

Supplementary Table 1 Clinicopathological characteristics of LATG/TLTG and LADG/TLDG subgroup for elderly patients

Characteristics	LATG group (<i>n</i> = 107)	TLTG group (<i>n</i> = 121)	<i>P</i> value	LADG group (<i>n</i> = 125)	TLDG group (<i>n</i> = 109)	<i>P</i> value
Gender			0.395			0.604
Male	92	99		91	76	
Female	15	22		34	33	
Age (year, mean $\pm$ SD)	74.10 $\pm$ 3.38	74.26 $\pm$ 3.55	0.726	75.06 $\pm$ 4.08	75.17 $\pm$ 4.60	0.860
BMI (kg/m ² , mean $\pm$ SD)	22.88 $\pm$ 2.92	23.61 $\pm$ 3.03	0.067	23.68 $\pm$ 3.18	23.67 $\pm$ 3.90	0.987
aCCI score [n (%)]			0.937			0.381
0-4	88	100		100	82	
> 4	19	21		25	27	
ASA score [n (%)]			0.653			0.409
I	1	0		0	1	
II	84	94		93	74	
III	22	27		32	34	
Neoadjuvant chemotherapy			0.112			0.284
No	101	107		123	109	
Yes	6	14		2	0	
pTNM			0.725			0.441

0	1	0		1	0		
I	18	24		34	36		
II	33	30		32	27		
III	55	67		58	46		
Nerve invasion			0.149				0.935
Yes	36	52		35	30		
No	71	69		90	79		
Vascular invasion			0.761				0.819
Yes	41	44		50	42		
No	66	77		75	67		
Differentiation			0.653				0.655
Well/Moderate	65	77		86	72		
Poor/Undifferentiated	42	44		39	37		
Tumor diameters, cm	5.0(3.0-6.2)	4.2(3.0-6.5)	0.850	4.0(2.5-5.5)	3.5(2.0-5.0)		0.035
(median , IQR)							

LADG: Laparoscopic assisted distal gastrectomy; TLDG: Totally laparoscopic distal gastrectomy; LATG: Laparoscopic assisted total gastrectomy; TLTG: Totally laparoscopic total gastrectomy; aCCI: Age-adjusted Charlson Comorbidity Index; BMI: Body mass index; ASA: American Society of Anesthesiologists; SD: Standard deviation; IQR: Interquartile range.

Supplementary Table 2 Perioperative outcomes of LATG/TLTG and LADG/TLDG subgroup for elderly patients

Variable	LATG group (n = 107)	TLTG group (n = 121)	P value	LADG group (n = 125)	TLDG group (n = 109)	P value
Surgical time, min (mean ± SD)	225.38 ± 61.08	229.69 ± 55.17	0.577	217.88 ± 49.08	201.82 ± 45.35	0.010
Blood loss, ml (median, IQR)	100 (50-200)	100 (50-150)	0.011	100 (50-200)	50 (50-100)	0.000
Anastomotic approach			1.000			0.931
B1	NA	NA		17	14	
B2(+Braun)	NA	NA		39	36	
Roux-en-Y	107	107		69	59	
Retrieved lymph nodes, n (mean ± SD)	32.14 ± 11.83	32.54 ± 13.61	0.815	26.90 ± 10.21	28.65 ± 11.20	0.214
Extent of resection			0.585			0.452
R0	97	107		121	108	
R1/R2	10	14		4	1	
First flatus day, d (mean ± SD)	5.0 (3.0-5.0)	3.0 (3.0-5.0)	0.000	4.44 ± 1.17	3.82 ± 1.21	0.000
Postoperative day, d (median, IQR)	8.0 (7.0-10.0)	7.3 (6.0-9.0)	0.005	8.1 (7.0-10.0)	7.8 (6.0-9.0)	0.002
Total complication rate (%)	28 (26.2)	20 (16.5)	0.075	33 (26.4)	18 (16.5)	0.068

Anastomotic-related complication rate (%)	6 (5.6)	4 (3.3)	0.397	2 (1.6)	2 (1.8)	1.000
Severe complication rate (%)	8 (7.5)	3 (2.5)	0.079	2 (1.6)	6 (5.5)	0.201

LADG: Laparoscopic assisted distal gastrectomy; TLDG: Totally laparoscopic distal gastrectomy; LATG: Laparoscopic assisted total gastrectomy; TLTG: Totally laparoscopic total gastrectomy; SD: Standard deviation; IQR: Interquartile range; Statistically significant P values are in bold ($P < 0.05$).

