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1: [J Neurosurg.](#) 2008 Dec 1. [Epub ahead of print] [Related Articles](#),
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Gliadel (BCNU) wafer plus concomitant temozolomide therapy after primary resection of glioblastoma multiforme.

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Object Gliadel (BCNU) wafer and concomitant temozolomide (TMZ) therapy, when used individually as adjuvant therapies, extend survival from that achieved by resection and radiation therapy (XRT) for glioblastoma multiforme (GBM). It remains unstudied whether combining Gliadel and TMZ therapy is safe or further improves survival in patients with newly diagnosed GBM. The authors reviewed their initial experience utilizing combined Gliadel, TMZ, and radiation therapy for the treatment of GBM. Methods All cases involving patients undergoing primary resection of GBM with or without Gliadel wafer (3.85% BCNU) implantation and adjuvant XRT over a 10-year period (1997-2006) were retrospectively reviewed. Beginning in 2004, concomitant TMZ became the standard of care at the authors' institution and all patients with Gliadel implantation also received concomitant TMZ (Stupp protocol). Overall survival and treatment-related morbidity were assessed for all patients treated with Gliadel plus concomitant TMZ (XRT + Gliadel + TMZ). Age-matched (≤ 70 years) comparison of survival and morbidity was performed between the XRT + Gliadel + TMZ (post-2003) and XRT + Gliadel (pre-2004) cohorts. Results Thirty-three patients were treated with XRT + Gliadel + TMZ. The median survival in this group was 20.7 months, with a 2-year survival rate of 36%. Six-month morbidity included surgical site infection in 1 case (3%), perioperative seizures in 2 cases (6%), deep-vein thrombus in 1 (3%), pulmonary embolism in 3 (9%), and cerebral edema requiring admission for intravenous dexamethasone in 1 case (3%). Myelosuppression required premature termination of TMZ in 7 patients (21%) (thrombocytopenia in 5, neutropenia in 2 cases). In patients ≤ 70 years of age, XRT + Gliadel + TMZ (30 patients, post-2003) was independently associated with improved median survival (21.3 vs 12.4 months, $p = 0.005$) versus XRT + Gliadel (78 patients, pre-2004), with 2-year survival of 39 versus 18%, respectively. In these patients, XRT + Gliadel + TMZ was not associated with an increase in perioperative morbidity in comparison with XRT + Gliadel. Conclusions In this experience, concomitant TMZ therapy in addition to Gliadel wafer implantation was associated with a median survival of nearly 21 months without increased perioperative morbidity. Temozolomide can be safely administered to patients receiving Gliadel wafers after resection of GBM.

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