

ABSTRACT

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Glioblastoma: What can we do for these patients today and what will we be able to do in the future?

Bryukhovetskiy I(1), Kosianova A(2), Zaitsev S(2), Pak O(2), Sharma A(3), Sharma HS(4).

Author information:

(1)School of Life Science & Biomedicine, Medical Center, Far Eastern Federal University (FEFU), Vladivostok, Russia. Electronic address: igbryukhovetskiy@gmail.com.

(2)School of Life Science & Biomedicine, Medical Center, Far Eastern Federal University (FEFU), Vladivostok, Russia.

(3)International Experimental Central Nervous System Injury & Repair (IECNSIR), Department of Surgical Sciences, Anesthesiology & Intensive Care Medicine, Uppsala University Hospital, Uppsala University, Uppsala, Sweden.

(4)International Experimental Central Nervous System Injury & Repair (IECNSIR), Department of Surgical Sciences, Anesthesiology & Intensive Care Medicine, Uppsala University Hospital, Uppsala University, Uppsala, Sweden. Electronic address: sharma@surgsci.uu.se.

Glioblastoma multiforme (GBM) is an extremely aggressive primary human brain tumor. The median survival of GBM patients is 15 months in case of completing the modern complex treatment protocol. Chemotherapy can help to extend the life expectancy of patients. GBM treatment resistance is associated with cancer stem cells (CSCs). The present paper analyses the main reasons for ineffectiveness of the existing GBM treatment methods and suggests treating CSCs as a complex phenomenon, resulting from the coordinated interaction of normal stem cells and cancer cells (CCs) in immunosuppressive microsurroundings. The GBM treatment strategy is suggested not for only suppressing strategically important signaling pathways in CCs, but also for regulating interaction between normal stem cells and cancer cells. The paper considers the issue of controlling penetrability of the blood-brain barrier that is one of the main challenges in neuro-oncology. Also, the paper suggests the ways of extending life expectancy of GBM patients today and prospects for the near future.

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