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ORIGINAL ARTICLE

Prevalence of human papillomavirus infection in squamous cell carcinoma of the oral cavity, oropharynx and larynx☆

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KEYWORDS
Human papillomavirus;
Squamous cell carcinoma;
Head and neck;
Laryngeal;
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Abstract
Background: Cancer of the head and neck comprises a group of neoplasms that share a similar anatomical origin. Most originate from the epithelium of the aerodigestive tract and 90% correspond to squamous cell carcinoma. In the last 15 years, an increase in the incidence of squamous cell carcinoma induced by human papillomavirus (HPV) has been seen, mainly types 16 and 18, which are the most frequent found in cancers of the oral cavity and oropharynx, and types 6 and 11 in laryngeal cancer. There are reports in the literature that show HPV as the leading cause of oropharyngeal squamous cell carcinoma.
Objective: Determine the prevalence of infection with high-risk HPV in patients diagnosed with squamous cell carcinoma of the oral cavity, oropharynx and larynx.
Material and methods: An observational, cross-sectional, descriptive, unblinded study was performed. Prevalence of HPV infection was determined by polymerase chain reaction (PCR) in DNA samples from tumour tissue of patients with squamous cell carcinoma of the oral cavity, oropharynx and larynx. Typing was subsequently performed in HPV positive samples in order to detect types 18, 16, 11 and 6, using custom primers.

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Results: A total of 45 patients were included. The association between laryngeal squamous cell carcinoma and HPV was established in two patients, which represented an overall prevalence of 4.4% in our population, and 10% for laringeal tumours.
Conclusions: There is a low prevalence of HPV infection in squamous cell carcinoma of the oral cavity, oropharynx and larynx, in our population. Prospective studies on younger patients could provide more information.

PALABRAS CLAVE
Virus del papiloma humano;
Carcinoma espinocelular;
Cabeza y cuello;
Laringe;
Cavidad oral

Prevalencia de infección por virus del papiloma humano en carcinoma espinocelular de cavidad oral, orofaringe y laringe

Resumen
Antecedentes: El carcinoma de cabeza y cuello comprende un grupo de neoplasias que comparten un origen anatómico similar. La mayoría se originan de la mucosa del tracto aerodigestivo y más del 90% corresponden al carcinoma espinocelular. En los últimos 15 años se observó un incremento en la incidencia de carcinoma espinocelular inducido por el virus del papiloma humano (VPH) en jóvenes, principalmente los serotipos 16 y 18, los cuales son los más estudiados en cáncer de cavidad oral y orofaringe, y los serotipos 6 y 11 en cáncer de laringe. Existen reportes en la literatura sobre el VPH como principal causa de carcinoma espinocelular, principalmente de orofaringe.
Objetivo: Determinar la prevalencia de infección por VPH de alto riesgo en pacientes con diagnóstico de carcinoma espinocelular de cavidad oral, orofaringe y laringe.
Material y métodos: Estudio observacional, transversal, descriptivo, no ciego. Se determinó la prevalencia de infección por VPH por medio de la reacción en cadena de la polimerasa en muestras de ADN de tejido tumoral en pacientes con carcinoma espinocelular de cavidad oral, orofaringe y laringe. Se realizó tipificación de serotipos de alto riesgo.
Resultados: Se incluyó en el estudio un total de 45 pacientes. La asociación entre el carcinoma de células escamosas de laringe con VPH se ailo en 2 pacientes, lo cual represento una prevalencia global del 4.4% en nuestra población y del 10% para los tumores de laringe.
Conclusiones: Existe una baja prevalencia de carcinoma espinocelular de la cavidad oral, orofaringe y laringe, asociado a infección por VPH en nuestra población. Estudios prospectivos en población más joven con cáncer de cabeza y cuello podrían aportar mayor información sobre la influencia del VPH en dicha patología.

Background

Cancer of the head and neck comprises a group of neoplasms that share a similar anatomical origin. Most originate from the mucous membrane encasing the epithelium of the aerodigestive tract and over 90% correspond to squamous cell carcinoma. They rank sixth in worldwide neoplasms of all locations and the most commonly affected site is the oral cavity.[1]

It has been calculated that approximately 400,000 new cases per year are diagnosed worldwide, with higher prevalence in males. The most common sites of origin are the oral cavity and the oropharynx. In the oral cavity the most affected area is the tongue, followed by the gums and the floor of the mouth. In the oropharynx it is the tonsillar región.[2]

In Mexico, 5% of all malignancies correspond to the epidermoid carcinoma of the head and neck, which in general is diagnosed in advanced stages, particularly in the tongue.[3]

Several mechanisms have been reported in the genesis of tumours which originate in the upper aerodigestive tracts, with the most outstanding being the carcinogenic effects of alcohol and tobacco as the main risk factors and which play a major role in their aetiopathogenesis due to their potential to induce mutations in tumour suppressor gene p53.[4]

However, the role of the human papillomavirus has now been recognised as an independent factor in the development of these neoplasms. During the last 15 years an increase in the incidence of squamous cell carcinoma induced by the human papillomavirus (HPV) has been observed, with its frequency increasing in young patients and in non smokers or drinkers, especially associated with high risk serotypes such as viral 16 sub-type. This has been supported by reports in the literature which show HPV as the primary cause of oropharyngeal squamous cell carcinoma.[5,6]