

**Supplementary Table 1.** Demographic characteristics of patients after PSM.

Characteristic	Patients (n=1058)		P value	Patients (n=1008)		P value	Patients (n=100)		P value	Patients (n=580)		P value
	Non-Smoker (n=529)	Smoker (n=529)		Non-Drinker (n=504)	Drinker (n=504)		Smoker (n=50)	Drinker (n=50)		Smoker (n=290)	Both (n=290)	
KPS			0.899			0.704			0.836			0.444
	≥90	329(66.2%)	331(62.6%)	228(45.2%)	234(46.4%)	19(38.0%)	18(36.0%)	109(37.6%)	118(40.7%)			
	≤80	200(37.8%)	198(37.4%)	276(54.8%)	270(53.6%)	31(62.0%)	32(64.0%)	181(62.4%)	172(59.3%)			
Sex			0.762			0.780			1.000			1.000
	Male	524(99.1%)	523(98.9%)	497(98.6%)	498(98.8%)	48(96.0%)	49(98.0%)	287(99.0%)	288(99.3%)			
	Female	5(0.9%)	6(1.1%)	7(1.4%)	6(1.2%)	2(4.0%)	1(2.0%)	3(1.0%)	2(0.7%)			
Age, years		62(38-90)	62(41-84)	62(34-84)	62(39-85)	63.5(49-77)	64(45-81)	62(34-84)	62(39-85)			0.996
Tumor grade			0.850			0.615			0.329			0.614
	Well G1	322(60.9%)	319(60.3%)	99(19.6%)	91(18.1%)	14(28%)	10(20.0%)	53(18.3%)	48(16.6%)			
	Moderate G2	207(39.1%)	210(39.7%)	215(42.7%)	230(45.6%)	21(42.0%)	18(36.0%)	141(48.6%)	135(46.6%)			
	Poor or undifferentiated G3	0(0.0%)	0(0.0%)	190(37.7%)	183(36.3%)	15(30.0%)	22(44.0%)	96(33.1%)	107(36.9%)			
Lymphovascular invasion			0.753			0.871			0.183			0.831
	Yes	102(19.3%)	98(18.5%)	94(18.7%)	92(18.3%)	6(12.0%)	11(22.0%)	53(18.3%)	55(19.0%)			

	No	427(80.7%)	431(81.5%)	410(81.3%)	412(81.7%)	44(88.0%)	39(78.0%)	237(81.7%)	235(81.0%)
Nerve invasion			0.763		0.328		0.640		0.384
	Yes	114(21.6%)	110(20.8%)	121(24.0%)	108(21.4%)	11(22.0%)	13(26.0%)	66(22.8%)	75(25.9%)
	No	415(78.4%)	419(79.2%)	383(76.0%)	396(78.6%)	39(78.0%)	37(74.0%)	224(77.2%)	215(74.1%)
Tumor location			0.331		0.701		0.715		0.189
	Upper	98(18.5%)	113(21.4%)	92(18.3%)	85(16.9%)	10(20.0%)	10(20.0%)	65(22.4%)	48(16.6%)
	Middle	309(58.4%)	286(54.1%)	282(56.0%)	295(58.5%)	30(60.0%)	33(66.0%)	159(54.8%)	167(57.6%)
	Lower	122(23.1%)	130(24.6%)	130(25.8%)	124(24.6%)	10(20.0%)	7(14.0%)	66(22.8%)	75(25.9%)
Pathological T stage			0.182		1.000		0.341		0.949
	T1	45(8.5%)	34(6.4%)	40(7.9%)	40(7.9%)	3(6.0%)	3(6.0%)	12(4.1%)	15(5.2%)
	T2	105(19.8%)	114(21.6%)	103(20.4%)	103(20.4%)	12(24.0%)	13(26.0%)	56(19.3%)	56(19.3%)
	T3	327(61.8%)	344(65.0%)	324(64.3%)	324(64.3%)	31(62.0%)	24(48.0%)	208(71.7%)	205(70.7%)
	T4	52(9.8%)	37(7.0%)	37(7.3%)	37.3(7.3%)	4(8.0%)	10(20.0%)	14(4.8%)	14(4.8%)
pN			0.936		0.606		0.088		0.982
	N0	210(39.7%)	213(40.3%)	211(41.9%)	218(43.4%)	28(56.0%)	21(42.0%)	123(42.4%)	119(41.0%)
	N1	165(31.2%)	165(31.2%)	171(33.9%)	156(31.0%)	17(34.0%)	17(34.0%)	88(30.3%)	91(31.4%)
	N2	106(20.0%)	99(18.7%)	80(15.9%)	92(18.3%)	2(4.0%)	10(20.0%)	53(18.3%)	55(19.0%)
	N3	48(9.1%)	52(9.8%)	42(8.3%)	38(7.5%)	3(6.0%)	2(4.0%)	26(9.0%)	25(8.6%)

