

Table SI. Univariate analysis of risk factors for infectious complications in older patients after laparoscopic and open gastrectomy.

A, Laparoscopic gastrectomy			
Variables	Infectious complications		P-value
	Yes, n (%)	No, n (%)	
Total	63	309	
Preoperative factors			
Age, years			0.018 <sup>a</sup>
<74	25 (39.7)	173 (56.0)	
≥74	38 (60.3)	136 (44.0)	
Sex			0.021 <sup>a</sup>
Male	52 (82.5)	210 (68.0)	
Female	11 (17.5)	99 (32.0)	
PS			0.066
1	50 (79.4)	272 (88.0)	
≥2	13 (20.6)	37 (12.0)	
Modified frailty index			0.129
<2	39 (61.9)	221 (71.5)	
≥2	24 (38.1)	88 (28.5)	
Charlson comorbidity index			0.080
0	21 (33.3)	140 (45.3)	
≥1	42 (66.7)	169 (54.7)	
Use of steroids			0.449
No	60 (95.2)	300 (97.1)	
Yes	3 (4.8)	9 (2.9)	
CRP, mg/dl			0.156
<0.10	25 (43.1)	142 (53.4)	
≥0.10	33 (56.9)	124 (46.6)	
PNI			0.002 <sup>a</sup>
≤48.93	38 (60.3)	121 (39.2)	
>48.93	25 (39.7)	188 (60.8)	
NLR			0.185
≤2.23	31 (49.2)	174 (56.3)	
>2.23	32 (50.8)	135 (43.7)	
PLR			0.817
≤128.80	32 (50.8)	152 (49.2)	

>128.80	31 (49.2)	157 (50.8)	
BMI, kg/m <sup>2</sup>			0.463
≤22.52	28 (44.4)	153 (49.5)	
>22.52	35 (55.6)	156 (50.5)	
VFA, cm <sup>2</sup>			0.013 <sup>a</sup>
≤135.98	26 (41.3)	180 (58.3)	
>135.98	37 (58.7)	129 (41.7)	
SMI, cm <sup>2</sup> /m <sup>2</sup>			0.675
<43.30	31 (49.2)	161 (52.1)	
≥43.30	32 (50.8)	148 (47.9)	
Preoperative T factor			0.646
T1	50 (79.4)	237 (76.7)	
>T2	13 (20.6)	72 (23.3)	
Preoperative N factor			0.396
N0	53 (84.1)	272 (88.0)	
≥N1	10 (15.9)	37 (12.0)	
Type of operation			
Extent of resection			0.157
Distal/proximal gastrectomy	46 (73.0)	250 (77.8)	
Total gastrectomy	17 (27.0)	59 (22.2)	
Lymph node dissection			0.852
D1/D1+	48 (76.2)	232 (75.1)	
D2	15 (23.8)	77 (24.9)	

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#### B, Open gastrectomy

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Variables	Infectious complication		P-value
	Yes, n (%)	No, n (%)	
Total	32	100	
Preoperative factors			
Age, years			0.482
<74	17 (53.1)	46 (46.0)	
≥74	15 (46.9)	54 (54.0)	
Sex			0.132
Male	27 (84.4)	71 (71.0)	
Female	5 (15.6)	29 (29.0)	
PS			0.399
1	28 (87.5)	81 (81.0)	

