

EPSTEIN-BARR VIRUS INFECTION INDUCE MELANOMA CELL MIGRATION

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INTRODUCTION

Epstein-Barr virus (EBV) and cytomegalovirus (CMV) are human herpes viruses with oncogenic potential. They are associated with several malignancies (Hodgkin's and non-Hodgkin's lymphomas, HIV/AIDS lymphomas, lymphoepithelioma-like carcinomas, colon carcinoma, Kaposi's sarcoma, cervical carcinoma etc.), however the relationship between these viruses and melanoma is scarcely investigated. Only scattered clinical studies demonstrate that some nevi and malignant melanomas are also related with EBV infection.

Exosomes are nanometer-size extracellular vesicles. These small information packages are generated via endosomal way and carry wide spectra of molecules, e.g. miRNA, mRNA, signal molecules, proteins, viral elements, receptor components.

Our aim was to show whether these herpes viruses can play a role in the invasiveness of melanoma through induction of melanoma cell migration.

METHODS

Migration of NHME melanocyte cells toward the supernatant of EBV transformed B lymphocyte cell culture as chemoattractant was observed with ibidi 2D chemotaxis assays using μ -Slide Chemotaxis^{2D} and μ -Slide Chemotaxis^{3D}. The potential role of EBV infection in the malignant transformation of melanocytes was also investigated by searching viral miRNA, analyzing the miRNA content of melanoma cell derived exosomes with GeneChip miRNA Array (Affimetrix).

RESULTS

We have found significant migration of NHME melanocytes induced by EBV transformed B lymphocyte supernatant in the real time 2D chemotaxis assays.

MicroRNA analysis showed that B16F1 melanoma cell derived exosomes carry EBV and CMV microRNAs, however, the genome or proteins of these viruses were not detected in the cells.

CONCLUSIONS

Our results support our working hypothesis that the EBV infection not only facilitate malignant transformation of melanocytes, but, during the malignant course, could increase of tumor invasiveness, number of metastasis and the progression of disease.

Eredményeinket poszter prezentáció formájában kívánjuk bemutatni.

Az absztrakt témája elméleti jellegű.