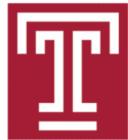


# The Impact of a Dedicated Multidisciplinary Care Team on a High Risk Head and Neck Cancer Population



Adam Kaplon, BA<sup>1</sup>; Elizabeth Blackman MPH<sup>2</sup>, Curtis Miyamoto MD<sup>3</sup>, Deric Savior MD<sup>4</sup>, Camille Ragin PhD<sup>2</sup>, Jeffrey C. Liu MD<sup>1</sup>

<sup>1</sup>Dept of Otolaryngology, Lewis Katz School of Medicine, Philadelphia, PA, <sup>2</sup>Cancer Prevention and Control Research Program, Fox Chase Cancer Center, Philadelphia, PA  
<sup>3</sup>Dept of Radiation Oncology, Lewis Katz School of Medicine, Philadelphia, PA, <sup>4</sup>Medical Oncology, Fox Chase Cancer Center at Temple University Hospital, Philadelphia, PA



## Purpose

While the Multidisciplinary Tumor Board (MTB) is accepted best practice for the management for head and neck cancer, there is a paucity of evidence demonstrating its impact on treatment outcomes.

Our goal was to investigate the impact of MTB following the hiring of a fellowship trained head and neck surgeon and implementation of an expanded MTB. As minorities and underinsured patients have consistently had worse outcomes and survival in HNSCC, we hypothesized that these changes would improve survival in our high risk cohort.

## Methods

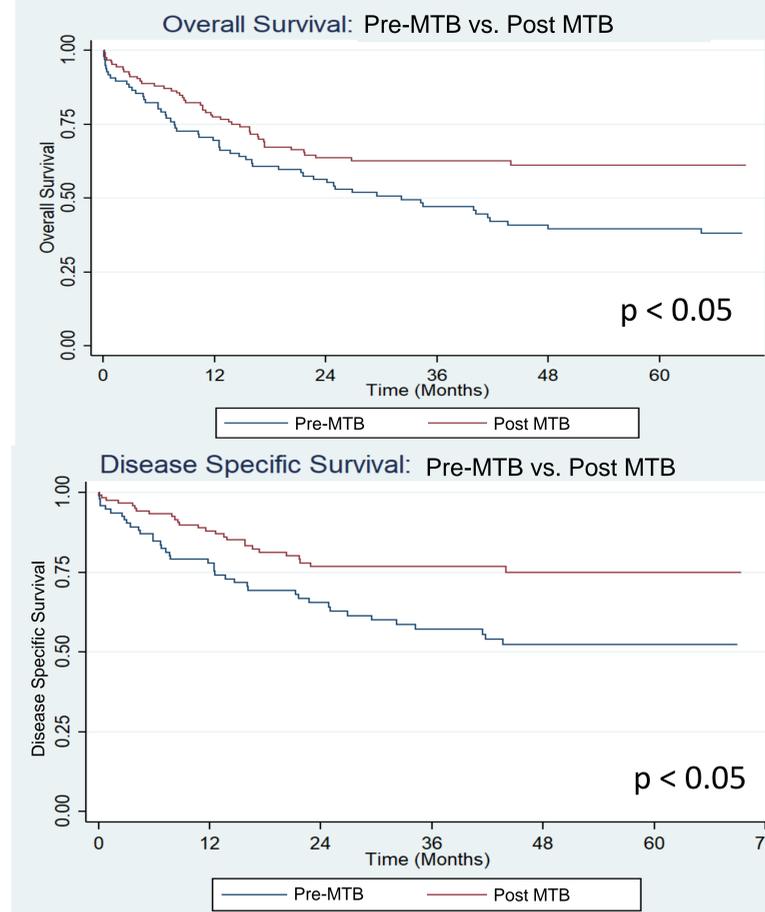
A retrospective chart review was conducted of patients with Head and Neck Squamous cell carcinoma (HNSCC) listed in tumor registry as having been affiliated with Temple University Hospital (TUH) between January 1 2006 and May 31 2015. The cohort was divided into pre-MTB (10/06-2/11) and post MTB (2/11-5/25) cohorts. Prior to 2/11, the MTB at that time did not consistently include a dedicated surgeon or additional members. In 2/2011 a dedicated fellowship trained head and neck surgeon joined the MTB, and the MTB was expanded with additional members including: speech/swallow therapy, social work, neuroradiology, pathology, and dental. Patients without a HNSCC primary, who were not managed by an otolaryngologist within the institution, had inadequate records, or did not receive any treatment, were excluded.

