

Table S1 Patient Characteristics among Three Treatment Groups

Variables	Nonsurgical Group (n=22)	Surgery alone Group (n=89)	Surgery±CT±RT Group (n=142)	P value
Sex				0.878
Female	5 (22.7)	16 (18.0)	27 (19.0)	
Male	17 (77.3)	73 (82.0)	115 (81.0)	
Age, y				0.076
≤60	12 (54.5)	34 (38.2)	75 (52.8)	
>60	10 (45.5)	55 (61.8)	67 (47.2)	
Smoking history				0.549
No	8 (36.4)	25 (28.1)	49 (34.5)	
Yes	14 (63.6)	64 (71.9)	93 (65.5)	
Brinkman index				0.560
≤500	12 (54.5)	42 (47.2)	77 (54.2)	
>500	10 (45.5)	47 (52.8)	65 (45.8)	
Personal cancer history				0.601
Yes	20 (90.9)	85 (95.5)	136 (95.8)	
No	2 (9.1)	4 (4.5)	6 (4.2)	
Year of diagnosis				0.305
2003-2010	4 (18.2)	21 (23.6)	22 (15.5)	
2011-2018	18 (81.8)	68 (76.4)	120 (84.5)	
Obstructive pneumonia				0.183
No	15 (68.2)	63 (70.8)	84 (59.2)	
Yes	7 (31.8)	26 (29.2)	58 (40.8)	
Laterality				0.635
Left lung	8 (36.4)	40 (44.9)	56 (39.4)	
Right lung	14 (63.6)	49 (55.1)	86 (60.6)	
Tumor site				0.036 ^a
Upper lobe	20 (90.9)	69 (77.5)	90 (63.4)	
Middle lobe	0	4 (4.5)	7 (4.9)	
Lower lobe	2 (9.1)	16 (18)	45 (31.7)	
Tumor location				0.322
Central	4 (18.2)	25 (28.1)	47 (33.1)	
Peripheral	18 (81.8)	64 (71.9)	95 (66.9)	
Tumor size, cm				0.096
≤5	9 (40.9)	58 (65.2)	80 (56.3)	
>5	13 (59.1)	31 (34.8)	62 (43.7)	
Histology				0.002 ^a
Pleomorphic carcinoma	1 (4.5)	32 (36)	42 (29.6)	
Spindle cell carcinoma	0	18 (20.2)	25 (17.6)	
Giant cell carcinoma	0	2 (2.2)	5 (3.5)	
Carcinosarcoma	0	0	3 (2.1)	
Pulmonary blastoma	0	0	1 (0.7)	
PSC, NOS	21 (95.5)	37 (41.6)	66 (46.5)	
TNM stage				<0.001
I	1 (4.5)	27 (30.3)	23 (16.2)	
II	1 (4.5)	24 (27.0)	43 (30.3)	
III	9 (40.9)	37 (41.6)	71 (50.0)	
IV	11 (50.0)	1 (1.1)	5 (3.5)	
T category				0.037
1	2 (9.1)	8 (9.0)	8 (5.6)	
2	5 (22.7)	37 (41.6)	66 (46.5)	
3	4 (18.2)	26 (29.2)	42 (29.6)	
4	11 (50.0)	18 (20.2)	26 (18.3)	
N category				<0.001 ^a
0	3 (13.6)	61 (68.5)	63 (44.4)	
1	3 (13.6)	14 (15.7)	28 (19.7)	
2	8 (36.4)	14 (15.7)	51 (35.9)	
3	8 (36.4)	0	0	
M category				<0.001
0	11 (50.0)	88 (98.9)	137 (96.5)	
1	11 (50.0)	1 (1.1)	5 (3.5)	

Abbreviations: CT, chemotherapy; RT, radiotherapy, NOS, not otherwise specified. ^a Date was compared using the Fisher's exact test.

