

Supplemental Online Content

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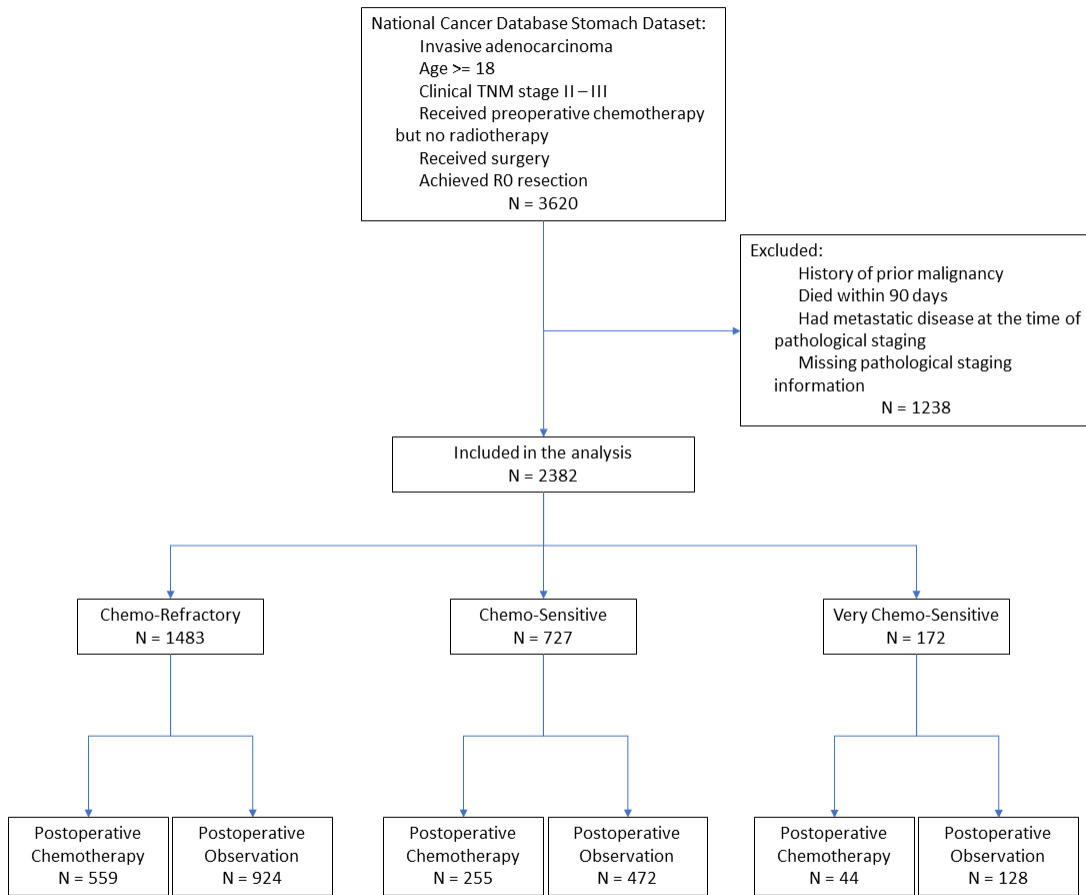
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This supplemental material has been provided by the authors to give readers additional information about their work.

eFigure. Flowchart of Study



eTable 1. Logistic Regression Model for Receiving Postoperative Chemotherapy

Variables	OR¹	95% CI¹	p-value
Age (continuous)	0.99	0.97 - 1.00	0.018
Race			0.721
<i>White</i>	—	—	
<i>Black</i>	0.91	0.68 - 1.21	
<i>Other</i>	1.05	0.78 - 1.43	
Sex			0.303
<i>Female</i>	—	—	
<i>Male</i>	1.12	0.90 - 1.40	
Insurance			0.724
<i>Uninsured</i>	—	—	
<i>Government</i>	0.91	0.52 - 1.61	
<i>Private</i>	1.00	0.58 - 1.75	
Treating Facility			0.16
<i>Academic/Integrated</i>	—	—	
<i>Community</i>	1.19	0.93 - 1.52	
Year of Diagnosis (continuous)	1.03	0.99 - 1.08	0.175
Comorbidity			0.004
<i>No Comorbidity</i>	—	—	
<i>Has Comorbidity</i>	0.71	0.57 - 0.90	
Grade			0.103
<i>I/II</i>	—	—	
<i>III/IV</i>	1.21	0.96 - 1.53	
Clinical TNM Stage			0.172
<i>II</i>	—	—	
<i>III</i>	1.16	0.94 - 1.45	
Days from Chemotherapy Initiation to Surgery (continuous)	0.99	0.99 - 1.00	<0.001
# of Nodes Examined			0.153
<i><15</i>	—	—	
<i>15</i>	1.20	0.94 - 1.53	
Preoperative Chemosensitivity			0.041
<i>Refractory</i>	—	—	

