Supplementary Materials

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Table S1. The details of treatment-related information.

Treatment factors	Total (N=244)
First-line chemotherapy regimen	
GP	13 (5.3)
FP	74 (30.3)
TP	62 (25.4)
TPF	95 (38.9)
Cycle of first-line chemotherapy	
<6	97 (39.8)
≥6	147 (60.2)
RT technique	
CRT	39(16.0)
IMRT	205 (84.0)
RT dose (continuous)	
Mean (Gy)	69.1
Median (Gy)	70
Range (Gy)	44-74
Interquartile Range	68-70
RT dose (group)	
<60Gy	2 (0.8)
60-69.9Gy	71 (29.1)
≥70Gy	171 (70.1)
Concurrent treatment	
No	113 (46.3)
Yes	131 (53.7)
Concurrent chemotherapy	
No	122 (50.0)
Cisplatin	90 (36.9)
Other platinum drugs	15 (6.1)
Non-platinum drugs	17 (7.0)
Cycle of concurrent chemotherapy	
0	122 (50.0)
1	15 (6.1)
2	82 (33.6)
3	15 (6.1)
≥4	10 (4.1)
Other concurrent treatment	
No	229 (93.9)
Nimotuzumab	8 (3.3)
Cetuximab	5 (2.0)
Bevacizumab	1 (0.4)
CIK therapy	1 (0.4)
Local treatment to metastasis	
No	173 (70.9)
Local RT	56 (23.0)
Local ablation	11 (4.5)
Surgery	2 (0.8)
Ablation plus local RT	2 (0.8)
Ablation plus surgery	0 (0)

Abbreviation: RT, radiotherapy; GP, gemcitabine and platinum; FP, 5-fluorouracil and platinum; TP, taxane and platinum; TPF, taxane, platinum and 5-fluorouracil; CRT, conventional radiotherapy; IMRT, intensity-modulated radiotherapy; CIK, cytokines induced killer.

Table S2. Univariate association of the patient characteristics with overall survival in training set.			
Characteristics	**HR**	**95% CI**	**P**
Age (year)	1.01	0.991-1.04	0.240
Sex: male *v* female	1.81	0.83-3.95	0.134
Comorbidity: present *vs.* absent	1.21	0.76-1.94	0.418
KPS: ≥80 *vs.* <80	0.86	0.54-1.37	0.531
Smoking: yes *vs.* no	1.62	1.03-2.55	0.038
Drinking: yes *vs.* no	1.43	0.73-2.78	0.296
Body mass index (kg/m²)	1.00	0.94-1.07	0.946
Histology: type III *vs.* type II	0.82	0.33-2.03	0.665
T stage:			
T3 *vs.* T1-2	0.97	0.50-1.88	0.937
T4 *v*s. T1-2	1.43	0.73-2.80	0.300
N stage			
N2 *vs.* N0-1	1.40	0.75-2.61	0.291
N3 *vs.* N0-1	1.47	0.73-2.95	0.283
No. of metastatic sites:			
single *vs.* multiple	0.37	0.22-0.62	<0.001
No. of metastatic lesions:			
single *vs.* multiple	0.69	0.41-1.16	0.164
Live metastasis: present *vs.* absent	2.60	1.53-4.40	<0.001
Bone metastasis: present *vs.* absent	0.84	0.51-1.38	0.490
Lung metastasis: present *vs.* absent	1.03	0.61-1.73	0.919
Pretreatment EBV DNA:			
detectable *vs.* undetectable	1.63	0.75-3.55	0.220
Lactate dehydrogenase (U/L)	1.00	0.99-1.00	0.058
Alkaline phosphatase (U/L)	1.00	0.99-1.01	0.270
C-reactive protein (g/mL)	1.02	1.01-1.04	0.004
Albumin (g/L)	0.94	0.88-1.01	0.089
Neutrophil (10*9E)	0.96	0.84-1.09	0.532
Hemoglobin (g/L)	1.00	0.98-1.02	0.936
Thrombocyte (10*9E)	1.00	0.99-1.00	0.128
First-line chemotherapy regimen:			
FP *vs.* GP	0.41	0.14-1.22	0.108
TP *vs.* GP	0.59	0.21-1.72	0.337
TPF *vs.* GP	0.40	0.14-1.16	0.092
Cycle of first-line chemotherapy:			
≥6 *vs.* <6	0.92	0.58-1.45	0.703
Radiotherapy dose (Gy): ≥66 *vs.* <66	4.46	0.62-36.20	0.138
Concurrent treatment: yes *vs.* no	1.08	0.68-1.7	0.748
Local treatment to metastasis: yes *vs.* no	0.65	0.38-1.12	0.118
Posttreatment EBV DNA:			
detectable *vs.* undetectable	3.62	2.28-5.75	<0.001
Response of primary tumor:			
PR *vs.* CR	1.16	0.53-2.54	0.704
SD/PD *vs.*CR	2.03	0.64-6.39	0.229
Response of metastasis:			
PR *vs.* CR	1.85	0.73-4.70	0.195
SD/PD *v* CR	5.48	2.13-14.13	<0.001
Abbreviation: KPS, Karnofsky Performance Scale; EBV DNA, Epstein–Barr virus DNA; FP, 5-fluorouracil and platinum; TP, taxane and platinum; GP, gemcitabine and platinum; TPF, taxane, platinum and 5-fluorouracil; CR, complete response; PR, partial response; SD, stable disease; PD, progression disease.			

