



Surgery After Neoadjuvant Chemoimmunotherapy for Non-Small Cell Lung Cancer: A Multi-Center Experience

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INTRODUCTION

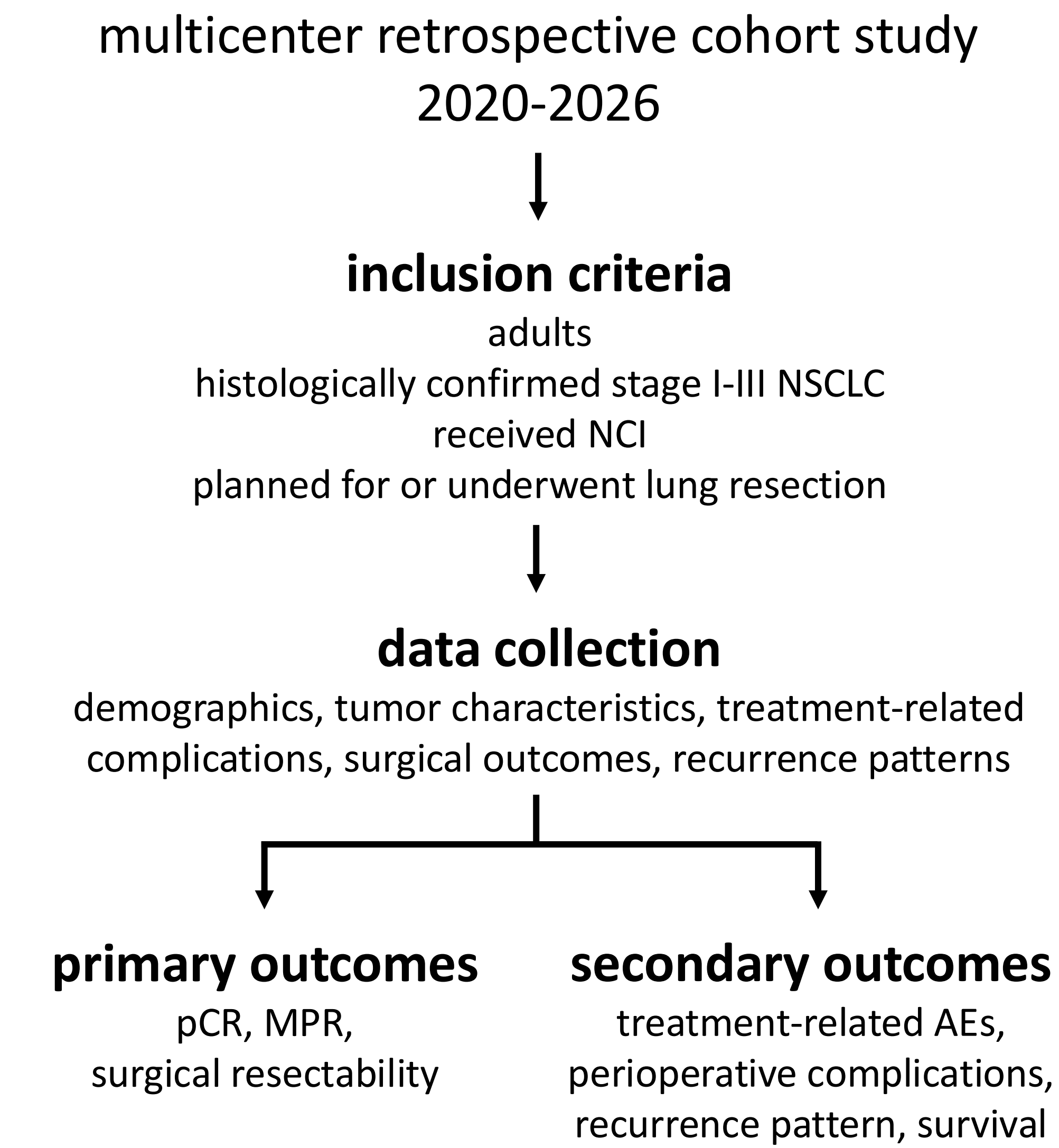
Neoadjuvant chemoimmunotherapy (NCI) has shown a significant benefit in non-small cell lung cancer (NSCLC)

