Aye Myat Thwe, Dent Implants Dentures 2017, 2:2 (Suppl)
DOI: 10.4172/2572-4835-C1-002

Role of EGFR inhibitors in oral cancer cell migration

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Epithelial to mesenchymal transition (EMT) is the process by which cells change shape from being tightly connected epithelial cells to more motile mesenchymal cell. EMT has been reported to facilitate cell migration. Cell motility is an initial first step on the road to metastasis. Epidermal growth factor receptor (EGFR) has been reported to be overexpressed in oral cancer and is often related with poor prognosis. Epidermal growth factor (EGF) and transforming growth factor (TGFα) are ligands that bind to EGFR and can affect many different cellular processes such as proliferation, migration, apoptosis etc. In this project, cell proliferation, migration, morphology change and EMT makers of HSG, AZA1, HacaT and TYS are measured by cell counting, scratch assay, photographic image capturing and immunofluorescence in related with addition of 1 ng/ml, 10 ng/ml, 50 ng/ml of EGF and TGFα incubated at different time point. 10 ng/ml and 50 ng/ml concentration induce morphology change (EMT like phenotype with finger like projection) and increase migration while there is not much difference in cell proliferation. Their morphological changes are completely blocked by 1hour pre-treatment with 5μM Gefitinib (EGFR tyrosine kinase inhibitor), 5 μM Erlotinib (EGFR TK inhibitor) and 25 μM PD (MAPK inhibitor) while there is no blockage of cell migration.

Biography

Aye Thwe graduated from Myanmar with a Bachelor of Dental Surgery in 2010. After practicing as a Dentist for 2 years, she came to UK to study at University of Dundee. She received an MRes in Oral Cancer, and progressed into the PhD programme. She is now in the 3rd year of her PhD programme.

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