

## BACKGROUND

When considering an ileal orthotopic bladder substitution as urinary diversion following radical cystectomy due to bladder cancer preoperative biopsies of the prostatic urethra (in male) or bladder neck (in female) are performed as standard of care to evaluate a potential involvement of the urethra. Our aim was to investigate the influence of positive preoperative biopsies on urethral recurrence, cancer-specific (CSS) and overall survival (OS) after orthotopic bladder substitution.

## PATIENTS AND METHODS

- Retrospective analysis of 803 consecutive patients (single institution) who underwent radical cystectomy followed by ileal orthotopic bladder substitution because of bladder cancer between 1986 and 2017 (*Table 1*)
- The preoperative staging included biopsies of the prostatic urethra (male) or the bladder neck (female).
- The patients were classified into 2 groups according the prior cystectomy biopsies
  - Group A= negative biopsies
  - Group B= positive biopsies
- Median follow up was 64 months (IQR 21-128) in the total population

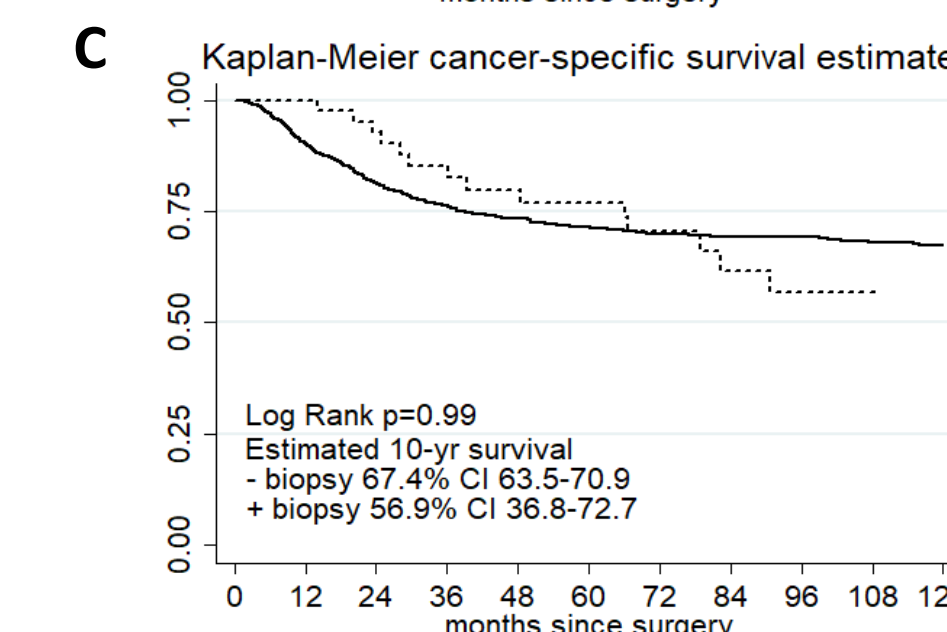
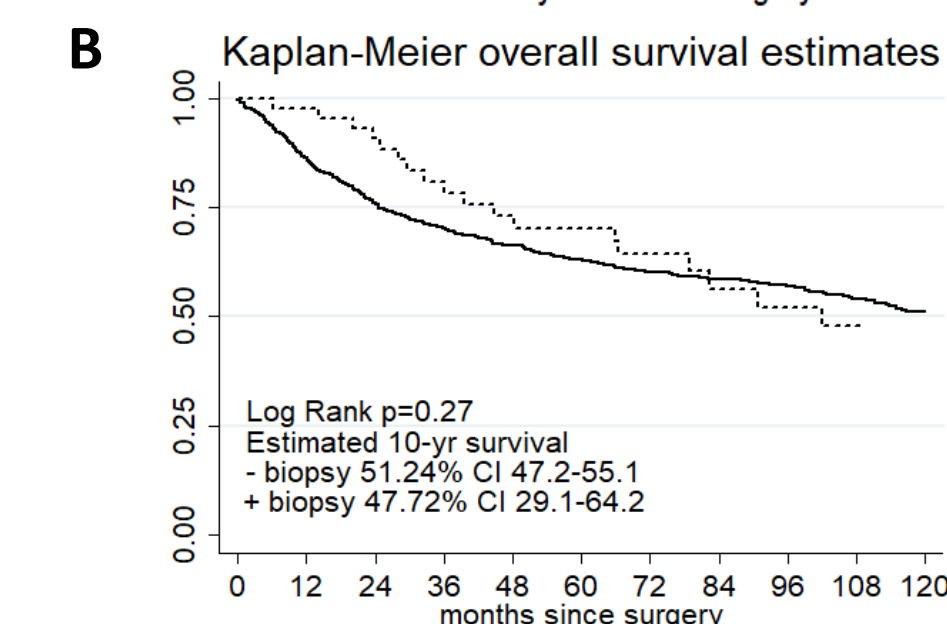
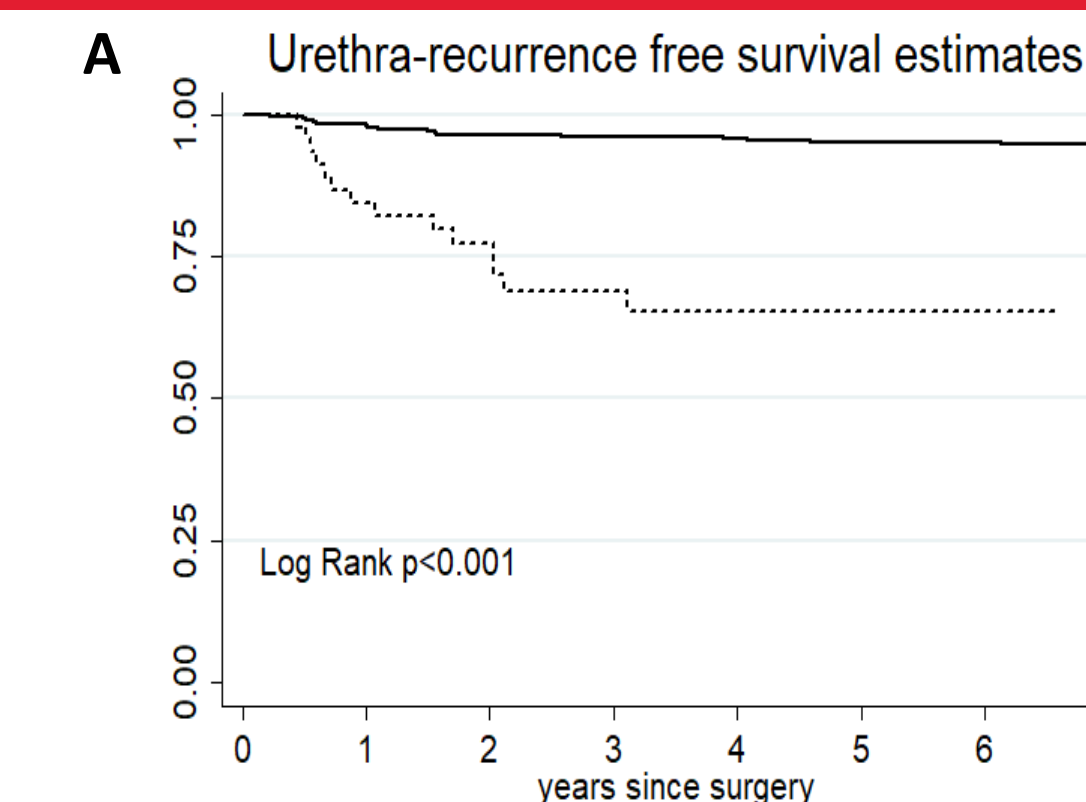
Characteristic	All patients	Group A	Group B	p
Total, n (%)	803 (100)	755 (94)	48 (6)	
Age (years)				
Mean (SD)	63.9 (8.6)	64 (8.65)	62.3 (7.75)	0.16
