Title : EGF and TGFα motogenic activies are mediated by the EGF receptor: Identification of signalling pathways involved in oral cancer

Aye Myat Thwe

University of Dundee, United Kingdom

Abstract description

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 a number of different cellular process 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 1ng/ml,10ng/ml,50ng/ml of EGF and TGFα incubated at different time point. 10ng/ml and 50ng/ml concentration induce morphology change (EMT like phenotype with finger like projection) and increase migration while there is not much difference in cell proliferation. There morphological changes are completely blocked by 1 hour pre treatment with 5μM Gefitinib(EGFR tyrosine kinase inhibitor), 5μM Erlotinib (EGFR TK inhibitor) and 25μM PD (MAPK inhibitor) while there is no blockage of cell migration.

Presenting author details
Full name: Aye Myat Thwe
Contact number: +440754497567

Email: a.m.thwe@dundee.ac.uk
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