

**Figure S1** Distribution of propensity scores before and after matching with 16 variables with caliper =0.1. Treated, adjuvant therapy yes; Control, adjuvant therapy no; Raw, before matched.

**Table S1** Characteristics of patients with a propensity score  $\geq 0.40$  prior to matching

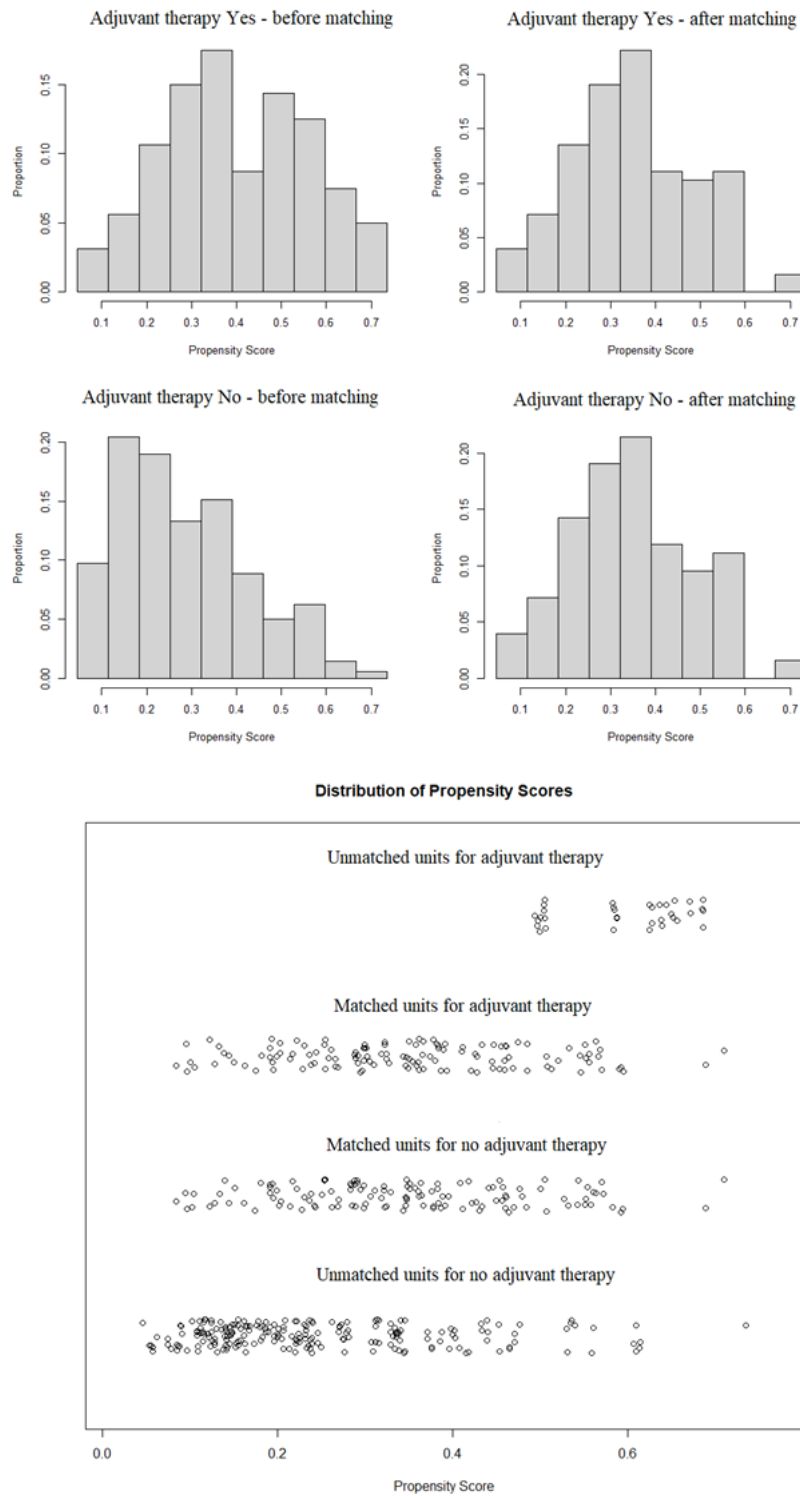
Variables	Subtypes	All patients with PS $\geq 0.40$ (N=146), n (%)	Adjuvant therapy, n (%)		P
			No (N=71)	Yes (N=75)	
Sex	Male	131 (89.73)	60 (84.51)	71 (94.67)	0.0804
	Female	15 (10.27)	11 (15.49)	4 (5.33)	
Age (years)	Median [IQR]	59 [53, 63]	60 [52.500, 64]	58 [53, 62]	0.3693
BMI (kg/m <sup>2</sup> )	Mean (SD)	22.864 (3.055)	22.711 (2.929)	23.009 (3.183)	0.557
Smoking	No	78 (53.42)	40 (56.34)	38 (50.67)	0.6026
	Yes	68 (46.58)	31 (43.66)	37 (49.33)	
Alcohol use	No	70 (47.95)	32 (45.07)	38 (50.67)	0.6095
	Yes	76 (52.05)	39 (54.93)	37 (49.33)	
ECOG	0	107 (73.29)	53 (74.65)	54 (72.00)	0.8616
	1	39 (26.71)	18 (25.35)	21 (28.00)	
Comorbidity	No	66 (45.21)	26 (36.62)	40 (53.33)	0.0626
