

1754P Association between Body Mass Index (BMI) and anti-PD1/L1 immune checkpoint inhibitor (ICI) outcomes in patients with metastatic urothelial carcinoma (mUC)

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BACKGROUND

- Strong predictive and prognostic factors are lacking for anti-PD1/L1 ICIs
- Obesity causes a low grade chronic inflammatory state and has been associated with increased ICI responsiveness mainly in lung cancer and melanoma
- We investigated association between BMI and ICI outcomes in mUC

METHODS

- Multi-center retrospective cohort study
- mUC patients treated with ICI between 2016-2021 at 3 Canadian cancer centres
- ICI response was determined by investigator assessment of clinical and radiologic parameters
- Log rank and Cox regression models were used to assess overall survival (OS)

RESULTS

Table 1: Patient Characteristics

	N = 121 (%)
Gender	
Male	90 (74%)
Female	31 (26%)
Ever smoker	64 (52.8%)
Primary	
Bladder	111 (91.7%)
Upper tract	10 (8.2%)
Pathology	
Urothelial	109 (90%)
Squamous	7 (5%)
Other	5 (4%)
ECOG	
0-1	99 (81.8%)
≥ 2	14 (11.5%)
Metastatic sites	
Liver	36 (29.7%)
Lung	45 (37.1%)
Bone	40 (33%)
LN	78 (64.4%)
Other	58 (47.9%)
BMI	
< 25	55 (45.4%)
25-30	43 (35.5%)
≥ 30	23 (19%)
ICI Line	
First	47 (38.8%)
Second or later	74 (61.1%)
ICI within a clinical trial	32 (26.4%)

Table 2: Median BMI

	Median (Range)
BMI < 25 (n=55)	20.9 (14.5 - 24.8)
25 ≤ BMI < 30 (n=43)	26.6 (25.1 – 29.8)
BMI ≥ 30 (n=23)	34.6 (30 – 47.2)

