



**Figure S1** Differences in risk score among various subgroups. (A) Sex. No significant difference between males and females. (B) Age. No significant difference between age  $>60$  and  $\leq 60$ . (C) Tumor location. There were no significant differences among the lower, middle and upper portions. (D) LVI. Significant differences were observed between the negative LVI group and the positive LVI group. (E) PNI. There was no significant difference between the negative PNI group and the positive PNI group. (F) PLNR. There were no significant differences among the different PLNR groups. LVI, lymphovascular invasion; PNI, perineural invasion; PLNR, positive lymph node ratio; LN, lymph node.

**Table S1** Clinicopathological factors of the study population before and after PSM in high-risk groups

Variables	High-risk cohort			PSM high-risk cohort		
	Non-adjuvant chemo, n (%)	Adjuvant chemo, n (%)	P value	Non-adjuvant chemo, n (%)	Adjuvant chemo, n (%)	P value
Sex			0.004			0.542
Male	150 (76.1)	182 (87.1)		52 (91.2)	50 (87.7)	
Female	47 (23.9)	27 (12.9)		5 (8.8)	7 (12.23)	
Age						0.442
≤60 years	86 (43.7)	133 (63.6)	<0.001	33 (57.9)	37 (64.9)	
>60 years	111 (56.3)	76 (36.4)		24 (42.1)	20 (35.1)	
Neoadjuvant chemo			0.288			0.793
Yes	29 (14.7)	39 (18.7)		8 (14.0)	48 (84.2)	
No	168 (85.3)	170 (81.3)		49 (86.0)	9 (15.8)	
Tumor location			0.64			0.075
Upper portion	18 (9.1)	25 (10.6)		3 (5.3)	8 (14.0)	
Middle portion	131 (66.5)	133 (63.6)		43 (75.4)	32 (56.1)	
Lower portion	48 (24.4)	51 (24.4)		11 (19.3)	17 (29.8)	
Differentiation status (G)			0.724			0.805
Well (G1)	14 (7.1)	15 (7.2)		6 (10.5)	6 (10.5)	
Mild (G2)	136 (69.0)	137 (65.6)		35 (61.4)	38 (66.7)	
Poor (G3)	47 (23.9)	57 (27.3)		16 (28.1)	13 (22.8)	
Tumor depth (T)			0.229			1
T1b	1 (0.5)	0 (0.0)		0 (0.0)	0 (0.0)	
T2	17 (8.6)	27 (12.9)		6 (10.5)	6 (10.5)	
T3	179 (90.9)	182 (87.1)		51 (89.5)	51 (89.5)	
Lymph node metastasis (N)			<0.001			0.932
N0	85 (43.1)	40 (19.1)		17 (29.8)	19 (33.3)	
N1	58 (29.4)	65 (31.1)		19 (33.3)	18 (31.6)	
N2	27 (13.7)	64 (30.6)		14 (24.6)	13 (22.8)	
N3	27 (13.7)	40 (19.1)		7 (12.3)	7 (12.3)	
pTNM			<0.001			0.932
IIA	22 (11.2)	9 (4.3)		3 (5.3)	5 (8.8)	
IIB	63 (32.0)	31 (14.8)		14 (24.6)	14 (24.6)	
IIIA	6 (3.0)	4 (1.9)		2 (3.5)	1 (1.8)	
IIIB	79 (40.1)	125 (59.8)		31 (54.4)	30 (52.6)	
IVA	27 (13.7)	40 (19.1)		7 (12.3)	7 (12.3)	
cTNM			<0.001			0.979
II	91 (46.2)	44 (21.1)		19 (33.3)	20 (35.1)	
III	79 (40.1)	125 (59.8)		31 (54.4)	30 (52.6)	
IVA	27 (13.7)	40 (19.1)		7 (12.3)	7 (12.3)	
LVI			0.013			0.691
Negative	50 (25.4)	132 (63.2)		37 (64.9)	39 (68.4)	
Positive	147 (74.6)	77 (36.8)		20 (35.1)	18 (31.6)	
PNI			0.079			0.845
Negative	137 (69.5)	128 (61.2)		37 (64.9)	36 (63.2)	
Positive	60 (30.5)	81 (38.8)		20 (35.1)	21 (36.8)	
Surgical margin			0.13			0.647
R0	191 (97.0)	196 (93.8)		55 (96.5)	54 (94.7)	
R1	6 (3.0)	13 (6.2)		2 (3.5)	3 (5.3)	

PSM, propensity score matching; pTNM, pathological tumor-nodal-metastasis; cTNM, clinical tumor-nodal-metastasis; LVI, lymphovascular invasion; PNI, perineural invasion.