	Yes	80 (54.79)	45 (63.38)	35 (46.67)	
Total days	Median [IQR]	16 [13, 19.500]	17 [14, 23]	15 [12, 17]	0.0173
Approach	Open	85 (58.22)	43 (60.56)	42 (56.00)	0.6959
	Lap/robot	61 (41.78)	28 (39.44)	33 (44.00)	
Surgery type	Ivor Lewis	128 (87.67)	58 (81.69)	70 (93.33)	0.0592
	McKeown	18 (12.33)	13 (18.31)	5 (6.67)	
Post-surgery complications	No	87 (59.59)	39 (54.93)	48 (64.00)	0.3433
	Yes	59 (40.41)	32 (45.07)	27 (36.00)	
Location	Upper	7 (4.79)	2 (2.82)	5 (6.67)	0.0582
	Middle	45 (30.82)	28 (39.44)	17 (22.67)	
	Lower	56 (38.36)	21 (29.58)	35 (46.67)	
	GEJ	38 (26.03)	20 (28.17)	18 (24.00)	
Tumor size (cm)	Mean (SD)	42.555 (13.486)	42.239 (11.492)	42.853 (15.206)	0.7844
Stage T	T1	6 (4.11)	2 (2.82)	4 (5.33)	0.6059
	T2	16 (10.96)	7 (9.86)	9 (12.00)	
	T3	120 (82.19)	59 (83.10)	61 (81.33)	
	T4	4 (2.74)	3 (4.23)	1 (1.33)	
Stage N	N0	18 (12.33)	9 (12.68)	9 (12.00)	>0.99
	N+	128 (87.67)	62 (87.32)	66 (88.00)	
Grade	G1	1 (0.68)	1 (1.41)	0 (0.00)	0.5396
	G2	72 (49.32)	36 (50.70)	36 (48.00)	
	G3	73 (50.00)	34 (47.89)	39 (52.00)	