Supplementary Table 3 Uni and variate-analysis of LTG group and LDG group for elderly patients

LTG group					LDG group				
Factor	Univariate analysis		P value	Multivariate analysis		P value	Univariate analysis		P value
	OR	95%CI		OR	95%CI		OR	95%CI	
Sex			0.728						0.236
Male	1.000						1.000		
Female	0.854	0.350-2.083					1.492	0.770-2.889	
Age			0.189			0.298			0.073
< 75	1.000			1.000			1.000		1.000
≥ 75	1.535	0.810-2.911		1.420	0.733-2.751		1.774	0.948-3.321	1.457 0.697-3.043
BMI (kg/m ²)			0.412						0.549
< 25	1.000						1.000		
≥ 25	0.738	0.357-1.525					0.813	0.414-1.598	
Surgical approach			0.077			0.152			0.070
LAG	1.000			1.000			1.000		1.000
TLG	0.559	0.293-1.065		0.612	0.313-1.198		0.551	0.290-1.049	0.619 0.313-1.224
aCCI score			0.501						0.078
0-4	1.000						1.000		1.000
> 4	1.316	0.592-2.926					1.867	0.932-3.739	1.464 0.653-3.282

ASA score			0.067		0.111		0.205		
≤ II	1.000			1.000		1.000			
> II	1.952	0.954-3.992		1.836	0.869-3.878	1.534	0.791-2.974		
pTNM stage			0.478					0.234	
0-I	1.000					1.000			
II	0.909	0.371-2.230				1.127	0.457-2.778		
III	0.640	0.280-1.462				1.811	0.850-3.861		
Tumor diameter (cm)			0.970					0.002	0.012
≤ 3	1.000					1.000		1.000	
> 3	1.013	0.503-2.041				3.154	1.523-6.530	2.736	1.245-6.014
Operation time (min)			0.366					0.027	0.016
≤ 220	1.000					1.000		1.000	
> 220	1.344	0.708-2.551				2.030	1.083-3.806	2.306	1.172-4.537
Estimated Blood loss (ml)			0.038		0.067			0.954	
≤ 200	1.000			1.000		1.000			
> 200	2.378	1.050-5.389		2.216	0.947-5.186	1.029	0.392-2.701		
Vascular invasion			0.480					0.026	0.184
No	1.000					1.000		1.000	
Yes	1.264	0.660-2.419				2.042	1.090-3.826	1.586	0.804-3.129

Nerve invasion		0.133		0.272		0.318	
No	1.000		1.000		1.000		
Yes	0.590	0.296-1.175	0.668	0.325-1.372	1.406	0.720-2.745	
Differentiation		0.972				0.628	
Well /Moderate	1.000				1.000		
Poor/Undifferentiate	0.988	0.512-1.907			1.176	0.612-2.259	
d							
R0 resection		0.306				0.334	
No	1.000				1.000		
Yes	1.637	0.637-4.209			2.449	0.398-15.067	

LADG: Laparoscopic assisted distal gastrectomy; TLDG: Totally laparoscopic distal gastrectomy; LATG: Laparoscopic assisted total gastrectomy; TLTG: Totally laparoscopic total gastrectomy; OR: Odd ratio; Statistically significant P values are in bold ($P < 0.05$).

Supplementary Table 4 Comparison of QOL between LATG and TLTG group using EORTC QLQ-C30 and STO-22 questionnaires

Factor	Baseline		P value	Postoperative 3 mo		P value
	LATG group	TLTG group		LATG group	TLTG group	
QLQ-C30 questionnaire						
Global status	91.6(91.6-100)	91.6(91.6-91.6)	0.157	91.6(91.6-100)	91.6(91.6-100)	0.788
Physical functioning	100(93.3-100)	100(93.3-100)	0.922	100(93.3-100)	93.3(93.3-100)	0.708
Role functioning	100(83.3-100)	100(83.3-100)	0.420	83.3(83.3-100)	83.3(83.3-100)	0.786
Emotional functioning	91.6(91.6-100)	91.6(91.6-91.6)	0.634	91.6(91.6-100)	91.6(91.6-100)	0.999
Cognitive functioning	100(83.3-100)	100(83.3-100)	0.622	100(83.3-100)	100(83.3-100)	0.683
Social functioning	100(83.3-100)	100(83.3-100)	0.096	100(83.3-100)	100(83.3-100)	0.423
Fatigue	0(0-0)	0(0-0)	0.975	0(0-0)	0(0-0)	0.249
Nausea and vomiting	0(0-0)	0(0-0)	0.529	0(0-16.6)	0(0-0)	0.016
Pain	0(0-0)	0(0-0)	0.525	0(0-0)	0(0-0)	0.768
Dyspnea	0(0-0)	0(0-0)	0.164	0(0-0)	0(0-0)	0.605
Insomnia	0(0-33.3)	33.3(0-33.3)	0.078	0(0-33.3)	0(0-33.3)	0.607
Appetite loss	0(0-33.3)	0(0-33.3)	0.803	0(0-33.3)	0(0-33.3)	0.995
Constipation	0(0-33.3)	0(0-33.3)	0.066	33.3(0-33.3)	0(0-33.3)	0.086
Diarrhea	0(0-0)	0(0-0)	0.197	0(0-0)	0(0-0)	0.779
Financial difficulties	0(0-33.3)	0(0-33.3)	0.781	0(0-33.3)	0(0-33.3)	0.857

