

Table S1 Univariate and multivariate survival analysis in AC patients

Different variables	Items	Progression-free survival					Overall survival				
		Univariate analysis		Multivariate analysis			Univariate analysis		Multivariate analysis		
		MST (days)	P value	HR	95% CI	P value	MST (days)	P value	HR	95% CI	P value
Age	<75/≥75 yrs	165/249	0.89				649 /436	0.36			
Sex	Male/Female	219/94	0.15				571/378	0.84			
ECOG PS	0-1/2-3	236/51	0.001*	5.259	1.845-13.96	0.002*	646/128	0.001*	3.538	1.232-9.606	0.02*
Smoking (BI)	820</≥820	140/294	0.08				378/646	0.33			
Lymph meta	Yes/No	155/366	0.15				371/NR	0.08			
Brain meta	Yes/No	272/174	0.46				436/NR	0.30			
Bone meta	Yes/No	130/244	0.08				254/646	0.10			
NLR	High/Low (≥2.8/<2.8)	126/323	0.07				360/NR	0.03*	1.590	0.724-3.856	0.25
PD-L1 (%)	≥1/<1	272/182	0.13				NR/378	0.22			
SUV _{max}	High/Low	200/195	0.85				571/371	0.75			
SUV _{peak}	High/Low	200/195	0.62				571/371	0.75			
MTV	High/Low	71/314	0.001*	4.707	2.355-9.079	0.001*	128/720	0.001*	3.067	1.392-6.485	0.006*
TLG	High/Low	73/312	0.001*				136/720	0.001*			

*, statistically significance. yrs, years; MST, median survival time (days); ECOG PS, eastern cooperative oncology group performance status; BI, brinkman index; AC, adenocarcinoma; non-AC, non-adenocarcinoma; PD-L1, programmed death ligand-1; BI, brinkman index; lymph, lymph node; HR, hazard ratio; 95% CI, 95% confidence interval; NR, not reached; SUV_{max}, maximum standardized uptake value; MTV, metabolic tumor volume; TLG, total lesion glycolysis; NLR, neutrophil to lymphocyte ratio; PFS, progression-free survival; OS, overall survival; NR, not reached.

Table S2 Univariate and multivariate survival analysis in Non-AC patients

Different variables	Items	Progression-free survival					Overall survival				
		Univariate analysis		Multivariate analysis			Univariate analysis		Multivariate analysis		
		MST (days)	P value	HR	95% CI	P value	MST (days)	P value	HR	95% CI	P value
Age	<75/≥75 yrs	203/284	0.39				516/367	0.67			
Sex	Male/Female	196/559	0.10				515/920	0.10			
ECOG PS	0-1/2-3	91/247	0.20				548/127	0.002*	1.782	0.670-4.500	0.23
Smoking (BI)	820</≥820	265/196	0.71				920/515	0.50			
Lymph meta	Yes/No	196/420	0.19				515/775	0.65			
Brain meta	Yes/No	243/208	0.41				NR/515	0.30			
Bone meta	Yes/No	194/246	0.15				315/704	0.11			
NLR	High/Low (≥2.8/<2.8)	143/420	0.018*	2.654	1.203-7.019	0.01*	386/NR	0.006*	4.839	1.410-30.347	0.008*
PD-L1 (%)	≥1/<1	194/247	0.82				548/515	0.47			
SUV _{max}	High/Low	208/104	0.36				516/548	0.83			
SUV _{peak}	High/Low	208/104	0.30				515/548	0.75			
MTV	High/Low	80/247	0.32	1.287	0.617-2.485	0.48	186/775	0.01*	1.640	0.641-3.907	0.29
TLG	High/Low	127/247	0.44				186/775	0.01*			

*, statistically significance. yrs, years; MST, median survival time (days); ECOG PS, eastern cooperative oncology group performance status; BI, brinkman index; AC, adenocarcinoma; non-AC, non-adenocarcinoma; PD-L1, programmed death ligand-1; BI, brinkman index; lymph, lymph node; HR, hazard ratio; 95% CI, 95% confidence interval; NR, not reached; SUV_{max}, maximum standardized uptake value; MTV, metabolic tumor volume; TLG, total lesion glycolysis; NLR, neutrophil to lymphocyte ratio; PFS, progression-free survival; OS, overall survival; NR, not reached.

Table S3 Univariate and multivariate survival analysis in patients with PD-L1 ≥1(%)

Different variables	Items	Progression-free survival					Overall survival				
		Univariate analysis		Multivariate analysis			Univariate analysis		Multivariate analysis		
		MST (days)	P value	HR	95% CI	P value	MST (days)	P value	HR	95% CI	P value
Age	<75/≥75 yrs	194/353	0.87				NR/563	0.52			
Sex	Male/Female	195/333	0.89				563/NR	0.37			
ECOG PS	0-1/2-3	247/51	0.001*	3.264	1.258-7.645	0.01*	NR/123	0.001*	4.207	1.497-11.12	0.008*
Smoking (BI)	820</≥820	189/196	0.08				563/NR	0.32			
Histology	AC/Non-AC	272/194	0.35				NR/548	0.71			
Lymph meta	Yes/No	174/510	0.25				563/NR	0.54			
Brain meta	Yes/No	205/196	0.71				571/NR	0.95			
Bone meta	Yes/No	175/217	0.24				350/NR	0.10			
NLR	High/Low (≥2.8/<2.8)	165/510	0.12				366/NR	0.01	6.096	1.225-110.5	0.02*
SUV _{max}	High/Low	199/174	0.97				571/NR	0.71			
SUV _{peak}	High/Low	203/164	0.83				571/563	0.86			
MTV	High/Low	51/281	0.005*	2.176	0.964-4.582	0.07	137/NR	0.003*	2.353	0.946-5.583	0.11
TLG	High/Low	62/265	0.03				190/NR	0.008*			