PS, propensity score; BMI, body mass index; ECOG, Eastern Cooperative Oncology Group performance score; GEJ, gastroesophageal junction; n (%), number and percentage of patients in the designated category; IQR, interquartile range; lap/robot, laparoscopic/robotic; SD, standard deviation.

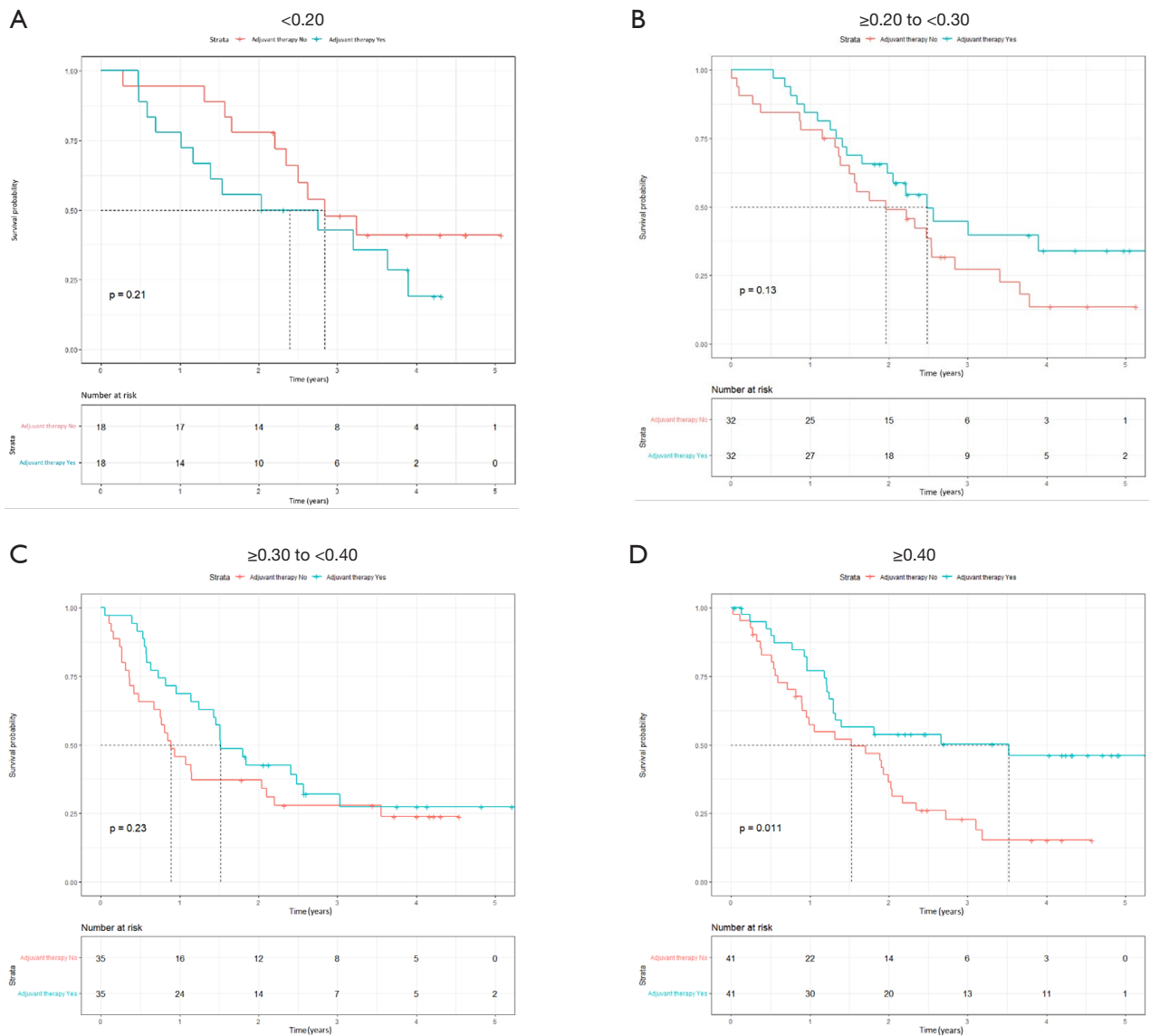
**Table S2** Characteristics of patients matched with all 13 variables using caliper 0.05

