

Figure S1. Kaplan-Meier curves of (A and C) overall survival and (B and D) cause-specific survival for stage based on (A and B) AJCC sixth edition and (C and D) AJCC seventh edition. The concordance indices for AJCC sixth edition were 0.531 (OS) and 0.534 (CSS) and those for seventh edition were 0.547 (OS) and 0.561 (CSS). AJCC, American Joint Committee on Cancer; OS, overall survival; CSS, cause-specific survival.

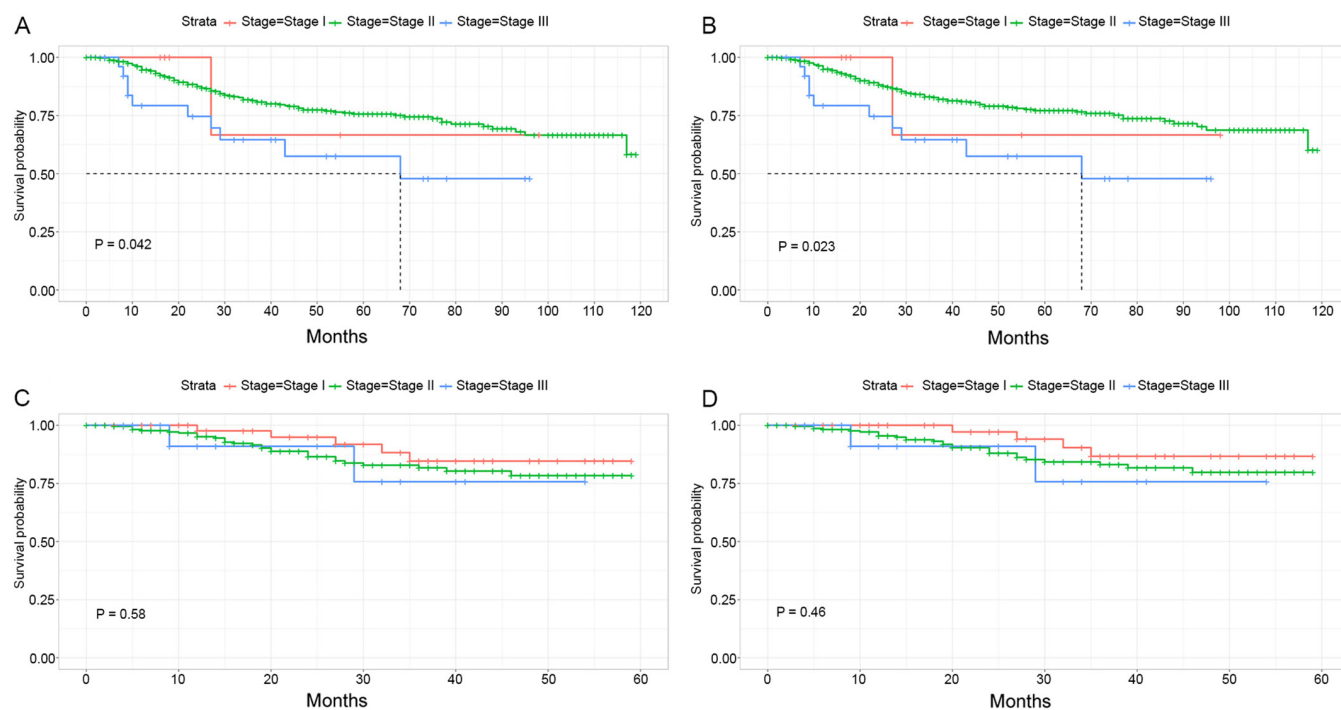


Figure S2. Kaplan-Meier curves of (A) overall survival and (B) cause-specific survival for chemotherapy based on patients at The First Affiliated Hospital of Zhengzhou University (Zhengzhou, China). The concordance indices for external validation of overall survival and cause-specific survival prediction were 0.834 and 0.825.

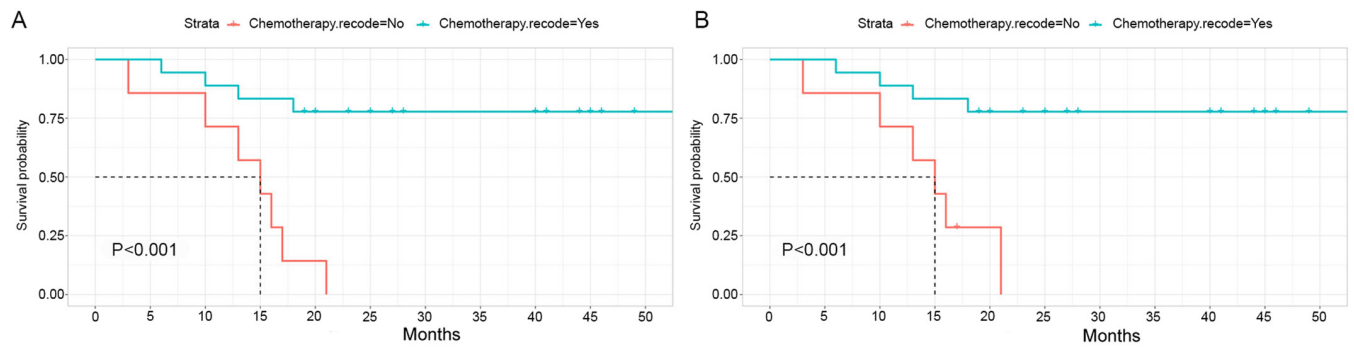


Table SI. Baseline characteristics of patients with non-metastatic Ewing sarcoma.