Table S3. Comparison of Patient Characteristics Stratified by Three Risk Subgroups.

Variable	Low risk N=166	Medium risk N=51	High risk N=27	P value
Age (year)	45.0 [39.0; 52.0]	46.0 [39.5; 55.0]	47.0 [40.0; 54.0]	0.676
Sex				0.707
Female	25 (15.1)	5 (9.80)	3 (11.1)	
Male	141 (84.9)	46 (90.2)	24 (88.9)	
Comorbidity				0.256
Absent	111 (66.9)	39 (76.5)	16 (59.3)	
Present	55 (33.1)	12 (23.5)	11 (40.7)	
Karnofsky Performance Scale				0.691
<80	42 (25.3)	10 (19.6)	7 (25.9)	
≥80	124 (74.7)	41 (80.4)	20 (74.1)	
Smoking				0.489
No	106 (63.9)	32 (62.7)	14 (51.9)	
Yes	60 (36.1)	19 (37.3)	13 (48.1)	
Drinking				0.882
No	151 (91.0)	47 (92.2)	24 (88.9)	
Yes	15 (9.04)	4 (7.84)	3 (11.1)	
Body mass index (kg/m2)	21.5 [19.4; 23.8]	20.4 [18.3; 23.2]	22.7 [19.6; 24.8]	0.193
Histology				1.000
II	9 (5.42)	2 (3.92)	1 (3.70)	
III	157 (94.6)	49 (96.1)	26 (96.3)	
T category				0.604
T1	11 (6.63)	2 (3.92)	1 (3.70)	
T2	14 (8.43)	8 (15.7)	5 (18.5)	
T3	82 (49.4)	24 (47.1)	11 (40.7)	
T4	59 (35.5)	17 (33.3)	10 (37.0)	
N category				0.622
N0	5 (3.01)	1 (1.96)	0 (0.00)	
N1	32 (19.3)	7 (13.7)	2 (7.41)	
N2	69 (41.6)	25 (49.0)	16 (59.3)	
N4	60 (36.1)	18 (35.3)	9 (33.3)	
No. of metastatic sites				<0.001
Single	143 (86.1)	34 (66.7)	12 (44.4)	
Multiple	23 (13.9)	17 (33.3)	15 (55.6)	
No. of metastatic lesions				0.139
Single	54 (32.5)	13 (25.5)	4 (14.8)	
Multiple	112 (67.5)	38 (74.5)	23 (85.2)	
Liver metastasis				<0.001
No	150 (90.4)	35 (68.6)	12 (44.4)	
Yes	16 (9.64)	16 (31.4)	15 (55.6)	
Bone metastasis				0.552
No	52 (31.3)	13 (25.5)	10 (37.0)	
Yes	114 (68.7)	38 (74.5)	17 (63.0)	
Lung metastasis				0.824
No	126 (75.9)	38 (74.5)	19 (70.4)	
Yes	40 (24.1)	13 (25.5)	8 (29.6)	
Pretreatment EBV DNA				0.174
Undetectable	22 (13.3)	3 (5.88)	0 (0.00)	
Detectable	134 (80.7)	45 (88.2)	26 (96.3)	
Missing	10 (6.02)	3 (5.88)	1 (3.70)	