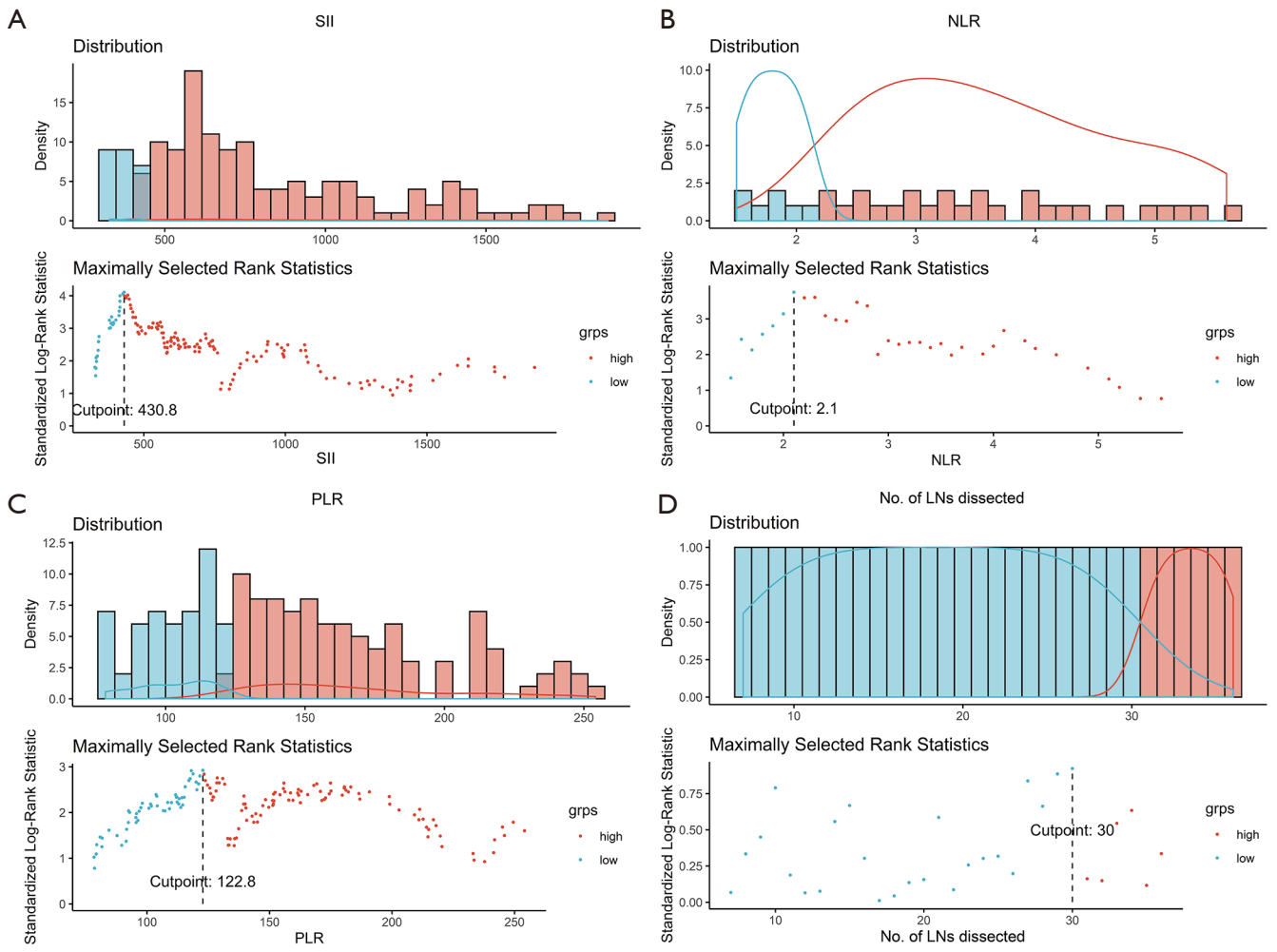


Figure S1 The optimal cut-off values for SII (A), the NLR (B), the PLR (C), and the number of lymph nodes dissected (D) were determined by R software. SII, systemic inflammation-immune index; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-lymphocyte ratio.

