



Evaluating Perioperative and Oncologic Outcomes among Neoadjuvant Treatment Strategies for Gastric Cancer: A Propensity Score Matched Analysis



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BACKGROUND

- Current National Comprehensive Cancer Center (NCCN) guidelines recommend either upfront surgical resection, perioperative chemotherapy, or preoperative chemoradiation for patients with T2-T4 and/or nodal positive gastric cancer.
- Over the past two decades, the use of neoadjuvant chemotherapy and chemoradiation have demonstrated improved survival for patients with gastric cancer compared to surgery alone through several randomized controlled trials.
- However, the optimal treatment remains unclear as randomized controlled trials directly comparing perioperative chemotherapy versus chemoradiation have yet to be completed.

RESEARCH OBJECTIVES

To evaluate perioperative and oncologic outcomes among patients with T2-T4 and/or node-positive gastric cancer receiving neoadjuvant treatment.

METHODS

Patients ≥ 18 years of age were evaluated from the Gastric National Cancer Database (NCDB) who received either neoadjuvant chemotherapy alone versus neoadjuvant chemoradiation for T2-T4 and/or nodal positive gastric adenocarcinoma.

Exclusion Criteria:

- Underwent upfront surgical or palliative intent resection
- Patients with T1/N0 or metastatic disease
- Patients who did not undergo definitive surgical resection following completion of neoadjuvant therapy

Perioperative Outcomes: 30-day Readmission, 30-day Mortality, 90-day Mortality, Postoperative Length of Stay

Oncologic Outcomes: Pathologic Complete Response, Margin Status, negative pathologic lymph nodes

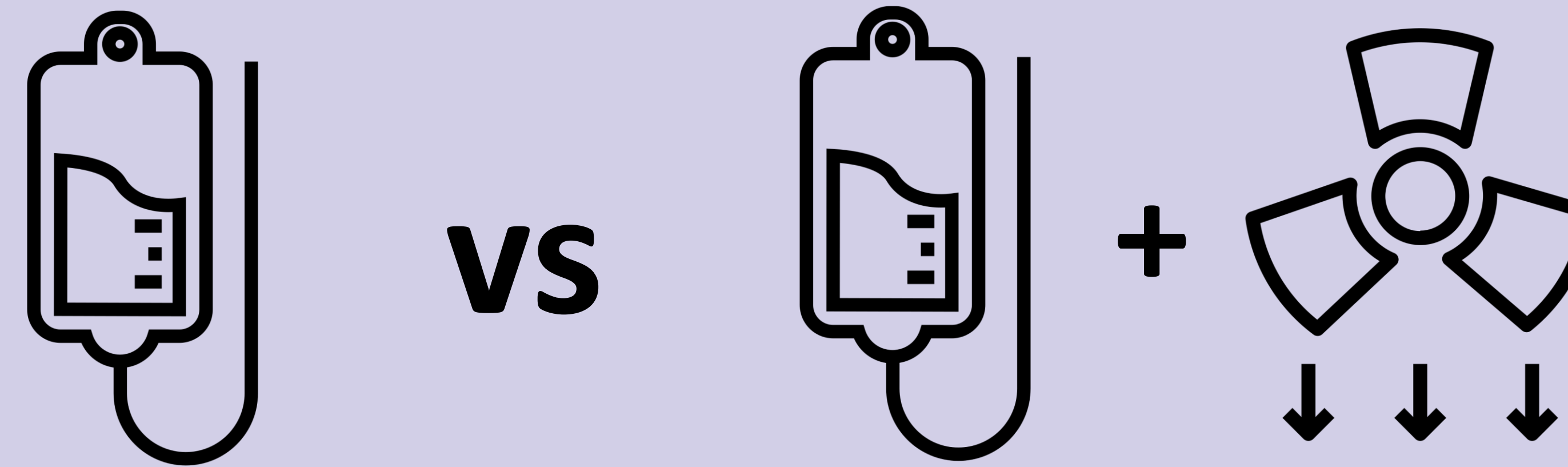
Multivariable logistic regression models assessed the association of neoadjuvant treatments with each perioperative and oncologic outcome.

Kaplan Meier methods and Cox proportional hazard regression assessed the association of neoadjuvant treatments with overall survival.

