

Brainstem glioblastoma

Adult brainstem gliomas are characterized into subtypes depending on clinicopathologic and radiographic characteristics. Among them, brainstem glioblastoma is the most malignant and has the poorest prognosis, with surgical resection for this condition posing a great challenge and risk. Postoperative synchronous radiotherapy and temozolomide (TMZ) chemotherapy, or “Stupp protocol”, is the standard of care for glioblastomas. However, antiangiogenic therapy, which is widely used for different cancers, is now an alternative treatment for malignant tumors. Angiogenesis is one of the pathological features of glioblastoma and is involved in tumor progression and metastases. Besides, previous studies suggested a better response to antiangiogenic therapy in some solid tumors with TP53 mutation than TP53 wide-type. Apatinib is a novel, oral, small-molecule tyrosine kinase inhibitor that mainly targets vascular endothelial growth factor receptor-2 (VEGFR-2) to inhibit angiogenesis. In addition, apatinib can cross the blood-brain barrier and improve encephaledema. A report by Zhu et al. describes the use of concurrent apatinib and dose-dense TMZ in a clinically inoperable patient who had a refractory brainstem glioblastoma with a TP53 germline mutation. He obtained an ongoing progression-free survival (PFS) of nearly 16.0 months after resistance to TMZ maintenance. Due to the patient's circumstances, apatinib and TMZ was considered an effective and safe treatment method ¹⁾

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Zhu Y, Zhao L, Xu Y, Zhan W, Sun X, Xu X. Combining apatinib and temozolomide for brainstem glioblastoma: a case report and review of literature. Ann Palliat Med. 2022 Jan;11(1):394-400. doi: 10.21037/apm-22-22. PMID: 35144430.

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