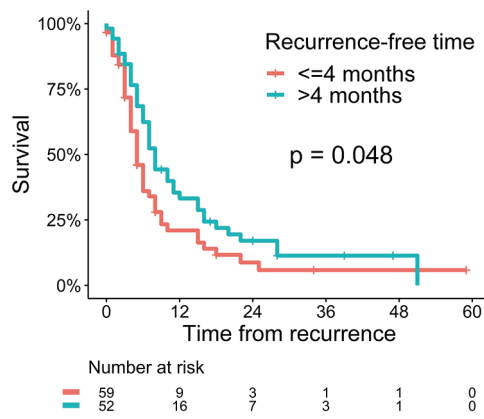


Figure S2 Comparison of survival after recurrence in patients stratified by recurrence-free time.

Table S2 Univariate Competing Risk Analysis of Variables Associated with Recurrence in 215 Radically Resected PSC Patients

Variables	HR (95% CI)	P value
Sex (Male vs. Female)	0.875 (0.584-1.310)	0.520
Age (>60 vs. ≤60)	0.896 (0.623-1.290)	0.550
Smoking history (Yes vs. No)	0.733 (0.506-1.060)	0.100
Brinkman index (>500 vs. ≤500)	0.685 (0.472-0.996)	0.047
SII (>430.8 vs. ≤430.8)	2.420 (1.430-4.080)	<0.001
NLR (>2.1 vs. ≤2.1)	1.620 (1.070-2.450)	0.023
PLR (>122.8 vs. ≤122.8)	1.660 (1.110-2.470)	0.013
Personal cancer history (Yes vs. No)	0.735 (0.295-1.830)	0.510
Year of diagnosis (2003-2010 vs. 2011-2018)	1.190 (0.755-1.860)	0.460
Obstructive pneumonia (Yes vs. No)	0.871 (0.590-1.290)	0.490
Laterality (Right vs. Left)	1.030 (0.711-1.480)	0.890
Tumor site		
(Middle vs. Upper)	0.631 (0.267-1.490)	0.290
(Lower vs. Upper)	1.103 (0.730-1.670)	0.640
Tumor location (Peripheral vs. Central)	1.020 (0.692-1.490)	0.940
Tumor size (>5 vs. ≤5)	1.750 (1.220-2.510)	0.002
Histology		
Pleomorphic carcinoma	Reference	
Spindle cell carcinoma	1.580 (0.945-2.640)	0.081
Giant cell carcinoma	1.853 (0.893-3.840)	0.098
Carcinosarcoma	0.745 (0.130-4.260)	0.740
Pulmonary blastoma	3.503 (2.404-5.110)	0.000
PSC, NOS	1.467 (0.935-2.300)	0.095
Resection type		
(Pneumectomy vs. Lobectomy)	0.669 (0.352-1.270)	0.220
(Sublobectomy vs. Lobectomy)	0.688 (0.291-1.630)	0.390
No. of lymph nodes dissected (>30 vs. ≤30)	1.210 (0.788-1.860)	0.380
TNM stage		
(II vs. I)	2.020 (1.180-3.460)	0.011
(III vs. I)	2.020 (1.190-3.430)	0.009
Necrosis (yes vs. no)	1.450 (1.010-2.090)	0.044
VPI (Yes vs. No)	1.180 (0.805-1.720)	0.400
LVI (Yes vs. No)	0.757 (0.399-1.440)	0.400
Treatment pattern (Surgery±CT±RT vs. Surgery alone)	1.630 (1.080-2.470)	0.021

Abbreviations: PSC, pulmonary sarcomatoid carcinoma; HR, hazards ratio; CI, confidence interval; SII, systemic inflammation-immune index; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-lymphocyte ratio; NOS, not otherwise specified; VPI, visceral pleura invasion; LVI, lymphovascular invasion; CT, chemotherapy; RT, radiotherapy.

