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THE EFFECT OF NEEM LEAF GLYCOPROTEIN ON HUMAN GLIOBLASTOMA CELL

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Glioblastoma (GBM) is an aggressive brain tumour and the treatment options are limited. Despite advancement in surgical and adjuvant radiation therapy and chemotherapy strategies, malignant gliomas continue to be associated with poor prognosis. Immunotherapeutic use seems to be an effective remedy for cancer. Immunotherapeutic compounds harness the power of the hosts' immune system. *Azadirachta indica*, also known as neem, is commonly found in many semi-tropical and tropical countries including India, Pakistan and Bangladesh. The components extracted from neem plant have been traditionally used as the curative of cancer. Neem leaf glycoprotein has been seen to have a broad-range of inhibition activity on different cancer in culture and is currently being used in different cancer treatments as an immunotherapeutic agent. Uncontrolled cell growth and proliferation are one of the fundamental hallmarks in this disease and play important role in the development of tumour and metastasis. Extracts of neem suppress the proliferation and growth of tumour cells through disruption of cell cycle progression. But it is not clear that how neem leaf glycoprotein inhibits the action of glioblastoma. In this experiment, we are using several experimental approaches to identify that NLGP is an essential component for anti tumoral action. We are testing neem leaf glycoprotein, the most abundant plant-derived, on the U251, U87 and SF126 glioblastoma cell lines. The treatment of glioblastoma cells with neem leaf glycoprotein is expected to have an apoptosis as well as inhibitory activity. Our expected test results may improve the overall effectiveness in the treatment of glioblastoma in cancer patients. In this study, we are trying to find that NLGP has inhibitory activity on glioblastoma cell proliferation and survival. We are also trying to find that NLGP induce apoptosis of glioblastoma cell. Glioblastoma multiforme (GBM) cell lines are treated with freshly prepared NLGP from mature *Azadirachta indica*. MTT assay is being done to find out the cell metabolic activity. Cell culture is being analysed for cell apoptosis. Glioblastoma cells are being grown in petri dishes and are being treated with NLGP. Cell cycle and Western blot analysis is being done to find out how after NLGP treatment cellular content of proteins that regulate cell progression through the cell cycle works. Finally PCR is being done. NLGP, as an immunotherapeutic agent, has shown promising result in cancers. If our experiment meets the expected result then NLGP can be used as an immunotherapeutic agent for brain tumours and can bring a revolutionary change in medical field.

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