Abstract

One main etiology for oral squamous cell carcinoma (OSCC) is inflammation. Inducible nitric oxide synthase (iNOS), vascular endothelial growth factor (VEGF) and cyclooxygenase-2 (COX-2) are the important molecules showing close relation to not only inflammation but also carcinogenesis and angiogenesis. Angiogenesis is defined as the formation of new blood vessels from existing vasculature. It is necessary for tumor growth and progression and also involved in metastasis. The objective of this research was to study the expression and relationship among iNOS, VEGF, COX-2, angiogenesis and their clinico-pathological correlation in OSCC. In this study, standard indirect immunohistochemical technique using polyclonal antibodies specific to human iNOS, VEGF, COX-2 and CD31 was performed in formalin-fixed paraffin-embedded tissue sections of 66 OSCC samples. The staining patterns and intensity are measured and analyzed statistically. The results showed that epithelial components of squamous cell carcinomas demonstrated moderate to intense staining for iNOS, VEGF and COX-2. iNOS shows correlation with cervical lymph node metastasis and tumor staging (TNM) of the patients and angiogenesis. VEGF shows correlation with tumor grading, tumor staging and angiogenesis. COX-2 shows correlation with cervical lymph node metastasis. In conclusion, the expression of iNOS, VEGF and COX-2 exists in OSCC. The data provided show the expression of these chemical mediators associated with carcinogenesis and angiogenesis in OSCC. It can be the primary database before using angiogenesis drug against these mediators for OSCC treatment.

Key words: *Inflammation-induced cancer, iNOS, VEGF, COX-2, angiogenesis, squamous cell carcinoma, oral.*