Table S3 Associations between SII and clinicopathological variables

Variables	Total	SII \leq 430.8 \times 10 ⁹	SII $>$ 430.8 \times 10 ⁹	P value
No. of patients	215	46	169	
Sex				0.051
Female	40 (18.6)	4 (8.7)	36 (21.3)	
Male	175 (81.4)	42 (91.3)	133 (78.7)	
Age, y				0.607
\leq 60	96 (44.7)	19 (41.3)	77 (45.6)	
$>$ 60	119 (55.3)	27 (58.7)	92 (54.4)	
Smoking history				0.362
No	68 (31.6)	12 (26.1)	56 (33.1)	
Yes	147 (68.4)	34 (73.9)	113 (66.9)	
Brinkman index				0.561
\leq 500	111 (51.6)	22 (47.8)	89 (52.7)	
$>$ 500	104 (48.4)	24 (52.2)	80 (47.3)	
Personal cancer history				0.497
No	205 (95.3)	43 (93.5)	162 (95.9)	
Yes	10 (4.7)	3 (6.5)	7 (4.1)	
Year of diagnosis				0.297
2003-2010	40 (18.6)	11 (23.9)	29 (17.2)	
2011-2018	175 (81.4)	35 (76.1)	140 (82.8)	
Obstructive pneumonia				0.137
No	134 (62.3)	33 (71.7)	101 (59.8)	
Yes	81 (37.7)	13 (28.3)	68 (40.2)	
Laterality				0.181
Left lung	89 (41.4)	23 (50)	66 (39.1)	
Right lung	126 (58.6)	23 (50)	103 (60.9)	
Tumor site				0.565
Upper lobe	148 (68.8)	34 (73.9)	114 (67.5)	
Middle lobe	10 (4.7)	1 (2.2)	9 (5.3)	
Lower lobe	57 (26.5)	11 (23.9)	46 (27.2)	
Tumor location				0.786
Central	69 (32.1)	14 (30.4)	55 (32.5)	
Peripheral	146 (67.9)	32 (69.6)	114 (67.5)	
Tumor size, cm				0.010
\leq 5	128 (59.5)	35 (76.1)	93 (55)	
$>$ 5	87 (40.5)	11 (23.9)	76 (45)	
Histology				0.008 ^a
Pleomorphic carcinoma	69 (32.1)	15 (32.6)	54 (32)	
Spindle cell carcinoma	41 (19.1)	15 (32.6)	26 (15.4)	
Giant cell carcinoma	7 (3.3)	2 (4.3)	5 (3)	
Carcinosarcoma	3 (1.4)	2 (4.3)	1 (0.6)	
Pulmonary blastoma	1 (0.5)	0 (0)	1 (0.6)	
PSC, NOS	94 (43.7)	12 (26.1)	82 (48.5)	
Resection type				0.719
Lobectomy	182 (84.7)	39 (84.8)	143 (84.6)	
Pneumectomy	23 (10.7)	4 (8.7)	19 (11.2)	
Sublobectomy	10 (4.7)	3 (6.5)	7 (4.1)	
No. of lymph nodes dissected				0.455
\leq 30	164 (76.3)	37 (80.4)	127 (75.1)	
$>$ 30	51 (23.7)	9 (19.6)	42 (24.9)	
TNM stage				0.001
I	49 (22.8)	20 (43.5)	29 (17.2)	
II	65 (30.2)	12 (26.1)	53 (31.4)	
III	101 (47.0)	14 (30.4)	87 (51.5)	
Necrosis				0.801
No	118 (54.9)	26 (56.5)	92 (54.4)	
Yes	97 (45.1)	20 (43.5)	77 (45.6)	
VPI				0.692
No	88 (40.9)	20 (43.5)	68 (40.2)	
Yes	127 (59.1)	26 (56.5)	101 (59.8)	
LVI				0.549
No	191 (88.8)	42 (91.3)	149 (88.2)	
Yes	24 (11.2)	4 (8.7)	20 (11.8)	
Treatment pattern				0.360
Surgery alone	81 (37.7)	26 (56.5)	108 (63.9)	
Surgery \pm CT \pm RT	134 (62.3)	20 (43.5)	61 (36.1)	
Recurrence				0.001
No	104 (48.4)	32 (69.6)	72 (42.6)	
Yes	111 (51.6)	14 (30.4)	97 (57.4)	

Abbreviations: SII, systemic inflammation-immune index; NOS, not otherwise specified; VPI, visceral pleura invasion; LVI, lymphovascular invasion; CT, chemotherapy; RT, radiotherapy. ^a Date was compared using the Fisher's exact test.