

Table S1 Demographics and clinicopathological characteristics of all patients after PSM

Characteristics	CSCLC (n=871)		NSCLC (n=3,484)		P ₁ value	CSCLC (n=871)		Pure SCLC (n=3,366)		P ₂ value
	Number	%	Number	%		Number	%	Number	%	
Age (years)					0.793					0.935
≤60	229	26.3	956	27.4		229	26.3	903	26.8	
60-70	305	35.0	1,201	34.5		305	35.0	1,180	35.1	
>70	337	38.7	1,327	38.1		337	38.7	1,283	38.1	
Gender					0.830					0.965
Female	378	43.4	1,498	43.0		378	43.4	1,458	43.3	
Male	493	56.6	1,986	57.0		493	56.6	1,908	56.7	
Race					0.974					0.970
White	727	83.5	2,904	83.4		727	83.5	2,818	83.7	
Black	109	12.5	434	12.5		109	12.5	411	12.2	
Other	35	4.0	146	4.2		35	4.0	137	4.1	
Site					0.970					0.973
Left upper lobe	217	24.9	832	23.9		217	24.9	830	24.7	
Left lower lobe	100	11.5	427	12.3		100	11.5	390	11.6	
Right upper lobe	270	31.0	1,092	31.3		270	31.0	1,011	30.0	
Right middle lobe	32	3.7	145	4.2		32	3.7	133	4.0	
Right lower lobe	100	11.5	379	10.9		100	11.5	388	11.5	
Main bronchus	66	7.6	261	7.5		66	7.6	244	7.2	
Unspecific	86	9.9	348	10.0		86	9.9	370	11.0	
T					0.994					0.870
T1	184	21.1	740	21.2		184	21.1	690	20.5	
T2	291	33.4	1,168	33.5		291	33.4	1,097	32.6	
T3	36	4.1	150	4.3		36	4.1	153	4.5	
T4	360	41.3	1,426	40.9		360	41.3	1,426	42.4	
N					0.867					0.457
N0	285	32.7	1,115	32.0		285	32.7	1,025	30.5	
N1	83	9.5	358	10.3		83	9.5	302	9.0	
N2	375	43.1	1,520	43.6		375	43.1	1,544	45.9	
N3	128	14.7	491	14.1		128	14.7	495	14.7	
M					0.220					0.243
M0	460	52.8	1,759	50.5		460	52.8	1,703	50.6	
M1	411	47.2	1,725	49.5		411	47.2	1,663	49.4	
Surgery					0.384					0.141
None	626	71.9	2,555	73.3		626	71.9	2,502	74.3	
Yes	245	28.1	929	26.7		245	28.1	864	25.7	
Radiation					0.457					0.791
None	473	54.3	1,843	52.9		473	54.3	1,811	53.8	
Yes	398	45.7	1,641	47.1		398	45.7	1,555	46.2	
Chemotherapy					0.775					0.325
None	306	35.1	1,206	34.6		306	35.1	1,123	33.4	
Yes	565	64.9	2,278	65.4		565	64.9	2,243	66.6	

PSM, propensity score matching; CSCLC, combined small cell lung cancer; NSCLC, non-small cell lung cancer; SCLC, small cell lung cancer.

Table S2 Univariate and multivariate Cox analyses of LCSS for NSCLC and CSCLC patients in unmatched and matched cohorts

