Supplementary Information for

Establishment and validation of a prognostic nomogram for patients with locoregionally advanced nasopharyngeal carcinoma incorporating clinical characteristics and dynamic changes in hematological and inflammatory markers during concurrent chemo-radiation

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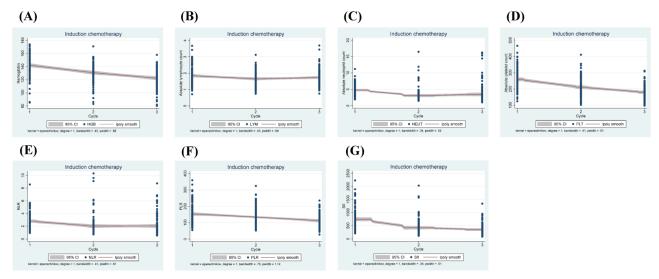
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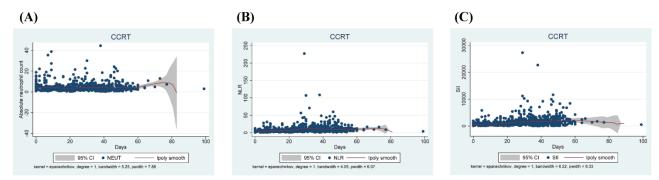
[†]These authors contributed equally to this work

Δρ/bLYM Lymphocyte count at end of treatment/baseline lymphocyte count Δε/bLYM Lymphocyte count at end of treatment/lymphocyte post-IC AminLYM Minimum lymphocyte count during CCRT/lymphocyte count post-IC Ap/bPLT Platelet count post-IC/baseline platelet count Δε/bPLT Platelet count at end of treatment/baseline platelet count Δε/bPLT Platelet count at end of treatment/baseline platelet count Δε/bPLT Platelet count at end of treatment/baseline platelet count post-IC AminPLT Minimum platelet count during CCRT/platelet count post-IC AminPLT Neutrophil count post-IC/baseline neutrophil count Δε/bNEUT Neutrophil count at end of treatment/baseline neutrophil count Δε/bNEUT Neutrophil count at end of treatment/baseline neutrophil count post-IC AminNEUT Minimum neutrophil count during CCRT/neutrophil count post-IC Δρ/bHGB Hemoglobin count at end of treatment/baseline hemoglobin count Δε/bHGB Hemoglobin count at end of treatment/baseline hemoglobin count post-IC AminHGB Minimum hemoglobin count during CCRT/hemoglobin count post-IC Ap/bNLR NLR at end of treatment/baseline NLR Ac/bNLR NLR at end of treatment/baseline NLR		
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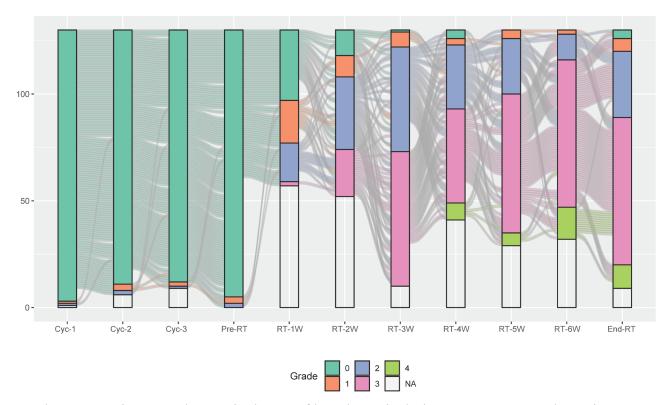
Supplementary Table 1. Calculations of dynamic changes in hematological and inflammatory markers



Supplementary Figure 1. Changes in hematological and inflammatory markers during induction chemotherapy, including hemoglobin(A), lymphocyte(B), neutrophil(C), platelet(D), NLR(E), PLR(F) and SII(G).



Supplementary Figure 2. Changes in neutrophils(A), NLR(B), SII(C) during concurrent chemoradiation.



Supplementary Figure 3. Changes in degree of lymphopenia during treatment. Lymphopenia was graded according to the CTCAE v4.0.