*, statistically significance. yrs, years; MST, median survival time (days); ECOG PS, eastern cooperative oncology group performance status; BI, brinkman index; AC, adenocarcinoma; non-AC, non-adenocarcinoma; PD-L1, programmed death ligand-1; BI, brinkman index; lymph, lymph node; HR, hazard ratio; 95% CI, 95% confidence interval; NR, not reached; SUV_{max}, maximum standardized uptake value; MTV, metabolic tumor volume; TLG, total lesion glycolysis; NLR, neutrophil to lymphocyte ratio; PFS, progression-free survival; OS, overall survival; NR, not reached.

Table S4 Univariate and multivariate survival analysis in patients with PD-L1 <1(%)

Different variables	Items	Progression-free survival					Overall survival				
		Univariate analysis		Multivariate analysis			Univariate analysis		Multivariate analysis		
		MST (days)	P value	HR	95% CI	P value	MST (days)	P value	HR	95% CI	P value
Age	<75/≥75 yrs	128/249	0.36				515/415	0.72			
Sex	Male/Female	208/129	0.64				436/416	0.56			
ECOG PS	0-1 /2-3	244/80	0.002*	1.703	0.673-3.936	0.24	516/127	0.001*	2.029	0.774-4.963	0.14
Smoking (BI)	820</≥ 820	193/246	0.83				416/515	0.68			
Histology	AC/Non-AC	193/247	0.88				415/515	0.76			
Lymph meta	Yes/No	129/355	0.14				371/720	0.13			
Brain meta	Yes/No	282/195	0.26				646/415	0.22			
Bone meta	Yes/No	88/246	0.007*	3.871	1.243-11.35	0.02*	211/604	0.03*	3.420	0.867-4.139	0.06
NLR	High/Low (≥2.8/<2.8)	127/322	0.009*	1.716	0.952-3.252	0.07	280/720	0.01*	1.811	0.867-4.139	0.11
SUV _{max}	High/Low	224/194	0.82				515/345	0.74			
SUV _{peak}	High/Low	244/195	0.51				436/371	0.97			
MTV	High/Low	76/250	0.001*	2.611	1.295-5.079	0.008*	123/646	0.001*	2.663	1.221-5.563	0.01*
TLG	High/Low	80/249	0.001*				127/646	0.001*			

*, statistically significance. yrs, years; MST, median survival time (days); ECOG PS, eastern cooperative oncology group performance status; BI, brinkman index; AC, adenocarcinoma; non-AC, non-adenocarcinoma; PD-L1, programmed death ligand-1; BI, brinkman index; lymph, lymph node; HR, hazard ratio; 95% CI, 95% confidence interval; NR, not reached; SUV_{max}, maximum standardized uptake value; MTV, metabolic tumor volume; TLG, total lesion glycolysis; NLR, neutrophil to lymphocyte ratio; PFS, progression-free survival; OS, overall survival; NR, not reached.

Table S5 Comparison of patient's demographics according to MTV and PFS

Different variables	Items	High MTV/PFS<6M (n=27)	Low MTV/PFS>12M (n=33)	P value
Age	<75/≥75 yrs	19/8	21/12	0.78
Sex	Male/Female	24/3	24/9	0.19
ECOG PS	0-1/2-3	17/10	32/1	0.001*
Smoking (BI)	820</≥820	12/15	12/21	0.60
Histology	AC/Non-AC	17/10	21/12	>0.99
Lymph meta	Yes/No	25/2	21/12	0.01*
Brain meta	Yes/No	5/22	6/27	>0.99
Bone meta	Yes/No	19/8	10/23	0.003*
PD-L1(%)	≥1/<1	10/17	14/19	0.79
NLR	High/Low (≥2.8/<2.8)	25/2	21/12	0.01*
Leukocyte	High/Low	17/10	13/20	0.18
Neutrophil	High/Low	17/10	11/22	0.03*
Lymphocyte	High/Low	9/18	20/13	0.04*
Albumin	High/Low	3/24	20/13	0.001*
CRP	High/Low	22/5	13/20	0.001*
RT before Nivo-Ipi	Yes/No	10/17	8/25	0.39

*, statistically significance. yrs, years; ECOG, eastern cooperative oncology group; PS, performance status; PD-L1, programmed death ligand-1; BI, brinkman index; lymph, lymph node; meta, metastasis; Prior RT, radiation before initial treatment; MTV, metabolic tumor volume; NLR, neutrophil to lymphocyte ratio; PFS, progression-free survival; M, months.