

ABSTRACT

BACKGROUND:

Natural killer cells play an important role in the innate and adaptive immune system. The immune defense against tumour cells is mainly mediated by the natural killer cells. Cluster of differentiation 57 is a 110-kd glycoprotein, typically expressed by the natural killer cells, attack the cancer cells and inhibit the tumour development. Proliferating cell nuclear antigen (PCNA) is a 36 kd auxiliary protein for DNA polymerase delta, located on chromosome 20p12 correlates with the cell proliferation and DNA synthesis. This PCNA protein varies during cell cycle and accumulates in late G and S phase of the cell cycle. PCNA is essential component of the DNA replication, DNA recombination and repair.

AIMS AND OBJECTIVE:

To compare and correlate the expression of CD57 and PCNA in different grades of oral squamous cell carcinoma by immunohistochemistry.

MATERIALS AND METHODS:

Previously histopathologically confirmed 30 samples of different grades of oral squamous cell carcinomas and 10 samples of normal mucosa were included in this retrospective study. The histopathological sections were examined immunohistochemically for CD57 and PCNA expression. The statistical analysis was done by Anova (Post hoc) followed by Dunnet t-test and correlation between the markers was done by Pearson correlation test.

RESULTS

The CD57 expression in oral squamous cell carcinoma was found to be higher in well differentiated squamous cell carcinoma and lower in poorly differentiated squamous cell carcinoma whereas expression of PCNA was found to be lower in well differentiated squamous cell carcinoma and higher in poorly differentiated squamous cell carcinoma.

CONCLUSION:

CD57 expression was found to be decreasing from well differentiated squamous cell carcinoma to poorly differentiated squamous cell carcinoma. On the other hand, proliferative activity was found to be increasing from well differentiated squamous cell carcinoma to poorly differentiated squamous cell carcinoma. Therefore, the combination of CD57 and PCNA biomarkers appears to be good indicators of the immune status of the patient and the aggressiveness of the lesion.

Keywords: CD57, Proliferating cell nuclear antigen, Immunohistochemistry, Oral squamous cell carcinoma