Variables	Subtypes	Adjuvant therapy						P value
		Total (N=252)		No (N=126)		Yes (N=126)		
		N	%	N	%	N	%	
Sex	Male	217	86.11	112	88.89	105	83.33	0.2743
	Female	35	13.89	14	11.11	21	16.67	
Age (years)	Mean (SD)	63.4 (7.6)		63.0 (7.1)		63.8 (7.9)		0.5468
Age category (years)	<65	144	57.14	68	53.97	76	60.32	0.3729
	≥65	108	42.86	58	46.03	50	39.68	
BMI (kg/m <sup>2</sup> )	Mean	22.7 (3.0)		22.7 (3.0)		22.7 (3.1)		0.9952
BMI category (kg/m <sup>2</sup> )	<18.5	16	6.35	6	4.76	10	7.94	0.5885
	18.5-24.9	177	70.24	89	70.63	88	69.84	
	≥25	59	23.41	31	24.6	28	22.22	
Smoking	No	126	50	66	52.38	60	47.62	0.5288
	Yes	126	50	60	47.62	66	52.38	
Alcohol use	No	137	54.37	68	53.97	69	54.76	>0.99
	Yes	115	45.63	58	46.03	57	45.24	
ECOG score	0	202	80.16	97	76.98	95	75.4	0.8777
	1	50	19.84	26	20.63	28	22.22	
Comorbidity	No	109	43.25	56	44.44	53	42.06	0.7993
	Yes	143	56.75	70	55.56	73	57.94	
Hospitalization days	Mean (SD)	21.2 (15.8)		20.0 (12.0)		22.0 (14.2)		0.1529
Days category	≤18	138	54.76	71	56.35	67	53.17	0.7043
	>18	114	45.24	55	43.65	59	46.83	
Approach	Open	167	66.27	84	66.67	83	65.87	>0.99
	Lap/Robot	85	33.73	42	33.33	43	34.13	
Surgery type	Ivor Lewis	220	87.3	111	88.1	109	86.51	0.8502
	McKeown	32	12.7	15	11.9	17	13.49	
Post-surgery complications	No	134	53.17	68	53.97	66	52.38	0.8996
	Yes	118	46.83	58	46.03	60	47.62	
Location	Upper	10	3.97	6	4.76	4	3.17	0.5592
	Middle	112	44.44	51	40.48	61	48.41	
	Lower	69	27.38	38	30.16	31	24.6	
	GEJ	61	24.21	31	24.6	30	23.81	
Tumor size (cm)	Mean (SD)	3.7 (1.8)		3.5 (1.4)		3.8 (2.1)		0.177
Size category	≤3.5 cm	147	58.33	76	60.32	71	56.35	0.6094
	>3.5 cm	105	41.67	50	39.68	55	43.65	
Stage T	T1	34	13.49	16	12.7	18	14.29	0.8685
	T2	45	17.86	21	16.67	24	19.05	
	T3	168	66.67	87	69.05	81	64.29	
	T4	5	1.98	2	1.59	3	2.38	
Stage N	N0	123	48.81	65	51.59	58	46.03	0.7681
	N1	78	30.95	37	29.37	41	32.54	
	N2	34	13.49	17	13.49	17	13.49	
	N3	17	6.75	7	5.56	10	7.94	
Differentiation grade	G1	8	3.17	5	3.97	3	2.38	0.7992
	G2	135	53.57	66	52.38	69	54.76	
	G3	109	43.25	55	43.65	54	42.86	

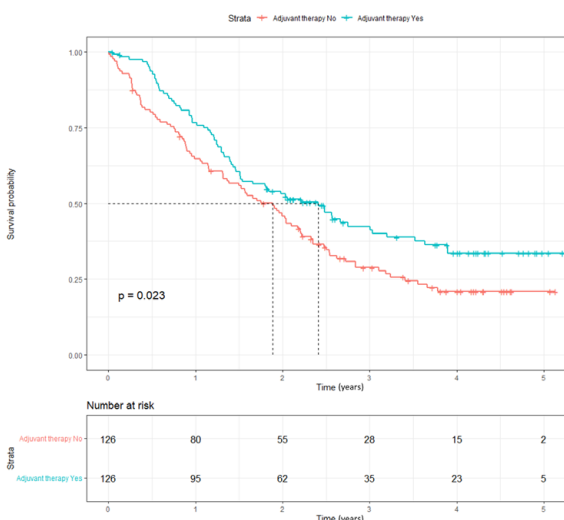
BMI, body mass index; ECOG, Eastern Cooperative Oncology Group performance score; GEJ, gastroesophageal junction; lap/robot, laparoscopic/robotic; n/%, number and percentage of patients in the designated category; SD standard deviation.



**Figure S2** Distribution of propensity scores before and after matching for 13 variables with caliper 0.05.



**Figure S3** Kaplan-Meier curves (log-rank tests) for recurrence-free survival in patients who did/did not receive adjuvant therapy after matching with 13 variables with caliper =0.05 by propensity score stratum (A)  $<0.20$  (B)  $\geq 0.20$  to  $<0.30$  (C)  $\geq 0.30$  to  $<0.40$  (D)  $\geq 0.40$ .