≥2	4 (12.5)	19 (19.0)	
Modified frailty index			0.652
<2	20 (62.5)	58 (58.0)	
≥2	12 (37.5)	42 (42.0)	
Charlson comorbidity index			0.051
0	16 (50.0)	31 (31.0)	
≥1	16 (50.0)	69 (69.0)	
Use of steroids			0.971
No	31 (96.9)	97 (97.0)	
Yes	1 (3.1)	3 (3.0)	
CRP, mg/dl			0.074
<0.16	9 (36.0)	43 (56.6)	
≥0.16	16 (64.0)	33 (43.4)	
PNI			1
≤45.15	16 (50.0)	50 (50.0)	
>45.15	16 (50.0)	50 (50.0)	
NLR			1
≤2.71	16 (50.0)	50 (50.0)	
>2.71	16 (50.0)	50 (50.0)	
PLR			0.546
≤160.99	15 (46.9)	53 (53.0)	
>160.99	17 (53.1)	47 (47.0)	
BMI, kg/m <sup>2</sup>			0.069
≤21.75	13 (40.6)	59 (59.0)	
>21.75	19 (59.4)	41 (41.0)	
VFA, cm <sup>2</sup>			0.267
≤124.01	14 (43.8)	55 (55.0)	
>124.01	18 (56.2)	45 (45.0)	
SMI,cm <sup>2</sup> /m <sup>2</sup>			0.546
<41.22	15 (46.9)	53 (53.0)	
≥41.22	17 (53.1)	47 (47.0)	
Preoperative T factor			0.004 <sup>a</sup>
T1	0 (0.0)	22 (22.0)	
>T2	32 (100.0)	78 (78.0)	
Preoperative N factor			0.227
N0	14 (43.8)	56 (56.0)	

≥N1	18 (56.2)	44 (44.0)	
Type of operation			
Extent of resection			0.031 <sup>a</sup>
Distal/Proximal gastrectomy	15 (46.9)	68 (68.0)	
Total gastrectomy	17 (53.1)	32 (32.0)	
Lymph node dissection			0.015 <sup>a</sup>
D1/D1+	4 (12.5)	35 (35.0)	
D2	28 (87.5)	65 (65.0)	

<sup>a</sup>P<0.05. PS, performance status;CRP, C-reactive protein; PNI, prognostic nutritional index; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-to-lymphocyte ratio; BMI, body mass index; VFA, visceral fat area; SMI, skeletal muscle index.

Table SII. Multivariate analysis of risk factors for infectious complications in older patients after laparoscopic and open gastrectomy.

A, Laparoscopic gastrectomy		
Variables	Preoperative factors and planned surgical procedures, HR (95% CI)	P-value
Age, years		0.043 <sup>a</sup>
<74	1	
≥74	1.841 (1.021-3.319)	
Sex		0.074
Male	1.942 (0.937-4.024)	
Female	1	
PNI		0.012 <sup>a</sup>
≤48.93	2.122 (1.180-3.815)	
>48.93	1	
VFA, cm <sup>2</sup>		0.021 <sup>a</sup>
≤135.98	1	
>135.98	1.984 (1.108-3.552)	
B, Open gastrectomy		
Variables	Preoperative factors and planned surgical procedures, HR (95% CI)	P-value
Preoperative T factor		0.998
T1	1	
>T2	382321421.3 (0.000)	
Extent of resection		0.102
Distal/proximal gastrectomy	1	
Total gastrectomy	2.013 (0.870-4.659)	
Lymph node dissection		0.278
D1/D1+	1	
D2	1.932 (0.588-6.346)	

<sup>a</sup>P<0.05. HR, hazard ratio;n/a, not applicable; PNI, prognostic nutritional index; VFA, visceral fat area.

Table SIII. Univariate analysis of risk factors for non-infectious complications in older patients.

Variables	Non-infectious complication		P-value
	Yes, n (%) (n=96)	No, n (%) (n=408)	
Preoperative factors			
Age, years			0.004 <sup>a</sup>
<75	37 (38.5)	224 (54.9)	
≥75	59 (61.5)	184 (45.1)	
Sex			0.389
Male	72 (75.0)	288 (70.6)	
Female	24 (25.0)	120 (29.4)	
PS			0.101
1	77 (80.2)	354 (86.8)	
≥2	19 (19.8)	54 (13.2)	
Modified frailty index			0.006 <sup>a</sup>
<2	53 (55.2)	285 (69.9)	
≥2	43 (44.8)	123 (30.1)	
Charlson comorbidity index			0.287
0	35 (36.5)	173 (42.4)	
≥1	61 (63.5)	235 (57.6)	
Use of steroids			0.207
No	91 (94.8)	397 (97.3)	
Yes	5 (5.2)	11 (2.7)	
CRP, mg/dl			0.099
≤0.11	37 (43.5)	182 (53.5)	
>0.11	48 (56.5)	158 (46.5)	
PNI			0.061
≤48.50	53 (55.2)	182 (44.6)	
>48.50	43 (44.8)	226 (55.4)	
NLR			0.897
≤2.27	48 (50.0)	207 (50.7)	

