

# **ABSTRACT**

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**Aim:** To compare the immunohistochemical expression of survivin and further evaluate its prognostic significance among three grades (well differentiated, moderately differentiated, and poorly differentiated) of oral squamous cell carcinoma.

**Materials and Methods:** The study material consisted of 60 formalin fixed paraffin embedded tissue samples: 15 cases each of well differentiated, moderately differentiated and poorly differentiated oral squamous cell carcinoma and normal oral mucosal epithelium as control. Survivin expression was analyzed immunohistochemically and data analysis was accomplished using SPSS version 22.0. Fisher's chi square test was opted to compare the variance in distribution, intensity of staining, percentage of immunopositivity and assess pairwise comparison between the groups (WDSCC & MDSCC, MDSCC & PDSCC and WDSCC & PDSCC). Analysis of Variance (ANOVA) technique was used to compare the immunoreactivity score of survivin within the four groups. A 'p' value less than 0.05 denotes significant relationship.

**Results:** Survivin was expressed in all grades of oral squamous cell carcinoma, but absent in normal oral tissue samples. There was a statistically significant difference among the three grades of oral squamous cell carcinoma in relation to survivin immunopositivity and immunoreactivity ( $p < 0.01$ ). High immunopositivity and strong staining intensity for survivin, predominantly in nuclear areas were observed in poorly differentiated oral squamous cell carcinoma whereas moderate immunopositivity and staining intensity were observed in well and moderately differentiated oral squamous cell carcinoma.

**Conclusion:** Higher survivin expression and its nuclear localization appeared to correlate with higher grade of malignancy. Survivin was highly expressed in poorly differentiated oral squamous cell carcinoma compared to well and moderately differentiated oral squamous cell

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carcinoma suggesting unfavourable prognosis. Based on the present study, it was concluded that survivin may be used as an important diagnostic and prognostic marker for aggressive form of oral squamous cell carcinoma. To further validate survivin as a prognostic marker, a large scale study with greater sample size along with clinical follow-up data is needed. Due to its selective expression in tumor cells and absence in normal tissues, it may be used as a therapeutic target for oral cancer.

**Keywords:** Well differentiated OSCC, Moderately differentiated OSCC, Poorly differentiated OSCC, Immunohistochemistry, Survivin, Prognostic marker.