The role of Gliadel wafers in the treatment of high-grade gliomas.

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Abstract

Glioblastoma multiforme (GBM) is the most aggressive brain tumor. Standard treatment includes surgery, radiation and chemotherapy. Prognosis is dismal with an average survival of approximately 1 year. Gliadel wafers are one treatment option, working as a source for local chemotherapy delivery. Their use is controversial with questionable survival benefit and potential side effects. We reviewed the literature in an effort to clarify their role in the treatment of high-grade gliomas. A systematic PubMed search was performed using the keywords 'Gliadel', 'carmustine' or 'BCNU wafers' in newly diagnosed high-grade glioma patients. Treatment regimen, and median survival were analyzed. Adverse event ratio was calculated by computing the number of adverse events in a study per patient receiving carmustine wafers. Nineteen studies with 795 patients were included in our review. Survival was 8.7-22.6 months with a mean overall survival (OS) of 16.2 months (control survival is approximately 14 months with surgery and adjuvant chemoradiotherapy). Adverse event ratio using Gliadel wafers in control group. Complication rate was 42.7%. Gliadel wafers may marginally increase survival and local control in newly diagnosed GBM patients but are associated with a high complication rate; therefore, we do not recommend using Gliadel wafers in patients with GBM. Further research may be warranted once a safer alternative to Gliadel wafers has been introduced.

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