

## Supplementary

**Table S1** Clinicopathological characteristics of patients with OPGC and RGC before and after propensity score matching, excluding patients with incomplete follow-up

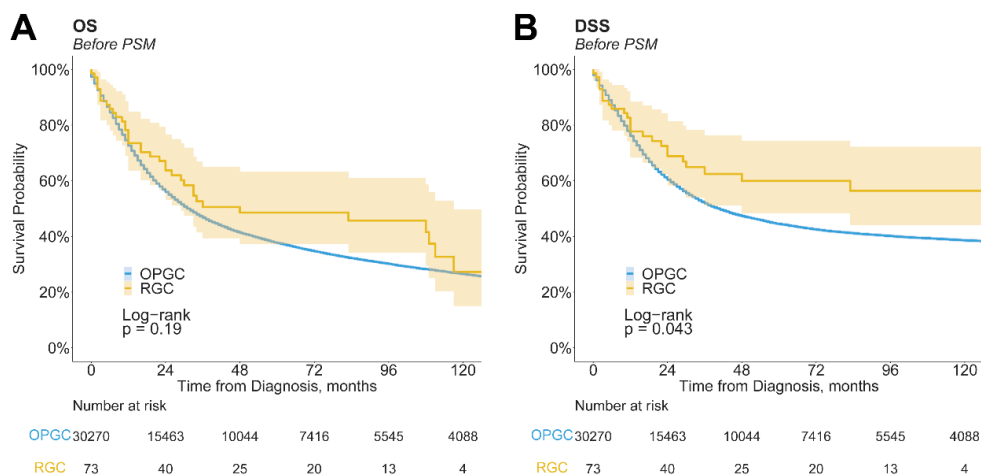
Variables	Before PSM		RGC	After PSM	
	OPGC	P value		P value	OPGC
Patients, n	30,270		73		365
Year of diagnosis, median (range)	2008 (1990–2020)	<0.001	2014 (1990–2020)	0.789	2015 (1991–2020)
Age (years), median (range)	67 (18–90)	0.006	73 (49–90)	0.416	73 (33–90)
Sex, n (%)		0.964		0.795	
Male	18,531 (61.2)		44 (60.3)		211 (57.8)
Female	11,739 (38.8)		29 (39.7)		154 (42.2)
Race, n (%)		<0.001		0.999	
White	13,753 (45.4)		18 (24.7)		91 (24.9)
Black	3,730 (12.3)		11 (15.1)		54 (14.8)
Asian	6,409 (21.2)		29 (39.7)		143 (39.2)
Others	6,378 (21.1)		15 (20.5)		77 (21.1)
Marital status, n (%)		0.379		0.978	
Married	18,425 (60.9)		51 (69.9)		251 (68.8)
Widowed	4,269 (14.1)		5 (6.8)		27 (7.4)
Single	3,816 (12.6)		9 (12.3)		39 (10.7)
Divorced	2,309 (7.6)		4 (5.5)		26 (7.1)
Others	1,451 (4.8)		4 (5.5)		22 (6.0)
Area, n (%)		0.300		>0.99	
Urban	3,219 (10.6)		11 (15.1)		56 (15.3)
Non-urban	27,051 (89.4)		62 (84.9)		309 (84.7)
Income, n (%)		0.573		0.989	
<\$55,000	3,396 (11.2)		11 (15.1)		54 (14.8)
\$55,000–64,999	3,954 (13.1)		7 (9.6)		39 (10.7)
\$65,000–74,999	8,402 (27.8)		18 (24.7)		85 (23.3)
\$75,000+	14,518 (48.0)		37 (50.7)		187 (51.2)
Tumor site, n (%)		<0.001		0.952	
Cardia	6,764 (22.3)		8 (11.0)		47 (12.9)
Middle	8,931 (29.5)		26 (35.6)		123 (33.7)
Distal	9,647 (31.9)		12 (16.4)		65 (17.8)
NOS	4,928 (16.3)		27 (37.0)		130 (35.6)
Tumor stage, n (%)		<0.001		0.984	
<i>In situ</i>	252 (0.8)		2 (2.7)		11 (3.0)
Localized	9,225 (30.5)		39 (53.4)		187 (51.2)
Regional	17,721 (58.5)		26 (35.6)		138 (37.8)
Distant	3,072 (10.1)		6 (8.2)		29 (7.9)

