Antiangiogenic therapy for high-grade gliomas: current concepts and limitations.


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Abstract
Glioblastoma (GBM) is associated with a high degree of angiogenesis. Therefore, antiangiogenic therapy could have a role in the treatment of this tumor. The currently available treatment approaches acting against angiogenesis are mainly directed toward three pathways: VEGF pathway, VEGF-independent pathways and inhibition of vascular endothelial cell migration. It has been demonstrated that antiangiogenic therapy can produce a rapid radiological response and a decrease of brain edema, without significantly influencing survival. Future studies should consider that: animal models are inadequate and cells used for animal models (mainly U87) are deeply different from patient GBM cells; GBM cells may become resistant to antiangiogenic therapy and some cells may be resistant to antiangiogenic therapy ab initio; and angiogenesis in the peritumor tissue has been poorly investigated. Therefore, the ideal target of angiogenesis is probably yet to be identified.

PMID: 24175724 [PubMed - in process]