Characteristics	CSCLC (n=871) and NSCLC (n=280,391)						1:4 match of CSCLC (n=871) and NSCLC (n=3,484)					
	Univariable			Multivariable			Univariable			Multivariable		
	HR	95% CI	P	HR	95% CI	P	HR	95% CI	P	HR	95% CI	P
Age (years)												
≤60	1			1			1			1		
60–70	0.97	0.96–0.98	<0.001	1.07	1.06–1.08	<0.001	1.10	1.01–1.21	0.031	1.14	1.04–1.25	0.005
>70	1.15	1.14–1.17	<0.001	1.20	1.19–1.22	<0.001	1.23	1.13–1.35	<0.001	1.24	1.13–1.36	<0.001
Gender												
Female	1			1			1			1		
Male	1.27	1.26–1.28	<0.001	1.21	1.20–1.22	<0.001	1.30	1.21–1.39	<0.001	1.28	1.19–1.37	<0.001
Race												
White	1			1			1			1		
Black	1.14	1.12–1.15	<0.001	0.98	0.96–0.99	0.001	1.16	1.05–1.29	0.005	0.97	0.88–1.08	0.626
Other	0.90	0.89–0.92	<0.001	0.75	0.73–0.76	<0.001	0.92	0.77–1.10	0.363	0.66	0.55–0.80	<0.001
Primary site												
Left upper lobe	1			1			1			1		
Left lower lobe	1.00	0.98–1.01	0.597	1.04	1.02–1.06	<0.001	1.03	0.91–1.16	0.683	1.04	0.91–1.17	0.586
Right upper lobe	1.00	0.99–1.01	0.647	0.98	0.97–1.00	0.013	1.01	0.92–1.11	0.882	0.92	0.84–1.01	0.092
Right middle lobe	0.97	0.94–0.99	0.005	0.99	0.97–1.02	0.437	1.19	0.99–1.43	0.060	1.19	0.99–1.43	0.061
Right lower lobe	1.04	1.03–1.06	<0.001	1.06	1.04–1.08	<0.001	1.09	0.96–1.24	0.186	1.09	0.95–1.24	0.211
Main bronchus	1.87	1.83–1.91	<0.001	1.22	1.19–1.25	<0.001	1.68	1.46–1.93	<0.001	1.21	1.05–1.39	0.009
Unspecific	1.99	1.96–2.02	<0.001	1.21	1.19–1.23	<0.001	1.88	1.66–2.14	<0.001	1.23	1.08–1.40	0.002
T												
T1	1			1			1			1		
T2	1.92	1.90–1.95	<0.001	1.60	1.57–1.62	<0.001	1.70	1.52–1.89	<0.001	1.59	1.42–1.78	<0.001
T3	2.81	2.75–2.86	<0.001	2.08	2.03–2.12	<0.001	2.34	1.95–2.81	<0.001	1.90	1.57–2.29	<0.001
T4	4.06	4.01–4.12	<0.001	2.09	2.05–1.12	<0.001	3.02	2.73–3.35	<0.001	1.93	1.73–2.16	<0.001
N												
N0	1			1			1			1		
N1	1.62	1.60–1.65	<0.001	1.49	1.47–1.52	<0.001	1.34	1.17–1.53	<0.001	1.38	1.20–1.58	<0.001
N2	2.70	2.67–2.73	<0.001	1.63	1.61–1.65	<0.001	2.46	2.52–2.68	<0.001	1.72	1.56–1.90	<0.001
N3	3.14	3.09–3.18	<0.001	1.63	1.60–1.65	<0.001	2.80	2.50–3.12	<0.001	1.61	1.42–1.82	<0.001
M												
M0	1			1			1			1		
M1	3.37	3.34–3.40	<0.001	1.92	1.90–1.94	<0.001	3.10	2.88–3.34	<0.001	2	1.84–2.17	<0.001
Histology												
CSCLC	1			1			1			1		
NSCLC	0.77	0.72–0.83	<0.001	0.74	0.69–0.80	<0.001	0.80	0.73–0.87	<0.001	0.73	0.67–0.79	<0.001
Surgery												
None	1			1			1			1		
Yes	0.18	0.18–0.19	0.280	0.27	0.27–0.28	<0.001	0.23	0.21–0.26	<0.001	0.35	0.31–0.39	<0.001
Radiation												
None	1			1			1			1		
Yes	1.39	1.38–1.40	<0.001	0.91	0.90–0.92	<0.001	1.24	1.16–1.33	<0.001	0.93	0.86–1.00	0.050
Chemotherapy												
None	1			1			1			1		
Yes	1.12	1.11–1.13	<0.001	0.52	0.52–0.53	<0.001	1.06	0.98–1.14	0.151	0.49	0.45–0.54	<0.001

LCSS, lung cancer-specific survival; CSCLC, combined small cell lung cancer; NSCLC, non-small cell lung cancer; HR, hazard ratio; CI, confidence interval.

