

Importance of Vascular Endothelial Growth Factor (VGFR) in Grade II-III Astrocytomas

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Abstract

The purpose of the study: to analyze and evaluate the status of vascular endothelial growth factor (VGFR) in the neoangiogenesis of astrocytomas with a risk level of II-III.

Keywords: anaplastic astrocytoma, fibrillary astrocytoma, vascular endothelial growth factor (VGFR), glioma, immunohistochemistry.

Research object and methods: in 2020-2022, a retrospective analysis of the pathomorphological types of astrocytomas of 40 grade II-III astrocytomas was conducted at RINIATM. From them, 20 patients were selected in 2 groups with fibrillary astrocytomas (Grade-2) and anaplastic astrocytomas (Grade-3). Immunohistochemical examination Using Bond Leica Australia (Australia) immunohistoprocessor, the expression of VGFR in tumor cells was studied with monoclonal antibody. The intensity in the tumor cell was given importance according to the results of IGX. The obtained results were evaluated in the form of points and percentages according to the ALLRED methodology. The minimum score is 0 (negative), 1 point (low positive 10-30%), 2 points (high positive 30-60%), 3 points (high positive 60-100%). The obtained results are evaluated in the form of mild, moderate and severe positive reactions.

Obtained results: Reactions of the tissues of fibrillary astrocytoma with level II risk level to VGFR marker, a mild positive reaction was observed in 15 fibrillary astrocytomas (75%). A moderate positive reaction was observed in 3 (15%), and a high positive reaction in 2 (10%). In anaplastic astrocytoma (Grade-3) with risk level III, a mild positive reaction was observed in 3 cases (15%). Moderate positive reaction was observed in 5 patients (25%). A high positive reaction was observed in 12 patients (60%).

Conclusion: High level of positive indicator of vascular endothelial growth factor in astrocytomas with risk level II indicates the low formation of neoangiogenesis in this type of tumors and the low growth rate of the tumor. Taking into account that medium and high positivity of vascular endothelial growth factor in anaplastic astrocytomas with a level of risk III occupies the main share, neoangiogenesis is well developed in this type of tumor, which can lead to relapse and acceleration of regrowth.

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