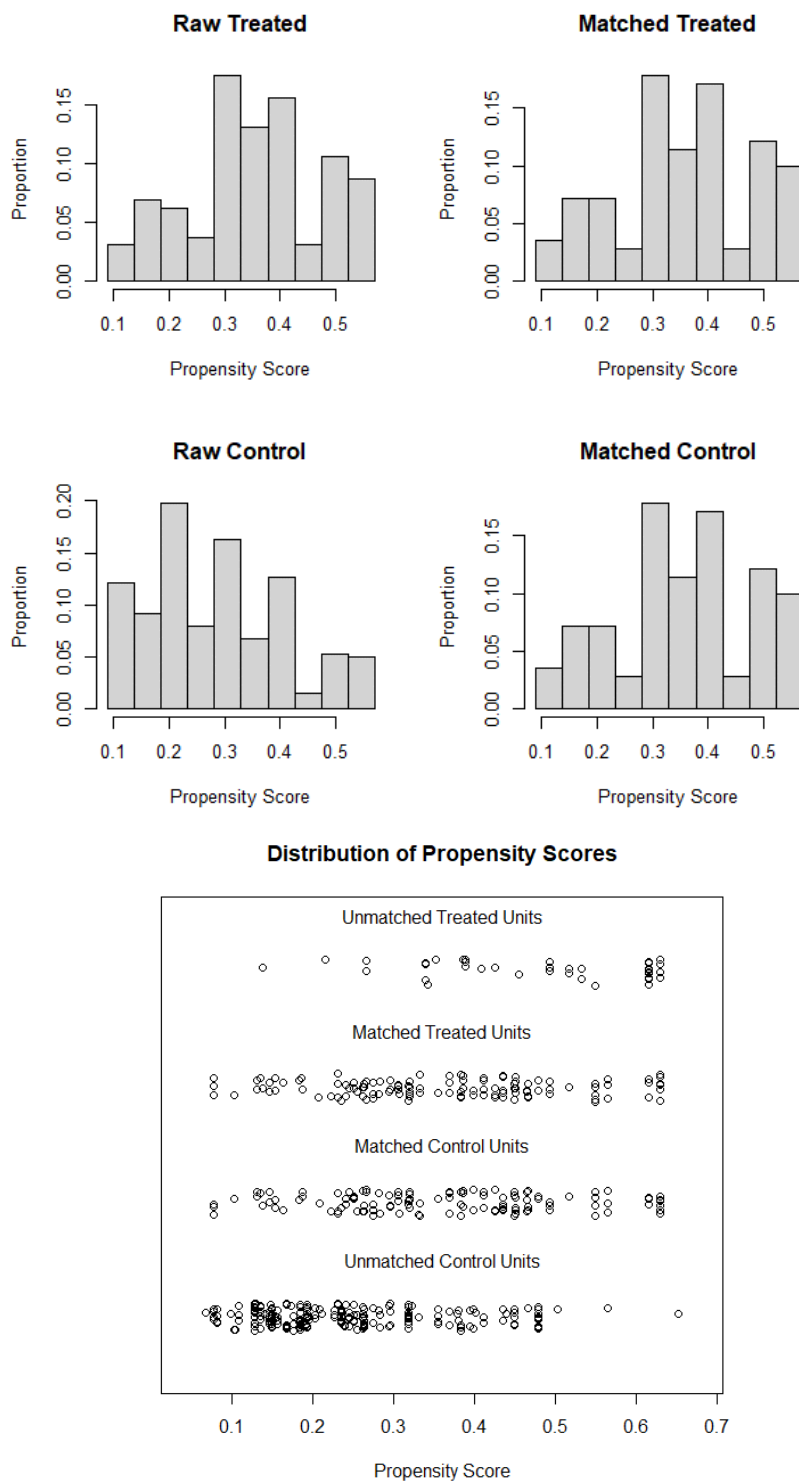


**Figure S4** Kaplan-Meier curve (log-rank test) for recurrence-free survival in patients who did/did not receive adjuvant therapy after matching with 13 variables with caliper =0.05.

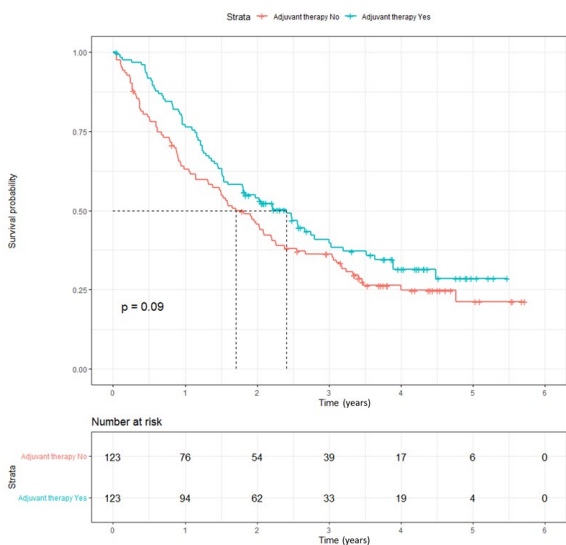
**Table S3** Characteristics of patients matched with 6 variables that are significantly associated with adjuvant therapy (caliper =0.01)

