

ABSTRACT

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Congress of Neurological Surgeons systematic review and evidence-based guidelines update on the role of cytotoxic chemotherapy and other cytotoxic therapies in the management of progressive glioblastoma in adults.

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TARGET POPULATION: These recommendations apply to adult patients diagnosed with progressive glioblastoma (pGBM). **QUESTION (Q1):** In adult patients with pGBM does the use of temozolomide (TMZ) with alternative dosing or the use of TMZ in combination with other cytotoxic treatments result in increased overall survival compared to other chemotherapy?

RECOMMENDATION: Level III: Adult patients with pGBM might derive benefit in treatment with TMZ, especially those who progress after more than 5 months of TMZ-treatment free interval. Level III: Combination of TMZ with other cytotoxic agents such as nitrosourea, cisplatin, electrohyperthermia, or tamoxifen is not suggested in adult patients with pGBM as a stand-alone therapy. There is insufficient data to make a recommendation about which alternative TMZ dosing provides the best benefits. **QUESTION (Q2):** In adult patients with pGBM does the use of systemic or in situ nitrosourea result in increased overall survival compared to other chemotherapy?

RECOMMENDATION: Level III: In the setting of pGBM, fotemustine is suggested in elderly patients with methylated MGMT promoter status. There is insufficient evidence to compare fotemustine to other nitrosoureas. There is insufficient evidence to make a recommendation about the use of in situ nitrosourea in patients with pGBM who underwent the Stupp regimen. **QUESTION (Q3):** In adult patients with pGBM does the use of platinum compounds and topoisomerase result in increased survival compared to other chemotherapy?

RECOMMENDATION: Level III: Other chemotherapy including platinum compounds and topoisomerase inhibitors are not suggested to be used in adult patients with pGBM. Level III: Other cytotoxic therapies like perillyl alcohol or ketogenic diet are not suggested for use in adult patients with pGBM as a stand-alone therapy. **QUESTION (Q4):** In adult patients with pGBM does the use of tumor treating field (TTF) result in increased overall survival compared to chemotherapy?

RECOMMENDATION: Level III: The use of TTF with other chemotherapy may be considered when treating adult patients with pGBM. There is insufficient evidence to recommend TTF to increase overall survival in adult patients with pGBM. **QUESTION (Q5):** In adult patients with pGBM does the use of oncolytic virotherapy result in increased survival compared to chemotherapy?

RECOMMENDATION: Level III: Oncolytic virotherapy is not suggested in patients with pGBM.

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