ABSTRACT

DISSERTATION TITLE:

EVALUATION OF CAVEOLIN-1 EXPRESSION IN DIFFERENT GRADES OF ORAL EPITHELIAL DYSPLASIA.

AIM:

To evaluate the expression of Caveolin-1in various grades of oral epithelial dysplasia.

MATERIALS AND METHODS:

The present study was conducted using 45 archival tissue samples of histopathologically confirmed cases of different grades of oral epithelial dysplasia (mild, moderate and severe). 15 cases were selected from each lesion. Sections of 4 micron thickness were made from each block and slides were stained by immunohistochemical method using Caveolin-1 monoclonal antibody raised in rabbit. The observations were done using binocular light microscope with 40x magnification. The counting was done in five randomly selected high power fields. The positivity of cells was graded as 0, 1, 2, 3 and 4 based on the percentage of cells per high power field that had taken up the stain. The intensity of expression was evaluated as negative, mild, moderate and intense. Immunoreactivity scores were then obtained for each case by multiplying the average score for positivity percentage with the average score for staining intensity for each case.

STATISTICAL ANALYSIS:

Results obtained were compared using one way ANOVA test.

RESULTS:

In our study all 45 cases showed positivity for caveolin-1 expression, although the degree, extent and intensity of staining were different among different groups. The number of cells taking up Cav-1 (PP) decreased as the severity of dysplasia increased. All the three groups showed mild to moderate intensity of Cav-1 expression. There was a gradual decline in IRS as the severity of dysplasia increased. In mild dysplasia group all samples showed positive staining in basal and parabasal layers.

However 11 cases (73%) also showed positivity up to the granulosum layer, with only one sample showing positivity throughout the epithelium including corneal layer. In moderate dysplasia group, most of the samples showed positivity in the basal layer. However eight cases (53%) showed positivity up to stratum granulosum also. In severe dysplasia group, most of the samples showed positivity in the basal and parabasal layers. However, only two cases (13%) showed positivity up to stratum granulosum. Immunoreactivity for Cav-1 was highest in mild dysplastic group and it gradually decreased as the severity of dysplasia increased.

CONCLUSION: Cav-1 expression is altered in oral epithelial dysplasia. Expression is probably directly related to the grade of dysplasia. Decreased expression was noticed when the severity of dysplasia increased, which suggests the potential role for Cav-1 in the tendency towards malignant transformation.

KEY WORDS: Caveolin-1, oral epithelial dysplasia, immunohistochemistry, tumor suppressor, oxidative stress.