Gender, n (%)				
Male	703 (87.5)	662 (87.7)	41 (85.4)	0.64
Female	100 (12.5)	93 (12.3)	7 (14.6)	
TUR, n (%)				
single	573 (71.5)	544 (72)	29 (60.4)	0.08
multiple	230 (28.5)	211 (28)	19 (39.6)	
Nerve sparing, n (%)				
no	260 (32.4)	251 (33.3)	9 (18.8)	<b>0.03</b>
yes	543 (67.6)	504 (66.7)	39 (81.2)	
Intravesical instillations, n (%)				
no	660 (82.2)	629 (83.3)	31 (64.6)	<b>0.001</b>
yes	143 (17.8)	126 (16.7)	17 (35.4)	
T stage after RC, n (%)				
T0/CIS	55 (6.8)	50 (6.6)	5 (10.4)	<b>0.004</b>
Ta/T1	179 (22.3)	159 (21.1)	20 (41.7)	
T2	245 (30.5)	235 (31.1)	10 (20.8)	
T3	277 (34.5)	268 (35.5)	9 (18.8)	
T4	47 (5.9)	43 (5.7)	4 (8.3)	
Lymph Nodes, n (%)				
Negative	624 (77.7)	584 (77.3)	40 (83.3)	0.33
Positive	179 (22.3)	171 (22.7)	8 (16.7)	
Concomitant CIS, n (%)				
Negative	489 (60.9)	471 (62.4)	18 (37.5)	<b>0.001</b>
Positive	314 (39.1)	284 (37.6)	30 (62.5)	
PSM, n (%)				
Negative	793 (98.8)	747 (98.9)	46 (95.8)	0.06
Positive	10 (1.2)	8 (1.1)	2 (4.2)	
(Neo)adjuvant chemotherapy, n (%)				
No	489 (60.9)	461 (61)	28 (58.3)	0.7
Yes	314 (39.1)	294 (39)	20 (41.7)	
Pelvic and abdominal recurrence, n (%)				
Upper tract recurrence, n (%)	57 (7.1)	54 (7.2)	3 (6.3)	0.81
Distant metastases, n (%)	31 (3.9)	27 (3.6)	4 (8.3)	0.09
Distant metastases, n (%)	241 (30)	224 (29.7)	17 (35.4)	0.4

