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# **Risk of Prostate Cancer in Male Patients Going for Radical Cystoprostatectomy for Bladder Cancer**



Fung-wan Ho, Chi-Hang Yee, Pui-man Yeung, Andy S. Wong Kwok, Wa-kin Wong, Cheuk-ying Cho, Chui-ying Ho, Jeremy Y.C. Teoh, Peter K.F. Chiu, Chi-fai Ng

S.H. Ho Urology Centre, Department of Surgery The Chinese University of Hong Kong





## Introduction

The overall incidence of bladder cancer is 2.5 % in Hong Kong over the past 10 years. [1] Radical cystectomy (RC) is indicated when the patient is diagnosed with high grade non-muscle invasive bladder cancer and muscle invasive bladder cancer (MIBC). Classically radical prostatectomy is performed in the same setting because of the high risk of concomitant prostate cancer (CaP). However, PSA screening has been gaining popularity in the modern era. We aimed to review the prevalence of concomitant CaP in RC specimen for bladder cancer.

# Method

- A retrospective review of male patients who underwent cystoprostatectomy for bladder cancer between 1998 and 2017 in Prince of Wales Hospital.
- All subjects did not have prior diagnosis of CaP or evidence of distant metastasis at time of RC
- Patient demographic data were collected. Pre-operative PSA and RC specimen pathology were compared between the group with incidental CaP and the group without.
- Statistical analysis with SPSS
  - Descriptive statistics:
  - Pearson chi-squared test for categorical variables
  - t-test and Mann-Whitney U test for continuous variables Risk factors:
    - Multivariate logistic regression model



MULTIVARIATE LOGISTIC REGRESSION ANALYSIS FOR RISK FACTORS OF HAVING INCIDENTAL CaP (iCaP)

Variables	Odds ratio	95% Confidence interval		Dvoluo
Variables		Lower	Upper	Pvalue
Age	1.11	1.009	1.237	0.034
Smoker	2.619	1.071	6.404	0.035
Neo Adjuvant Chemo	0.41	0.023	7.248	0.542
PreOp PSA	1.160	0.920	1.462	0.209
Margin Status of bladder cancer	0.00	0.000	0.000	0.999
BCa TCC Pathology	1.05	0.484	2.085	0.990
Grade	2.23	0.490	10.165	0.300
Positive Node	0.00	0.000	0.000	0.995
Prostate PIN	12.33	1.979	76.914	0.007

Table 2. Multivariate logistic regression analysis for risk factors of having incidental cap (iCaP)

#### Age and smoker 1 risk for having iCaP

Yet no definite cut-off has been suggested for age being one of the risk factors
Pre-op PSA is not one of the risk factors in this analysis, may be due to the low
prevalence of iCaP in our study population

### PREVALENCE OF INCIDENTAL PROSTATE CANCER ACCORDING TO GEOGRAPHICAL LOCATION [5-17]

## Results

A total of 193 patients were included in the review with a mean follow-up time of 10.41  $\pm$  5.86 years. The final specimen found 17% pT0-T1 urothelial carcinoma, 31% pT2, 28% pT3 and 21% pT4. In the study 31 patients (16.1%) were found to have incidental CaP. All incidental CaP were pT2a diseases with ISUP Grade Group 1 classification. Patients with prostate cancer had a higher mean age (with CaP: 71.13  $\pm$  8.96 years, without CaP: 67.49  $\pm$  9.51 years, p=0.0248). A trend of higher pre-operative PSA was found in the group with CaP (with CaP: 4.47  $\pm$  4.13 ng/ml, without CaP: 2.84  $\pm$  3.57 ng/ml, p=0.0804). No patients in the group of incidental CaP died of prostate cancer. Multivariate analysis found that increasing age (OR 1.11, 95% CI: 1.009 – 1.237, p=0.034) and a prior positive history of smoking (OR 2.619, 95% CI: 1.071 – 6.404, p=0.035) were independent risk factors contributing to a higher risk of incidental CaP.

#### Table 1. Patient demographics

P	arameters	All (n=193)	With iCaP (n=31)	No iCaP (n=162)	P-value
Age (years) (n=	=193)	68.01 ± 9.56	71.13 ± 8.96	67.49 ± 9.51	0.0248*
Follow up (years) (n=192)		10.42 ± 5.86	11.43 ± 5.81	10.23 ± 5.85	0.160
Smoker (n=182) active & ex-smokers		70.9%	22	107	0.489
PreOp PSA (ng/ml) (n=90)		2.98 ± 3.72	4.47 ± 4.13	2.84 ± 3.57	0.0804
Mode of surgery [ Open/ laparoscopic/ robotic ]					
TCC tumour staging	0-1	33 (17%)	5 (16%)	28 (18%)	0.901
	2	58 (31%)	8 (26%)	50 (32%)	
	3	53 (28%)	10 (32%)	43 (27%)	
	4	40 (21%)	6 (19%)	34 (22%)	
TCC recurrence			6 (19.4%)	41 (25.6%)	0.479
Adjuvant therapy	Chemotherapy		1 (3%)	22 (13.6%)	0.103
	Radiotherapy		4	16	0.324



Figure 2. Prevalence of incidental prostate cancer according to geographical location

- Our prevalence of 16.9% (\*) is compatible with other Asian studies
- Majority of iCaP is clinically insignificant
- Less iCaP in Asian population (P<0.05) then in non-Asian countries
- May consider having more prostate-sparing surgeries in Asian countries given the generally lower prevalence

# Conclusion

Incidental CaP in patients of RC are usually indolent and clinically insignificant. Age and a history of smoking are risk factors for the occurrence of incidental CaP.

Key features of TCC w/ concomitant iCaP



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