## Results

Patient Demographics	Pre-MTB	Post MTB	All Patients
Patients	98	126	224
Male	70 (71.43%)	91 (72.22%)	161 (71.88%)
Female	28 (28.57%)	35 (27.78%)	63 (28.13%)
Mean Age	61.16	61.59	61.50
Race (Black)	65 (66.33%)	74 (58.73%)	139 (62.05%)
Stage I/II	14 (14.29%)	42 (33.33%)	56 (25.00%)
Stage III/IV	75 (76.53%)	77 (61.11%)	152 (67.86%)
Positive Tobacco	92 (93.88%)	107 (84.92%)	199 (88.84%)
Medicaid	47 (47.96%)	40 (31.75%)	87 (38.84%)

**Table 1: Patient Demographics.** Historical and contemporary cohorts were similar in terms of male:female ratio, mean age and percent black with the historic cohort having a slightly higher proportion of late stage patients, tobacco usage and Medicaid insurance coverage.

## Results Cont.



Stat. Analysis	Univariate		Multivariate	
	Overall Survival	Disease Specific Survival	Overall Survival	Disease Specific Survival
Gender	0.954 (0.532-1.711)	1.047 (0.554-1.979)	1.087 (0.553-2.138)	1.127 (0.551-2.309)
Race (Black)	1.242 (0.722-2.138)	1.207 (0.664-2.197)	1.116 (0.559-2.077)	1.152 (0.583-2.279)
<b>Pre-MTB vs. Post-MTB</b>	<b>0.410 (0.239-0.705)</b>	<b>0.413 (0.229-0.742)</b>	<b>0.448 (0.242-0.826)</b>	<b>0.466 (0.240-0.903)</b>
Early vs Late Stage	4.908 (2.402-10.028)	10.600 (3.165-35.498)	4.994 (2.335-10.678)	9.164 (2.679-31.350)
Tobacco ever	2.021 (0.834-4.897)	0.874 (0.357-2.138)	2.668 (0.950-7.494)	0.982 (0.340-2.837)
Medicaid Yes/No	1.190 (0.698-2.031)	1.724 (0.964-3.082)	0.639 (0.339-1.203)	0.952 (0.491-1.845)

**Table 2: Statistical analysis.** Gender, racial status, and Medicaid status did not have a statistically significant association with both OS and DSS in both univariate and multivariate analysis. Tobacco use had a minor association with increased OS but was not statistically significant. Early stage cancer was associated with increased OS and DSS in both analyses and being in the historic cohort was associated with decreased OS and DSS in both analyses.

## Results Cont.

Treatment Modalities	Pre MTB	Post MTB	All Patients
Surgery	8 (8.16%)	19 (15.08%)	27 (12.05%)
Surgery + RT	9 (9.18%)	27 (21.43%)	36 (16.17%)
Surgery + CRT	6 (6.12%)	6 (4.76%)	12 (5.36%)
CRT	65 (66.33%)	54 (42.86%)	119 (53.13%)
RT	20 (20.41%)	30 (23.81%)	50 (22.32%)

**Table 3: Treatment Modalities.** Contemporary cohort patients were more likely to be treated with surgery (both with and without radiotherapy) and less likely to be treated with chemotherapy.

## Findings:

- Demographics
  - 224 patients were included, with 98 patients in the historical cohort and 126 in the contemporary cohort.
  - 139 (62%) of the patient cohort were black and 91 (40%) were Medicaid or uninsured.
  - Average follow-up time was 2.87 years. 25% of the overall cohort were stage I/II and 68% were stage III/IV.
- Amongst advanced stage cancers, use of gastrostomy tube prior to treatment decreased from 52% to 34% (p=0.03). (data not shown)
- On Kaplan-Meier evaluation, OS and DSS were significantly different with 5 year DSS of 52% vs. 75% (p=0.003) respectively. This OS and DSS difference persisted when evaluating only stage III/IV cancers (p=0.02).
- Surgery was more commonly employed for advanced HNSCC treatment in the contemporary group (p=0.0067).
- When excluding oropharynx cancers to eliminate potential imbalance from HPV associated oropharynx cancers, DSS remained statistically significant (p=0.02). Average time to treatment was not significantly different.

## Conclusions

Implementation of an expanded MTB and dedicated head and neck surgeon had measurable and significant impact on OS and DSS in HNSCC. Our study corroborates the belief that treatment of HNSCC by a dedicated multidisciplinary team results in best outcomes for patients. Implementing expanded MTB and specialty surgeon support should be considered to help address HNSCC racial disparity outcomes.