

***Immunohistochemical Expression of
Cyclin D1 and NFκB p65 in Oral
Lichen Planus and Oral Squamous Cell Carcinoma
(Comparative Study)***

A Thesis

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Abstract

Background

Oral Lichen Planus (OLP) is a chronic inflammatory mucosal disease, presenting in various clinical forms .WHO had regarded oral lichen planus as a precancerous conditions in 1978 because of its potential with cancer. Both antigen-specific and nonspecific mechanisms involved in the pathogenesis of OLP.

Oral Squamous Cell Carcinoma (OSCC) is a malignant neoplasm of stratified squamous epithelium; it occurs in different sites and has many etiological factors, it is by far the most common malignant neoplasm of the oral cavity representing more than 94% of oral cancer. It is capable of local destruction and invasion with distant metastasis.

Cyclin D1 is a proto-oncogene which consider as the key protein in the regulation of cell proliferation, it can prompt cells from G1 to S phase of cell cycle, and its overexpression led to the occurrence and progression of malignant tumors.

NF-KB p65 is a member of NF-kB family of transcription factors that widely used by eukaryotic cells as a regulator of genes that control cell proliferation and cell survival, also plays a major role in inflammation. Its activation has been implicated in chemical carcinogenesis.

Aims of the Study

The aims of this study were to evaluate the immunohistochemical expression of Cyclin D1 & NF-KB p65 in OLP & OSCC & to correlate the expression of the studied markers with the clinicopathological findings and with each other.

Materials and Methods

Fifty (50) formalin – fixed, paraffin – embedded blocks of both Oral Lichen Planus (25 cases) & Oral Squamous Cell Carcinoma (25 cases) were collected pro- and retrospectively were included in this study. Hematoxylin & Eosin stain was performed for each block for reassessment of histopathological examination. An immunohistochemical staining was performed using anti Cyclin D1 and anti NF-KB p65 monoclonal antibodies.

Results

The results of 25 OLP cases were designed as follows: Most of the cases 16 (64%) aged were above 40 years and the majority of the cases were females 16 (64 %). The most common site was buccal mucosa 23 cases(92 %),while most of the cases were presented as white lesions 18 cases (72%).

Positive immunohistochemical expression of Cyclin D1 was found in 21 cases (84%) .Positive immunohistochemical expression of NF-KB p65 was found in 22 cases (88%).

There was statistically significant correlation regarding Cyclin D1 expression in relation to clinical presentation. A highly significant correlation was found between the expressions of both markers.

The results of 25 OSCC cases were designed as follows: Most of the cases 22 (88%) aged were above 40 years and the majority of the cases were males 15 (60 %). The most common site was the tongue 11 cases (44%) and most of the cases were presented as ulcers 14 cases (56%).

Histopathological examination showed that 14 cases of OSCC (56%) were moderately differentiated, followed by 8 cases (32%) well differentiated and 3 cases (12%) were poorly differentiated.

Positive immunohistochemical expression of Cyclin D1 was found in 22 cases (88%) . Positive immunohistochemical expression of NF-KB p65 was found in 24 cases (96%).

There was statistically significant correlation regarding Cyclin D1 expression in relation to tumor grade. There was statistically significant correlation regarding NF-KB p65 expression in relation to tumor stage. A highly significant correlation was found between the expressions of both markers.

Conclusions

This study showed that increasing expression level of Cyclin D1 and NF-KB p65 in OLP and OSCC cases suggest their important role in oral carcinogenesis.

Also, a highly significant correlation was seen regarding the expression of both markers with each other, suggesting their cooperative role in pathogenesis of OLP and OSCC.