MIGRATION CHARACTERISTICS OF CELLS GROWN IN EMBRYONIC MICROENVIRONMENT AND UNDER ANTIVIRAL AGENTS

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Introduction. Cancer metastasis is a crucial process of spread of cancer cells from the origin of tumor lesion to the tissues and other organs beyond, where new tumor lesions are formed

which might be a single kick of event that may bring to the death of most of cancer suffering patients. It is known that there are various characteristics between aggressive cancer cells and embryonic progenitors, which gave rise to the theory of "embryonic rest" and suggested possibility of presence of dormant embryonic remnants in differentiated tissues that may have direct link to the generation of cancer lesions when these remnants get activated in the differentiated tissue microenvironments. This concept was a foundation to use of embryonic microenvironment as a treating agent against cancer cells. There are many factors like bad died, use of tobacco, genetic factors and viral infections that influence the occurrence of cancer. It is well-known that cancer cells have a long history with viruses, which may give arise to cancer lesions. It is estimated that 15 percent of all worldwide human cancer cases are related to viruses, which represents a major portion of worldwide cancer problems. Thus, it was decided to use of antiviral agent (e.g. Acyclovir) as well as with chicken embryonic extract in cancer cell reprogramming.

Methods. Two types of treatments were used against cancer malignancy. Stock of antiviral drug acyclovir (ACV) was dissolved in the culture 10% FBS /DMEM in order to reach a final concentration of 100 uM for treating U118 glioblastoma cells and 5 uM for MCF-7 breast cancer cells. Other treatment is chicken embryo extract (CEE) was derived from fertilized 11 days old chicken eggs, Final concentrations of 4% and 10% of chicken embryo extract (CEE) were prepared to treat U118 and MCF-7 cells respectively. Effect of these treatments on cell survival, cell proliferation, cell migration and whether onco- and viral genes would be suppressed was tested.

Results. Proliferation and survival assay demonstrates that CEE and ACV treatments have effect on cell survival and cell proliferation of cancer cells. Our results showed that migration trend of cancer cells have decreased for both cancer cell lines compared to untreated cells. However, ACV drug seems to have less effect on cell migration than CEE, as percentage of migrated cancer cells treated with CEE is less than with ACV. Rate of MCF-7 cells treated with treatments were decreased in comparison to control cells, whereas, this trend was not observed in U118 cells. Oncogenes were still present in the cell treated with CEE and ACV, as well as suppressor genes. P65 viral genes were dominating in MCF cells and absent in U118 cells.

Conclusion. The use of CEE and ACV treatments against cancer cells revealed sufficient results in cancer cell migration and not in the migration rate of cancer cells. Altogether, these results allow us to summarise that CEE and ACV can mask the metastatic pattern of MCF and U118 cells.