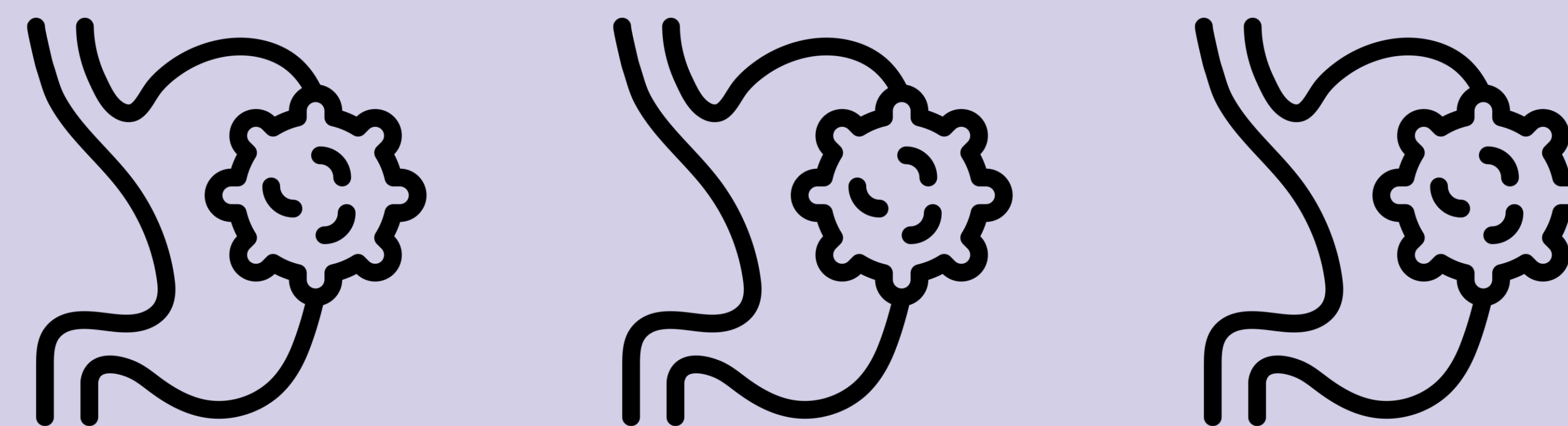
Patients underwent 1:1 Propensity Score Matching based on age, race, comorbidities, stage, and year of diagnosis.

CONCLUSION

Although neoadjuvant chemoradiation was associated with improved oncologic outcomes, neoadjuvant chemotherapy alone was associated with better perioperative outcomes and survival.



Histologic assessment of treatment response may not accurately reflect clinical efficacy.



These data highlight the need for randomized controlled trials directly comparing neoadjuvant treatments among this population.