Table S3 Univariate and multivariate Cox analyses of LCSS for NSCLC and pure SCLC patients in unmatched and matched cohorts

Characteristics	CSCLC (n=871) and pure SCLC (n=45,433)						1:4 match of CSCLC (n=793) and pure SCLC (n=3,366)					
	Univariable			Multivariable			Univariable			Multivariable		
	HR	95% CI	P	HR	95% CI	P	HR	95% CI	P	HR	95% CI	P
Age (years)												
≤60	1			1			1			1		
60–70	1.14	1.12–1.17	<0.001	1.12	1.09–1.44	<0.001	1.12	1.03–1.23	0.011	1.14	1.04–1.24	0.005
>70	1.53	1.49–1.57	<0.001	1.36	1.32–1.39	<0.001	1.47	1.35–1.60	<0.001	1.43	1.31–1.56	<0.001
Gender												
Female	1			1			1			1		
Male	1.17	1.15–1.20	<0.001	1.15	1.13–1.17	<0.001	1.38	1.29–1.48	<0.001	1.29	1.21–1.39	<0.001
Race												
White	1			1			1					
Black	0.92	0.89–0.95	<0.001	0.93	0.89–0.96	<0.001	1.11	1.00–1.23	0.057			
Other	0.92	0.87–0.97	0.001	0.88	0.83–0.92	<0.001	1.00	0.84–1.19	0.985			
Primary site												
Left upper lobe	1			1			1			1		
Left lower lobe	1.06	1.02–1.10	0.006	1.03	0.99–1.07	0.115	0.95	0.84–1.08	0.452	1.04	0.92–1.17	0.570
Right upper lobe	0.99	0.96–1.02	0.332	1.00	0.97–1.03	0.992	0.94	0.86–1.04	0.221	0.94	0.85–1.03	0.182
Right middle lobe	0.98	0.93–1.04	0.560	0.99	0.94–1.04	0.623	0.90	0.75–1.08	0.255	0.84	0.70–1.02	0.075
Right lower lobe	1.07	1.04–1.11	<0.001	1.04	1.00–1.07	0.067	0.98	0.86–1.10	0.686	1.04	0.92–1.18	0.516
Main bronchus	1.13	1.10–1.18	<0.001	1.05	1.02–1.09	0.005	1.35	1.17–1.55	<0.001	1.06	0.92–1.22	0.443
Unspecific	1.32	1.28–1.37	<0.001	1.07	1.04–1.11	0.000	1.61	1.43–1.82	<0.001	1.07	0.95–1.21	0.274
T												
T1	1			1			1			1		
T2	1.35	1.30–1.40	<0.001	1.26	1.21–1.31	<0.001	1.74	1.57–1.93	<0.001	1.33	1.20–1.48	<0.001
T3	1.53	1.45–1.62	<0.001	1.40	1.32–1.48	<0.001	2.35	1.97–2.81	<0.001	1.57	1.31–1.89	<0.001
T4	1.77	1.72–1.83	<0.001	1.47	1.42–1.52	<0.001	2.85	2.57–3.15	<0.001	1.66	1.48–1.85	<0.001
N												
N0	1			1			1			1		
N1	1.11	1.06–1.16	<0.001	1.14	1.09–1.19	<0.001	1.37	1.20–1.57	<0.001	1.40	1.22–1.60	<0.001
N2	1.44	1.40–1.48	<0.001	1.34	1.30–1.38	<0.001	2.24	2.05–2.43	<0.001	1.57	1.43–1.73	<0.001
N3	1.52	1.47–1.58	<0.001	1.36	1.31–1.41	<0.001	2.36	2.11–2.63	<0.001	1.39	1.23–1.57	<0.001
M												
M0	1			1			1			1		
M1	2.25	2.21–2.30	<0.001	1.88	1.84–1.92	<0.001	3.18	2.96–3.42	<0.001	2.14	1.98–2.32	<0.001
Histology												
CSCLC	1			1			1					
Pure SCLC	1.38	1.28–1.49	<0.001	1.06	0.98–1.15	0.134	1.02	0.94–1.11	0.669			
Surgery												
None	1			1			1			1		
Yes	0.36	0.33–0.38	<0.001	0.43	0.40–0.46	<0.001	0.33	0.30–0.36	<0.001	0.49	0.44–0.55	<0.001
Radiation												
None	1			1			1			1		
Yes	0.49	0.48–0.50	<0.001	0.68	0.40–0.46	<0.001	0.73	0.68–0.78	<0.001	0.77	0.72–0.83	<0.001
Chemotherapy												
None	1			1			1			1		
Yes	0.37	0.36–0.37	<0.001	0.39	0.38–0.39	<0.001	0.59	0.55–0.64	<0.001	0.51	0.47–0.56	<0.001

LCSS, lung cancer-specific survival; CSCLC, combined small cell lung cancer; SCLC, small cell lung cancer; HR, hazard ratio; CI, confidence interval.