Lactate dehydrogenase (U/L)	193 [163; 232]	222 [179; 316]	232 [188; 408]	<0.001
Alkaline phosphatase (U/L)	76.8 [66.0; 92.2]	85.0 [68.4; 94.0]	80.0 [69.2; 91.3]	0.278
C-reactive protein (g/mL)	2.42 [0.99; 7.44]	4.44 [1.40; 12.9]	15.7 [4.74; 38.5]	<0.001
Albumin (g/L)	44.0 [41.8; 45.4]	43.0 [41.0; 44.7]	42.6 [40.2; 45.8]	0.105
Neutrophil (10*9E)	4.56 [3.50; 5.77]	4.40 [3.70; 5.85]	4.50 [3.75; 5.40]	0.843
Hemoglobin (g/L)	143 [132; 152]	142 [130; 151]	142 [133; 147]	0.876
Thrombocyte (10*9E)	246 [207; 296]	244 [216; 290]	252 [184; 306]	0.859
Chemotherapy regimen				0.377
GP	7 (4.22)	4 (7.84)	2 (7.41)	
FP	47 (28.3)	15 (29.4)	12 (44.4)	
TP	41 (24.7)	15 (29.4)	6 (22.2)	
TPF	71 (42.8)	17 (33.3)	7 (25.9)	
Cycle of first-line chemotherapy				0.487
<6	62 (37.3)	22 (43.1)	13 (48.1)	
≥6	104 (62.7)	29 (56.9)	14 (51.9)	
Radiotherapy dose (Gy)				0.691
<66	6 (3.61)	3 (5.88)	1 (3.70)	
≧66	160 (96.4)	48 (94.1)	26 (96.3)	
Concurrent treatment				0.710
No	74 (44.6)	25 (49.0)	14 (51.9)	
Yes	92 (55.4)	26 (51.0)	13 (48.1)	
Local treatment to metastasis				0.717
No	115 (69.3)	38 (74.5)	20 (74.1)	
Yes	51 (30.7)	13 (25.5)	7 (25.9)	
Posttreatment EBV DNA				<0.001
Undetectable	124 (74.7)	6 (11.8)	2 (7.41)	
Detectable	28 (16.9)	36 (70.6)	21 (77.8)	
Missing	14 (8.43)	9 (17.6)	4 (14.8)	
Response of primary tumor				0.077
Complete response	27 (16.3)	4 (7.84)	2 (7.41)	
Partial response	131 (78.9)	46 (90.2)	21 (77.8)	
Stable disease	6 (3.61)	0 (0.00)	2 (7.41)	
Progression disease	2 (1.20)	1 (1.96)	2 (7.41)	
Response of metastasis				<0.001
Complete response	33 (19.9)	3 (5.88)	0 (0.00)	
Partial response	119 (71.7)	15 (29.4)	4 (14.8)	
Stable disease	14 (8.43)	27 (52.9)	17 (63.0)	
Progression disease	0 (0.00)	6 (11.8)	6 (22.2)	

Abbreviation: EBV DNA, Epstein–Barr virus DNA; GP, gemcitabine and platinum; FP, 5-fluorouracil and platinum; TP, taxane and platinum; TPF, taxane, platinum and 5-fluorouracil.