>2.27	48 (50.0)	201 (49.3)	
PLR			0.476
≤138.47	46 (47.9)	212 (52.0)	
>138.4	50 (52.1)	196 (48.0)	
BMI, kg/m <sup>2</sup>			0.863
≤22.14	48 (50.0)	200 (49.0)	
>22.14	48 (50.0)	208 (51.0)	
VFA, cm <sup>2</sup>			0.265
≤122.06	51 (53.1)	191 (46.8)	
>122.06	45 (46.9)	217 (53.2)	
SMI, cm <sup>2</sup> /m <sup>2</sup>			0.141
≤41.88	52 (54.2)	187 (45.8)	
>41.88	44 (45.8)	221 (54.2)	
Preoperative T factor			0.258
T1	54 (56.3)	255 (62.5)	
>T2	42 (43.8)	153 (37.5)	
Preoperative N factor			0.733
N0	74 (77.1)	321 (78.7)	
≥N1	22 (22.9)	87 (21.3)	
Operation, pathology and postoperative factors			
Extent of resection			0.402
Distal/proximal gastrectomy	69 (71.9)	310 (76.0)	
Total gastrectomy	27 (28.1)	98 (24.0)	
Approach			0.043 <sup>a</sup>
Open	33 (34.4)	99 (24.3)	
Laparoscopy	63 (65.6)	309 (75.7)	
Lymph node dissection			0.218
D1/D1+	66 (68.8)	253 (62.0)	
D2	30 (31.3)	155 (38.0)	
Node dissection according to guidelines			<0.001 <sup>a</sup>

Standard	82 (85.4)	392 (96.1)	
Reduced	14 (14.6)	16 (3.9)	
Operative duration, min			0.721
≤317.5	47 (49.0)	208 (51.0)	
>317.5	49 (51.0)	200 (49.0)	
Blood loss, ml			1.000
≤133	48 (50.0)	204 (50.0)	
>133	48 (50.0)	204 (50.0)	
Pathological stage			0.561
I/II	81 (84.4)	334 (81.9)	
III	15 (15.6)	74 (18.1)	

<sup>a</sup>P<0.05. PS, performance status; CRP, C-reactive protein; PNI, prognostic nutritional index; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-to-lymphocyte ratio; BMI, body mass index; VFA, visceral fat area; SMI, skeletal muscle index.



Table SIV. Multivariate analysis of risk factors for non-infectious complications in older patients.

Variables	Preoperative factors and planned surgical procedures		All perioperative factors	
	HR (95% CI)	P-value	HR (95% CI)	P-value
Age, years		0.020 <sup>a</sup>		0.052
<75	1		1	
≥75	1.744 (1.093-2.781)		1.600 (0.995-2.574)	
Modified frailty index		0.045 <sup>a</sup>		0.064
<2	1		1	
≥2	1.616 (1.011-2.584)		1.567 (0.975-2.519)	
Approach		0.094		0.327
Open	1.516 (0.931-2.467)		1.292 (0.774-2.154)	
Laparoscopy	1		1	
Node dissection according to guidelines		n/a		0.007 <sup>a</sup>
Standard	n/a		1	
Reduced	n/a		3.019 (1.356-6.722)	

<sup>a</sup>P<0.05. HR, hazard ratio; n/a, not applicable.

Table SV. Univariate analysis of risk factors for infectious complications in patients  $\geq 75$  years old.