Figure 1: Overall Response Rate

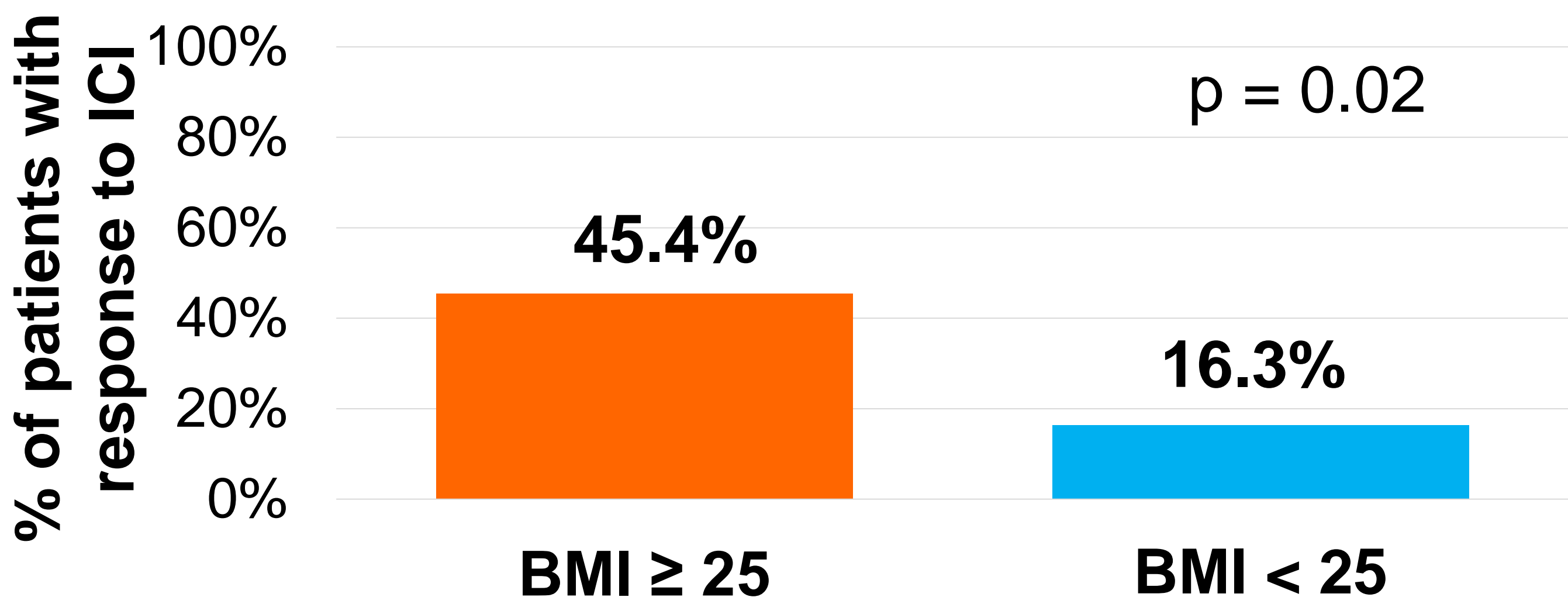


Figure 2: Overall Survival (OS) According to BMI

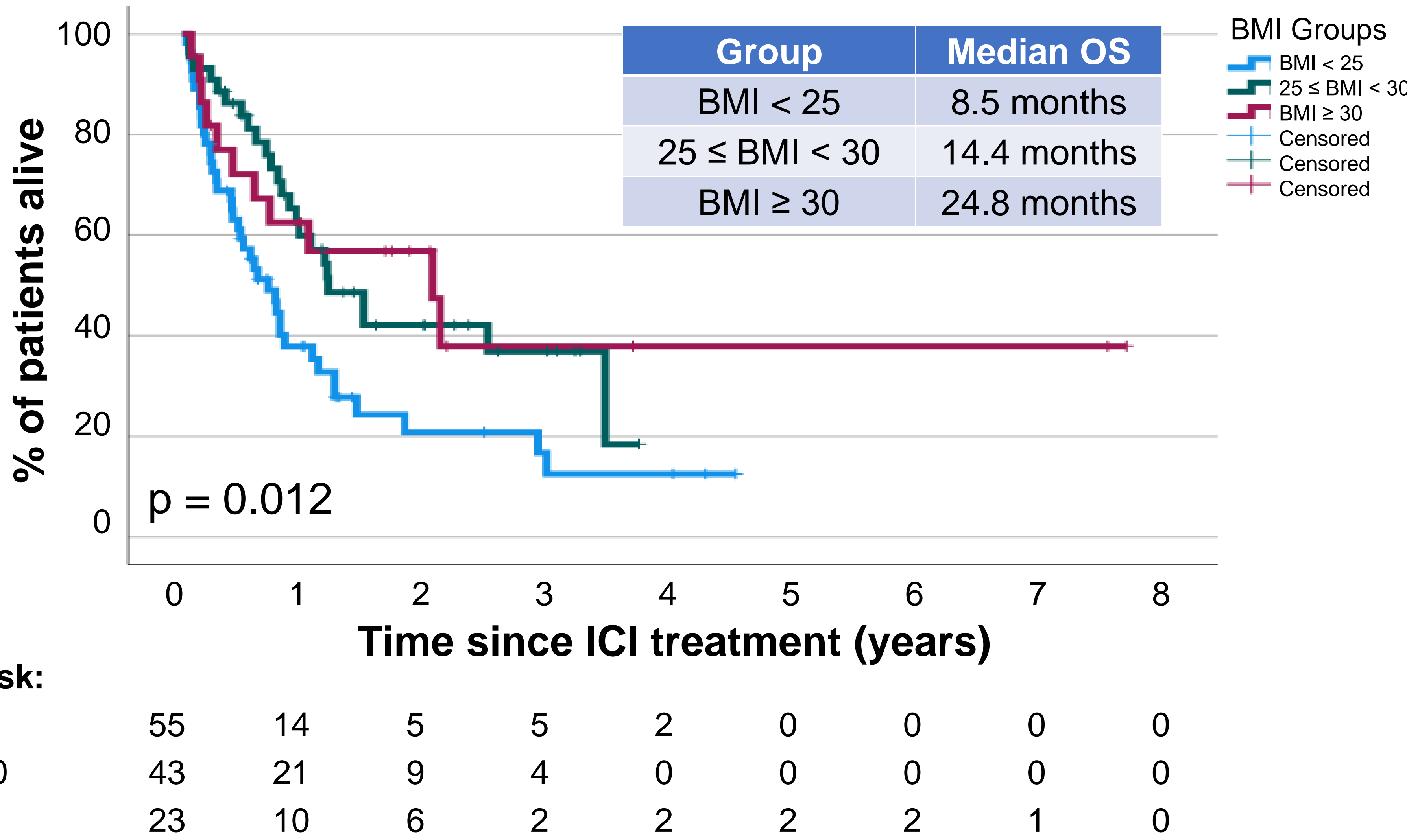


Table 3: Univariable and Multivariable Analysis for Overall Survival

OS	Univariable			Multivariable		
	HR	95% CI	p value	HR	95% CI	p value
BMI ≥ 30 vs < 30	0.63	0.45-0.88	0.012	0.40	0.17-0.96	0.040
Male vs Female	0.95	0.58-1.57	0.867			
ECOG ≥ 2 vs 0-1	1.68	0.86-3.29	0.125	2.21	1.02-4.78	0.042
ICI Line ≥ 2 vs 1	2.39	1.43-3.97	0.001	1.80	1.31-2.48	0.000
NLR ≥ 4 vs < 4	2.46	1.53-3.94	0.000	2.66	1.58-4.49	0.000
Bone metastasis Yes vs No	2.38	1.52-3.73	0.000	1.98	1.17-3.35	0.010
Lung metastasis Yes vs No	1.88	1.21-2.93	0.005			
Liver metastasis Yes vs No	1.92	1.2-3.09	0.006			

CONCLUSIONS

- Elevated BMI represents a novel potential biomarker in urothelial cancer
- BMI is strongly and independently associated with ICI response and survival
- Underlying mechanisms deserve to be clarified
- Larger studies and prospective validation are warranted

DISCLOSURE

The first author has no conflict of interests to declare.
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