

Table SI. Receiver operating characteristic curve analysis of inflammatory biomarkers in different treatment phases for overall survival prediction.

Marker	Phase	Optimal cut-off	AUC	95% CI	Sensitivity	Specificity	Youden index
NLR	Pre-IC	4.02	0.615	0.404-0.827	44.4	84.6	0.290
	Pre-CCRT	1.91	0.624	0.437-0.811	88.9	41.0	0.299
	Post-RT	9.15	0.704	0.523-0.885	77.8	59.0	0.368
PLR	Pre-IC	248.67	0.672	0.465-0.880	44.4	92.3	0.367
	Pre-CCRT	212.16	0.610	0.309-0.825	44.4	84.6	0.290
	Post-RT	296.36	0.672	0.487-0.857	100	39.5	0.385
LMR	Pre-IC	3.17	0.556	0.296-0.722	100	20.5	0.205
	Pre-CCRT	2.80	0.675	0.491-0.859	77.8	66.7	0.445
	Post-RT	1.06	0.647	0.47-0.824	77.8	56.4	0.342

AUC, area under the curve; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-to-lymphocyte ratio; LMR, lymphocyte-to-monocyte ratio; IC, induction chemotherapy; CCRT, concurrent chemoradiotherapy; RT, radiotherapy. The optimal cut-off values were determined by maximizing the Youden index (sensitivity + specificity - 1) based on overall survival.

Table SII. Sensitivity analyses using continuous variables of NLR, PLR and LMR with Firth's correction to evaluate risk factors for mortality.

Characteristic	Univariate analysis		Multivariate analysis	
	HR (95% CI)	P-value	HR (95% CI)	P-value
Age, years				
<60	1.00			
≥60	1.43 (0.46-4.49)	0.54		
Sex				
Male	1.00			
Female	0.58 (0.14-2.34)	0.44		
T stage				
T1-T3	1.00			
T4	0.56 (0.14-2.28)	0.42		
N stage				
N0-N2	1.00		1.00	
N3	2.99 (1.04-8.63)	0.04 ^a	2.75 (0.91-8.29)	0.07
Pre-treatment EBV status				
Undetected	1.00			
Detected	2.57 (0.40-16.30)	0.32		
Unknown	3.20 (0.49-20.75)	0.22		
Weight loss, %				
<7.5	1.00			
≥7.5	1.27 (0.45-3.56)	0.65		
NLR pre-IC	1.06 (0.95-1.19)	0.30		
PLR pre-IC	1.01 (0.99-1.01)	0.16		
LMR pre-IC	1.06 (0.99-1.12)	0.08		
NLR pre-CCRT	1.02 (0.98-1.05)	0.36		
PLR pre-CCRT	0.99 (0.99-1.01)	0.57		
LMR pre-CCRT	1.01 (0.98-1.04)	0.76		
NLR post-RT	1.03 (1.01-1.04)	0.02 ^a	1.02 (0.99-1.04)	0.12
PLR post-RT	1.00 (1.00-1.01)	0.09		
LMR post-RT	1.01 (0.89-1.15)	0.87		

Variables with P<0.05 in the univariate analysis were included in the multivariate model. HRs with 95% CIs and the corresponding P-values are reported. ^aStatistically significant associations. CCRT, concurrent chemoradiotherapy; EBV, Epstein-Barr virus; IC, induction chemotherapy; LMR, lymphocyte-to-monocyte ratio; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-to-lymphocyte ratio; HR, hazard ratio.

Table SIII. Subgroup analysis by sex to evaluate risk factors for mortality.

Sex	Male				Female			
Characteristic	Univariate analysis		Multivariate analysis		Univariate analysis		Multivariate analysis	
	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
Age, years								
<60	1.00				1.00			
≥60	1.35 (0.42-4.32)	0.62			2.33 (0.03-204.38)	0.71		
T stage								
T1-T3	1.00				1.00			
T4	0.55 (0.13-2.28)	0.41			1.25 (0.01-110.39)	0.92		
N stage								
N0-N2	1.00				1.00			
N3	2.78 (0.91-8.48)	0.07			2.33 (0.03-204.38)	0.71		
Pre-treatment EBV status								
Undetected	1.00				1.00			
Detected	2.32 (0.34-15.60)	0.39			3.52 (0.02-555.72)	0.62		
Unknown	2.21 (0.34-14.13)	0.40			0.70 (0.01-347.56)	0.91		
Weight loss, %								
<7.5	1.00				1.00			
≥7.5	1.15 (0.38-3.49)	0.81			0.73 (0.01-70.94)	0.89		
NLR pre-IC	1.00				1.00			
	1.96 (0.61-6.29)	0.26			1.25 (0.01-110.39)	0.92		
PLR pre-IC	1.00		1.00		1.00			
	4.31 (1.22-15.23)	0.02	4.21 (1.17-15.13)	0.03 ^a	14.48 (0.15-1363.45)	0.25		
LMR pre-IC	1.00		1.00		1.00			
	5.97 (1.02-34.83)	0.05	5.61 (0.92-34.41)	0.06				
NLR pre-CCRT	1.00				1.00			
	1.67 (0.52-5.34)	0.39			1.38 (0.01-134.14)	0.90		
PLR pre-CCRT	1.00				1.00			
	1.69 (0.48-5.93)	0.42			3.85 (0.04-350.37)	0.56		

LMR pre-CCRT	1.00				1.00			
	0.63 (0.21-1.87)	0.40			0.49 (0.01-48.30)	0.77		
NLR post-RT	Ref.				Ref.			
	2.24 (0.73-6.83)	0.16			3.25 (0.04-298.70)	0.61		
PLR post-RT	Ref.				Ref.			
	4.35 (0.75-25.29)	0.10			1.38 (0.01-134.14)	0.90		
LMR post-RT	Ref.				Ref.			
	0.53 (0.17-1.61)	0.27			0.36 (0.01-33.61)	0.66		

Variables with P<0.05 in the univariate analysis were included in the multivariate model. HRs with 95% CIs and the corresponding P-values are reported. ^aStatistically significant associations. CCRT, concurrent chemoradiotherapy; EBV, Epstein-Barr virus; IC, induction chemotherapy; LMR, lymphocyte-to-monocyte ratio; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-to-lymphocyte ratio; HR, hazard ratio.