

**Table S1** Multivariate logistic regression analysis of liver metastasis

Independent variable	Percentage of patients with liver metastasis	Analysis 1 <sup>†</sup>		Analysis 2 <sup>‡</sup>	
		OR (95% CI)	P value	OR (95% CI)	P value
Age at diagnosis (years)					
<40	3.6	1		1	
40-59	2.8	0.91 (0.27-3.33)	0.881	0.84 (0.26-3.21)	0.844
≥60	2.0	0.65 (0.19-2.37)	0.491	0.56 (0.16-2.03)	0.357
Gender					
Male	3.8	1		1	
Female	1.7	0.75 (0.26-2.01)	0.568	0.76 (0.27-2.03)	0.593
Tumor size (mm)					
≤20	1.3	1		1	
21-40	1.7	0.80 (0.19-3.15)	0.748	0.84 (0.20-3.28)	0.798
>40	8.7	3.67 (1.22-12.42)	0.025	3.73 (1.24-12.61)	0.023
Number of metastatic regional lymph nodes (analysis 1 only)					
0	0	1			
1-10	2.6	4.64×10 <sup>7</sup> (3.46×10 <sup>7</sup> -NA)	0.991		
11-20	8.7	1.71×10 <sup>8</sup> (1.27×10 <sup>8</sup> -NA)	0.990		
>20	11.3	1.82×10 <sup>8</sup> (1.36×10 <sup>8</sup> -NA)	0.990		
AJCC 8th N category (analysis 2 only)					
N0	0			1	
N1a	1.7			3.13×10 <sup>7</sup> (2.61×10 <sup>7</sup> -NA)	0.991
N1b	8.4			1.48×10 <sup>8</sup> (8.43×10 <sup>7</sup> -NA)	0.990

<sup>†</sup>, a model to predict liver metastasis including the factors of the age of diagnosis, gender, tumor size and the number of metastatic regional lymph nodes; <sup>‡</sup>, a model to predict liver metastasis including the factors of the age of diagnosis, gender, tumor size and the N stage according to the 8th edition of AJCC classification. CI, confidence interval; NA, not available; OR, odds ratio.

**Table S2** Multivariate logistic regression analysis of lung metastasis

Independent variable	Percentage of patients with lung metastasis	Analysis 1 <sup>†</sup>		Analysis 2 <sup>‡</sup>	
		OR (95% CI)	P value	OR (95% CI)	P value
Age at diagnosis (years)					
<40	2.1	1		1	
40-59	2.4	1.40 (0.33-7.24)	0.662	1.27 (0.31-6.40)	0.752
≥60	2.0	1.19 (0.30-6.01)	0.812	0.99 (0.25-4.85)	0.988
Gender					
Male	2.6	1		1	
Female	1.9	1.51 (0.51-4.52)	0.451	1.38 (0.47-4.05)	0.550
Tumor size (mm)					
≤20	0.3	1		1	
21-40	2.1	5.47 (0.86-106.09)	0.125	5.34 (0.84-103.43)	0.130
>40	8.7	20.79 (3.79-388.08)	0.004	20.56 (3.76-383.35)	0.005
Number of metastatic regional lymph nodes (analysis 1 only)					
0	0	1			
1-10	3.0	4.93×10 <sup>7</sup> (4.25×10 <sup>7</sup> -NA)	0.990		
11-20	4.3	5.95×10 <sup>7</sup> (5.13×10 <sup>7</sup> -NA)	0.990		
>20	9.7	1.41×10 <sup>8</sup> (1.21×10 <sup>8</sup> -NA)	0.990		
AJCC 8th N category (analysis 2 only)					
N0	0			1	
N1a	2.3			3.84×10 <sup>7</sup> (2.94×10 <sup>7</sup> -NA)	0.990
N1b	6.3			8.82×10 <sup>7</sup> (6.76×10 <sup>7</sup> -NA)	0.990

<sup>†</sup>, a model to predict lung metastasis including the factors of the age of diagnosis, gender, tumor size and the number of metastatic regional lymph nodes; <sup>‡</sup>, a model to predict lung metastasis including the factors of the age of diagnosis, gender, tumor size and the N stage according to the 8th edition of AJCC classification. CI, confidence interval; NA, not available; OR, odds ratio.

**Table S3** Multivariate logistic regression analysis of liver metastasis and lung metastasis by the ratio of metastatic regional lymph nodes

Independent variable	Liver metastasis			Lung metastasis		
	Percentage of patients (%)	OR (95% CI)	P value	Percentage of patients (%)	OR (95% CI)	P value
Age at diagnosis (years)						
<40	3.6	1		2.1	1	
40-59	2.8	1.13 (0.33-4.22)	0.843	2.4	1.53 (0.36-7.88)	0.577
≥60	2.0	0.71 (0.21-2.60)	0.591	2.0	1.04 (0.26-5.17)	0.955
Gender						
Male	3.8	1		2.6	1	
Female	1.7	0.79 (0.27-2.12)	0.639	1.9	1.62 (0.55-4.86)	0.382
Tumor size (mm)						
≤20	1.3	1		0.3	1	
21-40	1.7	0.93 (0.22-3.63)	0.911	2.1	5.29 (0.83-102.47)	0.132
>40	8.7	3.85 (1.27-13.12)	0.02	8.7	22.60 (4.08-423.83)	0.004
Ratio of metastatic regional lymph nodes						
<0.372	0.5	1				
≥0.372	9.3	14.53 (4.53-64.99)	<0.001			
<0.176				0	1	
≥0.176				6.0	1.02×10 <sup>8</sup> (4.02×10 <sup>-23</sup> -NA)	0.988

CI, confidence interval; NA, not available; OR, odds ratio.