Postoperative Complications By Lymph Node Sampling Strategy in Lung Cancer

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Background

- American College of Surgeons (ACS) Commission on Cancer (CoC) Lymph Node Sampling: at least 3 mediastinal (N2) and 1 hilar (N1) lymph node station
- European Society of Thoracic Surgeons (ESTS) Lobe-Specific Sampling
- Postoperative complications with different sampling criteria unknown

Research Objectives

1. Describe rates of meeting lymph node sampling criteria
2. Evaluate association of lymph node sampling strategy on postoperative complications
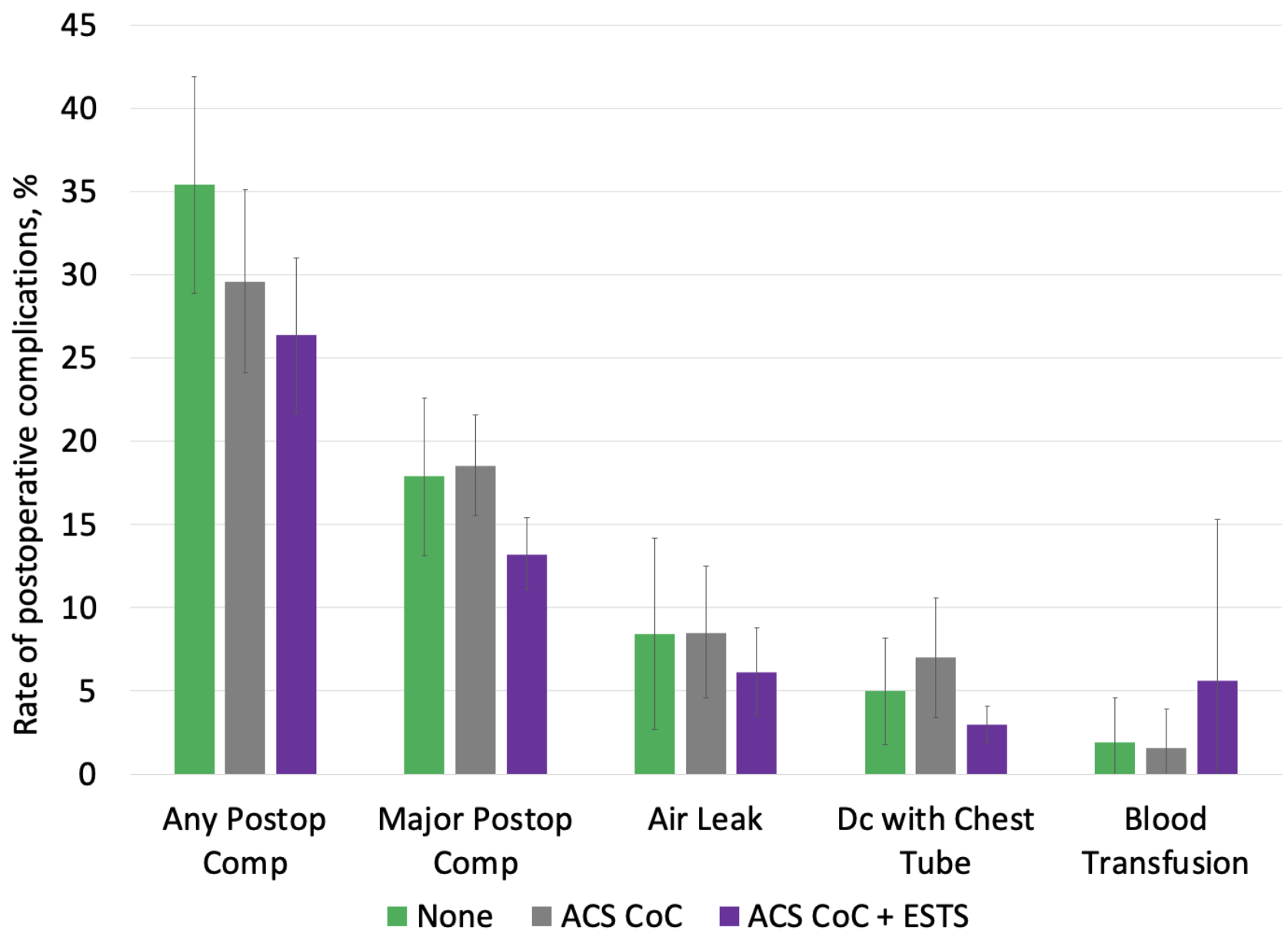
Overview of Lymph Node Sampling Criteria
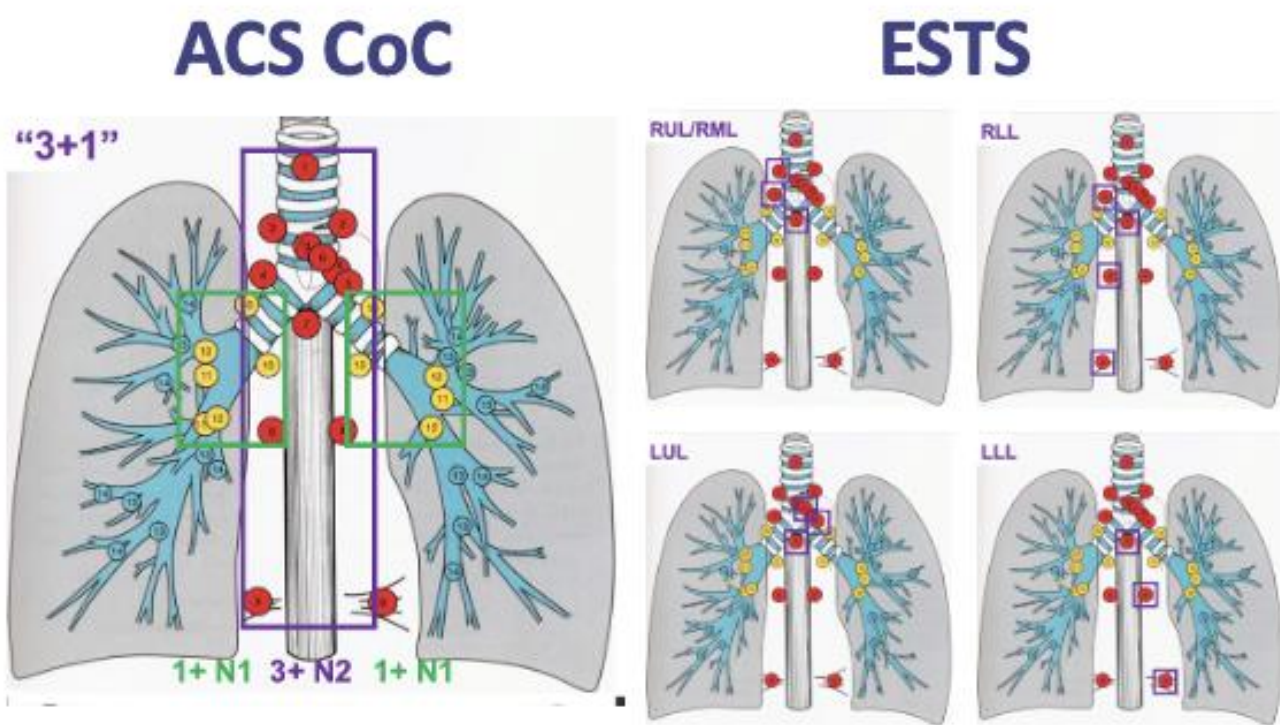
Methods