STO-22 questionnaire						
Dysphagia	0(0-11.0)	0(0-0)	0.411	0(0-22.0)	0(0-11.0)	0.352
Pain	0(0-0)	0(0-0)	0.961	0(0-16.7)	0(0-8.3)	0.205
Reflux	0(0-11.0)	0(0-11.0)	0.549	0(0-22.0)	0(0-22.0)	0.994
Eating restrictions	0(0-0)	0(0-8.3)	0.544	0(0-16.7)	0(0-8.3)	0.923
Anxiety	0(0-11.0)	0(0-11.0)	0.845	0(0-22.0)	0(0-22.0)	0.444
Dry mouth	0(0-0)	0(0-0)	0.186	0(0-0)	0(0-0)	0.968
Taste	0(0-0)	0(0-0)	0.654	0(0-0)	0(0-0)	0.518
Body image	0(0-0)	0(0-0)	0.206	0(0-33.3)	0(0-0)	0.027
Hair loss	0(0-0)	0(0-0)	0.500	0(0-0)	0(0-0)	0.832

QOL: Quality of life; LATG: Laparoscopic assisted total gastrectomy; TLTG: Totally laparoscopic total gastrectomy;
Statistically significant P values are in bold ($P < 0.05$).

Supplementary Table 5 Quality of life using EORTC QLQ-C30 and STO-22 questionnaire between LADG and TLDG group

Factor	Baseline		P value	Postoperative 3 mo		P value
	LADG group	TLDG group		LADG group	TLDG group	
QLQ-C30 questionnaire						
Global status	91.6(91.6-100)	91.6(91.6-100)	0.361	91.6(91.6-100)	91.6(91.6-100)	0.876
Physical functioning	100(93.3-100)	100(93.3-100)	0.900	100(93.3-100)	93.3(93.3-100)	0.987
Role functioning	100(83.3-100)	100(83.3-100)	0.453	100(83.3-100)	100(83.3-100)	0.982
Emotional functioning	91.6(91.6-100)	91.6(91.6-100)	0.582	91.6(91.6-100)	91.6(91.6-100)	0.824
Cognitive functioning	100(83.3-100)	100(83.3-100)	0.688	100(83.3-100)	100(83.3-100)	0.787
Social functioning	100(83.3-100)	100(83.3-100)	0.160	100(83.3-100)	100(83.3-100)	0.504
Fatigue	0(0-5.5)	0(0-0)	0.485	0(0-0)	0(0-11.0)	0.301
Nausea and vomiting	0(0-0)	0(0-0)	0.090	0(0-16.6)	0(0-0)	0.622
Pain	0(0-0)	0(0-0)	0.705	0(0-0)	0(0-0)	0.621
Dyspnea	0(0-0)	0(0-0)	0.428	0(0-0)	0(0-0)	0.750
Insomnia	0(0-33.3)	0(0-33.3)	0.494	0(0-33.3)	0(0-33.3)	0.460
Appetite loss	0(0-0)	0(0-16.6)	0.517	0(0-16.6)	0(0-33.3)	0.991
Constipation	0(0-33.3)	0(0-16.6)	0.201	0(0-33.3)	0(0-33.3)	0.121
Diarrhea	0(0-0)	0(0-0)	0.371	0(0-0)	0(0-0)	0.786
Financial difficulties	0(0-33.3)	0(0-33.3)	0.028	0(0-66.7)	0(0-66.7)	0.246

STO-22 questionnaire						
Dysphagia	0(0-0)	0(0-5.5)	0.987	0(0-22.0)	0(0-11.0)	0.371
Pain	0(0-0)	0(0-0)	0.881	0(0-8.3)	0(0-16.7)	0.961
Reflux	0(0-0)	0(0-11.0)	0.096	0(0-22.0)	0(0-22.0)	0.382
Eating restrictions	0(0-0)	0(0-0)	0.663	0(0-8.3)	0(0-8.3)	0.784
Anxiety	0(0-22.0)	0(0-16.6)	0.782	0(0-22.0)	0(0-22.0)	0.302
Dry mouth	0(0-0)	0(0-0)	0.643	0(0-0)	0(0-0)	0.990
Taste	0(0-0)	0(0-0)	0.279	0(0-0)	0(0-0)	0.338
Body image	0(0-0)	0(0-0)	0.892	0(0-33.3)	0(0-0)	0.002
Hair loss	0(0-0)	0(0-0)	0.136	0(0-0)	0(0-0)	0.050

QOL: Quality of life; LADG: Laparoscopic assisted distal gastrectomy; TLGD: Totally laparoscopic distal gastrectomy;
Statistically significant P values are in bold ($P < 0.05$).