

ABSTRACT

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Oncolytic Viral Therapy for Malignant Glioma and Their Application in Clinical Practice.

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Glioblastoma is the most common primary malignant brain tumor in adults and outcomes remain poor despite the current standard of care multimodal therapy. Oncolytic virotherapy utilizes engineered viruses to exert an anti-tumor effect via both direct oncolysis and stimulation of an immune response within the tumor microenvironment, turning tumors from "cold" to "hot." This has shown promise as a novel therapeutic modality and attempts to circumvent the challenges associated with traditional treatments. Many oncolytic viruses have been investigated in completed and ongoing clinical trials and while safety has been demonstrated, clinical outcomes have been variable, often with only a subgroup of patients showing a significant response. This review summarizes these studies, addresses relevant technical aspects of oncolytic virus administration, and highlights practical considerations to assist providers in appropriately caring for patients treated with oncolytic virotherapy. Additionally, future directions within the field that may help to maximize efficacy of this modality are discussed.

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