Table S4 Demographics and clinicopathologic characteristics of the training and validation data sets

Characteristics	All patients (n=871)		Training data set (N=602)		Validation data set (N=269)		P value
	Number	%	Number	%	Number	%	
Age (years)							0.009
≤60	229	26.3	174	28.9	55	20.4	
60–70	305	35.0	194	32.2	111	41.3	
>70	337	38.7	234	38.9	103	38.3	
Gender							0.396
Female	378	43.4	267	44.4	111	41.3	
Male	493	56.6	335	55.6	158	58.7	
Race							0.269
White	727	83.5	508	84.4	219	81.4	
Black	109	12.5	74	12.3	35	13.0	
Other	35	4.0	20	3.3	15	5.6	
Site							0.902
Left upper lobe	217	24.9	154	25.6	63	23.4	
Left lower lobe	100	11.5	70	11.6	30	11.2	
Right upper lobe	270	31.0	184	30.6	86	32.0	
Right middle lobe	32	3.7	22	3.7	10	3.7	
Right lower lobe	100	11.5	70	11.6	30	11.2	
Main bronchus	66	7.6	41	6.8	25	9.3	
Unspecific	86	9.9	61	10.1	25	9.3	
T							0.032
T1	184	21.1	125	20.8	59	21.9	
T2	291	33.4	197	32.7	94	34.9	
T3	36	4.1	18	3.0	18	6.7	
T4	360	41.3	262	43.5	98	36.4	
N							0.614
N0	285	32.7	194	32.2	91	33.8	
N1	83	9.5	61	10.1	22	8.2	
N2	375	43.1	263	43.7	112	41.6	
N3	128	14.7	84	14.0	44	16.4	
M							0.891
M0	460	52.8	317	52.7	143	53.2	
M1	411	47.2	285	47.3	126	46.8	
Surgery							0.447
None	626	71.9	428	71.1	198	73.6	
Yes	245	28.1	174	28.9	71	26.4	
Radiation							0.564
None	473	54.3	323	53.7	150	55.8	
Yes	398	45.7	279	46.3	119	44.2	
Chemotherapy							0.077
None	306	35.1	200	33.2	106	39.4	
Yes	565	64.9	402	66.8	163	60.6	

