

**Supplemental Table S1.** Multivariable associations\* of age with outcomes after grouping age in different ways.

Variable	Objective Response		Progression-free Survival		MCC-specific Survival		Overall Survival	
	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
Age								
<60	(ref)		(ref)		(ref)		(ref)	
60-69	2.08 0.03 (1.10-3.95)		1.11 0.78 (0.55-2.24)		0.76 0.52 (0.33-1.76)		0.83 0.67 (0.36-1.93)	
70-79	1.62 0.14 (0.85-3.10)		1.06 0.86 (0.54-2.07)		0.87 0.74 (0.40-1.91)		1.23 0.60 (0.57-2.62)	
≥80	1.02 0.96 (0.43-2.42)		1.89 0.11 (0.87-4.10)		1.21 0.68 (0.49-3.00)		1.45 0.42 (0.59-3.61)	
Age								
≤75	(ref)		(ref)		(ref)		(ref)	
>75	0.73 0.19 (0.46-1.17)		1.37 0.21 (0.84-2.23)		0.97 0.92 (0.51-1.83)		1.05 0.88 (0.59-1.86)	

HR = hazard ratio; CI = confidence interval; BMI = body mass index; ECOG = Eastern Cooperative Oncology Group;

\*All models include age (categorized into four groups or into two groups), BMI, gender, stage, immunosuppression status, and ECOG performance status.

**Supplemental Table S2.** Multivariable associations\* of body mass index (BMI) with outcomes after grouping age in different ways.

Variable	Objective Response		Progression-free Survival		MCC-specific Survival		Overall Survival	
	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
BMI								
<25	(ref)		(ref)		(ref)		(ref)	
kg/m <sup>2</sup>								
≥25	1.20 0.48		0.82 0.46		0.80 0.50		0.90 0.75	
kg/m <sup>2</sup>	(0.73-1.97)		(0.49-1.38)		(0.41-1.55)		(0.49-1.67)	
BMI								
<30	(ref)		(ref)		(ref)		(ref)	
kg/m <sup>2</sup>								
≥30	1.18 0.38		0.94 0.79		0.84 0.54		0.94 0.82	
kg/m <sup>2</sup>	(0.81-1.73)		(0.62-1.44)		(0.49-1.45)		(0.57-1.56)	

HR = hazard ratio; CI = confidence interval; BMI = body mass index; ECOG = Eastern Cooperative Oncology Group;

\*All models include age, BMI (dichotomized at 25 kg/m<sup>2</sup> or 30 kg/m<sup>2</sup>), gender, stage, immunosuppression status, and ECOG performance status.