**Table S1** (continued)

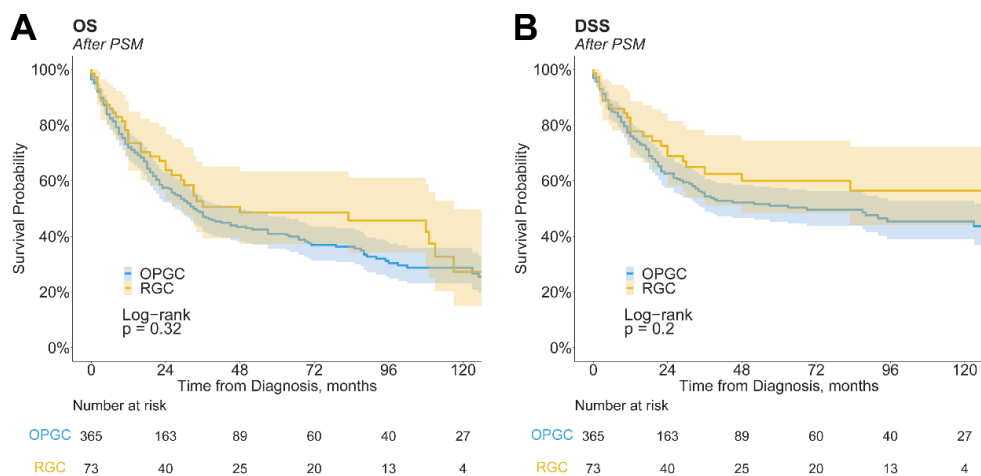
**Table S1** (continued)

Variables	Before PSM		RGC	After PSM	
	OPGC	P value		P value	OPGC
T category, n (%)		0.018		0.995	
Tis	252 (0.8)		2 (2.7)		11 (3.0)
T1	6,386 (21.1)		24 (32.9)		118 (32.3)
T2	3,596 (11.9)		9 (12.3)		46 (12.6)
T3	11,407 (37.7)		17 (23.3)		92 (25.2)
T4	8,629 (28.5)		21 (28.8)		98 (26.8)
N category, n (%)		<0.001		0.927	
N0	11,872 (39.2)		50 (68.5)		245 (67.1)
N+	18,398 (60.8)		23 (31.5)		120 (32.9)
M category, n (%)		>0.99		>0.99	
M0/MX	27,980 (92.4)		67 (91.8)		335 (91.8)
M1	2,290 (7.6)		6 (8.2)		30 (8.2)
Tumor size, n (%)		0.005		0.872	
≤5 cm	16,106 (53.2)		50 (68.5)		261 (71.5)
>5 cm	9,521 (31.5)		10 (13.7)		46 (12.6)
Unknown	4,643 (15.3)		13 (17.8)		58 (15.9)
Grade, n (%)		0.504		0.981	
G1	1,509 (5.0)		4 (5.5)		19 (5.2)
G2	7,493 (24.8)		14 (19.2)		75 (20.5)
G3	19,396 (64.1)		48 (65.8)		232 (63.6)
Unknown	1,872 (6.2)		7 (9.6)		39 (10.7)
Lauren classification, n (%)		0.034		0.924	
Diffuse	8,255 (27.3)		29 (39.7)		137 (37.5)
Intestinal	19,921 (65.8)		42 (57.5)		219 (60.0)
Mixed/Others	2,094 (6.9)		2 (2.7)		9 (2.5)
Surgical method, n (%)		<0.001		>0.99	
PG	22,951 (75.8)		33 (45.2)		167 (45.8)
TG/NTG	7,319 (24.2)		40 (54.8)		198 (54.2)
Chemotherapy, n (%)		0.029		>0.99	
No/Unknown	15,826 (52.3)		48 (65.8)		240 (65.8)
Yes	14,444 (47.7)		25 (34.2)		125 (34.2)
Radiotherapy, n (%)		<0.001		0.918	
No/Unknown	21,586 (71.3)		69 (94.5)		349 (95.6)
Yes	8,684 (28.7)		4 (5.5)		16 (4.4)
rLN number, n (%)		<0.001		0.917	
1–16	15,398 (50.9)		49 (67.1)		254 (69.6)
16+	13,274 (43.9)		10 (13.7)		46 (12.6)
None	1,598 (5.3)		14 (19.2)		65 (17.8)

OPGC, only primary gastric cancer; RGC, remnant gastric cancer; PSM, propensity score matching; NOS, not otherwise specified; PG, partial gastrectomy; TG/NTG, total/near total gastrectomy; rLN, retrieved lymph node.



