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Role of angiogenesis in oral squamous cell carcinoma development and metastasis

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Aim: The aim of this study was to compare two endothelial markers (CD31 and CD34) and to clarify the role of angiogenesis in OSCC development and metastasis.

Material and methods: We have performed a retrospective analysis on 50 human OSCC bioptic specimens, using immunohistochemical analysis with anti CD31 and anti CD34. Mean values of these two antibodies were compared, as well as possible correlations between peritumoral microvessel density and clinico pathological parametres were evaluated, such as age, sex, tumor localization and size, lymph node status and histological grading.

Results: The peritumoral MVD count per high power field (1 mm²) in all 50 tumors detected by antibodies CD31 and CD34 ranged 4 to 27 and 13 to 58, respectively, with means of 13.74 and 22.75, respectively. The peritumoral MVD determined using CD34 were significantly associated with age ($P = 0.027$), the peritumoral MVD using CD34 and CD31 immunostaining of OSCC with a lymph node metastasis was higher than with a negative node status with means of 15.04 and 12.55 respectively for the CD31, 24.61 and 21.44 respectively for the CD34. However, no statistical correlation was observed between peritumoral microvessel density and other clinical parametres such as sex, tumor site, size, lymph node status and histological differentiation.

Conclusion: According to our study, tumor angiogenesis and the density of newly formed vessels are of potential prognostic relevance in the assessment of OSCC, and we showed that the endothelial marker CD34 was better in the assessment of tumor vascularization of OSCCs than CD31.

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