Variables	Infectious complication		P-value
	Yes, n (%) (n=53)	No, n (%) (n=190)	
Preoperative factor			
Age, years			0.186
<78	26 (49.1)	74 (38.9)	
$\geq 78$	27 (50.9)	116 (61.1)	
Sex			0.014 <sup>a</sup>
Male	42 (79.2)	116 (61.1)	
Female	11 (20.8)	74 (38.9)	
PS			0.655
1	38 (71.7)	142 (74.7)	
$\geq 2$	15 (18.3)	48 (25.3)	
Modified frailty index			0.047 <sup>a</sup>
<2	24 (45.3)	115 (60.5)	
$\geq 2$	29 (54.7)	75 (39.5)	
Charlson comorbidity index			0.227
0	14 (26.4)	67 (35.3)	
$\geq 1$	39 (73.6)	123 (64.7)	
Use of steroids			0.322
No	49 (92.5)	182 (95.8)	
Yes	4 (7.5)	8 (4.2)	
CRP, mg/dl			0.110

<0.13	21 (43.8)	91 (56.9)	
>0.13	27 (56.3)	69 (43.1)	
PNI			0.423
≤46.73	27 (50.9)	85 (44.7)	
>46.73	26 (49.1)	105 (55.3)	
NLR			0.395
≤2.29	23 (43.4)	95 (50.0)	
>2.29	30 (56.6)	95 (50.0)	
PLR			0.380
≤135.65	29 (54.7)	91 (47.9)	
>135.65	24 (45.3)	99 (52.1)	
BMI, kg/m <sup>2</sup>			0.020 <sup>a</sup>
≤22.13	20 (37.7)	106 (55.8)	
>22.13	33 (62.3)	84 (44.2)	
VFA, cm <sup>2</sup>			0.018 <sup>a</sup>
≤119.57	19 (35.8)	103 (54.2)	
>119.57	34 (64.2)	87 (45.8)	
SMI, cm <sup>2</sup> /m <sup>2</sup>			0.036 <sup>a</sup>
<40.68	19 (35.8)	99 (52.1)	
≥40.68	34 (64.2)	91 (47.9)	
Preoperative T factor			0.993
T1	31 (58.5)	111 (58.4)	

>T2	22 (41.5)	79 (41.6)	
Preoperative N factor			0.196
N0	38 (71.7)	152 (80.0)	
≥N1	15 (28.3)	38 (20.0)	
Type of operation			
Extent of resection			0.091
Distal/proximal gastrectomy	34 (64.2)	144 (75.8)	
Total gastrectomy	19 (35.8)	46 (24.2)	
Approach			0.986
Open	15 (28.3)	54 (28.4)	
Laparoscopy	38 (71.7)	136 (71.6)	
Lymph node dissection			0.850
D1/D1+	33 (62.3)	121 (63.7)	
D2	20 (37.7)	69 (36.3)	

<sup>a</sup>P<0.05. PS, performance status; CRP, C-reactive protein; PNI, prognostic nutritional index; NLR, neutrophil-to-lymphocyte ratio; PLR, platelet-to-lymphocyte ratio; BMI, body mass index; VFA, visceral fat area; SMI, skeletal muscle index.

Table SVI. Multivariate analysis of risk factors for infectious complications in patients  $\geq 75$  years old.

Variables	Preoperative factors and planned surgical procedures, HR (95% CI)	P-value
Sex		0.023 <sup>a</sup>
Male	2.488 (1.133-5.463)	
Female	1	
Modified frailty index		0.088
<2	1.736 (0.921-3.275)	
$\geq 2$	1	
BMI, kg/m <sup>2</sup>		0.030 <sup>a</sup>
$\leq 22.13$	2.215 (1.081-4.541)	
>22.13	1	
VFA, cm <sup>2</sup>		0.750
$\leq 135.98$	1	
>135.98	1.122 (0.552-2.282)	
SMI, cm <sup>2</sup> /m <sup>2</sup>		0.199
<40.68	1.600 (0.780-3.283)	
$\geq 40.68$	1	

<sup>a</sup>P<0.05. HR, hazard ratio; BMI, body mass index; VFA, visceral fat area; SMI, skeletal muscle index.