**Figure S1** Kaplan-Meier curves with risk tables for patients with only primary gastric cancer (OPGC) and remnant gastric cancer (RGC) before propensity score matching (PSM), excluding patients with incomplete follow-up. (A) Overall survival (OS). (B) Disease-specific survival (DSS).



**Figure S2** Kaplan-Meier curves with risk tables for patients with only primary gastric cancer (OPGC) and remnant gastric cancer (RGC) after propensity score matching (PSM), excluding patients with incomplete follow-up. (A) Overall survival (OS). (B) Disease-specific survival (DSS).

**Table S2** Individual and global Schoenfeld test P values of univariable and multivariable models

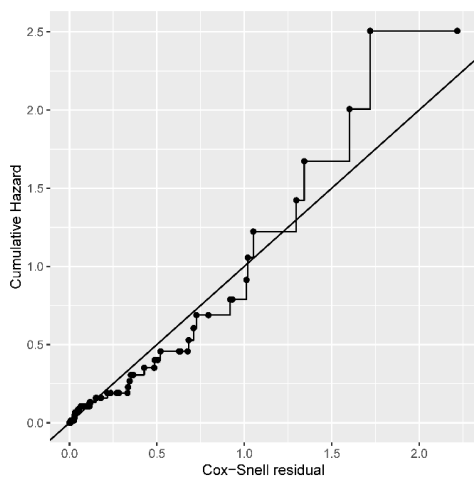
Variable	Univariable model	Multivariable model
Latency	0.03	–
Age	0.57	0.42
Year of diagnosis	0.13	–
Sex	0.89	–
Race	0.17	–
Marital status	0.74	–
Area	0.25	–
Income	0.62	0.88
Tumor site	0.41	0.07
Tumor stage	0.65	0.39
T category	0.48	0.10
N category	0.61	0.11
M category	0.56	–
Tumor size	0.50	0.86
Grade	0.44	0.41
Lauren classification	0.46	–
Surgical method	0.29	–
Chemotherapy	0.08	0.14
Radiotherapy	0.87	–
rLN number	0.84	–
Global	–	0.20

rLN, retrieved lymph node.

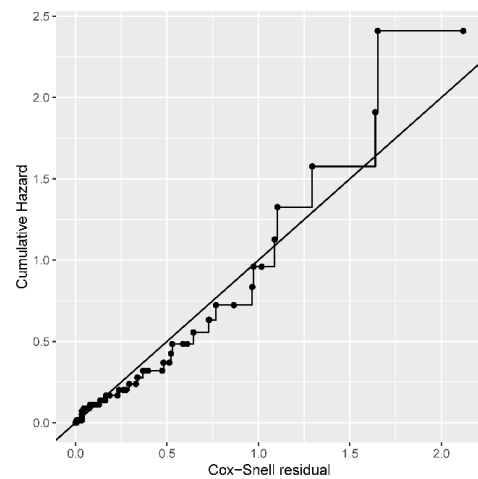
**Table S3** Individual and global Schoenfeld test P values of univariable and multivariable models, excluding patients with incomplete follow-up

Variable	Univariable model	Multivariable model
Latency	0.02	–
Age	0.70	0.24
Year of diagnosis	0.10	–
Sex	0.99	–
Race	0.23	–
Marital status	0.74	–
Area	0.23	–
Income	0.60	0.90
Tumor site	0.47	0.10
Tumor stage	0.64	0.13
T category	0.54	0.10
N category	0.40	0.05
M category	0.57	–
Tumor size	0.49	0.79
Grade	0.41	0.41
Lauren classification	0.37	–
Surgical method	0.39	–
Chemotherapy	0.05	0.10
Radiotherapy	0.32	–
rLN number	0.71	–
Global	–	0.15

rLN, retrieved lymph node.



**Figure S3** Cox-Snell residual plot of the final multivariable model.



**Figure S4** Cox-Snell residual plot of the final multivariable model, excluding patients with incomplete follow-up.

**Table S4** Prognostic factors for DSS in patients with RGC based on univariable and multivariable Cox regression analyses, excluding patients with incomplete follow-up