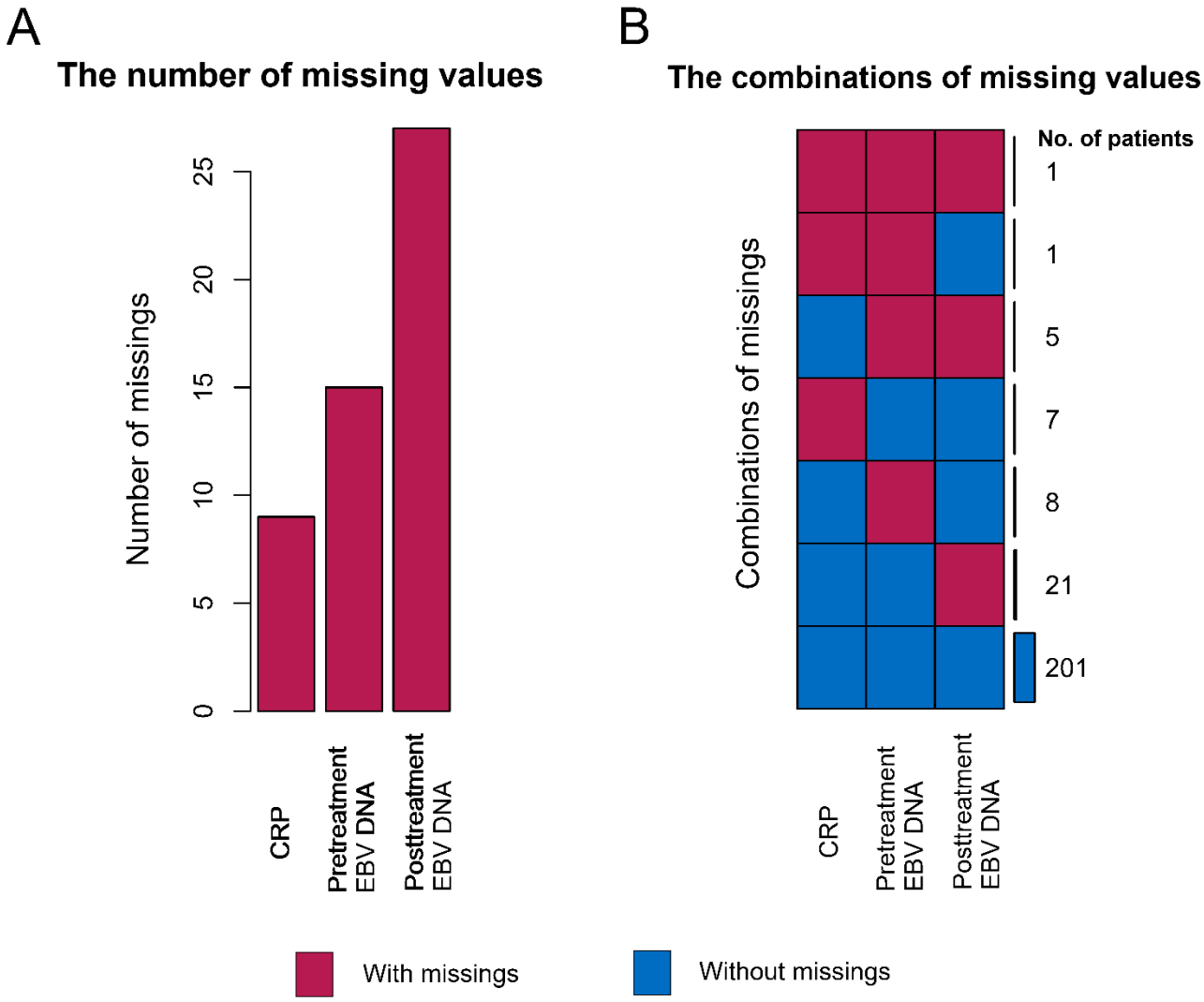

Figure S1. The number of missing values (A) and the combinations of missing values (B) in the dataset.

