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Longer survival of glioblastoma complicated by bacterial infections after surgery: what is known today

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Abstract

Background: Glioblastoma is the most common primary brain tumor in adults with the worst overall survival. Post-craniotomy intracranial infections are not infrequent after surgery, however their impact on overall survival of glioblastoma patients remains unclear. Here we report the case of an unusual longer survival of a glioblastoma patient affected by multiple infections and review the literature on this topic.

Methods: PubMed, Embase and Cochrane search engines were reviewed for papers describing outcome of patients suffering from glioblastoma and associated cerebral infections.

Results: Four papers accounting a total of 29 patients met the eligibility criteria. Staphylococcus aureus and Staphylococcus epidermidis resulted the most common bacteria causing post-craniotomy intracranial infections in brain tumor patients. The overall median survival rate was 18 months ± 18.12 when adding all 29 patients. Only one study described a significant higher survival rate for the infected group.

Conclusions: Glioblastoma is the most frequent malignant brain tumor with a very poor outcome/survival. In the literature few cases described an exceptional longer survival often associated with a postoperative infection. To date, the pathophysiology behind this longer survival remains unclear, but it seems that Staphylococcus species could have an influence on the progression of this aggressive brain tumor.