

Supplementary Table 1 Characteristics of the patients undergoing surgeries to both primary and metastatic tumors (SPM), patients undergoing gastrectomy only (GO), patients undergoing metastasectomy only (MO), and patients without surgery (NS) after propensity score matching and weighted by coarsened exact matching method

Variable	Propensity score matching cohort				<i>P</i>	Coarsened exact matching
	SPM (%)	GO (%)	MO (%)	NS (%)		method weighted cohort
						<i>P</i>
Age, years					0.479	1.000
< 50	106 (29.5%)	94 (26.2%)	113 (31.5%)	99 (27.6%)		
50–59	87 (24.2%)	98 (27.3%)	83 (23.1%)	79 (22.0%)		
60–69	83 (23.1%)	98 (27.3%)	90 (25.1%)	93 (25.9%)		
≥ 70	83 (23.1%)	69 (19.2%)	73 (20.3%)	88 (24.5%)		
Sex					0.979	0.998
Male	179 (49.9%)	184 (51.3%)	183 (51.0%)	180 (50.1%)		
Female	180 (50.1%)	175 (48.7%)	176 (49.0%)	179 (49.9%)		
Marriage status					0.649	0.999
Married	227 (63.2%)	230 (64.1%)	230 (64.1%)	226 (63.0%)		
Widowed	28 (7.8%)	37 (10.3%)	24 (6.7%)	29 (8.1%)		
Other	104 (29.0%)	92 (25.6%)	105 (29.2%)	104 (29.0%)		
Race					0.424	1.000
Non-Hispanic White	170 (47.4%)	166 (46.2%)	173 (48.2%)	158 (44.0%)		
Non-Hispanic Black	42 (11.7%)	60 (16.7%)	44 (12.3%)	44 (12.3%)		
Hispanic	93 (25.9%)	77 (21.4%)	90 (25.1%)	103 (28.7%)		
Other	54 (15.0%)	56 (15.6%)	52 (14.5%)	54 (15.0%)		
SEER region					0.821	1.000
Mid-west	43 (12.0%)	46 (12.8%)	45 (12.5%)	33 (9.2%)		

Northeast	62 (17.3%)	66 (18.4%)	58 (16.2%)	59 (16.4%)		
South	67 (18.7%)	56 (15.6%)	64 (17.8%)	70 (19.5%)		
West	187 (52.1%)	191 (53.2%)	192 (53.5%)	197 (54.9%)		
Year of diagnosis					0.136	1.000
2004–2006	130 (36.2%)	143 (39.8%)	140 (39.0%)	130 (36.2%)		
2007–2009	114 (31.8%)	108 (30.1%)	88 (24.5%)	114 (31.8%)		
2010–2013	115 (32.0%)	108 (30.1%)	131 (36.5%)	115 (32.0%)		
Primary tumor location					0.092	1.000
Upper one third	52 (14.5%)	56 (15.6%)	82 (22.8%)	59 (16.4%)		
Middle one third	35 (9.7%)	29 (8.1%)	40 (11.1%)	32 (8.9%)		
Lower one third	105 (29.2%)	99 (27.6%)	64 (17.8%)	89 (24.8%)		
NOS	167 (46.5%)	175 (48.7%)	173 (48.2%)	179 (49.9%)		
Histology					0.449	0.999
Adenocarcinoma						
NOS	219 (61.0%)	226 (63.0%)	214 (59.6%)	217 (60.4%)		
Mucinous						
adenocarcinoma	9 (2.5%)	9 (2.5%)	5 (1.4%)	3 (0.8%)		
Signet ring cell carcinoma	131 (36.5%)	124 (34.5%)	140 (39.0%)	139 (38.7%)		

Abbreviations: SEER, Surveillance, Epidemiology, and End Results; NOS, not otherwise specified.

Supplementary Table 2 Baseline demographic and clinicopathological characteristics of the patients in the sensitivity analyses