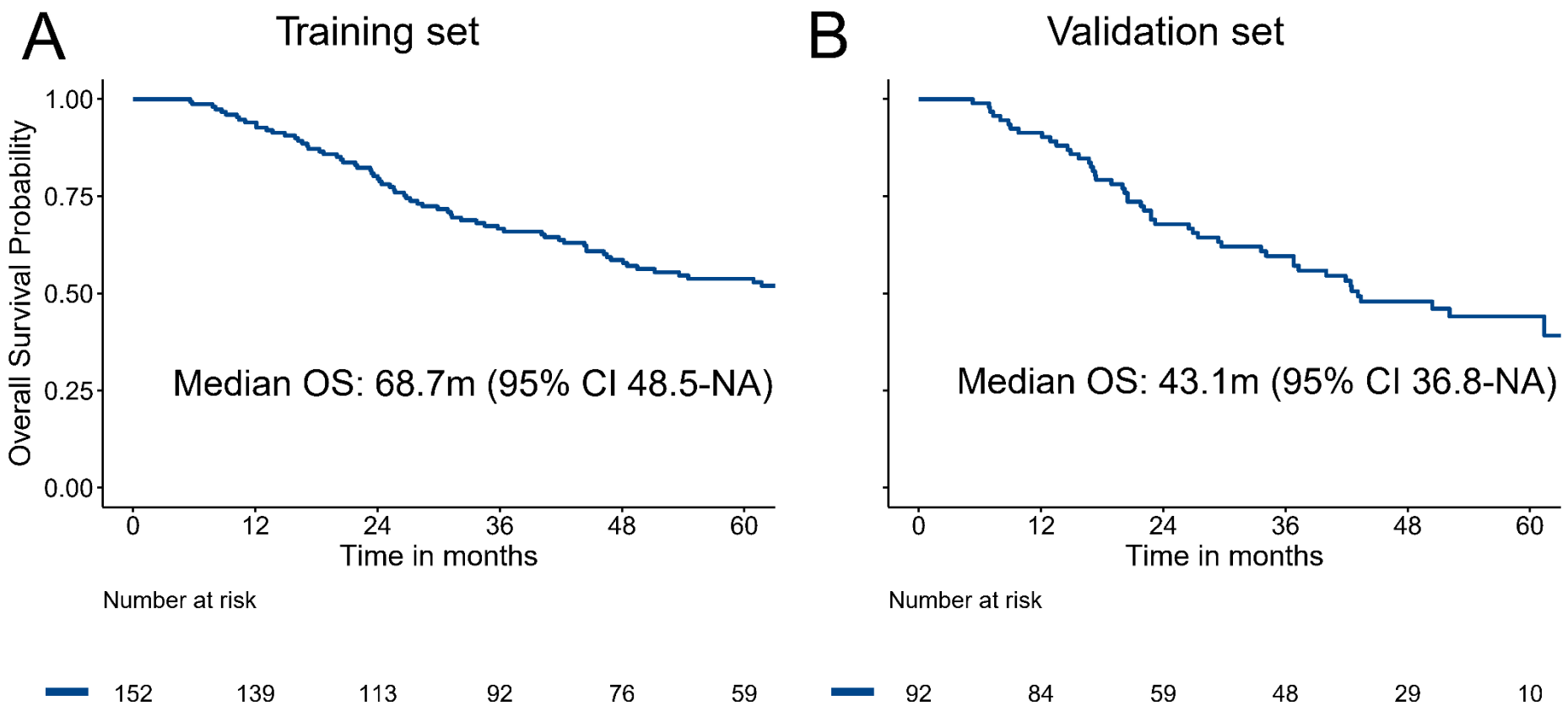

Figure S2. Unstratified Kaplan-Meier curve of training set (A) and validation set (B).

