Cytomegalovirus infection in early childhood may be protective against glioblastoma multiforme, while later infection is a risk factor.

Lehrer S.
Department of Radiation Oncology, Mount Sinai School of Medicine, Box 1236, NY 10029, USA.

Abstract
Glioblastoma multiforme is the most common and most aggressive type of primary brain tumor, accounting for 52% of all primary brain tumor cases and 20% of all intracranial tumors. Recently, evidence for a viral cause has been postulated, possibly cytomegalovirus (CMV). In one report, 80% of patients with newly diagnosed glioblastoma multiforme had detectable cytomegalovirus DNA in their peripheral blood, while sero-positive normal donors and other surgical patients did not exhibit detectable virus. However, another study reported that five glioblastoma patients showed no circulating CMV detected either with RT-PCR or blood culture. But CMV could still be a factor in the genesis of glioblastoma multiforme, if age at infection is taken into account, since the incidence of both glioblastoma multiforme and CMV infection are inversely related to socioeconomic status. CMV infection in early childhood, more common in lower socioeconomic groups, may be protective against glioblastoma multiforme, whereas CMV infection in later childhood or adulthood may be a risk factor for glioblastoma. If so, glioblastoma multiforme occurrence would resemble paralytic polio, where low socioeconomic status, poor hygiene and early infection are protective.

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