EFFECT OF HUMAN BONE MARROW DERIVED MESENCHYMAL STEM CELLS ON SQUAMOUS CELL CARCINOMA CELL LINE

Hala Elkammar ,Mohamed Salah El-Din Ayoub, Nagwa Kamal Eldin Roshdy, Houry Moustafa Baghdadi

Abstract

Back ground: Researchers have been evaluating the use of stem cells in anticancer therapy for several years. Squamous Cell Carcinoma (SCC) is considered the most common epithelial malignant neoplasm.There is an over expression of Bcl2 and Survivin and VEGF in SCC which correlate with more aggressive tumors that do not respond to treatment. Material and Methods: This study consisted of five groups. The first group consisted of HEp2 culture that acts as a control. The second and third groups consisted of HEp2 cells cultured in MSCs conditioned medium for 48 and 96 hours, respectively. The fourth and fifth groups consisted of HEp2 cells cultured in co-culture conditioned medium for 48 and 96 hours, respectively. All cultures were evaluated for Survivin, Bcl2 and VEGF gene expression using real time PCR and proliferation rates using MTT assay. Results: The results showed that culturing HEp2 in MSCs conditioned media and in co-culture conditioned media for 48 hours reduced Survivin, Bcl2 and VEGF gene expressions when compared to their expression in the HEp2culture. There was a further reduction in Survivin and VEGF gene expressions when culturing in these media was extended until 96 hours while Bcl2 expression increased. Conclusion: MSCs and Cocultured media reduced proliferation rate and angiogenesis in HEp2 cell line, while its effect on apoptosis still needs further studying.

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