

**Table S1** Univariate and multivariable analysis of overall survival for patients before propensity score matching

Characteristics	Univariate Cox analysis			Multivariate Cox analysis		
	HR	95% CI	P value	HR	95% CI	P value
Age (y)						
<65						
≥65	1.406	1.082-1.826	0.011	0.967	0.697-1.341	0.703
Sex						
Male						
Female	0.813	0.626-1.058	0.123	0.942	0.711-1.248	0.735
Race						
White			0.533			
Black	1.288	0.824-2.013	0.266			
Other	1.005	0.713-1.416	0.978			
Year						
2004-2009						
2010-2020	0.787	0.604-1.025	0.075	0.996	0.747-1.330	0.922
AJCC T classification/6th edition						
T1			0.456			0.331
T2	0.890	0.558-1.420	0.625			0.587
T3	1.116	0.749-1.665	0.589			0.332
T4	1.205	0.809-1.793	0.359			0.129
Unknown	1.314	0.885-1.953	0.176			0.347
Nodal status						
N0			0.809			
N1	1.105	0.820-1.487	0.513			
Unknown	1.032	0.703-1.515	0.872			
Tumor size						
≤5cm			0.001			0.324
>5cm	0.772	0.551-1.083	0.134			0.159
Unknown	1.382	0.971-1.965	0.072			0.677
Histological grade						
Well differentiated			0.001			0.047
Moderately differentiated	1.093	0.542-2.207	0.803	0.961	0.474-1.949	0.913
Poorly differentiated	1.397	0.686-2.844	0.357	1.111	0.541-2.280	0.774
Undifferentiated	2.409	0.803-7.228	0.117	2.744	0.908-8.292	0.074
Unknown	2.037	1.027-4.043	0.042	1.500	0.746-3.016	0.256
Radiotherapy						
Yes						
No/unknown	1.251	0.841-1.861	0.268			
Chemotherapy						
Yes						
No/unknown	2.402	1.838-3.140	<0.001	2.557	1.891-3.458	<0.001
Primary tumor resection						
No						
Yes	0.421	0.319-0.554	<0.001	0.660	0.476-0.915	0.013

**Table S2** Univariate and multivariable analysis of cancer-specific survival for patients before propensity score matching

Characteristics	Univariate Cox analysis			Multivariate Cox analysis		
	HR	95% CI	P value	HR	95% CI	P value
Age (y)						
<65						
≥65	1.144	0.846-1.547	0.382			0.902
Sex						
Male						
Female	0.799	0.592-1.080	0.145			
Race						
White			0.085			
Black	1.718	1.078-2.738	0.023			
Other	1.201	0.822-1.754	0.344			
Year						
2004-2009						
2010-2020	0.759	0.561-1.027	0.074			0.995
AJCC T classification/6th edition						
T1			0.460			0.812
T2	1.102	0.644-1.885	0.724			0.958
T3	1.430	0.901-2.268	0.129			0.398
T4	1.367	0.852-2.192	0.195			0.621
Unknown	1.416	0.880-2.277	0.151			0.637
Nodal status						
N0			0.980			
N1	0.967	0.682-1.370	0.849			
Unknown	0.975	0.629-1.512	0.910			
Tumor size						
≤5cm			0.013			0.198
>5cm	0.833	0.563-1.230	0.358			0.191
Unknown	1.410	0.936-2.124	0.100			0.921
Histological grade						
Well differentiated			<0.001			0.023
Moderately differentiated	1.392	0.550-3.523	0.485	0.979	0.383-2.501	0.965
Poorly differentiated	1.895	0.745-4.819	0.179	1.073	0.417-2.762	0.84
undifferentiated	4.175	1.201-14.511	0.025	3.514	0.997-12.388	0.051
Unknown	2.852	1.152-7.064	0.023	1.612	0.644-4.037	0.308
Radiotherapy						
Yes						
No/unknown	1.203	0.768-1.885	0.419			
Chemotherapy						
Yes						
No/unknown	2.250	1.655-3.057	<0.001	3.319	2.355-4.678	<0.001
Primary tumor resection						
No						
Yes	0.428	0.312-0.588	<0.001	0.734	0.508-1.061	0.100