EGFR and Cortactin: Markers for potential double target therapy in oral squamous cell carcinoma.

Abstract:
Survival periods of patients following surgical therapy of oral squamous cell carcinoma (OSCC) have previously been demonstrated to decrease over recent decades. Epidermal growth factor receptor (EGFR) and Cortactin are molecular markers that are important in tumour progression and development, and interact within the EGF pathway. Although EGFR antibody therapy exists, sufficient efforts for increased survival are still lacking due to the present limited response rates. The aim of the present study was to examine the association between EGFR and Cortactin expression on survival rates of OSCC patients and to determine whether EGFR and Cortactin expression levels are associated with advanced tumor sizes and lymphnode-metastases. In total, 222 OSCC patients were included in the study. EGFR and Cortactin expression in tumor tissue was evaluated by immunohistochemistry. Cox regression was used for survival analysis. Categories were tested for associations by using cross tabs (Chi-square test). Groups were compared by the non-parametric Mann Whitney U-test. Probabilities of less than 0.05 were considered significant and significant expression of Cortactin was observed in Advanced Union Internationale Contre le Cancer stage (P=0.032), including advanced tumour stage (P=0.021) and lymph node metastasis (P=0.049).
High Cortactin expression was significantly associated with poorer survival rates (P=0.037). Further Cortactin expression was not associated with extracapsular spread, however EGFR exhibited a significant association (P=0.034). Neither EGFR nor Cortactin expression was correlated to grading. EGFR and Cortactin co-expression was demonstrated to be significantly associated with poorer survival rates in OSCC patients, suggesting that identification of predictive biomarkers for adjuvant therapies are of primary concern in OSCC. In particular, efficient dual-target therapy may act as an appropriate therapy to improve survival time for patients at advanced OSCC tumor stages.