IL-6 enhances migration and ICAM-1 expression of human oral squamous cell carcinoma involves IL-6 receptor signaling pathway

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Abstract

Oral squamous cell carcinoma (SCC) has a striking tendency to migrate and metastasize. Interleukin-6 (IL-6), has been implicated in the pomotion of many cancers proliferation and migration. Intercellular adhesion molecule-1 (ICAM-1), a member of the immunoglobulin supergene family, is an inducible surface glycoprotein that mediates adhesion-dependent cell-to-cell interactions. However, the effects of IL-6 in migration and ICAM-1 expression in human oral cancer cells are largely unknown. We found that IL-6 increased migration and ICAM-1 expression in human oral cancer cells. Using a specific inhibitor and genetic inhibition of IL-6 receptor, we discovered that the IL-6 receptor is involved in migration and ICAM-1 expression of human oral cancer cells. IL-6-mediated migration and ICAM-1 up-regulation were attenuated by inhibitors of Syk, JNK and AP-1. Activation of the Syk, JNK, and AP-1 signaling pathway occurred after IL-6 stimulation. IL-6-induced AP-1 activity was inhibited by Syk and JNK inhibitor. Our results indicated that IL-6 enhances the migration of human oral cancer cells by increasing ICAM-1 expression through the IL-6 receptor, Syk, JNK and AP-1 signal transduction pathway.