

ABSTRACT

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Gamma Knife radiosurgery as primary treatment of low-grade brainstem gliomas: A systematic review and metanalysis of current evidence and predictive factors.

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The current standard of care for surgically inaccessible low-grade brainstem gliomas (BS-LLGs) is external-beam radiotherapy (RT). Developments toward more innovative conformal techniques have focused on decreasing morbidity, by limiting radiation to surrounding tissues. Among these Gamma Knife radiosurgery (SRS-GK) has recently gained an increasingly important role in the treatment of these tumors. Although SRS-GK has not yet been compared with conventional RT in patients harboring focal BS-LGGs, clinical practice has been deeply influenced by trials performed on other tumors. This is the first meta-analysis on the topic, systematically reviewing the most relevant available evidence, comparing RT and SRS-GK as primary treatments of BS-LGGs, focusing on survival, clinical outcome, oncological control, and complications. Predictive factors have been systematically evaluated and analyzed according to statistical significance and clinical relevance.

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