Impact of Travel Distance on Receipt of Indicated Adjuvant Therapy in Resected Non-Small Cell Lung Cancer

Objective
We have previously demonstrated the negative impact of travel distance on adherence to surveillance imaging guidelines for resected, early-stage non-small cell lung cancer (NSCLC). However, the influence of patient residential location on adherence to recommended postoperative treatment plans remains minimally explored. We sought to characterize the impact of travel distance on receipt of indicated adjuvant therapy in resected NSCLC.

Methods
We performed a single-institution, retrospective review of patients with stage II-III NSCLC who underwent upfront pulmonary resection between 2012 and 2016. Clinicopathologic and operative data as well as details of postoperative treatment were retrieved from a prospectively maintained database and patient charts. Travel distance was measured from patients' home zip codes to the operative hospital using online, open-source software. The primary outcome was the receipt of adjuvant systemic or radiotherapy, at any institution, including the operative hospital as well as elsewhere. Travel distance was stratified as 100 miles in accordance with prior studies. Multivariable logistic regression with backward elimination threshold (p=0.200) was used to investigate covariates impacting the primary outcome.

Results
391 patients met inclusion criteria, among whom median age was 65.9 years and sex distribution was relatively equal (182 female, 49.2%). The majority of patients were Caucasian (n=309, 83.5%), and the most frequent clinical stage was II (n=254, 64.9%). Within this population, 266 (71.9%) received indicated adjuvant therapy, and the median distance traveled was 209 miles (IQR 50.7-617). Of note, multivariate analysis revealed longer travel distance (>100 miles vs <100 miles) negatively impacted likelihood of receiving indicated adjuvant therapy (OR: 0.13, 95%CI: 0.06-0.26, p<0.001, Figure). Race also impacted receipt of adjuvant therapy, with Black patients being less likely to undergo appropriate treatment (OR: 0.05, 95%CI: 0.02-0.15, p<0.001). At 5 years, there is a suggested survival benefit in living <100 miles (50.9% vs 43.0%, p=0.178).

Conclusions
We importantly identified that travel distance >100 miles negatively impacts likelihood of receiving appropriate adjuvant therapy in NSCLC. Indications for systemic therapy in earlier staged disease are rapidly expanding, and these findings bear heightened relevance as we aim to provide equitable access to multimodality care to all patients.

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Additional Resources

- https://files.aievolution.com/prd/aat2101/abstracts/abs_3912/TravelDistanceImpactonReceiptofIndicatedAdjuvantTherapyFigure.docx