- Retrospective cohort analysis of 961 consecutive patients in 2 hospitals from single health system 2018-2023
- Inclusion: lung cancer, elective resection
- Exclusion: urgent or emergent pulmonary resection, clinical M1 disease, re-operative cases, ESTS Criteria Alone (only 3 patients)
- Cohorts: ACS CoC Criteria, ACS CoC+ESTS Criteria, Neither Criteria
- Primary outcome: 30-day postop complications
- Secondary outcomes: 30-day major postop complications, postop air leak, blood transfusion, discharge with chest tube
- Statistical analysis: descriptive statistics, multivariable Poisson regression with robust variance

Selected Characteristics of Patients by Lymph Node Sampling Criteria

Category	ACS CoC (n=406)	ACS CoC + ESTS (n=118)	Neither (n=437)	P
Age	69	68	68	0.070
Current Smoker	14%	22%	10%	0.04
NA chemo	12%	11%	5%	<0.01
NA immuno	7%	7%	1%	<0.01
Size, <3 cm	72%	65%	70%	0.69
Stage I	72%	68%	82%	<0.01
Robotic	78%	72%	48%	<0.01
Lobectomy	60%	67%	43%	<0.01
Surgeon Volume*	30%	8%	37%	<0.01
Op Time (min)	209	238	187	<0.01
# Nodes	16	19	10	<0.01

