

## **MVD, VEGF AND HIF-1 $\alpha$ expression in primary oral melanoma: comparison with cutaneous melanoma**

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Compared to cutaneous melanoma which consists of majority of disease, primary oral melanoma (POM) is relatively rare but pursued more aggressive natural course and poorer prognosis. The growth of many tumours is mediated by the proliferation of new vessels that is highly correlated to the tumour malignancy. Vascular Endothelial Growth Factor (VEGF), controlled by Hypoxia-Inducible Factor-1 $\alpha$  (HIF-1 $\alpha$ ), exerts a number of important biological actions on endothelial cells.

Our aim was to investigate the immunohistochemical expression of VEGF, HIF-1 $\alpha$  and CD34 (Microvessel Density, MVD) in 11 POM regarding 19 cutaneous melanoma and evaluate if different tumour localization is associated with different angiogenic responses.

In POM MVD was significantly increased at the periphery ( $63.72 \pm 15.17$ ) compared to the central area ( $42.27 \pm 18.03$ ) ( $p=0.0009$ ). Moreover peripheral vessels showed a significant expression of VEGF ( $40.83 \pm 15.05$ ) and HIF-1 $\alpha$  ( $24.75 \pm 18.46$ ) compared to the intratumoral ones (VEGF  $28.33 \pm 6.15$ ;  $p=0.014$ ; HIF-1 $\alpha$   $11.20 \pm 9.64$ ;  $p=0.043$ ). We observed similar VEGF and HIF-1 $\alpha$  expression in tumoral melanocytes both in the periphery and in the centre of the lesion. Contrary to POM, cutaneous melanoma showed no significant difference of MVD, VEGF and HIF-1 $\alpha$  expression in the differently localized vessels and neoplastic melanocytes.

The diverse immunohistochemical expression patterns could signify a real difference due to the localization of melanoma in the mucosa with respect to the cutis. Moreover our finding underlines in POM biology the importance of the invasive margin where VEGF and HIF-1 $\alpha$  overexpression could have a significant impact on the invasiveness of melanoma cells.

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### Key words

Oral melanoma, cutaneous melanoma, VEGF, HIF-1 $\alpha$ , MVD, Immunohistochemistry