- Improved pathological response
- Improved survival

Recent trials have demonstrated safety and efficacy, but real-world data remains limited

Study aim
To evaluate outcomes after NCI and surgery in NSCLC patients treated at hospitals in the Greater Toronto Area (GTA) in Canada

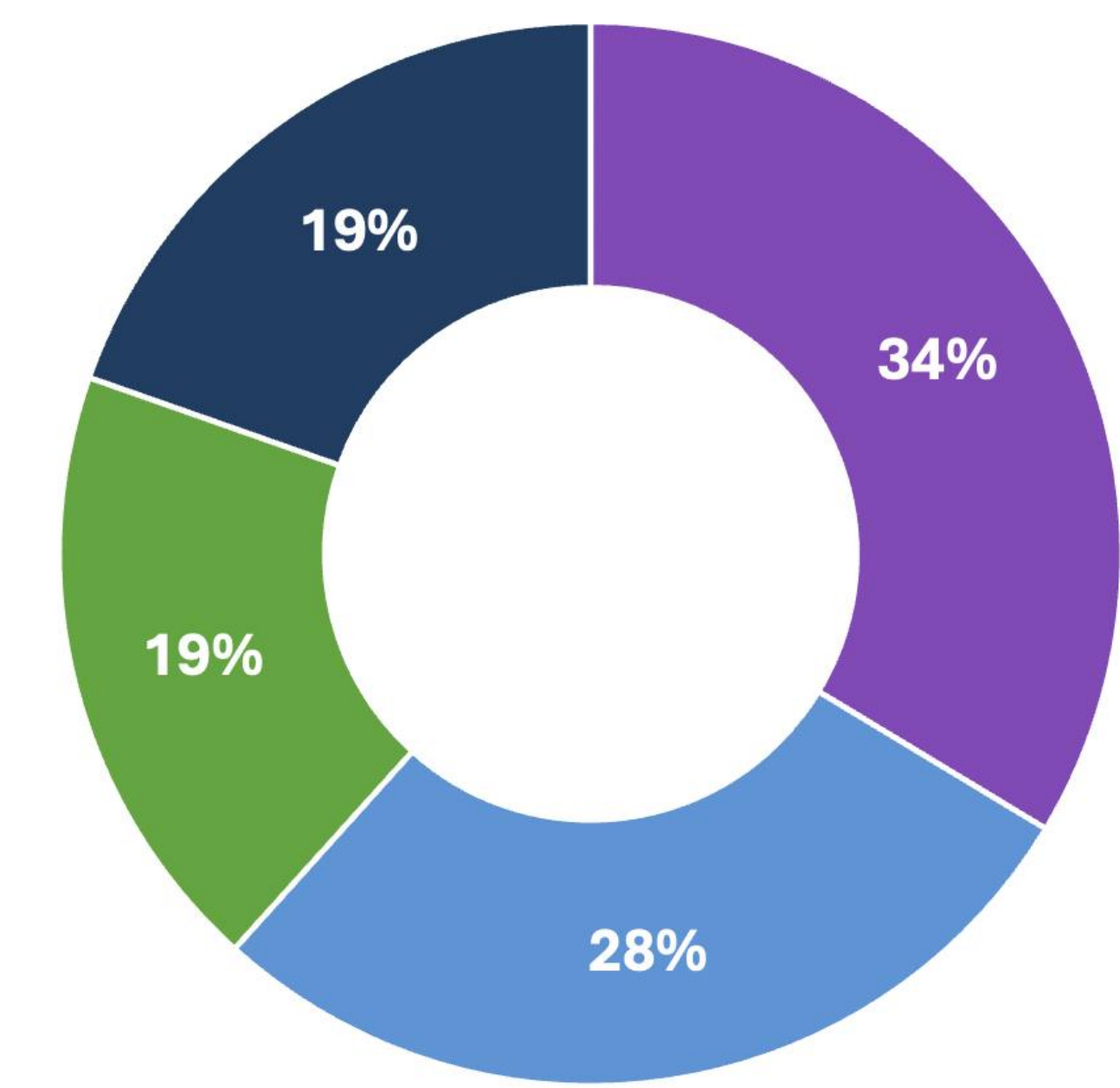
METHODS



descriptive statistics (means ± SD, or medians with IQR, counts and percentages),log-rank tests, Kaplan-Meier survival analyses

