Purpose of Review: First described in 2002, the presence and role of human cytomegalovirus (HCMV) infection in glioblastoma (GBM) has remained a controversial topic. New research indicates HCMV gene products likely promote GBM pathogenesis and that therapies aimed at HCMV might influence disease progression.

Recent Findings: Recently, investigators have begun to analyze HCMV genome and proteins present in GBM cells in vivo. Furthermore, the research has demonstrated that several HCMV gene products that have oncomodulatory properties are expressed in GBM and may be impacting tumor pathogenesis in vivo. These HCMV gene products modulate GBM proliferation, apoptosis, angiogenesis, invasion and immune evasion. A recent mouse model provides mechanistic information as to how CMV may promote gliomagenesis in the setting of tumor suppressor dysfunction and STAT3 signaling. In addition, clinical outcomes of GBM patients are associated with the degree of HCMV infection. Novel therapies aimed at direct antiviral and immunotherapy approaches to HCMV suggest that these modalities may impact the future treatment of this disease.

Summary: A more precise understanding of the role of HCMV infection in gliomagenesis and GBM pathogenesis could reveal novel therapeutic and preventive strategies.

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