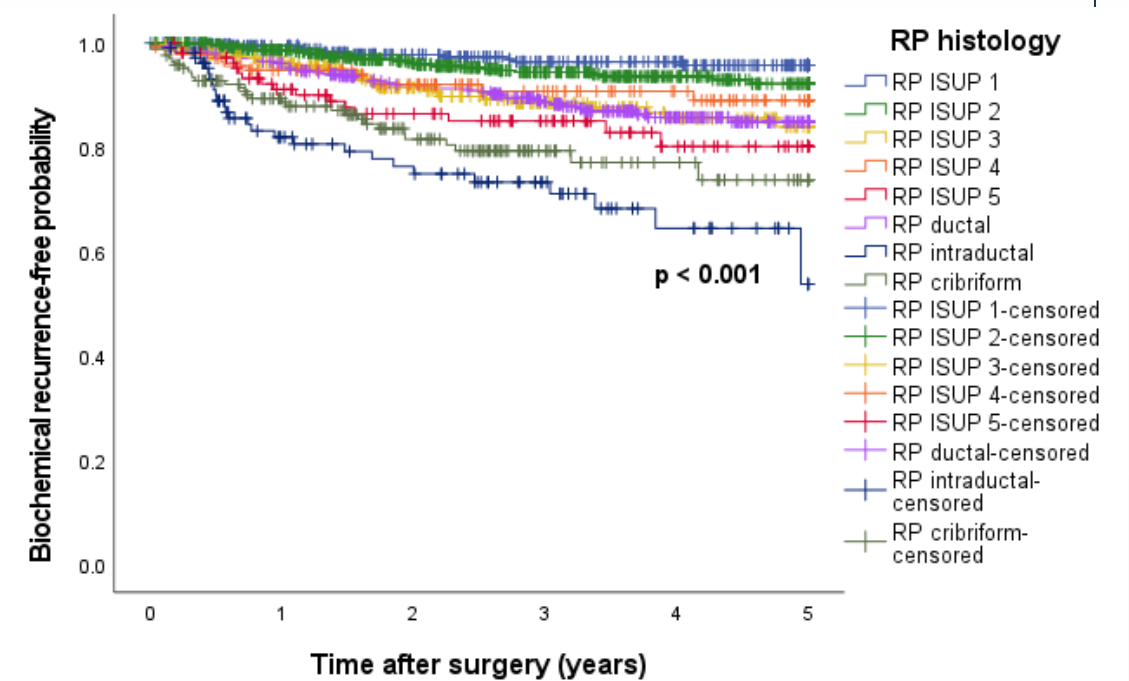
Statistical comparison was made among adenocarcinoma(N=3126) especially ISUP4-5(n=764), ductal carcinoma(N=447), intraductal carcinoma(N=186) and cribriform histology(N=174). The primary outcome was biochemical recurrence, secondary outcomes being distant metastasis and overall survival. Kaplan-Meier curves and multivariate cox regression were performed using SPSS.

## Results

Upon multivariate cox regression with reference to ISUP4 adenocarcinoma, each variant histologic type was shown to have increased risk of biochemical recurrence (intraductal HR=8.32, p<0.001; cribriform HR=5.81, p=0.001; ductal HR=3, p=0.039).

## Conclusion

Prostate cancers of ductal, intraductal and cribriform types carry higher risk of early postoperative biochemical recurrence and should be followed up more stringently.



Risk factor	Odds ratio (95% CI)	P-value
<b>RP histology</b>		
Adenocarcinoma ISUP 1-3	Reference	-
Adenocarcinoma ISUP 4	3.07 (1.32 – 7.13)	0.009
Adenocarcinoma ISUP 5	2.41 (1.01 – 5.77)	0.047
Ductal	1.61 (0.83 – 3.10)	0.158
Intraductal	9.58 (4.29 – 21.39)	<0.001
Cribriform	0.96 (0.39 – 2.34)	0.925
PSA*	1.48 (1.03 – 2.11)	0.033
Positive margin	1.99 (1.24 – 3.20)	0.005
Positive node	10.49 (4.78 – 23.04)	<0.001

Logistic regression analysis for adjuvant RT (ISUP 1-3 as reference)  
\* PSA was log-transformed

Risk factor	Hazard ratio (95% CI)	P-value
<b>RP histology</b>		
Adenocarcinoma ISUP 4	Reference	-
Adenocarcinoma ISUP 5	1.72 (0.53 – 5.61)	0.368
Ductal	3.00 (1.06 – 8.53)	0.039
Intraductal	8.32 (2.87 – 24.17)	<0.001
Cribriform	5.81 (2.02 – 16.74)	0.001
Age	0.99 (0.96 – 1.02)	0.392
PSA*	1.90 (1.45 – 2.49)	<0.001
Positive margin	1.96 (1.34 – 2.87)	<0.001

Table 1. Multivariable Cox regression analysis for 5-year biochemical recurrence-free survival (ISUP 4 as reference)  
\* PSA was log-transformed