Induction chemotherapy	Coefficient (95%CI)	P-value
Continue	-0.054 (-0.097, -0.012)	0.012
Baseline	Reference	
Cycle 2	-0.178 (-0.255, -0.102)	< 0.001
Cycle 3	-0.106 (-0.191, -0.021)	0.015
Concurrent chemo-RT	Coefficient (95%CI)	
Continue	-0.163 (-0.175, -0.152)	< 0.001
Pre-RT	Reference	
Week 1	-0.623 (-0.731, -0.515)	< 0.001
Week 2	-0.997 (-1.091, -0.903)	< 0.001
Week 3	-1.169 (-1.262, -1.076)	< 0.001
Week 4	-1.208 (-1.308, -1.074)	< 0.001
Week 5	-1.259 (-1.352, -1.167)	< 0.001
Week 6	-1.347 (-1.442, -1.252)	< 0.001
End-RT	-1.226 (-1.327, -1.126)	< 0.001

Supplementary Table 2. Kinetics of absolute lymphocyte counts during induction chemotherapy and concurrent chemo-radiation

Induction chemotherapy	Coefficient (95%CI)	P-value
Continue	-40.212 (-44.993, -35.430)	< 0.001
Pre-Chemo	Reference	
Cycle 2	-49.467 (-57.259, -41.675)	< 0.001
Cycle 3	-80.199 (-89.791, -70.608)	< 0.001
Concurrent chemo-RT	Coefficient (95%CI)	
Continue	1.296 (1.100, 1.493)	< 0.001
Pre-RT		
Week 1	1.917 (0.921, 2.914)	< 0.001
Week 2	3.771 (3.028, 4.514)	< 0.001
Week 3	2.633 (2.097, 3.169)	< 0.001
Week 4	9.976 (4.973, 14.979)	< 0.001
Week 5	10.559 (8.243, 12.875)	< 0.001
Week 6	7.696 (6.179, 9.213)	< 0.001
End-RT	7.556 (6.320, 8.792)	< 0.001

Supplementary Table 3. Kinetics of absolute platelet counts during induction chemotherapy and concurrent chemo-radiation

Induction chemotherapy	Coefficient (95%CI)	P-value
Continue	-0.661 (-0.971, -0.352)	< 0.001
Pre-Chemo	Reference	
Cycle 2	-1.667 (-2.133, -1.202)	< 0.001
Cycle 3	-1.303 (-1.924, -0.682)	< 0.001
Concurrent chemo-RT	Coefficient (95%CI)	
Continue	0.035 (-0.038, 0.108)	0.348
Pre-RT	Reference	
Week 1	0.287 (-0.673, 1.246)	0.558
Week 2	0.149 (-0.542, 0.839)	0.673
Week 3	-1.116 (-1.716, -0.516)	< 0.001
Week 4	0.450 (-0.194, 1.094)	0.171
Week 5	1.085 (0.450, 1.721)	0.001
Week 6	-0.563 (-1.234, 0.108)	0.100
End-RT	0.273 (-0.410, 0.957)	0.433

Supplementary Table 4. Kinetics of absolute neutrophil counts during induction chemotherapy and concurrent chemo-radiation

Induction chemotherapy	Coefficient (95%CI)	P-value
Continue	-9.875 (-10.994, -8.757)	< 0.001
Pre-Chemo	Reference	
Cycle 2	-11.161 (-12.761, -9.562)	< 0.001
Cycle 3	-19.718 (-21.955, -17.481)	< 0.001
Concurrent chemo-RT	Coefficient (95%CI)	
Continue	-2.509 (-2.901, -2.116)	< 0.001
Pre-RT	Reference	
Week 1	1.102 (-0.940, 3.145)	0.290
Week 2	-9.643 (-11.484, -7.803)	< 0.001
Week 3	-11.342 (-13.015, -9.669)	< 0.001
Week 4	-8.369 (-10.408, -6.329)	< 0.001
Week 5	-12.814 (-15.315, -10.312)	< 0.001
Week 6	-20.383 (-23.106, -17.660)	< 0.001
End-RT	-14.866 (-17.580, -12.151)	< 0.001

Supplementary Table 5. Kinetics of hemoglobin during induction chemotherapy and concurrent chemo-radiation

Induction chemotherapy	Coefficient (95%CI)	<i>P</i> -value
Continue	-0.383 (-0.549, -0.217)	< 0.001
Pre-Chemo	Reference	
Cycle 2	-0.770 (-1.090, -0.451)	< 0.001
Cycle 3	-0.758 (-1.090, -0.426)	< 0.001
Concurrent chemo-RT	Coefficient (95%CI)	
Continue	2.481 (0.730, 4.233)	0.005
Pre-RT	Reference	
Week 1	-11.094 (-20.869, -1.319)	0.026
Week 2	-44.208 (-55.406, -33.011)	< 0.001
Week 3	-19.728 (-28.546, -10.909)	< 0.001
Week 4	10.690 (-3.776, 25.156)	0.148
Week 5	-12.381 (-27.062, 2.300)	0.098
Week 6	-38.967 (-52.324, -25.610)	< 0.001
End-RT	33.048 (18.524, 47.573)	< 0.001