Demographic or characteristic	Total patients (n=627)	Alive cohort (n=502)	Dead cohort (n=125)
Age, years			
Mean $\pm$ SD	20.14 $\pm$ 13.62	18.69 $\pm$ 12.50	25.94 $\pm$ 16.13
Median (range)	17.00 (0.00-85.00)	16.00 (0.00-72.00)	20.00 (1.00-85.00)
Categorical age, n (%)			
<15 years	244 (38.9)	218 (43.4)	26 (20.8)
15-39 years	315 (50.2)	240 (47.8)	75 (60.0)
>39 years	68 (10.8)	44 (8.8)	24 (19.2)
Tumor size, mm			
Mean $\pm$ SD	80.29 $\pm$ 59.32	75.82 $\pm$ 57.96	98.25 $\pm$ 61.27
Median (range)	70.00 (5.00-950.00)	66.00 (5.00-950.00)	85.00 (5.00-320.00)
Categorical tumor size, n (%)			
<80 mm	363 (57.9)	308 (61.4)	55 (44.0)
$\geq$ 80 mm	264 (42.1)	194 (38.6)	70 (56.0)
Tumor extension, mm			
Mean $\pm$ SD	359.65 $\pm$ 182.30	344.03 $\pm$ 181.03	422.40 $\pm$ 173.71
Median (range)	400.00 (100.00-820.00)	350.00 (100.00-820.00)	400.00 (100.00-800.00)
Categorical tumor extension, n (%)			
<300 mm	149 (23.8)	135 (26.9)	14 (11.2)
$\geq$ 300 mm	478 (76.2)	367 (73.1)	111 (88.8)
Sex, n (%)			
Female	252 (40.2)	214 (42.6)	38 (30.4)
Male	375 (59.8)	288 (57.4)	87 (69.6)
Ethnicity, n (%)			
Black	24 (3.8)	16 (3.2)	8 (6.4)
White	556 (88.7)	451 (89.8)	105 (84.0)
Other	47 (7.5)	35 (7.0)	12 (9.6)
Primary site, n (%)			
Head, face, neck	50 (8.0)	43 (8.6)	7 (5.6)
Limbs	306 (48.8)	265 (52.8)	41 (32.8)
Thorax, abdomen	125 (19.9)	93 (18.5)	32 (25.6)
Trunk	146 (23.3)	101 (20.1)	45 (36.0)
Histological subtype, n (%)			
Adamantinoma of long bones	28 (4.5)	27 (5.4)	1 (0.8)
Ewing sarcoma	599 (95.5)	475 (94.6)	124 (99.2)
AJCC T stage, n (%)			
T1	333 (53.1)	285 (56.8)	48 (38.4)
T2	289 (46.1)	212 (42.2)	77 (61.6)
T3	5 (0.8)	5 (1.0)	0 (0.0)
Surgery information, n (%)			
Surgery not performed	147 (23.4)	105 (20.9)	42 (33.6)
Surgery performed	480 (76.6)	397 (79.1)	83 (66.4)
Radiation, n (%)			
No/unknown	372 (59.3)	316 (62.9)	56 (44.8)
Yes	255 (40.7)	186 (37.1)	69 (55.2)
Chemotherapy, n (%)			
No/unknown	50 (8.0)	37 (7.4)	13 (10.4)
Yes	577 (92.0)	465 (92.6)	112 (89.6)
Overall survival time, months			
Mean $\pm$ SD	46.38 $\pm$ 33.04	50.43 $\pm$ 34.09	30.13 $\pm$ 21.87
Median (range)	40.00 (0.00-119.00)	48.00 (0.00-119.00)	25.00 (3.00-117.00)
Marital status, n (%)			
Married	103 (16.4)	70 (13.9)	33 (26.4)
Single/separated/divorced/widowed	524 (83.6)	432 (86.1)	92 (73.6)

Table SI. Continued.

Demographic or characteristic	Total patients (n=627)	Alive cohort (n=502)	Dead cohort (n=125)
9th grade education, n (%)			
Lower 50%	313 (49.9)	254 (50.6)	59 (47.2)
Upper 50%	314 (50.1)	248 (49.4)	66 (52.8)
High school education, n (%)			
Lower 50%	311 (49.6)	253 (50.4)	58 (46.4)
Upper 50%	316 (50.4)	249 (49.6)	67 (53.6)
At least bachelor's degree, n (%)			
Lower 50%	266 (42.4)	211 (42.0)	55 (44.0)
Upper 50%	361 (57.6)	291 (58.0)	70 (56.0)
Median family income, n (%)			
Lower 50%	312 (49.8)	249 (49.6)	63 (50.4)
Upper 50%	315 (50.2)	253 (50.4)	62 (49.6)
Unemployed, n (%)			
Lower 50%	313 (49.9)	255 (49.8)	58 (50.4)
Upper 50%	314 (50.1)	247 (50.2)	67 (49.6)
Income status, n (%)			
Lower 50%	313 (49.9)	250 (50.8)	63 (46.4)
Upper 50%	314 (50.1)	252 (49.2)	62 (53.6)
Non-manual worker, n (%)			
Lower 50%	265 (42.3)	214 (42.6)	51 (40.8)
Upper 50%	362 (57.7)	288 (57.4)	74 (59.2)

AJCC, American Joint Committee on Cancer.