RESULTS

Patient characteristics



st. joseph’s health centre 36 patients
trillium health partners 30 patients
michael garron hospital 20 patients
toronto general hospital 21 patients

median age 70 years
female sex 39.3%
current or ex-smokers 95.3%
median FEV1 83%
median DLCO 77%

Tumor characteristics and surgical approach

Histology	
Squamous	52 (48.6%)
Non-squamous	55 (51.4%)
Clinical stage	
Stage II	45 (42.0%)
Stage IIA	15 (14.0%)
Stage IIB	30 (28.0%)
Stage III	60 (56.0%)
Stage IIIA	50 (46.7%)
Stage IIIB	10 (9.3%)
PD-L1 status	
<1%	23 (21.5%)
1-49%	38 (35.5%)
≥50%	44 (41.1%)
N/A	2 (1.9%)

Surgical approach (n=99*)	
Minimally invasive	63 (62.3%)
Minimally invasive converted to open	24 (23.8%)
Open (thoracotomy)	12 (11.9%)
Type of surgery	
Lobectomy	70 (69.3%)
Sleeve lobectomy	7 (6.9%)
Bilobectomy	9 (8.9%)
Pneumonectomy	12 (11.9%)
Surgical details	
Median estimated blood loss (EBL) (mL)	200 [100-350]
Median operative time (minutes)	266 [207-331]

*8 patients excluded:
3 no longer surgical candidates due to complications from NCI
3 unresectable after neoadjuvant treatment
1 no longer surgical candidate due to comorbidities
1 declined surgery

Systemic treatment and adverse events

completed chemoIO 100 (93.5%)

platinum therapy type

cisplatin 46 (43.0%)

carboplatin 59 (55.1%)

treatment related adverse events (trAEs)	
peripheral neuropathy	20 (18.7%)
skin rash	20 (18.7%)
gastrointestinal	14 (13.1%)
respiratory	8 (7.5%)
hematological	5 (4.7%)
renal	3 (2.8%)
cardiac	1 (0.9%)
other	14 (13.1%)

Post-operative complications and surgical outcomes

Post-operative complications	43 (40.2%)
Prolonged air leak and PTX	17
Pneumonia and empyema	4
Bronchopleural fistula	3
Atrial fibrillation	3
Chyle leak	2
Respiratory failure or ARDS	3
Readmissions	13 (12.1%)
Requiring procedures	6 (6.1%)
Reoperations	4 (4.0%)

Completeness of resection	
R0	94 (87.9%)
R1	3 (2.8%)
R2	1 (0.9%)
Pathological response	
Complete (pCR)	38 (37.6%)
Major (MPR)	12 (11.9%)
≥10% residual viable tumor	43 (42.6%)

median length of stay (LOS) = 5 [3-7] days

mean follow-up 15.6 months

recurrence 15 (15.1%)

