Association of Neoadjuvant Immunotherapy with Postoperative Major Morbidity After Oncologic Surgery

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Background

- Neoadjuvant immunotherapy (NI) has revolutionized cancer treatment.[1]
- Extensive research on the impact of neoadjuvant chemotherapy [2] but not NI on surgical outcomes across cancer types
- Understanding the effect of NI on surgical complication risk informs patient selection for oncologic surgery.

Methods

- National Cancer Database (NCDB): patients aged 18-90 who underwent non-palliative oncologic surgery for rectal, colon, anal, esophageal, lung (non-small cell), and oral cavity cancer between 2010-2020
- Primary outcome: major morbidity = hospital length of stay within top decile of each surgery subtype, unplanned 30-day readmission, or 30-day mortality
- Multivariable logistic regressions to calculate odds ratios of major morbidity from NI by cancer type
  - Controls: patient demographics, Charlson-Deyo comorbidity index, clinical cancer staging, procedure type, surgical approach, and other treatment (e.g., chemotherapy or radiotherapy)

Results

Figure 1. Flowchart of Inclusion Criteria for Cancer Surgery Patients by Neoadjuvant Immunotherapy

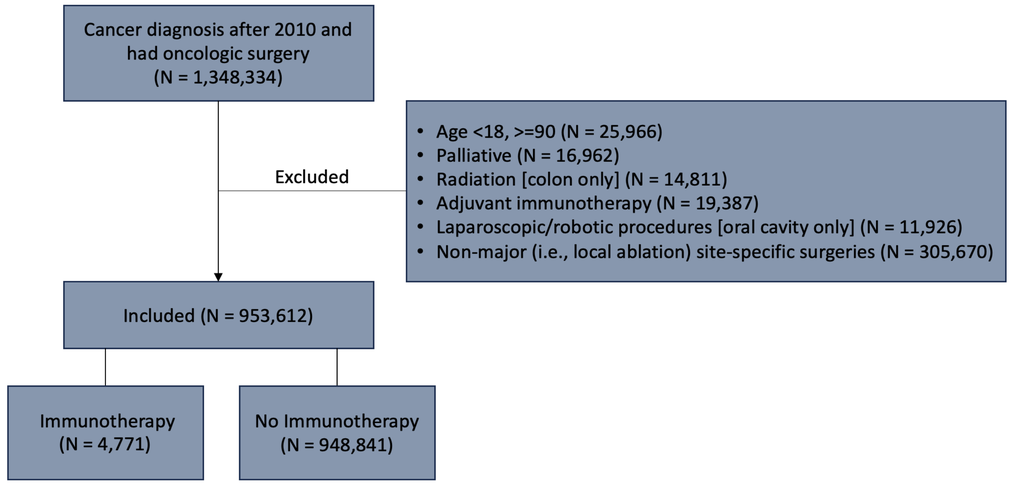
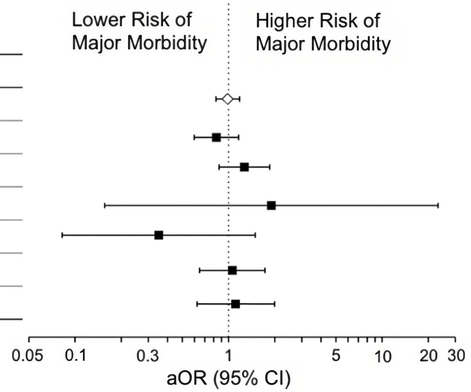


Figure 2. Adjusted Odds Ratios for Major Morbidity Associated with Neoadjuvant Immunotherapy by Cancer Type

Cancer Type	Adjusted OR (95% CI)	P-value
Pooled	0.98 (0.81-1.19)	0.852
Rectal	0.83 (0.60-1.16)	0.282
Colon	1.27 (0.87-1.85)	0.220
Anal	1.90 (0.16-23.15)	0.615
Esophageal	0.35 (0.08-1.49)	0.156
Lung (non-small cell)	1.06 (0.65-1.73)	0.821
Oral Cavity	1.10 (0.61-2.00)	0.743



Discussion / Conclusions

- No association between NI and increased surgical complication risk for rectal, colon, anal, esophageal, non-small cell lung, and oral cavity cancers
- Increasingly relevant finding as more surgeons are considering operating on patients who have recently completed or are currently undergoing immunotherapy
- Limitations: lack of detailed surgical complication information for each cancer type, small sample size for anal cancer, and use of NCDB to study surgical outcomes
  - However, our method of applying NCDB outcome variables to create a major morbidity variable as a surgical complication proxy has been previously validated. [3]
- As immunotherapy becomes more prevalent, understanding its impact on surgical outcomes is crucial for optimizing patient care.

References

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