## RESULTS ONCOLOGICAL OUTCOMES

- In Group B, urethral recurrences occurred significantly more often compared to Group A ((15/48 [31.3%] vs 30/755; 4%, p<0.001)
- Urethral recurrence free survival was significantly shorter in Group B (p<0.001) *Figure A*
- Overall survival (OS) and Cancer specific survival (CSS) were similar in both groups *Figure B&C*
- In multivariate cox regression analysis only positive preoperative biopsies and (neo) adjuvant chemotherapy remained an independent variable for urethral recurrences (*Table 2*)

Table 2

Prognostic factors	Urethral recurrence					
	Univariate			Multivariate		
	HR	CI	p	HR	CI	p
Intravesical instillations	<b>2.01</b>	1.07-3.78	<b>0.01</b>	1.52	0.78-2.98	0.21
Positive biopsy of prostatic urethra or bladder neck	<b>8.98</b>	4.83-16.74	<b>&lt;0.001</b>	<b>6.49</b>	3.33-12.62	<b>&lt;0.001</b>
Concomitant CIS	<b>1.84</b>	1.02-3.31	<b>0.02</b>	1.38	0.74-3.56	0.3
Chemotherapy	<b>3.03</b>	1.68-5.48	<b>&lt;0.001</b>	<b>2.66</b>	1.46-4.84	<b>0.001</b>



## RESULTS-FUNCTIONAL OUTCOMES

## CONCLUSIONS

- Although positive biopsies of the prostatic urethra or the bladder neck prior to radical cystectomy and orthotopic bladder substitution increase the rate of urethral recurrences, this does not translate into decreased CSS and OS.
- Functional outcomes including daytime and night-time continence were excellent and did not differ between both groups.
- In highly selected patients with positive, non-invasive preoperative biopsies orthotopic bladder substitution remains an option provided that patients are informed about the higher risk of urethral recurrence and have stringent follow-up including urethral cytology

- Nerve sparing could be obtained in the majority of patients in both groups. As a consequence of the selection towards higher tumor stages in Group A, NS rates were slightly higher in Group B (Group A 68%, Group B 81%; p=0.03).
- Voiding function including daytime and nighttime continence rates as well as residual urine volumes, did not differ between the two groups in a follow up period of 2 years (*Table 3*)

Table 3

Day-time continence	Group A (%)	Group B (%)	p
3 months (544 pts)	67.3	78.4	0.16
24 months (408 pts)	89.5	96.5	0.22
Night-time continence	Group A	Group B	p
3 months (544 pts)	36.4	45.9	0.24
24 months (408 pts)	64.4	75.9	0.21
Spontaneous voiding	Group A	Group B	p
3 months (544 pts)	97.8	94.6	0.1
24 months (408 pts)	97.1	93.1	0.41
Residual Urine <50mL	Group A	Group B	p
3 months (539 pts)	90	81.1	0.38
24 months (390 pts)	90.1	82.1	0.38