Variables	Subtypes	Adjuvant therapy						P value
		Total (N=246)		No (N=123)		Yes (N=123)		
		N	%	N	%	N	%	
Sex	Male	198	80.49	97	78.86	101	82.11	0.6297
	Female	48	19.51	26	21.14	22	17.89	
Age (years)	Mean (SD)	61.9 (7.5)		62.2 (7.9)		61.6 (7.1)		0.5718
Age category (years)	<65	148	60.16	73	59.35	75	60.98	>0.99
	≥65	98	39.84	50	40.65	48	39.02	
BMI (kg/m <sup>2</sup> )	Mean	22.7 (3.0)		22.4 (2.9)		22.9 (3.1)		0.1807
BMI category (kg/m <sup>2</sup> )	<18.5	16	6.5	8	6.5	8	6.5	0.555
	18.5-24.9	173	70.33	90	73.17	83	67.48	
	≥25	57	23.17	25	20.33	32	26.02	
Smoking	No	127	51.63	63	51.22	64	52.03	>0.99
	Yes	119	48.37	60	48.78	59	47.97	
Alcohol use	No	147	59.76	79	64.23	68	55.28	0.1934
	Yes	99	40.24	44	35.77	55	44.72	
ECOG score	0	192	78.05	97	78.86	95	77.24	0.8777
	1	54	21.95	26	21.14	28	22.76	
Comorbidity	No	113	45.93	60	48.78	53	43.09	0.4428
	Yes	133	54.07	63	51.22	70	56.91	
Hospitalization days	Mean (SD)	21.2 (15.8)		20.7 (17.2)		21.6 (14.3)		0.6614
Days category	≤18	140	56.91	71	57.72	69	56.1	0.8976
	>18	106	43.09	52	42.28	54	43.9	
Approach	Open	162	65.85	81	65.85	81	65.85	>0.99
	Lap/Robot	84	34.15	42	34.15	42	34.15	
Surgery type	Ivor Lewis	219	89.02	111	90.24	108	87.8	0.5346
	McKeown	27	10.98	12	9.76	15	12.2	
Post-surgery complications	No	123	50	65	52.85	58	47.15	0.4443
	Yes	123	50	58	47.15	65	52.85	
Location	Upper	12	4.88	6	4.88	6	4.88	0.9046
	Middle	117	47.56	60	48.78	57	46.34	
	Lower	58	23.58	30	24.39	28	22.76	
	GEJ	59	23.98	27	21.95	32	26.02	
Tumor size (cm)	Mean (SD)	3.7 (1.8)		3.6 (1.3)		3.8 (2.2)		0.1929
Size category	≤3.5 cm	141	57.32	71	57.72	70	56.91	>0.99
	>3.5 cm	105	42.68	52	42.28	53	43.09	
Stage T	T1	22	8.94	10	8.13	12	9.76	0.9081
	T2	37	15.04	20	16.26	17	13.82	
	T3	185	75.2	92	74.8	93	75.61	
	T4	2	0.81	1	0.81	1	0.81	
Stage N	N0	109	44.31	54	43.9	55	44.72	0.6606
	N1	75	30.49	41	33.33	34	27.64	
	N2	44	17.89	21	17.07	23	18.7	
	N3	18	7.32	7	5.69	11	8.94	
Differentiation grade	G1	5	2.03	3	2.44	2	1.63	0.9349
	G2	137	55.69	69	56.1	68	55.28	
	G3	102	41.46	50	40.65	52	42.28	