Table SIII. Data of 26 patients in external validation of the established nomograms for OS and CSS.

Case	Age, years	Sex	Histology subtypes	Surgery information	Chemotherapy recode	Survival, months	OS	CSS
No. 1	28	Female	Ewing sarcoma	Surgery not performed	Yes	54	Alive	Alive
No. 2	32	Female	Adamantinoma of long bones	Surgery performed	Yes	13	Dead	Dead
No. 3	6	Female	Ewing sarcoma	Surgery not performed	No	10	Dead	Dead
No. 4	34	Female	Ewing sarcoma	Surgery not performed	Yes	18	Dead	Dead
No. 5	14	Female	Ewing sarcoma	Surgery performed	No	16	Dead	Dead
No. 6	19	Male	Ewing sarcoma	Surgery not performed	Yes	28	Alive	Alive
No. 7	21	Male	Ewing sarcoma	Surgery not performed	Yes	6	Dead	Dead
No. 8	16	Female	Adamantinoma of long bones	Surgery performed	Yes	27	Alive	Alive
No. 9	24	Male	Ewing sarcoma	Surgery performed	Yes	25	Alive	Alive
No. 10	16	Male	Ewing sarcoma	Surgery not performed	No	21	Dead	Dead
No. 11	16	Male	Ewing sarcoma	Surgery not performed	Yes	19	Alive	Alive
No. 12	10	Female	Ewing sarcoma	Surgery performed	Yes	20	Alive	Alive
No. 13	46	Male	Adamantinoma of long bones	Surgery not performed	Yes	10	Dead	Dead
No. 14	1	Female	Ewing sarcoma	Surgery performed	No	17	Dead	Alive
No. 15	16	Female	Ewing sarcoma	Surgery performed	No	15	Dead	Dead
No. 16	16	Male	Ewing sarcoma	Surgery performed	No	13	Dead	Dead
No. 17	19	Male	Ewing sarcoma	Surgery performed	Yes	41	Alive	Alive
No. 18	8	Female	Ewing sarcoma	Surgery performed	Yes	27	Alive	Alive
No. 19	16	Female	Ewing sarcoma	Surgery performed	Yes	23	Alive	Alive
No. 20	45	Male	Ewing sarcoma	Surgery performed	Yes	45	Alive	Alive
No. 21	13	Female	Ewing sarcoma	Surgery performed	Yes	40	Alive	Alive
No. 22	33	Female	Adamantinoma of long bones	Surgery performed	Yes	44	Alive	Alive
No. 23	19	Male	Ewing sarcoma	Surgery performed	Yes	46	Alive	Alive
No. 24	17	Male	Ewing sarcoma	Surgery performed	Yes	49	Alive	Alive
No. 25	48	Female	Ewing sarcoma	Surgery not performed	No	3	Dead	Dead
No. 26	51	Female	Ewing sarcoma	Surgery not performed	Yes	54	Alive	Alive

The 26 patients in the external validation cohort had a mean age of 22.46 years (mean $\pm$ SD, 22.46 $\pm$ 13.12 years; range, 1-51 years) and a mean survival time of 26.31 months (mean $\pm$ SD, 26.31 $\pm$ 15.03 months; range, 3-54 months). OS, overall survival; CSS, cause-specific survival.

Table SIV. Results of univariate analysis.

Variable 1	Variable 2	OR	95% CI	P-value
Chemotherapy recode (yes)	Age, years			
	<15	1.000 (reference)		
	>39	0.093	0.039-0.223	<0.001 ^a
Sex (male)	15-39	0.426	0.187-0.970	0.042 ^a
	Tumor size, mm			
	<80	1.000 (reference)		
Tumor extension (≥300 mm)	≥80	1.558	1.124-2.167	0.008 ^a
	Surgery information			
	Surgery not performed	1.000 (reference)		
Surgery information (surgery performed)	Surgery performed	0.489	0.291-0.790	0.005 ^a
	Primary site			
	Head face neck	1.000 (reference)		
Tumor size (≥80 mm)	Limb	2.253	1.127-4.505	0.022 ^a
	Thorax abdomen	1.968	0.903-4.289	0.089
	Trunk	0.422	0.211-0.847	0.015 ^a
Tumor size (≥80 mm)	Tumor extension, mm			
	<300	1.000 (reference)		
	≥300	1.954	1.326-2.916	0.001 ^a

^aP<0.05. OR, odds ratio; CI, confidence interval.