

	Univariate		Multivariate		Adjusted P value*
	OR (95%CI)	P value	OR (95%CI)	P value	
Histology					
Urothelial carcinoma	-		Reference		
Micropapillary UC	2.80 (1.79-4.31)	<0.001	3.30 (2.01-5.37)	<0.001	<0.001
Lymphoepithelioma-like UC	0.81 (0.12-3.09)	0.8	0.80 (0.12-3.48)	0.8	1
Sarcomatoid UC	1.22 (0.84-1.73)	0.3	0.92 (0.62-1.32)	0.7	1
Adenocarcinoma	1.12 (0.86-1.43)	0.4	1.15 (0.86-1.51)	0.3	1
Giant & spindle cell carcinoma	0.74 (0.34-1.44)	0.4	0.52 (0.23-1.03)	0.08	1
Neuroendocrine tumor	1.95 (1.33-2.82)	<0.001	1.52 (1.01-2.26)	0.04	1
Squamous cell carcinoma	1.18 (0.97-1.42)	0.08	0.94 (0.75-1.17)	0.6	1
Sarcoma	0.37 (0.02-1.90)	0.3	0.27 (0.01-1.51)	0.2	1
Age at diagnosis (years)	1.01 (1.00-1.01)	<0.001	1.01 (1.00-1.01)	0.02	0.8
Sex					
Male	-		Reference		
Female	1.26 (1.14-1.39)	<0.001	1.09 (0.97-1.22)	0.1	1
Race					
Caucasian	-		Reference		
Black	1.25 (1.05-1.49)	0.01	1.14 (0.94-1.38)	0.2	1
Hispanic	1.16 (0.98-1.38)	0.07	1.21 (1.00-1.45)	0.05	1
Asiatic	0.91 (0.73-1.13)	0.4	0.96 (0.75-1.22)	0.8	1
Other	0.81 (0.38-1.52)	0.5	0.89 (0.41-1.75)	0.7	1
Socioeconomic status					
Low	-		Reference		
High	0.99 (0.91-1.09)	0.9	0.94 (0.85-1.05)	0.3	1
Region					
West	-		Reference		
Midwest	0.83 (0.70-0.98)	0.03	0.88 (0.73-1.05)	0.2	1
North-East	1.04 (0.92-1.18)	0.4	1.01 (0.88-1.15)	0.9	1
South	1.07 (0.95-1.21)	0.2	1.10 (0.96-1.26)	0.2	1
Marital status					
Married	-		Reference		
Never married	1.29 (1.12-1.48)	0.003	1.27 (1.09-1.48)	0.003	0.09
Previously married	1.35 (1.22-1.50)	<0.001	1.15 (1.02-1.29)	0.02	0.7
Unknown	1.02 (0.79-1.29)	0.8	1.15 (0.88-1.50)	0.3	1
Treatment					
No local treatment	-		Reference		
Radical cystectomy	0.17 (0.08-0.35)	<0.001	0.18 (0.08-0.38)	<0.001	<0.001
Partial cystectomy	0.08 (0.03-0.16)	<0.001	0.09 (0.04-0.20)	<0.001	<0.001
TURB only	0.29 (0.14-0.60)	0.001	0.52 (0.23-1.14)	0.1	1
Radiotherapy	2.33 (0.26-50.04)	0.5	1.72 (0.16-41.54)	0.7	1
Other/Unknown	0.47 (0.22-0.99)	0.05	0.34 (0.15-0.75)	0.009	0.3
T stage					
T<2	-		Reference		
T2	3.35 (2.58-4.41)	<0.001	3.31 (2.54-4.37)	<0.001	<0.001
T3-4	15.29 (11.9-19.8)	<0.001	15.39 (12.0-20.10)	<0.001	<0.001
T0/x	12.89 (7.4-21.9)	<0.001	8.93 (4.94-15.73)	<0.001	<0.001
Grade					
G1	-		Reference		
G2	1.17 (0.70-2.05)	0.6	0.87 (0.51-1.57)	0.6	1
G3	2.19 (1.37-3.72)	0.002	1.58 (0.95-2.78)	0.09	1
G4	1.89 (1.18-3.20)	0.01	1.50 (0.90-2.64)	0.1	1
Gx	1.62 (0.97-2.83)	0.07	1.39 (0.80-2.54)	0.3	1
NNR	0.99 (0.99-1.00)	0.5	1.00 (1.00-1.01)	0.06	1

Abbreviations. CI: confidence interval; CT: chemotherapy; OR: odd ratio; NNR: number of lymph nodes removed; UC: urothelial carcinoma

** p values were adjusted using the conservative Bonferroni correction method which multiplies the raw p-values by the number of tests*

Supplementary Table 6. Univariable and multivariable logistic regression analysis predicting lymph node invasion in patients without neoadjuvant or adjuvant chemotherapy treatment.