

ABSTRACT

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Current therapeutic options for glioblastoma and future perspectives.

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INTRODUCTION: Glioblastoma is a malignant primary brain tumor that affects approximately 250,000 new patients per year worldwide. It is among the most difficult cancers to treat, and 5-year survival rates remain low. Standard therapies for glioblastoma include surgical resection, radiation therapy and systemic chemotherapy. Multiple clinical trials are currently underway to improve therapeutic options for glioblastoma patients.

AREAS COVERED: We conducted a search of the literature on therapeutic options for glioblastoma on Pubmed for clinical trials, reviews, and meta-analyses. We also searched abstracts from the American Society of Clinical Oncology, Society for Neuro-Oncology, European Association of Neuro-Oncology and American Association for Cancer Research. We also searched the U.S. National Library of Medicine clinical trials database. We discuss therapeutic options for newly diagnosed glioblastoma, mainly temozolomide, lomustine and tumor treating fields (TTF). Lastly, we discuss available therapeutics for recurrent glioblastomas as well as agents currently under investigation in clinical trials.

EXPERT OPINION: Enrollment in clinical trials should be considered for both newly diagnosed and recurrent glioblastoma patients. The standard post-operative treatment for newly diagnosed glioblastoma patients is a combination of radiotherapy and temozolomide. This strategy mostly benefits patients with MGMT methylated tumors, and the decision to offer temozolomide to patients with MGMT unmethylated tumors should be made on an individual basis. TTF devices can be used in conjunction with temozolomide. Available standard therapies for recurrent glioblastoma include nitrosureas, bevacizumab and temozolomide rechallenge, as well as TTF devices. Agents that are currently being evaluated in clinical trials include novel targeted therapies, novel chemotherapies, and immunotherapies.

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