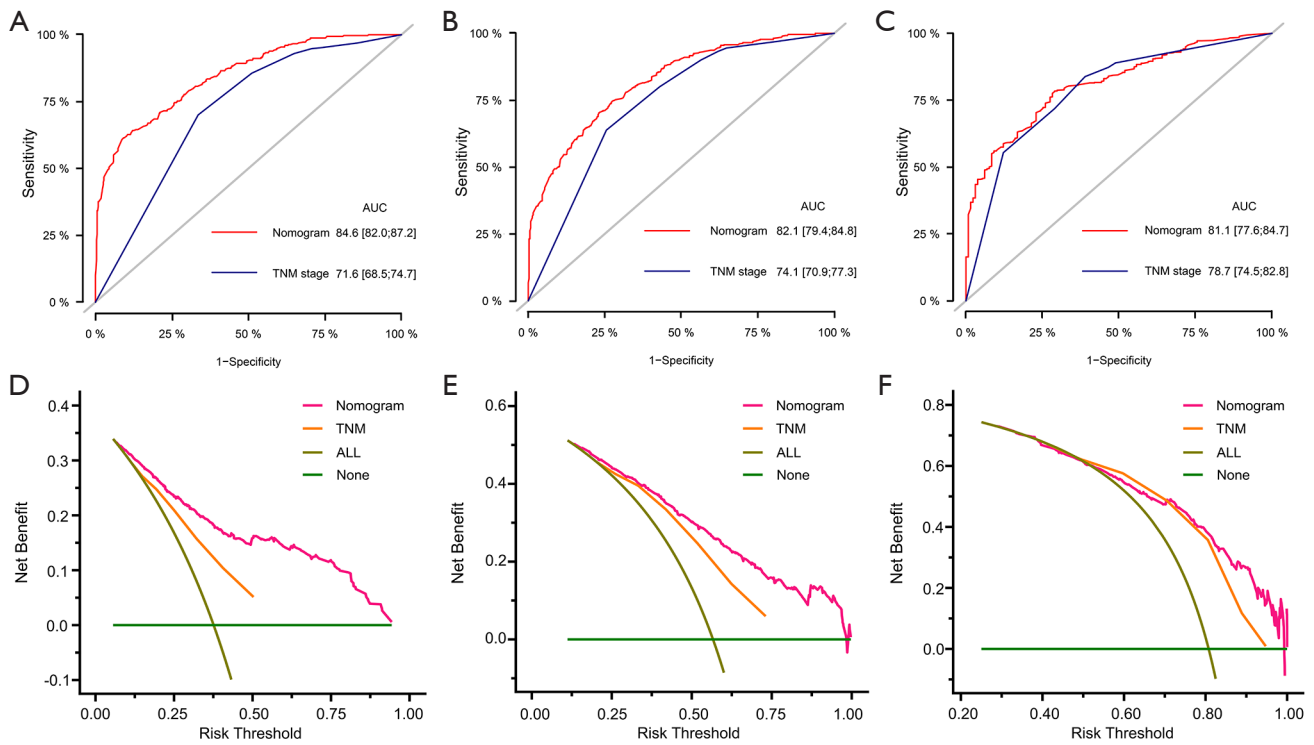


Figure S1 The receiver operating characteristic curves for predicting OS at (A) 6 months, (B) 1 year, and (C) 3 years of the nomogram and the TNM staging system. DCA analyses comparing the clinical utility of nomogram and TNM staging system at (D) 6 months, (E) 1 year, and (F) 3 years. OS, overall survival; DCA, decision curve analysis; AUC, area under the receiver operating characteristic curve.

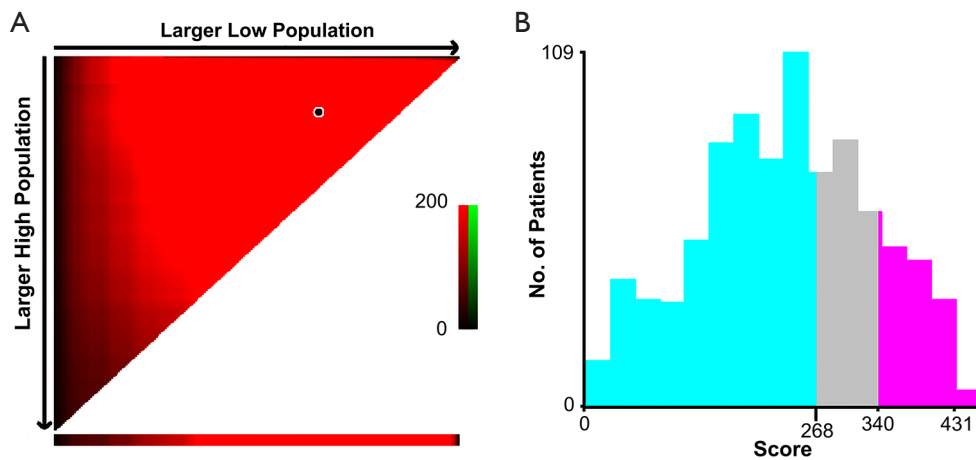


Figure S2 X-tile plots for identifying the optimal risk score cutoff values based on OS in CSCLC patients. (A) The optimum cutoff point is highlighted by the black dot. (B) Distributions of number of the CSCLC patients by risk scores, according to the nomogram. OS, overall survival; CSCLC, combined small cell lung cancer.

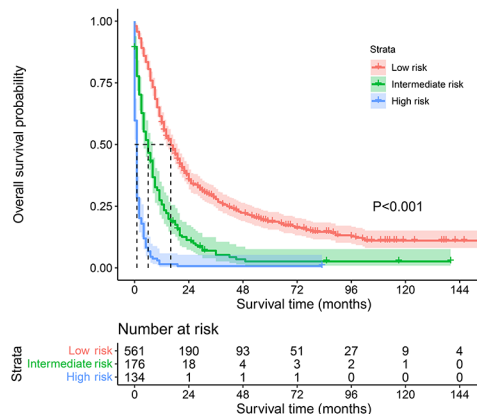


Figure S3 Kaplan-Meier curve of the low-, intermediate- and high-risk groups in CSCLC patients according to the risk scores. CSCLC, combined small cell lung cancer.