

Table 1 Panel A. Baseline characteristics by recurrence status

Variable	Overall (N=277)	No recurrence (N=181)	Recurrence (N=96)	P value
Age, yr	73.6 (68.6-79.5)	74.0 (68.9-79.2)	72.4 (68.6-80.1)	0.87
BMI, kg/m2	27.1 (24.4-29.7)	27.0 (24.3-29.6)	27.2 (24.5-29.8)	0.409
Baseline eGFR, ml/min	61.0 (48.9-70.6)	62.4 (50.3-72.5)	57.3 (47.1-68.1)	0.041
Follow-up, mo	48.5 (42.0-53.5)	48.6 (41.6-53.5)	48.5 (42.5-53.3)	0.652
Male sex	173 (62.5)	116 (64.1)	57 (59.4)	0.515
CCI >=5	245 (88.4)	154 (85.1)	91 (94.8)	0.017
Diabetes	86 (31.0)	55 (30.4)	31 (32.3)	0.786
Hypertension	185 (66.8)	124 (68.5)	61 (63.5)	0.423
Chronic kidney disease	96 (34.7)	60 (33.1)	36 (37.5)	0.508
Prior bladder cancer	136 (49.1)	86 (47.5)	50 (52.1)	0.528
Local symptoms present	154 (55.6)	100 (55.2)	54 (56.2)	0.899
Positive high-grade cytology	36 (13.0)	24 (13.3)	12 (12.5)	1.0
High-grade biopsy	92 (33.2)	53 (29.3)	39 (40.6)	0.062
Tumor size >2 cm	40 (14.4)	24 (13.3)	16 (16.7)	0.475
Multifocal tumor	77 (27.8)	45 (24.9)	32 (33.3)	0.159
Any hydronephrosis	144 (52.0)	92 (50.8)	52 (54.2)	0.615
Imperative indication	126 (45.5)	80 (44.2)	46 (47.9)	0.612

Values are median (IQR) or n (%). All values derive from the locked 277-patient dataset.

Panel B. Recurrence phenotype and downstream endpoints

Endpoint	Events	Denominator	Rate %	95% CI low %	95% CI high %
Any recurrence	96	277	34.7	29.3	40.4
Ipsilateral upper tract recurrence	62	277	22.4	17.9	27.6
Bladder recurrence	29	277	10.5	7.4	14.6
Contralateral upper tract recurrence	9	277	3.2	1.7	6.1
Grade/stage progression	30	277	10.8	7.7	15.0
Delayed RNU	31	277	11.2	8.0	15.4
Metastasis during follow-up	9	277	3.2	1.7	6.1
Overall death	31	277	11.2	8.0	15.4
Cancer-specific death	3	277	1.1	0.4	3.1

Panel C. Univariable Cox regression for recurrence-free survival

Variable	HR	95% CI low	95% CI high	P value
High-grade biopsy	1.6	1.07	2.41	0.023
Tumor size >2 cm	1.21	0.71	2.07	0.491
Multifocal disease	1.41	0.92	2.16	0.112
Any hydronephrosis	1.14	0.77	1.71	0.514
Positive high-grade cytology	0.94	0.51	1.72	0.837
Local symptoms	1.07	0.72	1.6	0.741
CCI >=5	2.61	1.06	6.42	0.037
Prior bladder cancer	1.14	0.76	1.7	0.526
Chronic kidney disease	1.14	0.76	1.73	0.528
Male sex	0.83	0.55	1.25	0.374
Age, per year	1.01	0.98	1.03	0.558
Baseline eGFR, per ml/min	0.99	0.98	1.0	0.035

Panel D. Restricted multivariable Cox regression for recurrence-free survival

Variable	Adjusted HR	95% CI low	95% CI high	P value
High-grade biopsy	1.67	1.1	2.52	0.016
Tumor size >2 cm	1.21	0.7	2.07	0.493
Multifocal disease	1.4	0.92	2.15	0.119
Any hydronephrosis	1.14	0.76	1.7	0.527
Local symptoms	1.14	0.76	1.72	0.525
Prior bladder cancer	1.19	0.79	1.79	0.395

HR = hazard ratio; CI = confidence interval. Cox models use months to first recurrence or censoring at last follow-up.