<i>Sensitive</i>	0.96	0.76 - 1.20	
<i>Very Sensitive</i>	0.58	0.37 - 0.89	
Days of Surgical Hospitalization (continuous)	0.95	0.93 - 0.97	<0.001
Unplanned 30-day Readmission			0.58
<i>No</i>	—	—	
<i>Yes</i>	0.87	0.53 - 1.40	

¹ OR = Odds Ratio, CI = Confidence Interval

eTable 2. Univariable and Multivariable Cox Regression Models for Survival Without Interaction Effects

Variables	Univariable		Multivariable	
	Hazard Ratio	p value	Hazard Ratio	p value
Age (continuous)	1.00	0.201	1.00	0.158
Race				
<i>White</i>	Reference			
<i>Black</i>	0.69	<0.001	0.84	0.102
<i>Other</i>	0.51	<0.001	0.58	<0.001
Male vs. Female	1.06	0.370	—	—
Insurance			—	—
<i>Uninsured</i>	Reference			
<i>Government</i>	1.00	0.987		
<i>Private</i>	0.91	0.596		
Community vs. Academic/Integrated Program	1.07	0.340	—	—
Year of diagnosis (continuous)	0.93	<0.001	0.94	<0.001
Has vs. No Comorbidity	1.05	0.510	1.10	0.236
Tumor Grade III/IV vs. II/I	1.58	<0.001	1.59	<0.001
Clinical TNM stage III vs. II	1.35	<0.001	1.63	<0.001
Days from initiating preoperative Chemotherapy to Surgery (continuous)	1.00	0.370	1.00	0.708
≥ 15 vs. < 15 Regional Lymph Nodes Examined	0.83	0.006	0.76	<0.001
Preoperative Chemosensitivity				
<i>Refractory</i>	Reference			
<i>Sensitive</i>	0.42	<0.001	0.39	<0.001
<i>Very Sensitive</i>	0.17	<0.001	0.12	<0.001
Days of Surgical Hospitalization (continuous)	1.01	<0.001	1.01	<0.001
Unplanned vs. No Unplanned 30-day Readmission	1.11	0.490	—	—
Postoperative Chemotherapy vs. None	0.94	0.370	0.88	0.091

eTable 3. Patient Characteristics by Preoperative Chemosensitivity and Postoperative Chemotherapy

Characteristic	Very Sensitive			Sensitive			Refractory		
	No Chemotherapy, N = 128 ¹	Chemotherapy, N = 44 ¹	p-value ²	No Chemotherapy, N = 472 ¹	Chemotherapy, N = 255 ¹	p-value ²	No Chemotherapy, N = 924 ¹	Chemotherapy, N = 559 ¹	p-value ²
Age (Year)			0.015			<0.001			0.001
<65	63 (49%)	31 (70%)		229 (49%)	159 (62%)		496 (54%)	348 (62%)	
65	65 (51%)	13 (30%)		243 (51%)	96 (38%)		428 (46%)	211 (38%)	
Sex			0.684			0.798			0.665
<i>Female</i>	30 (23%)	9 (20%)		145 (31%)	76 (30%)		322 (35%)	201 (36%)	
<i>Male</i>	98 (77%)	35 (80%)		327 (69%)	179 (70%)		602 (65%)	358 (64%)	
Race			0.534			0.392			0.003
<i>White</i>	100 (78%)	33 (75%)		321 (68%)	183 (72%)		665 (72%)	382 (68%)	
<i>Black</i>	15 (12%)	8 (18%)		81 (17%)	34 (13%)		153 (17%)	78 (14%)	
<i>Other</i>	13 (10%)	3 (6.8%)		70 (15%)	38 (15%)		106 (11%)	99 (18%)	
Diagnosis Period			0.465			0.408			0.305
<i>2006-2011</i>	28 (22%)	12 (27%)		151 (32%)	74 (29%)		281 (30%)	156 (28%)	
<i>2012-2017</i>	100 (78%)	32 (73%)		321 (68%)	181 (71%)		643 (70%)	403 (72%)	
Insurance			0.051			0.161			<0.001
<i>Uninsured</i>	3 (2.4%)	2 (4.5%)		15 (3.2%)	10 (4.0%)		29 (3.2%)	22 (4.0%)	
<i>Government</i>	66 (52%)	14 (32%)		249 (54%)	117 (46%)		483 (53%)	223 (41%)	
<i>Private</i>	58 (46%)	28 (64%)		198 (43%)	125 (50%)		394 (43%)	305 (55%)	
(Missing)	1	0		10	3		18	9	