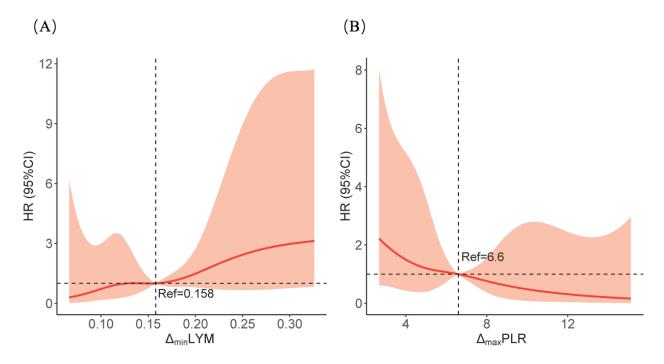
Supplementary Table 6. Kinetics of NLR during induction chemotherapy and concurrent chemoradiation

Induction chemotherapy	Coefficient (95%CI)	P-value
Continue	-200.594 (-239.420, -161.768)	< 0.001
Pre-Chemo	Reference	
Cycle 2	-329.570 (-405.963, -253.176)	< 0.001
Cycle 3	-398.507 (-475.864, -321.150)	< 0.001
Concurrent chemo-RT	Coefficient (95%CI)	
Continue	246.008 (210.125, 281.890)	< 0.001
Pre-RT	Reference	
Week 1	309.829 (164.839, 454.819)	< 0.001
Week 2	430.763 (313.576, 547.951)	< 0.001
Week 3	402.904 (307.987, 497.822)	< 0.001
Week 4	1693.160 (1059.006, 2327.315)	< 0.001
Week 5	1691.175 (1367.258, 2015.092)	< 0.001
Week 6	1026.197 (753.922, 1298.473)	< 0.001
End-RT	1701.652 (1398.537, 2004.766)	< 0.001

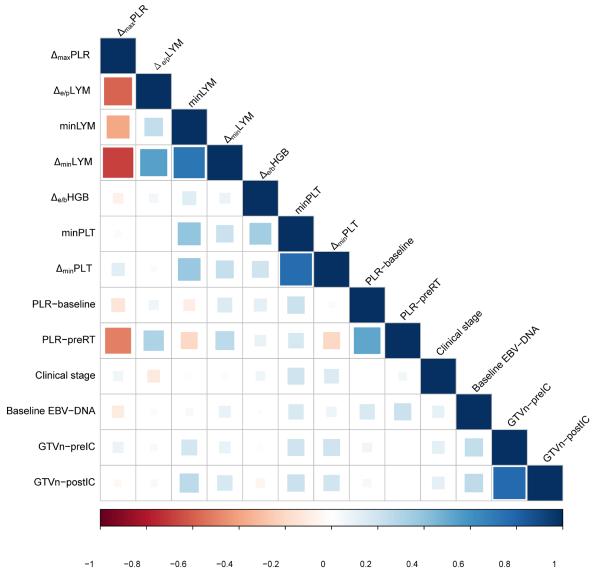
Supplementary Table 7. Kinetics of SII during induction chemotherapy and concurrent chemoradiation

Induction chemotherapy	Coefficient (95%CI)	P-value
Continue	-21.023 (-25.554, -16.493)	< 0.001
Pre-Chemo	Reference	
Cycle 2	-19.036 (-27.597, -10.474)	< 0.001
Cycle 3	-42.095 (-51.167, -33.024)	< 0.001
Concurrent chemo-RT	Coefficient (95%CI)	
Continue	67.296 (60.697, 73.894)	< 0.001
Pre-RT	Reference	
Week 1	56.599 (39.309, 73.890)	< 0.001
Week 2	106.015 (83.153, 128.877)	< 0.001
Week 3	230.986 (204.159, 257.813)	< 0.001
Week 4	373.914 (312.909, 434.919)	< 0.001
Week 5	342.554 (291.138, 393.970)	< 0.001
Week 6	385.379 (330.940, 439.818)	< 0.001
End-RT	460.227 (399.086, 521.367)	< 0.001

Supplementary Table 8. Kinetics of PLR during induction chemotherapy and concurrent chemoradiation



Supplementary Figure 4. Non-linear relationships between Δ minLYM and PFS (A) and between Δ maxPLR and PFS (B) were modelled using RCS.



Supplementary Figure 5. Covariate-adjusted heatmap analysis