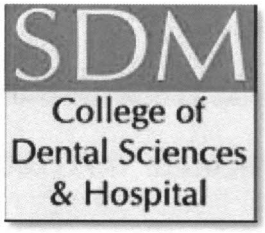

"QUANTITATIVE ANALYSIS OF CD1a POSITIVE LANGERHANS CELL IN ORAL DYSPLASTIC EPITHELIUM AND ORAL SQUAMOUS CELL CARCINOMA"

By

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ABSTRACT

BACKGROUND & PURPOSE:

The skin and the mucosa are active elements of the immune system. Langerhans cells are the most potent antigen presenting cells of the epidermis, which are required to initiate immune response. The purpose of this study is to quantify Langerhans cells in oral epithelial dysplasia and oral squamous cell carcinoma to assess the immune response in these lesions.

METHODS:

Quantification of Langerhans cells in normal oral mucosa (n=10), oral epithelial dysplasia (n=20) and oral squamous cell carcinoma (n=20) were done by immunohistochemical technique using monoclonal antibody against CD1a. Counting was done in 10 consecutive, non-overlapping high power fields (x40) by two independent observers.

RESULTS:

An increase in the number of Langerhans cells was observed from normal epithelial mucosa to oral epithelial dysplasia and oral squamous cell carcinoma (p=0.000). No statistically significant results were obtained between oral epithelial dysplasia and oral squamous cell carcinoma (p=0.968).

INTERPRETATION AND CONCLUSION:

The analysis has lead us to a conclusion that immune system responds to the dysplastic and malignant changes in epithelium by recruiting more number of Langerhans cells. These Langerhans cells present the antigens to naive T cells, thus initiating an immune response. A statistically insignificant result between Langerhans cell count in oral epithelial dysplasia and

oral squamous cell carcinoma could be attributed to the tumour microenvironment which produces various cytokines that prevents differentiation of Langerhans cells from its progeny and apoptosis of LCs. This reduction in LCs could be the possible explanation for the progression of malignancy in oral squamous cell carcinoma. However, a better understanding can be achieved by overcoming the limitations of this study like small sample size, inclusion of other immune factors and correlation with the clinical parameters.

Keywords: Dendritic cells, Langerhans cells, CD1a, oral dysplastic epithelium, oral squamous cell carcinoma.