

Objective: We intended to study the cellular proliferation by means of Ki-67 labeling index and the protein product overexpression of p53 in a series of oral intraepithelial lesions and squamous cell carcinoma, to evaluate the potential association between their histologic grades and the expression of the two markers. The expression of these markers on sections taken from hyperplastic and normal mucosal epithelium was also evaluated in order to determine whether the combination of p53 and Ki-67 over-expression could be used as a diagnostic aid in evaluating oral biopsies.

Materials and Methods: Archival biopsy specimens from 35 patients, with oral squamous cell carcinoma (19) and intraepithelial lesions (16) were retrieved from the histopathology departments of Erbil and Duhok cities, Iraq, between January and December 2010. From the same patients, 13 blocks with hyperplastic epithelium and 7 with normal mucosal epithelium were also retrieved. The study was done in Duhok Central Laboratory, Duhok, Iraq. Ki-67 labeling index and p53 overexpression was determined by immunohistochemistry on paraffin sections, using avidin–biotin technique.

Results: Overall, the staining patterns for Ki-67 antigen and p53 were similar. High Ki-67 and p53 overexpression was observed in 52.6% and 63.2% of carcinoma cases respectively, in 62.5% and 56.3% of intraepithelial lesions respectively, in 23.1% and 15.4% of hyperplastic epithelium respectively, and none in benign epithelium. Both high Ki-67- labeling index and p53 overexpression were significantly higher in carcinomas and intraepithelial lesions than in hyperplastic epithelium and were associated with the grade of both carcinomas and intraepithelial lesions.

Conclusions: Combination of p53 and Ki-67 overexpressions can be used as a specific marker for oral lesions that are probably at high risk for malignant transformation, their immunohistochemistry emerges as a clinically useful supplement for histopathological assessment of grading of oral squamous cell carcinoma and intraepithelial lesions.