Variable	Number (%)					P value
	All cohort	SPM	GO	MO	NS	
Total	5347 (100.0%)	227 (4.2%)	554 (10.4%)	373 (7.0%)	4193 (78.4%)	
Age, years						< 0.001
< 50	1351 (25.3%)	81 (35.7%)	147 (26.5%)	154 (41.3%)	969 (23.1%)	
50–59	1412 (26.4%)	59 (26.0%)	152 (27.4%)	100 (26.8%)	1101 (26.3%)	
60–69	1539 (28.8%)	48 (21.1%)	166 (30.0%)	73 (19.6%)	1252 (29.9%)	
≥ 70	1045 (19.5%)	39 (17.2%)	89 (16.1%)	46 (12.3%)	871 (20.8%)	
Sex						< 0.001
Male	3369 (63.0%)	105 (46.3%)	343 (61.9%)	141 (37.8%)	2780 (66.3%)	
Female	1978 (37.0%)	122 (53.7%)	211 (38.1%)	232 (62.2%)	1413 (33.7%)	
Marriage status						0.340
Married	3415 (63.9%)	156 (68.7%)	366 (66.1%)	224 (60.1%)	2669 (63.7%)	
Widowed	321 (6.0%)	12 (5.3%)	33 (6.0%)	21 (5.6%)	255 (6.1%)	
Other	1611 (30.1%)	59 (26.0%)	155 (28.0%)	128 (34.3%)	1269 (30.3%)	
Race						
Non-Hispanic White	2667 (49.9%)	108 (47.6%)	223 (40.3%)	163 (43.7%)	2173 (51.8%)	< 0.001
Non-Hispanic Black	676 (12.6%)	22 (9.7%)	87 (15.7%)	48 (12.9%)	519 (12.4%)	
Hispanic	1273 (23.8%)	65 (28.6%)	140 (25.3%)	106 (28.4%)	962 (22.9%)	
Other	731 (13.7%)	32 (14.1%)	104 (18.8%)	56 (15.0%)	539 (12.9%)	
SEER region						0.137
Mid-west	634 (11.9%)	27 (11.9%)	44 (7.9%)	49 (13.1%)	514 (12.3%)	
Northeast	963 (18.0%)	40 (17.6%)	97 (17.5%)	56 (15.0%)	770 (18.4%)	

South	819 (15.3%)	34 (15.0%)	87 (15.7%)	53 (14.2%)	645 (15.4%)	
West	2931 (54.8%)	126 (55.5%)	326 (58.8%)	215 (57.6%)	2264 (54.0%)	
Year of diagnosis						< 0.001
2004–2006	1354 (25.3%)	72 (31.7%)	191 (34.5%)	114 (30.6%)	977 (23.3%)	
2007–2009	1598 (29.9%)	73 (32.2%)	166 (30.0%)	95 (25.5%)	1264 (30.1%)	
2010–2013	2395 (44.8%)	82 (36.1%)	197 (35.6%)	164 (44.0%)	1952 (46.6%)	
Primary tumor location						< 0.001
Upper one third	1818 (34.0%)	39 (17.2%)	90 (16.2%)	82 (22.0%)	1607 (38.3%)	
Middle one third	543 (10.2%)	20 (8.8%)	59 (10.6%)	49 (13.1%)	415 (9.9%)	
Lower one third	910 (17.0%)	66 (29.1%)	165 (29.8%)	65 (17.4%)	614 (14.6%)	
NOS	2076 (38.8%)	102 (44.9%)	240 (43.3%)	177 (47.5%)	1557 (37.1%)	
Tumor grade						< 0.001
G1/G2	924 (17.3%)	31 (13.7%)	90 (16.2%)	32 (8.6%)	771 (18.4%)	
G3/G4	3370 (63.0%)	186 (81.9%)	423 (76.4%)	215 (57.6%)	2546 (60.7%)	
Unknown	1053 (19.7%)	10 (4.4%)	41 (7.4%)	126 (33.8%)	876 (20.9%)	
Histology						< 0.001
Adenocarcinoma NOS	3653 (68.3%)	131 (57.7%)	327 (59.0%)	186 (49.9%)	3009 (71.8%)	
Mucinous adenocarcinoma	82 (1.5%)	4 (1.8%)	15 (2.7%)	4 (1.1%)	59 (1.4%)	
Signet ring cell carcinoma	1612 (30.1%)	92 (40.5%)	212 (38.3%)	183 (49.1%)	1125 (26.8%)	
Gastrectomy						
Yes	781 (14.6%)	227 (100.0%)	554 (100.0%)	0 (0.0%)	0 (0.0%)	
Total gastrectomy	226 (4.2%)	73 (32.2%)	153 (27.6%)	0 (0.0%)	0 (0.0%)	

surgery					
Non-total					
gastrectomy	517 (9.7%)	136 (59.9%)	381 (68.8%)	0 (0.0%)	0 (0.0%)
surgery					
Not specified	38 (0.7%)	18 (7.9%)	20 (3.6%)	0 (0.0%)	0 (0.0%)
No	4566 (85.4%)	0 (0.0%)	0 (0.0%)	373 (100.0%)	4193(100.0%)
Metastasectomy					
Yes	600 (11.2%)	227 (100.0%)	0 (0.0%)	373 (100.0%)	0 (0.0%)
No	4747 (88.8%)	0 (0.0%)	554 (100.0%)	0 (0.0%)	4193 (100.0%)

Abbreviation: SPM, surgeries to both primary and metastatic tumors; GO, gastrectomy only; MO, metastasectomy only; NS, no surgery; SEER, Surveillance, Epidemiology, and End Results; NOS, not otherwise specified.