Risk-Adjusted Rates of Postoperative Complications

Multivariable Poisson Regression with Robust Variance, Association of Postoperative Complications on Lymph Node Sampling Criteria

Risk-Adjusted Relative Risk of Postoperative Complications by Lymph Node Sampling Criteria
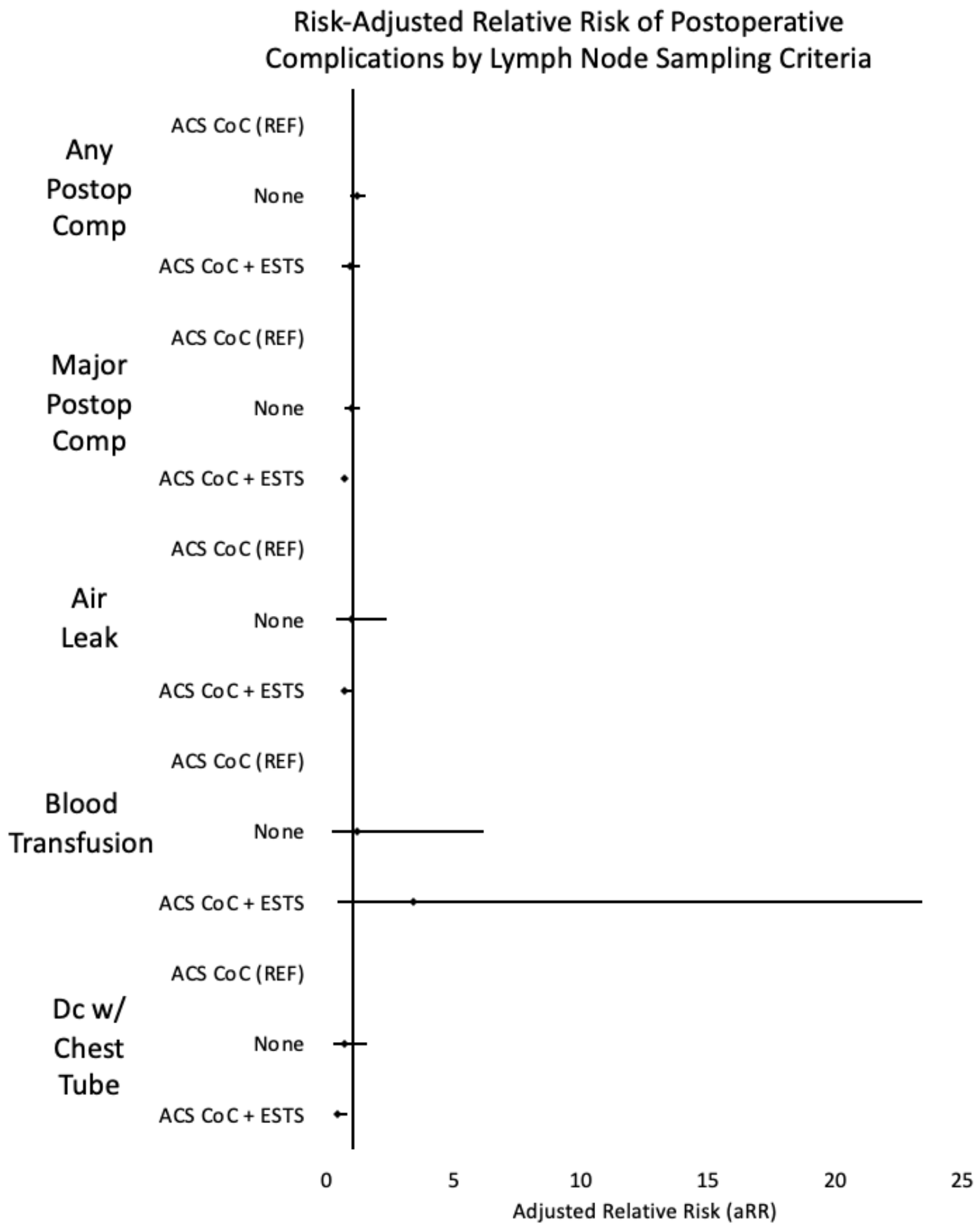
Conclusion

- No risk-adjusted differences in overall postop complications between ACS CoC, ACS CoC+ESTS, or neither lymph node sampling criteria
- Lower risk-adjusted rates of major postop complications, air leak, and discharge w/ chest tube with ACS CoC+ESTS lymph node sampling criteria
- Consideration of postoperative morbidity across sampling strategies may be less important than other considerations
- Validation with national dataset needed