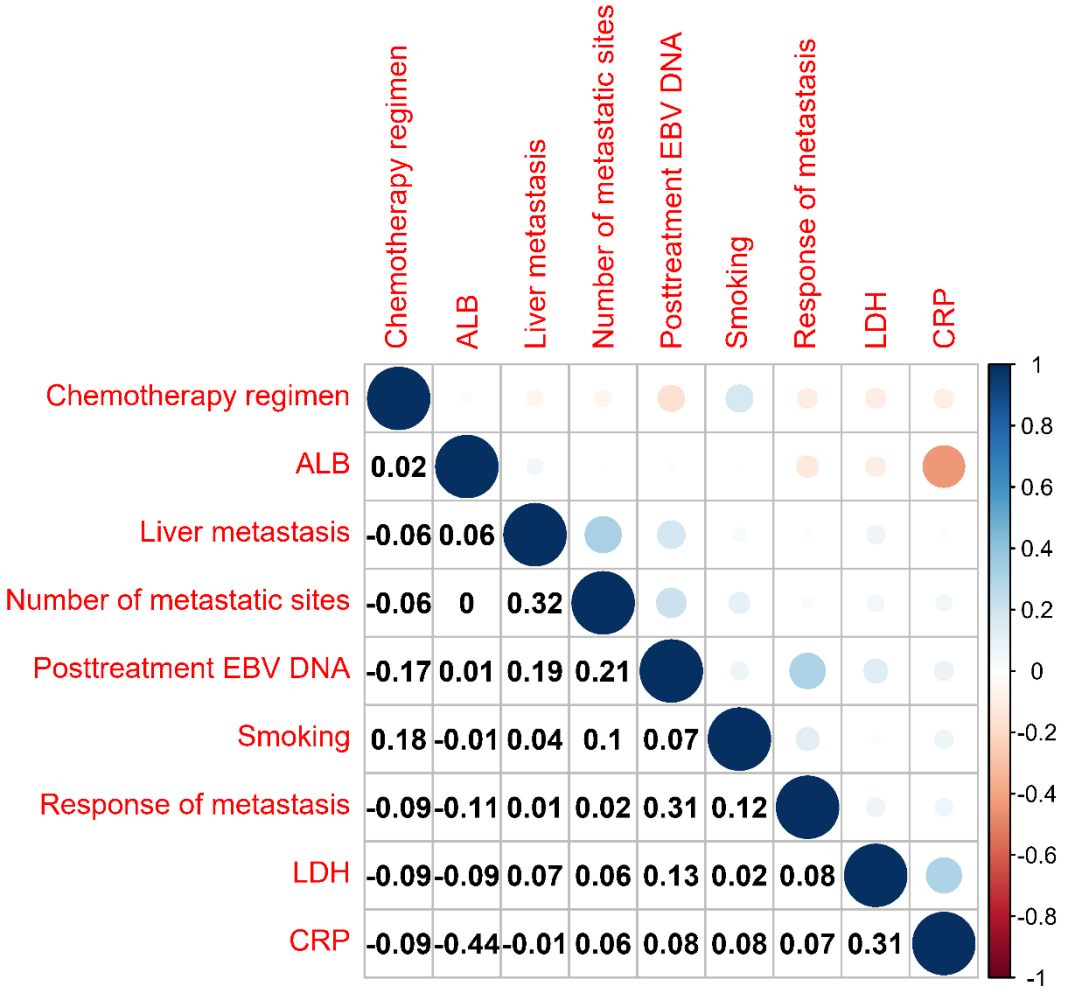

Figure S3. The pair-wise correlations among variables used in multivariable analysis. An absolute correlation coefficient less than 0.5 indicates weak correlation.