TNM stage				0.736		0.660		0.373		0.799	
	I	42(7.9%)	34(6.4%)		44(8.7%)	39(7.7%)		4(8.0%)	4(8.0%)	15(5.2%)	16(5.5%)
	II	170(32.1%)	178(33.6%)		165(32.7%)	178(35.3%)		24(48.0%)	18(36.0%)	110(37.9%)	100(34.5%)
	III	250(47.3%)	255(48.2%)		240(47.6%)	241(47.8%)		19(38.0%)	20(40.0%)	136(46.9%)	147(50.7%)
	IV	67(12.7%)	62(11.7%)		55(10.9%)	46(9.1%)		3(6.0%)	8(16.0%)	29(10.0%)	27(9.3%)
Thoracic surgery				0.806		0.800		1.000			0.737
	MIE	255(48.2%)	259(49.0%)		285(56.5%)	281(55.8%)		31(62.0%)	31(62.0%)	123(42.4%)	127(43.8%)
	OE	274(51.8%)	270(51.0%)		219(43.5%)	223(44.2%)		19(38.0%)	19(38.0%)	167(57.6%)	163(56.2%)
Abdominal surgery				0.508		0.570		0.546			0.424
	MIE	209(39.5%)	212(40.1%)		231(45.8%)	240(47.6%)		21(42.0%)	24(48.0%)	89(30.7%)	89(33.8%)
	OE	320(60.5%)	315(59.5%)		0(0.0%)	0(0.0%)		0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
	NO	0(0.0%)	2(0.4%)		273(54.2%)	264(52.4%)		29(58.0%)	26(52.0%)	201(69.3%)	192(66.2%)
Surgical.approach				0.566		1.000		1.000			0.335
	McKeown	370(69.9%)	375(70.9%)		394(78.2%)	394(78.2%)		39(78.0%)	39(78.0%)	206(71.0%)	209(72.1%)
	Iovr-Lewis	151(28.5%)	146(27.6%)		106(21.0%)	106(21.0%)		11(22.0%)	11(22.0%)	81(27.9%)	81(27.9%)
	Sweet	0(0.0%)	2(0.4%)		0(0.0%)	0(0.0%)		0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
	Left thoracotomy and laparotomy	8(1.5%)	6(1.1%)		4(0.8%)	4(0.8%)		0(0.0%)	0(0.0%)	3(1.0%)	0(0.0%)

Clinical treatment modality			0.588			0.078		0.450		0.168
Preoperative CT or RT/CRT plus surgery	9(1.7%)	13(2.5%)	15(3.0%)	5(1.0%)	4(8.0%)	1(2.0%)	6(2.1%)	5(1.7%)		
Surgery alone	255(48.2%)	244(46.1%)	264(52.4%)	268(53.2%)	26(52.0%)	29(58.0%)	98(33.8%)	120(41.4%)		
Surgery plus postoperative CT or RT/CRT	265(50.1%)	272(51.4%)	225(44.6%)	231(45.8%)	20(40.0%)	20(40.0%)	186(64.1%)	165(56.9%)		

CRT, chemoradiotherapy; CT, chemotherapy; MIE, minimally invasive esophagectomy; OE, open esophagectomy; RT, radiotherapy