PRIMARY TRACHEAL CANCERS (PTC) BY HISTOLOGY: RADIOTHERAPY VS DEFINITIVE SURGERY

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INTRODUCTION

Primary tracheal cancers (PTC) account for 0.2% of all respiratory malignancies, with squamous cell carcinomas (SCC) and adenoid cystic carcinoma (ACC) being the most common. The recommended treatment for PTC is surgery for resectable tumors, though consensus guidelines do not exist.

AIMS

- Evaluate demographic, disease, and treatment characteristics that may impact survival outcomes
- Compare surgery to other treatment modalities

METHODS

- Retrospective cohort study using Surveillance, Epidemiology, and End Result (SEER) database was conducted on PTC from 2000-2018
- Cox regression and log-rank five year overall survival (5y OS) analyses were performed for demographics, disease characteristics, and treatment modalities to assess for impact of definitive surgery vs and in conjunction with radiotherapy
- Chi-square testing was performed to assess for associational measures between variables
- *p*-value < 0.05 indicates statistical significance

RESULTS

- 287 patients with complete staging identified
- 47% (134/297) were < 65 years of age at diagnosis
- 24% (68/287) were diagnosed with ACC
- 47% (136/287) underwent surgical treatment
- **Patient age at diagnosis < 65 years** (p = 0.011), **ACC histology** (p < 0.0001), **treatment with radiotherapy** (p = 0.017), and **treatment with definitive surgery** (p = 0.012) were associated with improved 5y OS
- **Surgical treatment was associated with disease histology**, with 62% (158/256) of patients with SCC not undergoing surgical treatment compared to 22% (17/76) with ACC (p < 0.001)
- **Surgical treatment not associated with patient age** (p = 0.08), sex (p = 0.62), or race (p = 0.59)
- **Patients with regional disease less likely to undergo surgery compared to those with local disease** (40% (49/123) vs 53% (87/164) p = 0.027)
- On univariate analysis, unimodal treatment with radiotherapy was inferior to both definitive surgery (5 y OS = 40% vs 61%) and surgical treatment with adjuvant radiotherapy (57%)
- Unimodal treatment with surgery was noninferior to surgical treatment with adjuvant radiotherapy (p = 0.91)

Table 1: Cox Regression Analysis of Primary Tracheal Cancers

Variable	Hazard Ratio	*p*-value
Age < 65 Years vs Age ≥ 65 Years at Diagnosis	0.63	**0.011**
Male vs Female Sex	1.13	0.50
Race (Overall)	N/A	0.61
Non-White vs White	1.53	0.34
ACC vs SCC Histology	0.16	**<0.001**
Local vs Regional Stage	1.14	0.45
Treatment with Definitive Surgery Yes vs No	0.62	**0.012**
Treatment with Radiotherapy Yes vs No	0.61	**0.017**
Treatment with Chemotherapy Yes vs No	0.79	0.27

Table 1. Caption: Results from Cox regression analysis of patients with PTC based on demographic, disease, and treatment characteristics identified in patients diagnosed between 2000-2018 after identification via SEER program. Hazard ratios are provided for comparisons between two categories within a categorical variable.

Figure 1: Kaplan-Meier Analysis of Five-year Overall Survival Among Patients with Primary Tracheal Cancer, Stratified by Treatment

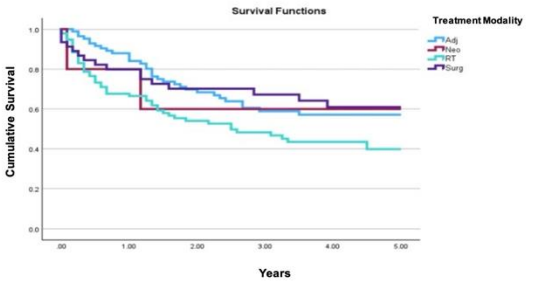

Figure 1. Caption: Five-year overall survival comparison based on treatment among patients diagnosed with PTC between 2000-2018 after identification via SEER program. Unimodal surgical treatment was noninferior to surgery with adjuvant radiotherapy (61% vs 57%; p = 0.91), though unimodal treatment with radiotherapy was associated with decreased 5y OS (40%; p = 0.047).

CONCLUSIONS

Surgical treatment of PTC was associated with increased 5y OS on overall survival on multivariate analysis and was noninferior to surgery with adjuvant radiotherapy on univariate analysis. Analysis of population-based trends suggests a relative undertreatment with surgery of these cancers, especially among those with SCC and regional disease.

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DISCLOSURES

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