

S1 Table. Factors affecting survival outcome for each risk groups in univariate analysis

	Low-risk group (n=5,684)				High-Risk group (n=2,196)			
	Alive (n=5,198)	Death (n=486)	HR (95% CI)	p-value	Alive (n=1,816)	Death (n=380)	HR (95% CI)	p-value
Adjuvant chemotherapy								
Without AC	2,616 (89.4)	310 (10.6)	Reference		618 (71.6)	245 (28.4)	Reference	
With AC	2,582 (93.6)	176 (6.4)	0.56 (0.47-0.68)	< 0.001	1,198 (89.9)	135 (10.1)	0.32 (0.26-0.40)	< 0.001
No. of risks								
0	5,198 (91.4)	486 (8.6)			-	-	-	-
1					1,600 (84.2)	300 (15.8)	Reference	
2					206 (73.6)	74 (26.4)	1.76 (1.37-2.27)	< 0.001
3 or 4					10 (62.5)	6 (37.5)	2.54 (1.13-5.69)	0.024
Sex								
Male	3,036 (90.4)	321 (9.6)	Reference		1,060 (82.3)	228 (17.7)	Reference	
Female	2,162 (92.9)	165 (7.1)	0.74 (0.61-0.89)	0.002	756 (83.3)	152 (16.7)	0.92 (0.75-1.13)	0.413
Age (yr)								
≤ 45	272 (97.8)	6 (2.2)	Reference		89 (95.7)	4 (4.3)	Reference	
> 45 and ≤ 70	2,911 (95.7)	132 (4.3)	2.08 (0.92-4.71)	0.080	962 (91.4)	90 (8.6)	1.98 (0.73-5.40)	0.180
> 70	2,015 (85.3)	348 (14.7)	7.84 (3.50-17.57)	< 0.001	765 (72.8)	286 (27.2)	7.36 (2.74-19.73)	< 0.001
BMI (kg/m ²) (n=7,823)								
≤ 18	226 (82.8)	47 (17.2)	2.26 (1.52-2.79)	< 0.001	91 (67.4)	44 (32.6)	2.33 (1.69-3.21)	< 0.001
> 18 and ≤ 25	3,382 (90.5)	353 (9.5)	Reference		1,232 (83.1)	250 (16.9)	Reference	
> 25	1,565 (95.2)	79 (4.8)	0.49 (0.39-0.63)	< 0.001	478 (86.3)	76 (13.7)	0.76 (0.59-0.98)	0.033
Type of institution								
Tertiary hospital	2,851 (92.2)	242 (7.8)	Reference		816 (83.4)	163 (16.7)	Reference	
General hospital	2,034 (90.0)	227 (10.0)	1.33(1.11-1.60)	0.002	941 (82.0)	206 (18.0)	1.17(0.95-1.44)	0.135
Hospital or clinic	313 (94.8)	17 (5.2)	0.65(0.40-1.06)	0.083	59 (84.3)	11 (15.7)	1.06(0.58-1.96)	0.846
ASA								
I-II	4,446 (93.4)	312 (6.6)	Reference		1,479 (86.8)	224 (13.2)	Reference	
III	732 (81.6)	165 (18.4)	3.18 (2.63-3.84)	< 0.001	313 (68.9)	141 (31.1)	2.81 (2.27-3.47)	< 0.001

IV	20 (69.0)	9 (31.0)	6.04 (3.12-11.72)	< 0.001	24 (61.5)	15 (38.5)	3.74 (2.22-6.32)	< 0.001
Emergency operation								
No	5162 (91.5)	478 (8.5)	Reference		1,399 (86.1)	225 (13.9)	Reference	
Yes	36 (81.8)	8 (18.2)	1.85 (0.92-3.72)	0.085	417 (72.9)	155 (27.1)	2.46 (2.00-3.02)	< 0.001
Others	36 (81.8)	8 (18.2)	-	-	27 (77.1)	8 (22.9)	Reference	
Perforated /Obstructive	-	-			390 (72.6)	147 (27.4)	1.77 (0.86-3.63)	0.118
Proximal or distal resection margin (n=6,470)								
Negative	4,622 (91.8)	415 (8.2)			1,122 (82.4)	239 (17.6)	Reference	
Positive	-	-	-	-	63 (87.5)	9 (12.5)	0.64 (0.33-1.24)	0.185
LVP invasion (n=1,369)								
No	558 (89.3)	67 (10.7)	-	-	93 (81.6)	21 (18.4)	Reference	
Yes	-	-			525 (83.3)	105 (16.7)	0.87 (0.55-1.40)	0.570
Lymph node (n=7,494)								
< 12	-	-	-	-	425 (83.2)	86 (16.8)	Reference	
≥ 12	5,082 (91.5)	473 (8.5)			1,199 (84.0)	229 (16.0)	1.06 (0.82-1.35)	0.665
Differentiation (n=3,488)								
Well	346 (89.9)	39 (10.1)	Reference		145 (77.5)	42 (22.5)	Reference	
Moderate	1,753 (89.3)	209 (10.7)	1.05 (0.75-1.48)	0.769	650 (81.5)	148 (18.6)	0.79 (0.56-1.12)	0.182
Poorly+others	-	-			126 (80.8)	30 (19.2)	0.86 (0.54-1.37)	0.519
Stage (n=4,392)								
IIA	3,099 (92.9)	238 (7.1)			381 (84.3)	71 (15.7)	Reference	
IIB-IIC	-	-			514 (85.2)	89 (14.8)	0.95 (0.70-1.30)	0.745

HR, hazard ratio; CI, confidence interval; AC, adjuvant chemotherapy; BMI, body mass index; ASA, American Society of Anesthesiologists; LVP, lymphovascular or peri-neural.