Treating Facility			0.821			0.702			0.279
<i>Academic/Integrated</i>	88 (69%)	29 (67%)		338 (74%)	178 (73%)		671 (76%)	384 (74%)	
<i>Community</i>	39 (31%)	14 (33%)		117 (26%)	66 (27%)		207 (24%)	136 (26%)	
(Missing)	1	1		17	11		46	39	
Comorbidity			0.026			0.122			0.004
<i>No Comorbidity</i>	85 (66%)	37 (84%)		324 (69%)	189 (74%)		652 (71%)	433 (77%)	
<i>Has Comorbidity</i>	43 (34%)	7 (16%)		148 (31%)	66 (26%)		272 (29%)	126 (23%)	
Grade			0.585			0.131			0.175
<i>I/II</i>	33 (33%)	11 (28%)		162 (37%)	74 (31%)		212 (25%)	113 (22%)	
<i>III/IV</i>	67 (67%)	28 (72%)		272 (63%)	161 (69%)		638 (75%)	407 (78%)	
(Missing)	28	5		38	20		74	39	
Clinical TNM Stage			0.774			0.326			0.697
<i>II</i>	73 (57%)	24 (55%)		242 (51%)	121 (47%)		642 (69%)	383 (69%)	
<i>III</i>	55 (43%)	20 (45%)		230 (49%)	134 (53%)		282 (31%)	176 (31%)	
Days from Chemotherapy Initiation to Surgery	98 (89, 114)	97 (85, 102)	0.086	101 (88, 123)	97 (85, 108)	<0.001	100 (85, 119)	95 (82, 111)	<0.001
(Missing)	6	0		32	8		88	20	
# of Nodes Examined			0.344			0.052			0.303
<i><15</i>	42 (33%)	11 (26%)		148 (32%)	62 (25%)		219 (24%)	119 (22%)	
<i>15</i>	84 (67%)	32 (74%)		320 (68%)	189 (75%)		696 (76%)	432 (78%)	

(Missing)	2	1		4	4		9	8	
Unplanned 30-day Readmission	6 (4.7%)	0 (0%)	0.34	22 (4.7%)	11 (4.3%)	0.83	46 (5.0%)	27 (4.8%)	0.898
Days of Surgical Hospitalization	7.0 (5.0, 9.0)	7.0 (6.0, 9.2)	0.667	8.0 (6.0, 11.0)	7.0 (5.0, 9.0)	0.003	8 (6, 12)	7 (6, 10)	<0.001
(Missing)	11	4		43	11		80	53	
¹ n (%); Median (IQR)									
² Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum test									

eTable 4. Cox Model of Overall Survival with Interaction Effect of Preoperative Chemosensitivity and Postoperative Chemotherapy

Characteristic	HR	95% CI	p-value
Age (continuous)	1.00	1.00 - 1.01	0.14
Year of Diagnosis (continuous)	0.94	0.91 - 0.97	<0.001
Comorbidity			0.21
No Comorbidity	—	—	
Has Comorbidity	1.11	0.94 - 1.30	
Race			<0.001
White	—	—	
Black	0.83	0.67 - 1.03	
Other	0.58	0.44 - 0.75	
Tumor Grade			<0.001
I/II	—	—	
III/IV	1.59	1.34 - 1.90	
Clinical TNM Stage			<0.001
II	—	—	
III	1.63	1.41 - 1.90	

Days from Chemotherapy Initiation to Surgery (continuous)	1.00	1.00 - 1.00	0.65
Days of Surgical Hospitalization (continuous)	1.02	1.01 - 1.02	<0.001
# of Nodes Examined			0.001
<15	—	—	
=15	0.76	0.65 - 0.89	
Preoperative Chemosensitivity			<0.001
Refractory	—	—	
Sensitive	0.44	0.35 - 0.54	
Very Sensitive	0.08	0.04 - 0.18	
Postoperative Chemotherapy			0.41
No Chemotherapy	—	—	
Chemotherapy	0.93	0.79 - 1.10	
Preoperative Chemosensitivity * Postoperative Chemotherapy (interaction effect)			0.033
Sensitive * Chemotherapy	0.69	0.47 - 1.01	
Very Sensitive * Chemotherapy	2.63	0.86 - 8.06	
HR = Hazard Ratio, CI = Confidence Interval			

eTable 5. Association of Survival in Patients Treated With Postoperative Chemotherapy or Not by yp Nodal Status

	Number of patients	5 - year survival rate (Chemotherapy vs. No)	Log-rank p value	Cox p value
ypCR	172	80.0% vs. 90.8%	0.223	0.143
ypN0	993	72.0% vs. 65.7%	0.051	0.213
ypN+	1241	41.5% vs. 38.1%	0.158	0.078