Variables	Value	Univariable		Multivariable	
		HR (95% CI)	P value	HR (95% CI)	P value
Age, years (mean ± SD)	70.3±10.3	1.10 (1.04–1.15)	<0.001	1.04 (0.97–1.12)	0.312
Year of diagnosis, years (mean ± SD)	2013.1±5.5	0.99 (0.92–1.06)	0.813		
Sex, n (%)					
Male	44 (60.3)	Reference			
Female	29 (39.7)	0.66 (0.28–1.53)	0.332		
Race, n (%)					
White	18 (24.7)	Reference			
Black	11 (15.1)	1.10 (0.36–3.38)	0.862		
Asian	29 (39.7)	0.62 (0.24–1.62)	0.333		
Others	15 (20.5)	0.61 (0.16–2.29)	0.460		
Marital status, n (%)					
Married	51 (69.9)	Reference			
Divorced	4 (5.5)	0.65 (0.09–4.94)	0.680		
Widowed	5 (6.8)	1.85 (0.54–6.36)	0.330		
Single	9 (12.3)	1.06 (0.31–3.67)	0.923		
Others	4 (5.5)	2.18 (0.50–9.51)	0.300		
Area, n (%)					
Urban	62 (84.9)	Reference			
Non-urban	11 (15.1)	0.82 (0.28–2.38)	0.711		
Income, n (%)					
<\$55,000	11 (15.1)	Reference			
\$55,000–64,999	7 (9.6)	0.79 (0.19–3.31)	0.746	0.13 (0.02–1.11)	0.062
\$65,000–74,999	18 (24.7)	0.82 (0.27–2.52)	0.734	0.28 (0.07–1.17)	0.082
\$75,000+	37 (50.7)	0.52 (0.17–1.55)	0.242	0.22 (0.05–0.92)	0.038
Tumor site, n (%)					
Cardia	8 (11.0)	Reference			
Middle	26 (35.6)	0.43 (0.14–1.33)	0.144	0.14 (0.03–0.81)	0.028
Distal	12 (16.4)	0.28 (0.07–1.20)	0.086	0.10 (0.02–0.62)	0.013
NOS	27 (37.0)	0.46 (0.15–1.38)	0.166	0.12 (0.03–0.52)	0.005
Tumor stage, n (%)					
Localized/ <i>in situ</i>	41 (56.2)	Reference			
Regional	26 (35.6)	3.40 (1.43–8.10)	0.006	5.63 (0.87–36.65)	0.070
Distant	6 (8.2)	3.35 (0.90–12.47)	0.071	3.05 (0.23–39.96)	0.395

Table S4 (continued)

**Table S4** (continued)

Variables	Value	Univariable		Multivariable	
		HR (95% CI)	P value	HR (95% CI)	P value
T category, n (%)					
Tis-2	35 (47.9)	Reference			
T3-4	38 (52.1)	4.98 (1.96-12.69)	<0.001	5.42 (1.22-23.97)	0.026
N category, n (%)					
N0	50 (68.5)	Reference			
N+	23 (31.5)	2.98 (1.34-6.64)	0.008	0.43 (0.09-2.12)	0.299
M category, n (%)					
M0/MX	67 (91.8)	Reference			
M1	6 (8.2)	1.92 (0.57-6.45)	0.288		
Tumor size, n (%)					
≤5 cm	50 (68.5)	Reference			
>5 cm	10 (13.7)	3.00 (1.16-7.78)	0.024	1.09 (0.28-4.19)	0.901
Unknown	13 (17.8)	0.98 (0.32-2.95)	0.970	0.44 (0.09-2.14)	0.308
Grade, n (%)					
G1-2	18 (24.7)	Reference			
G3	48 (65.8)	4.50 (1.05-19.28)	0.043	8.12 (1.37-48.06)	0.021
Unknown	7 (9.6)	2.11 (0.30-14.97)	0.456	7.25 (0.55-94.88)	0.131
Lauren classification, n (%)					
Diffuse	29 (39.7)	Reference			
Non-diffuse	44 (60.3)	0.97 (0.43-2.16)	0.937		
Surgical method, n (%)					
PG	33 (45.2)	Reference			
TG/NTG	40 (54.8)	0.67 (0.30-1.47)	0.313		
Chemotherapy, n (%)					
No/Unknown	48 (65.8)	Reference			
Yes	25 (34.2)	0.53 (0.20-1.41)	0.200	0.13 (0.03-0.68)	0.015
Radiotherapy, n (%)					
No/unknown	69 (94.5)	Reference			
Yes	4 (5.5)	1.07 (0.14-8.07)	0.947		
rLN number, n (%)					
1-16	49 (67.1)	Reference			
16+	10 (13.7)	1.05 (0.31-3.61)	0.937		
None	14 (19.2)	1.37 (0.53-3.49)	0.515		

DSS, disease-specific survival; RGC, remnant gastric cancer; HR, hazard ratio; CI, confidence interval; SD, standard deviation; NOS, not otherwise specified; PG, partial gastrectomy; TG/NTG, total/near total gastrectomy; rLN, retrieved lymph node.