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Risk Of Secondary Cancers of Head and Neck Following Radiation Therapy Among HPV+ Oropharyngeal Cancer Patients

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Introduction

Radiation induced malignancy is a late side effect of radiation therapy and can create a significant morbidity burden on patients. Radiation therapy has become part of the gold standard of treatment among patients diagnosed with HPV+ oropharyngeal cancers. In this study, we aimed to investigate the characteristics of head and neck second primary malignancies (SPMs) that can potentially be attributed to radiation therapy received as part of the treatment course for HPV+ oropharyngeal cancer.

Methods

The Surveillance, Epidemiology, and End Results (SEER) database, from 2010 to 2020, was queried for patients with a documented primary diagnosis of HPV+ HNC. Patients with subsequent SPMs documented were selected, and descriptive statistical analysis was conducted. SEER database HPV status field is limited only to 2010-2020. Given the limitation of SEER database on HPV-status, two separate databases (Specialized H&N 2010-2017 and Research-Plus 22 data registries) and Research Limited-Field Data, 22 registries (2000-2022). There are various limitations attributed to each of these databases due HPV status being unknown for majority of diagnosed oropharyngeal tumors.

Results

23,846 individuals with HPV+ oropharyngeal tumors that had undergone radiation therapy were identified. Mean time to diagnosis for second primary tumor was 4.32 (SD = 2.48 years).

Conclusion

Despite its effectiveness, long term complications of radiation therapy can cause significant morbidity amongst this patient population. Here, we report interesting cases of non-HPV related secondary lesions that could be attributed to radiotherapy in particular anatomical sub-sites. Such complications can alter patient’s decision making and should be discussed prior to treatment initiation.

