

The molecular characteristics of recurrent/metastatic HPV-positive head and neck squamous cell carcinoma: A systematic review of the literature

Susanne Flach¹, Pavithran Maniam², Shi Ying Hey³, and Jai Manickavasagam⁴

¹Ludwig-Maximilians-Universitat Munchen

²Newcastle University

³Guy's and St Thomas' NHS Foundation Trust

⁴Ninewells Hospital and Medical School

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Abstract

Background Up to 25% of patients with HPV-positive head and neck squamous cell carcinoma (HNSCC), which is mainly comprised of oropharyngeal SCC (OPSCC), will experience disease recurrence, which is often considered incurable when manifested at a metastatic and/or recurrent stage. **Objectives** To provide an overview of the molecular landscape of recurrent/metastatic HPV-positive HNSCC, novel molecular biomarkers and current trends in treatment options. **Type of review** A critical qualitative systematic review. **Design** A literature review was conducted to identify studies reporting on the molecular characteristics of recurrent/metastatic HPV-positive HNSCC, novel molecular biomarkers and treatment options. The reviews of abstracts, full articles, and revision of the included studies, followed by data extraction and quality assessment were performed by three independent assessors. **Results** The literature search resulted in the identification of 1995 articles. Sixty-six articles were selected for inclusion in the systematic review. Several studies reported that recurrent/metastatic HPV-positive HNSCC had higher rates of *TP53* mutation and were genomically similar to HPV-negative HNSCC. The detection of circulating tumour tissue-modified HPV DNA (ctHPVDNA) as a specific biomarker has shown promising results for monitoring treatment response and recurrence in the subset of HPV-positive HNSCC. **Conclusions** Our review outlines the latest evidence on the distinct molecular profiles of recurrent/metastatic HPV-positive HNSCC as well as the clinical potential of ctHPVDNA testing in routine practice. More controlled and longitudinal studies are needed to identify additional molecular targets and to assess the performance and benefits of novel molecular biomarkers in clinical practice.

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