

Determinants of Patient-reported Taste Disorders in Oropharyngeal Cancer Survivors

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Background

- There are growing numbers of oropharyngeal cancer (OPC) survivors due to Human papillomavirus (HPV) infection & improved cancer therapy.
- Head and neck cancer treatment-related side effects can have a devastating impact on quality of life (QOL) of OPC patients.
- **~75%** of OPC survivors' report varying degree of taste disorders, with **39%** reporting moderate to severe taste disorders.
- Taste disorders can lead to decline in nutritional status, decrease in medication adherence, mood disorders and diminished QOL.
- Risk factors for taste disorders in OPC needs to be explored.

Objective

- To identify clinico-demographic risk factors associated with moderate to severe taste disorders in OPC survivors.

Methods

Study Population

- 873 OPC survivors treated at MD Anderson Cancer Center between January 2000 to December 2013 participated in a survivorship survey study.

Inclusion criteria

- At least 1-year post-treatment
- English as primary language

Exclusion criteria

- Secondary primary malignancy
- Recurrent malignancy
- Distant metastasis

• The survey included the MD Anderson Symptom Inventory-Head and Neck Cancer Module (MDASI-HN), a validated patient-reported outcomes instrument which rates symptoms & interference on a 0 (no symptoms) to 10 (as bad as you can imagine) scale.

Primary Outcome Variable

- Taste symptoms reported by OPC survivors were dichotomized and moderate to severe taste disorder were defined as a ≥ 5 score on MDASI-HN. This was the primary outcome of our analysis.

Analysis

- Descriptive statistics
- Multivariable logistic regression (MLR)