RESULTS

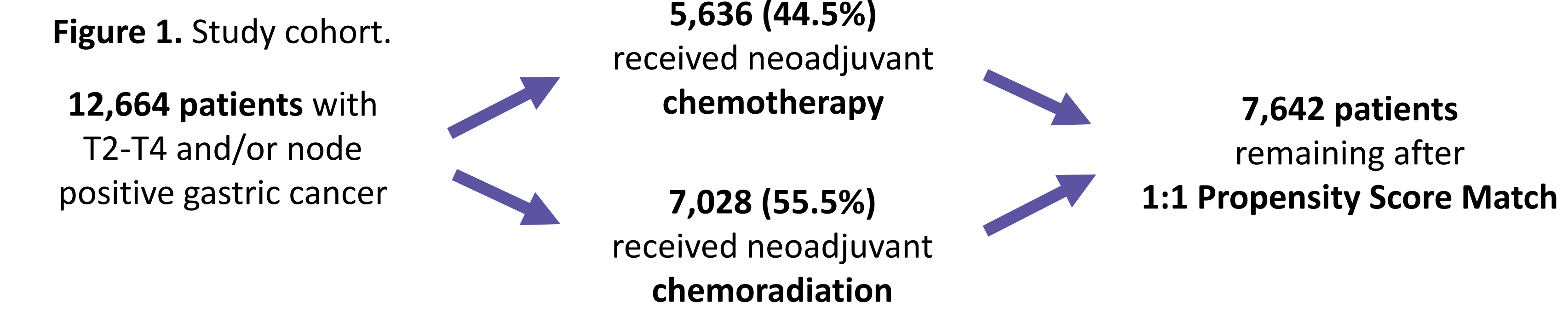
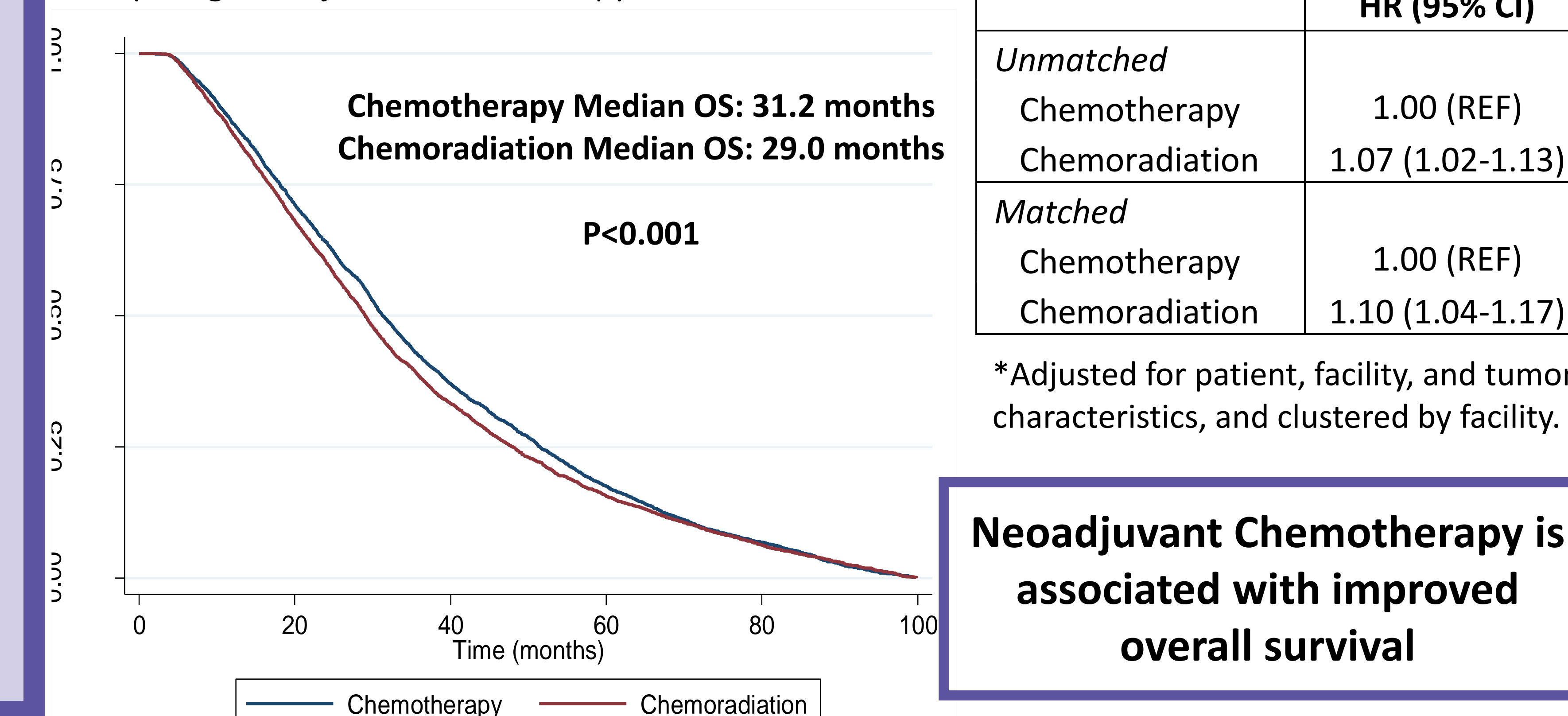


Table 1. Multivariable logistic regression models assessing perioperative and oncologic outcomes.

	Unmatched OR (95% CI)	Matched OR (95% CI)
Perioperative Outcomes		
<i>30-day Readmission</i>		
Chemotherapy	1.00 (REF)	1.00 (REF)
Chemoradiation	1.22 (0.95-1.59)	1.16 (0.87-1.55)
<i>30-day Mortality</i>		
Chemotherapy	1.00 (REF)	1.00 (REF)
Chemoradiation	1.15 (0.81-1.64)	1.31 (0.88-1.95)
<i>90-day Mortality</i>		
Chemotherapy	1.00 (REF)	1.00 (REF)
Chemoradiation	1.30 (1.02-1.66)	1.25 (0.95-1.64)
<i>Length of Stay</i>		
Chemotherapy	1.00 (REF)	1.00 (REF)
Chemoradiation	1.47 (1.23-1.76)	1.48 (1.22-1.80)
Oncologic Outcomes		
<i>Pathologic Complete Response</i>		
Chemotherapy	1.00 (REF)	1.00 (REF)
Chemoradiation	1.51 (1.28-1.79)	1.45 (1.19-1.77)
<i>Negative Margins</i>		
Chemotherapy	1.00 (REF)	1.00 (REF)
Chemoradiation	1.59 (1.25-2.04)	1.50 (1.15-1.96)
<i>Negative Pathologic Lymph Nodes</i>		
Chemotherapy	1.00 (REF)	1.00 (REF)
Chemoradiation	1.39 (1.22-1.59)	1.37 (1.17-1.60)

*All models were adjusted for patient, facility, and tumor characteristics, and clustered by facility.

Figure 2. Kaplan-Meier survival probability and Multivariable Cox Proportional Hazards Regression comparing neoadjuvant chemotherapy versus chemoradiation.



*Adjusted for patient, facility, and tumor characteristics, and clustered by facility.

Neoadjuvant Chemotherapy is associated with improved overall survival