

Expression of markers of hypoxia and epithelial-mesenchymal transition in tumor budding cells in oral squamous cell carcinoma

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Abstract

Objective: To determine the expression and distribution of the proteins HIF-1, E-cadherin, N-cadherin and Vimentin in neoplastic cells of tumor budding in the tumor progression zone of oral squamous cell carcinoma (OCC).

Method: A retrospective observational descriptive study will be developed that will have a representative casuistry for convenience of samples of tissue embedded in paraffin with previous histopathological diagnosis of COCE presenting specific areas of tumor budding. The cases will come from the Chair of Stomatological Molecular Pathology of the Faculty of Dentistry of the University of the Republic. First, immunohistochemistry technique will be performed for cytokeratin panel (anti-AE1 / AE3) to characterize the areas of tumor budding. Subsequently, the Tyramide Signal Amplification (TSA) immunofluorescence technique will be used for the staining of markers of hypoxia (HIF-1) and epithelial-mesenchymal transition (E-cadherin, N-cadherin and vimentin). The sections will be visualized with a Zeiss LSM 800 confocal microscope. The points containing the most positively stained cells will be identified and photomicrographed to extract qualitative information on expression pattern and locations of the markers studied. Clinical data regarding the sex and age of each patient included in the study will be collected for evaluation of possible associations.

Expected results: We intend, with the study of the expression of HIF-1, E-cadherin and Vimentin in budding tumors in COCE, to identify the presence and distribution of these proteins in the area; and we hope that the development of this study will help a better understanding of tumor budding in COCE and be of relevance for diagnoses and future treatments.

Keywords: Oral squamous cell carcinoma, E-cadherin, N-cadherin, Vimentin, HIF-1alpha, tumor budding, hypoxia, epithelial-mesenchymal transition.

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