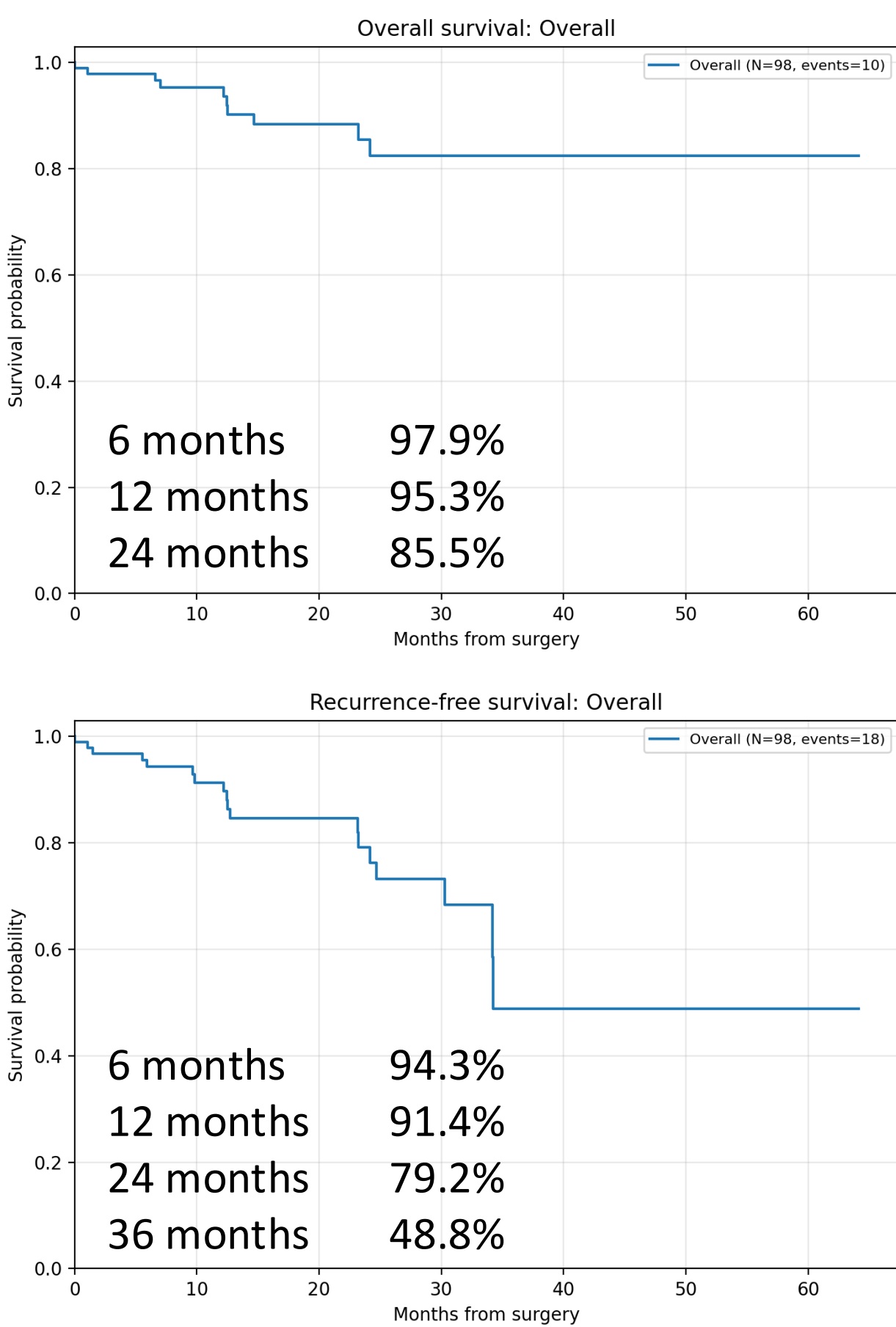
mortality 10 (9.9%)

site of recurrence	
ipsilateral lung	3
ipsilateral lung and nodal	2
ipsilateral lung, nodal and pleural	2
contralateral lung	1
bone	2
gi tract	1
brain	5

predictors of RFS

pathological response p = 0.005

pathological T stage p = 0.017



DISCUSSION AND CONCLUSION

- This is the **first real-world** Canadian study reporting outcome data for NCI followed by surgery
- This study confirms NCI followed by surgery to be **feasible and effective in both academic and community settings** with high surgical resectability, and promising pathological response and oncological outcomes including survival
- Recurrences** occurred early and **pathological response** was significantly associated with recurrence-free survival, suggesting its use as a prognostic marker
- Treatment-related adverse events and perioperative complications** remain a concern, highlighting the need for optimized patient selection

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