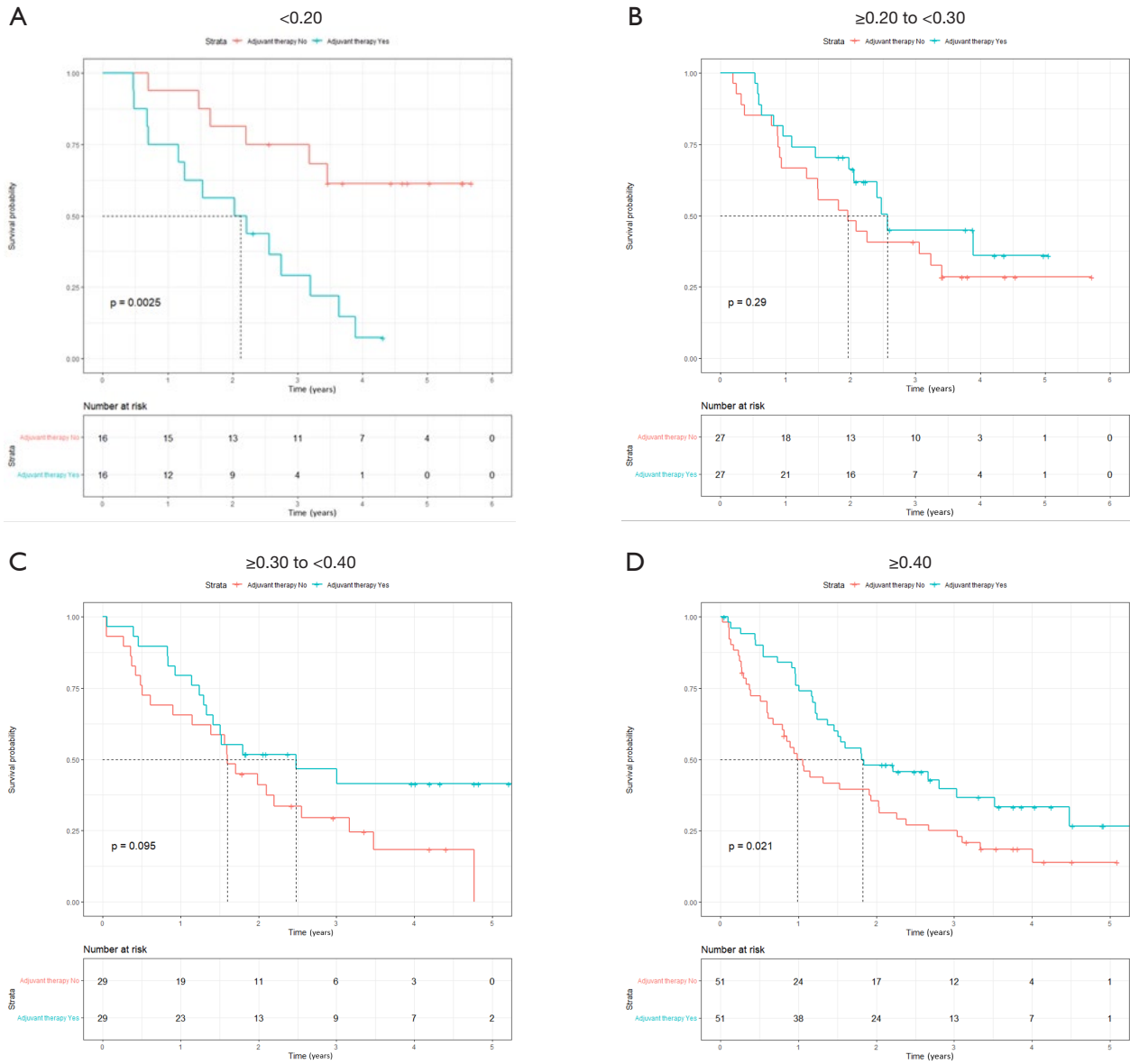
BMI, body mass index; ECOG, Eastern Cooperative Oncology Group performance score; GEJ, gastroesophageal junction; lap/robot, laparoscopic/robotic; n/%, number and percentage of patients in the designated category; SD standard deviation.



**Figure S5** Distribution of propensity scores before and after matching with 6 variables with caliper =0.01. Treated, adjuvant therapy yes; Control, adjuvant therapy no; Raw, before matched.



**Figure S6** Kaplan-Meier curve (log-rank test) for recurrence-free survival in patients who did/did not receive adjuvant therapy after matching with 6 variables with caliper =0.01.



**Figure S7** Kaplan-Meier curves (log-rank tests) for recurrence-free survival in patients who did/did not receive adjuvant therapy after matching with 6 variables with caliper = 0.01 by propensity score stratum (A)  $<0.20$  (B)  $\geq 0.20$  to  $<0.30$  (C)  $\geq 0.30$  to  $<0.40$  (D)  $\geq 0.40$ .