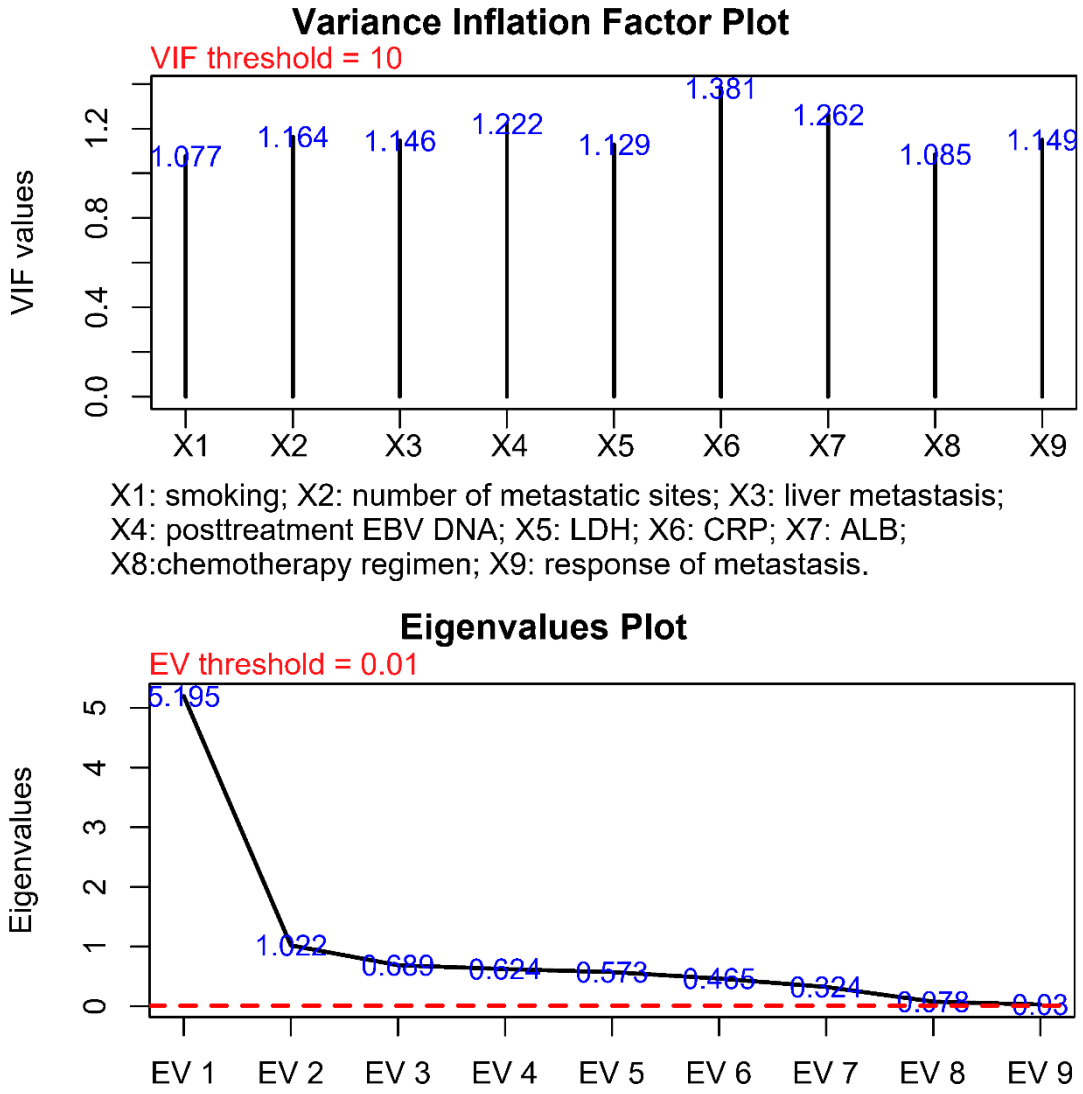

Figure S4. The Variance Inflation Factor (VIF) plot and Eigenvalues (EV) plot of variables used in multivariate analysis. A VIF value <10 and an EV value >0.01 indicate not severe multilinearity.

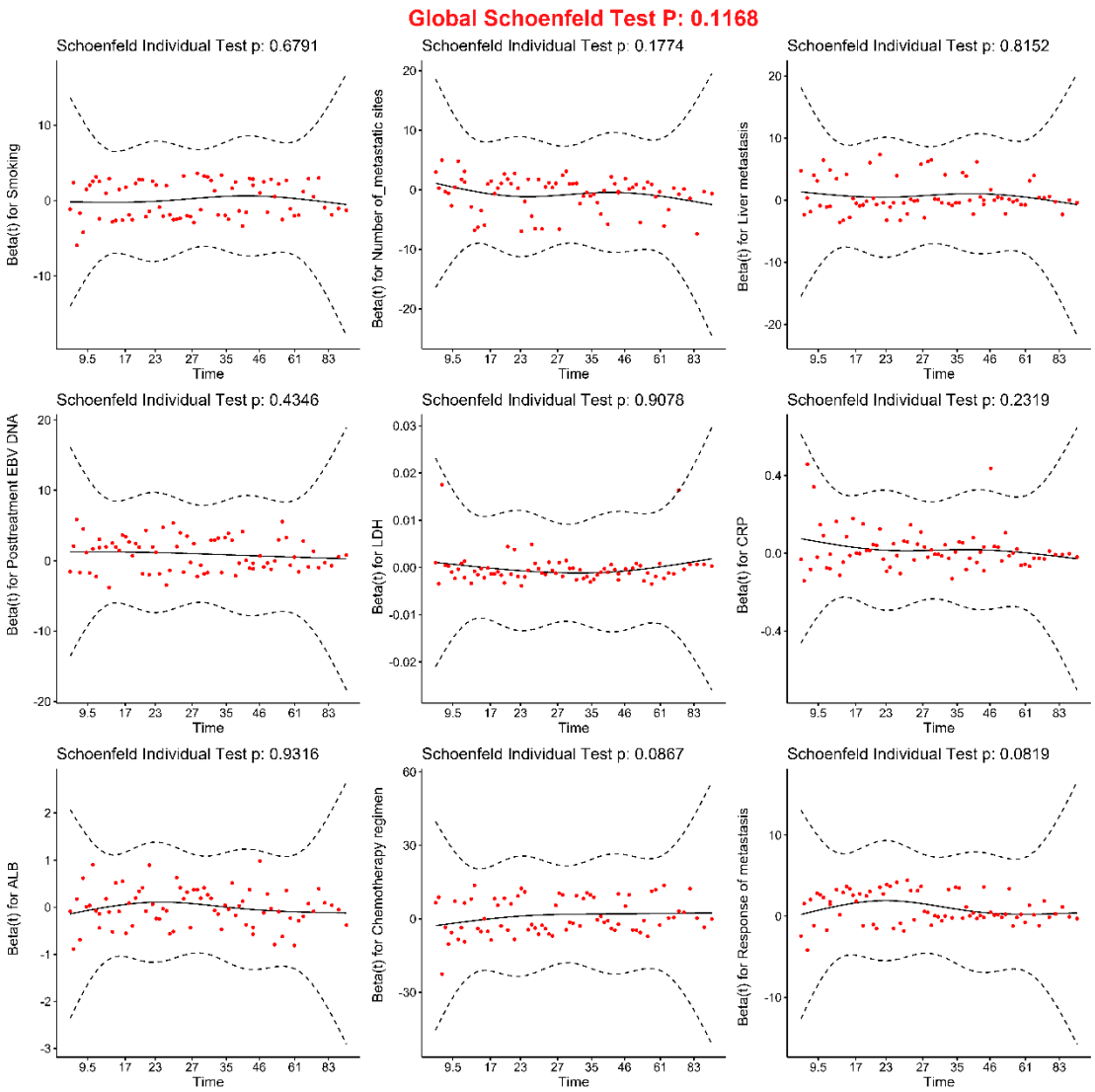

Figure S5. Proportional hazards diagnostics with Schoenfeld Residuals tests in the multivariate Cox regression model. A P-value >0.05 meets the proportional hazards assumption.

