CORRELATION OF THE CD133 AND VEGF EXPRESSIONS WITH CELULAR IMMUNITY

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Gliomas are the most aggressive and frequently diagnosed primary brain tumours. Despite advances in surgical resection, radiation therapy and chemotherapy, prognosis remains grim for many patients with glioblastoma. The aim of the research described in this paper is to investigate the correlation of the CD133 and VGF expressions with cellular immunity because it is well known that the patients with glioblastoma suffer from immunosuppression. Recently, tumour cells with stem-like features have been identified in glioblastoma and these brain tumour stem cells express the transmembrane glycoprotein CD133. Growing data demonstrate correlation between CD133- expressing glioblastoma and adverse prognosis including contribution to radio-and chemo-resistance and tumour aggressiveness. Some studies suggest that brain tumour stem cells live in „vascular niche" that promotes their long-term growth and self-renewal. The research results revealed strong correlation between CD133 and VEGF expressions. Spearman's rank correlation coefficient showed statistically significant negative correlation between overall survival and the expression of CD133 and VEGF, indicating biological aggressiveness of tumour. Linear regression analysis revealed low expressions of CD133 protein in tumour tissue as most significant predictor of longer survival among patients with glioblastoma. The results of our study showed that immunohistochemical analysis of CD133 and VEGF expression discloses a subgroup of patients with poor prognosis who could benefit from new forms of antiangiogenic therapies. This has promoted an intensive search for effective treatment alternatives. Immunotherapy, one such alternative, has long been recognized as a potentially potent cancer treatment but has been limited by an inadequate understanding of the immune system. The present research is focused on cellular immunity in glioblastoma that is then compared with other types of tumour. In this process, the NK activity, phagocytic activity and CD markers on the surface of cellular membranes are also researched. Although gliomas express tumour-associated antigens and appear potentially sensitive to immune responses, many factors work together to inhibit antiglioma immunity.