Title:

Anti-angiogenic Efficacy of Aflibercept and Bevacizumab in Primary Oral Squamous Cell Carcinoma Cells

Running title:

Anti-angiogenic targeted drugs in OSCC

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Abstract:

BACKGROUNDS: In recent decades, anti-angiogenic treatment strategy is well-described in cancer treatment including ovarian, colorectal, non-small cell lung cancers. Here, the anti-angiogenic activity of both Bevacizumab and Aflibercept have been searched on ten previously established primary Oral Squamous Cell Carcinoma (OSCC) cells of an Iranian population with different purity, searching for the most effective anti-angiogenic targeted drug.

METHODS: To investigate and compare the effect of Bevacizumab and Aflibercept on Vascular Endothelial Growth Factor (VEGF) secretion of ten primary OSCC cells, cell proliferation and viability was assessed by ELISA and MTT assays. Also, cell migration was studied using scratch assay.

RESULTS: The results showed that VEGF impressively expressed in all primary cancer cells. Although both drugs significantly reduced the secretion of VEGF, the effect of Aflibercept was more prominent. Also, Bevacizumab-treated cells migration was lower than the control group and the cells treated with Aflibercept showed the lowest migration rate comparing with Bevacizumab and control groups.

Conclusion: The anti-angiogenic targeted drugs could probably be used in treatment of the patients with OSCC in combination with conventional surgical treatments.