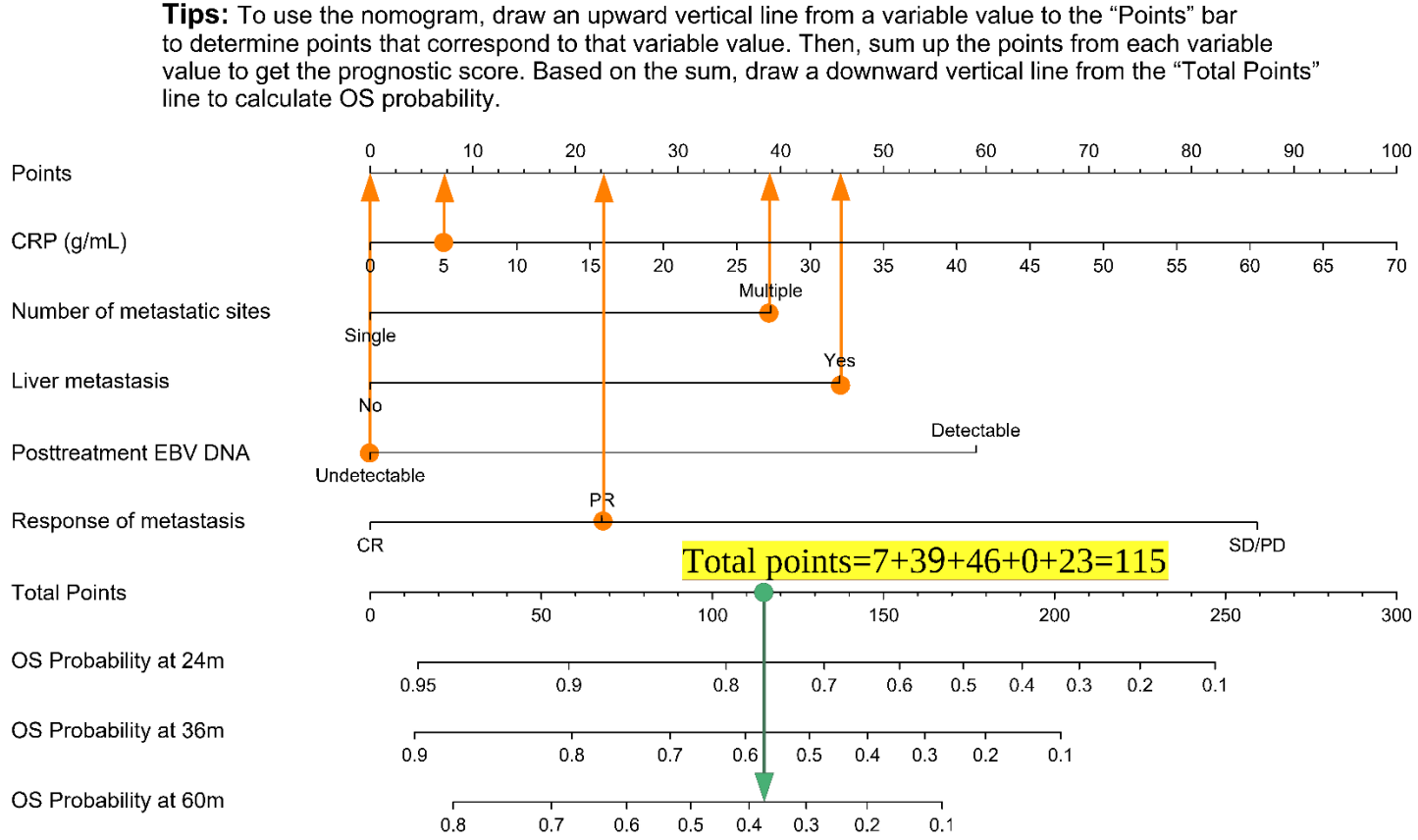

Figure S6. The example of how to use the nomogram.