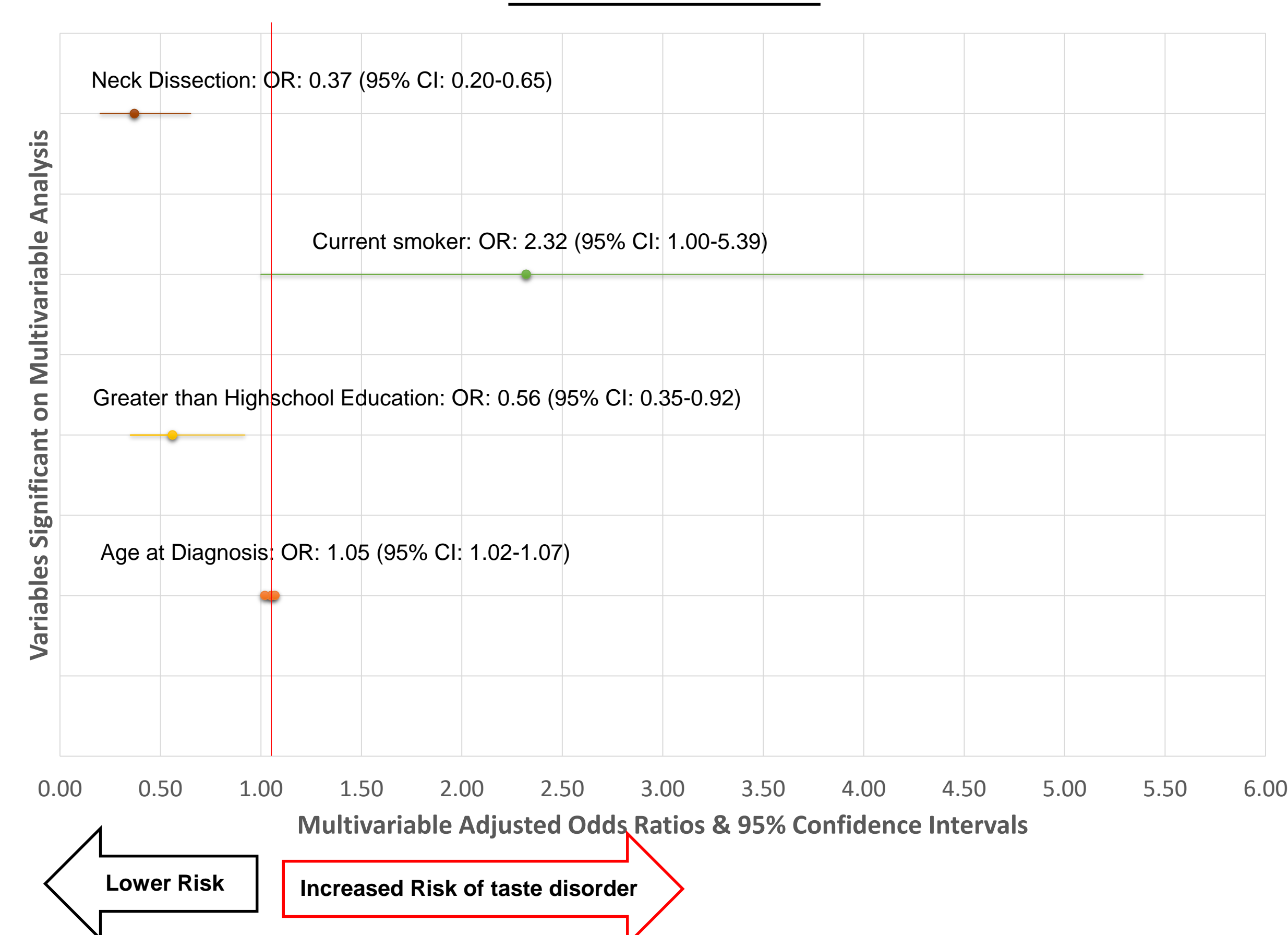
Results

Table 1: OPC Patient Characteristics, Clinical and Sociodemographic Variables and Taste Symptom Categories (N=873)

Variables	Taste symptom none to mild (N=731; 83.7%)	Taste symptom moderate to severe (N=142, 16.3%)	P
Age at Diagnosis, median (range, IQR)	55 (32-84, 51-62)	60 (41-82, 54-66)	<0.001
Survival Time, years median (range, IQR)	7 (1-16, 4-10)	5 (2-15, 3-9)	0.004
Radiation Dose, Gy median (range)	68 (57-72.6, 66-70)	70 (40-72, 66-70)	0.079
Sex			0.307
Male	624 (84.3)	116 (15.7)	
Female	107 (80.4)	26 (19.6)	
Education			0.019
≤Highschool	128 (79.0)	34 (21.0)	
> Highschool	541 (85.9)	89 (14.1)	
Primary Site			0.130
Tonsil	352 (86.7)	54 (13.3)	
Base of Tongue	345 (81.0)	81 (19.0)	
GPS	8 (80.0)	2 (20.0)	
T Stage			0.239
1+2	560 (84.6)	102 (15.4)	
3+4	171 (81.0)	40 (19.0)	
HPV Status			0.108
Negative	50 (87.7)	7 (12.3)	
Positive	346 (81.0)	81 (19.0)	
Unknown	335 (86.1)	54 (13.9)	
Cigarettes Smoking			0.223
Never	344 (84.3)	64 (15.7)	
Former smokers at time of diagnosis	277 (83.9)	53 (16.1)	
Quit smoking subsequent to diagnosis	77 (86.5)	12 (13.5)	
Current smoker at survey	24 (70.6)	10 (29.4)	
Treatment Group			0.691
Single Modality	226 (84.6)	41 (15.4)	
Multimodality	505 (83.3)	101 (16.7)	
Surgery			1.000
No	711 (83.7)	138 (16.3)	
Yes – Robotic	15 (83.3)	3 (16.7)	
Yes – Open	5 (83.3)	1 (16.7)	
Neck Dissection			<0.001
No	526 (80.8)	125 (19.2)	
Yes	205 (92.3)	17 (7.7)	
RT Type			0.282
3D Conformal	40 (81.6)	9 (18.4)	
IMRT Bilateral (SF+WF+VMAT) + Proton	599 (83.0)	123 (17.0)	
IMRT Ipsilateral	84 (89.4)	10 (10.6)	

- 16.3% of OPC survivors reported moderate to severe taste disorders.
- On MLR we identified:
 - Age at diagnosis (OR: 1.05; 95% CI: 1.02-1.07) and continued smoking at time of survey (OR 2.32; 95% CI:1.00-5.39) as significantly associated with increased risk of taste disorders.
 - > High school education (OR 0.56; 95% CI: 0.35-0.92) and neck dissection (OR 0.37; 95% CI: 0.20-0.65) as significantly associated with lower risk of moderate to severe taste disorders.

Figure 1: Risk Factors associated with moderate to severe Taste Disorders



Conclusion & Implications

- **1 in 6** patients reported moderate to severe taste disorders.
- **Smoking cessation** needs to be prioritized in OPC patients.
- There is need for **continued surveillance & management** of taste disorders.
- **Supportive care interventions:** **Alternative nutritional support and meal modification** can be used to reduce effects of taste disorders and improve QOL of OPC survivors.

Relation to Cancer Prevention

- Taste disorders can have a devastating impact on QOL.
- This project identifies some of the risk factors of taste disorders, importantly the need for ongoing smoking cessation efforts, surveillance, and supportive management of taste disorders among OPC survivors.
- Thereby it impacts tertiary cancer prevention and need to alleviate treatment-related side effects and improve QOL in OPC survivors' post-treatment.

Responsible Conduct of Research

- The study adhered to protocols outlined by the University of Texas MD Anderson Cancer Center Institutional review Board.
- All patient data were handled with caution and distributed only through MD Anderson secured platforms.

Acknowledgments

- The research was supported by NIH/NCI R25CA056452 (Christopher W. Ogboe, Shine Chang, Ph.D., Principal Investigator).
- I would also like to thank Dr Aggarwal, and Dr Shete for their support through the project.

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