

## **Preliminary study of Expression of Vascular Endothelial Growth Factor (VEGF) in oral cancer patients attending National Cancer Institute Maharagama- Sri Lanka**

Edirisinghe EAST<sup>1</sup>, Weerasekera MM<sup>2</sup>, Rich A<sup>3</sup>, de Silva H<sup>3</sup>, Hussaini M<sup>3</sup> de Silva K<sup>4</sup>,  
Goonasinghe R<sup>4</sup> Yasawardene SG<sup>1</sup>

Department of Anatomy, Faculty of Medical Sciences (FMS), University of Sri  
Jayewardenepura(USJP)<sup>1</sup>

Department of Microbiology, Faculty of Medical Sciences (FMS), University of Sri  
Jayewardenepura(USJP)<sup>2</sup>

Department of oral pathology, Oral Diagnostic and Surgical Sciences, Dental School, Health  
Sciences, University of Otago, New Zealand<sup>3</sup>

National Cancer Institute Maharagama<sup>4</sup>

### **Introduction**

Vascular endothelial growth factor(VEGF) is considered as a prime mediator of angiogenesis and has been implicated in carcinogenesis and metastasis. Various studies examined the relationship between VEGF protein overexpression with the clinical outcome in patients with oral cancer[1-3]

### **Objective**

To analyze the VEGFA gene expression in OSCC patients attending National Cancer Institute Maharagama- Sri Lanka

### **Methods**

This is a part of an ongoing study where the gene expression was evaluated using venous blood samples of histologically confirmed primary OSCCs (n = 10), and compared with healthy patients (n =10). Quantitative PCRs were performed using the TaqMan system for the VEGFA gene and GAPDH as the housekeeping gene, and gene expression was determined using the  $2^{-\Delta\Delta CQ}$  method.

### **Results**

The relative quantification(RQ) of controls ranged from 0.66-1.48. Mean relative quantification (RQ) value of VEGFA in OSCC patents was 4.85(1.59-11.10). VEGFA mRNA was overexpressed in primary samples compared to controls (5.12-fold).VEGFA transcript level was overexpressed (4/10) which ranged from 5.2 – 11.1 in T3–T4 tumors. Tumors (5/10) belong to TNM classification T1 – T2 had a comparatively low RQ value range from 1.59 -4.1. Poorly

differentiated (RQ-11.10 ) and invasive oral squamous cell carcinoma(RQ- 8.03), high-level of VEGFA was observed

## Conclusions

VEGFA was over expressed in aggressive OSCCs and that VEGFA expression may be an important prognostic factor in oral cancer. However advance studies are needed to develop the pattern of expression

1. Almadori, G., et al., *Epidermal growth factor receptor expression in primary laryngeal cancer: an independent prognostic factor of neck node relapse*. International journal of cancer, 1999. **84**(2): p. 188-191.
2. Ma, N., L.W. Li, and J.L. Cheng, *Predictive value of vascular endothelial growth factor polymorphisms on the clinical outcome of renal cell carcinoma patients*. Oncology letters, 2015. **9**(2): p. 651-656.
3. Kyzas, P.A., I.W. Cunha, and J.P. Ioannidis, *Prognostic significance of vascular endothelial growth factor immunohistochemical expression in head and neck squamous cell carcinoma: a meta-analysis*. Clinical cancer research, 2005. **11**(4): p. 1434-1440.