

HIV Infection and Treatment Outcomes of Head and Neck Cancers

Isabel Park MA¹, Esther Lee, DO¹, Leyn Shakhtour, BS¹, Hari Magge, BA¹, Diya Kallam, BA¹ Timothy Brandon Shaver MD¹, Punam G. Thakkar, MD¹

¹Division of Otolaryngology-Head and Neck Surgery, George Washington University School of Medicine & Health Sciences. Washington, DC

Background

Individuals with HIV are consistently reported to have a two to four-fold risk increase for head and neck cancers. Cancer-specific mortality remains elevated in HIV-positive people compared with the general population.

The objective of our study is to identify and compare head and neck cancer treatment outcomes between HIV-positive and HIV-negative people at a single institution.

Study Design Cohort study

Setting Single academic institution

Introduction

Despite advances in HIV treatment, individuals living with the virus remain at an elevated risk for various cancers. As life expectancy has improved, non-AIDS-defining cancers (NADCs) have become a growing contributor to morbidity and mortality in this population. Research has consistently shown higher incidence rates of NADCs among those with HIV compared to their uninfected counterparts. Immune system compromise and dysregulation create an environment conducive to oncogenic viruses and precancerous lesions, often leading to poorer outcomes for individuals with established cancers. Notably, individuals with HIV face a two to four-fold increased risk for head and neck cancers, and cancer-specific mortality rates remain higher in this group than in the general population.^{1,2}

Methods and Materials

In this cohort study conducted at a single academic institution, a retrospective medical record review was undertaken on 336 patients diagnosed with cancers of the larynx and oropharynx between 2000 and 2021.

The study encompassed a comprehensive examination of demographics, staging, treatment modalities, and response to treatment. Treatment outcomes were evaluated by assessing recurrence, metastasis, and overall survival rates. Variables were analyzed using the chi-square test and logistic regression. (SPSS, version 27).

Results

Of the 336 patients, 27 were HIV-positive, of which 16 had laryngeal cancer and 11 had oropharyngeal cancer. For both the laryngeal and oropharyngeal cancer groups the overall survival was independent of HIV status (Oropharyngeal cancer: 72.7% for HIV-positive vs. 86.7% for HIV-negative, p=0.198; laryngeal cancer: 81.3% vs. 77.9%, p=0.765). Among the oropharyngeal cancer group, a smaller portion of HIV-positive patients were disease-free compared to the HIV-negative patients (37.5% for HIV-positive vs. 92.3% for HIV-negative, p-value<0.0005) given similar time to treatment (median 38 vs. 31 days). HIV-positive patients had comparable disease recurrence or metastasis compared with the HIV-negative patients (recurrence: 14.8% vs. 11.6%, p=0.621; metastasis: 9.3% vs. 7.4%, p=0.750).

Discussion

It is well-established that individuals afflicted with HIV/AIDS exhibit a considerably higher susceptibility to developing head and neck malignancies. Interestingly, our specific study cohort study revealed that HIV status did not influence overall survival rates in patients with laryngeal and oropharyngeal cancers. For both the oropharyngeal and laryngeal cancer groups, the overall survival was independent of HIV status in oropharyngeal cancer and laryngeal cancer (p=0.198 and p=0.765).

However, a distinct pattern emerged in disease-free survival within the oropharyngeal cancer group. In this subset, a smaller proportion of HIV-positive patients achieved disease-free status compared to their HIV-negative counterparts (p-value<0.0005). It is noteworthy that this difference occurred despite similar time to treatment initiation, with a median of 38 days for HIV-positive patients compared to 31 days for HIV-negative patients. Additionally, our study found that HIV-positive patients had comparable rates of disease recurrence or metastasis when compared to HIV-negative patients (p=0.621 and p=0.750).

These specific findings from our study provide valuable insights into the nuanced interplay between HIV status and disease outcomes in patients with head and neck cancers. They underscore the importance of considering not only overall survival but also disease-free survival in this context, highlighting the need for tailored approaches to treatment for HIV-positive individuals with laryngeal and oropharyngeal cancers to reduce their morbidity.

Conclusions

While HIV status was not shown to impact the overall survival level and disease recurrence, disease-free survival in HIV-positive patients with laryngeal and oropharyngeal cancers was lower compared with their HIV-negative counterparts.

	Larynx		Oropharynx				
	HIV+	%	HIV-	%	HIV+	HIV-	%
n	16.0		111.0		11.0	196.0	
Recurrence or metastasis							
Yes	2.0	12.5	5.0	4.5	2.0	24.0	12.2
No	14.0	87.5	106.0	95.5	9.0	172.0	87.8
Survival							
Alive	13.0	81.3	92.0	82.9	8.0	72.7	88.8
Alive with disease	1.0	6.3	*	*	5.0	62.5	12.0
Alive without disease	12.0	75.0	*	*	3.0	37.5	162.0
Deceased	3.0	18.8	19.0	17.1	3.0	27.3	22.0

Table 1. Treatment Outcomes (recurrence and survival) of HIV-positive and HIV-negative groups with laryngeal and oropharyngeal cancers.

* denotes unavailable data.

Contact

Isabel Park

George Washington University School of Medicine and Health Sciences
Ross Hall, 2300 Eye Street, NW Washington, D.C. 20037
isabelpark@gwu.edu

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