

Are Gelatinases a bridge between TBI and Brain Cancer?

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Brain trauma is one of the major causes of disability and deterioration, worldwide. According to the newest statistics around 155 people die from TBI each day, while 1 in 60 people has a TBI – related disability. In the recent studies the new not well explained theory is that brain trauma is linked to the occurrence of brain tumors.

Matrix metalloproteases (MMPs) are superfamily of calcium – dependent zinc endopeptidases/ proteases, which are very important for the tissue remodeling processes. There are 24 MMPs homologues categorized into six different categories, each responsible for concrete functions.

The MMPs are expressed low in the organism, except of the gelatinases (MMP-2 and MMP-9) and MT1-MMP, which are continuously higher and well distributed in the nervous system. Moreover, gelatinases are thought to be the key proteolytic factors for the blood- brain – barrier disruption after TBI. It is believed that increased levels of

gelatinases in the plasma and brain fluids are linked poorer clinical outcome and enhanced mortality rates

On the other hand, the group of gelatinases is involved in the origin of malignant glioma, thus promoting angiogenesis and invasion.

Therefore, the present study has the aim to present in detail the possible function of the gelatinases in the origin of brain tumors after TBI.

Biography:

Alexandrina S. Nikova is a trainee, master and PhD student in neurosurgery. She is a two-time international award winner for research in the field of brain trauma. Until recently, she is an author of a book entitled “Cervical spine surgery and the operating team” and more than 20 publications. Dr Nikova is a member of variable Hellenic and international organizations. Her research interests include neurooncology, radiosurgery, vascular neurosurgery, neurotrauma, and neuroscience.

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