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Poster Presentation

Inhibition of Vasculogenic Mimicry in a Three-Dimensional Culture in Glioblastoma

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Abstract

Glioblastoma is one of the most common primary brain tumors (80% of patients) that has a poor prognosis due to malignancy. Glioblastoma has an annual incidence of 5.26 per 100 000 population or 17 000 new diagnoses per year and so as the population aging, the number of patients is expected to increase. There is a growing body of literature investigating the tumor microenvironmental mechanisms which lead to metastasis. It has previously been believed that the tumor ensures its growth through angiogenesis. Recent evidence suggests a new approach for tumor nutrition which is the act of tubulogenesis by tumor cells mimicking endothelial angiogenesis in the condition of hypoxia. This procedure is called vasculogenic mimicry. In addition to searching for oxygen and vital nutrients supporting tumor growth, vasculogenic mimicry can result in metastasis due to tumor cells migration into blood vessels. This approach has been detected in several cancers such as melanoma. In recent years there has been an increasing interes t in vasculogenic mimicry, nevertheless there is not sufficient research discussing mentioned mechanism in glioblas toma. The aim of this study is to investigate tumor cells behavior resulting in vasculogenic mimicry in glioblastoma in a three-dimensional culture in order to simulate natural brain environment to get exact and detailed results. Based on recent researches reviewing controlling ways of vasculogenic mimicry in melanoma and other cancers, it is expected to find interrupting mechanisms for tumor nourishment and metastasis through mentioned approach.

Keywords: Glioblastoma, Vasculogenic Mimicry, Tubulogenesis, Three-Dimensional Culture

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