

## CLINICAL CHARACTERISTICS, IMAGE FINDINGS, AND TREATMENT MODALITIES ASSOCIATE WITH OUTCOMES OF PATIENTS WITH GLIOBLASTOMA MULTIFORME

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**Purpose** : In this study, we evaluated the clinical outcomes of glioblastoma multiforme (GBM) patients with their prognostic factors.

**Materials and Methods** : From March 2001 through October 2008, we evaluated 114 consecutive patients with histologically confirmed GBM in a single institution. Most patients received tumor resection followed by radiotherapy (RT) with or without temozolomide use, while some received tumor resection alone. Clinical characteristics, image findings, treatment modalities, and overall survival (OS) of these patients were reviewed and analyzed.

**Results** : Thirty-five patients were treated with total or subtotal tumor resection followed by RT with concurrent and adjuvant temozolomide, 55 treated with tumor resection and adjuvant RT, and 24 treated with resection alone. At a median follow-up time of 40.6 months (ranging from 0.3 to 61.8 months), the median OS for all the patients was 12.5 months, and the one-year and two-year OS rates were 50% and 17.5%, respectively. Patients receiving combined tumor resection with RT and temozolomide had a better median OS than those without temozolomide used (19.4 vs. 10.1 months,  $p = 0.01$ ). In univariate analysis, poor Karnofsky performance status (KPS) ( $\leq 70$ ,  $p = 0.036$ ), multiple neurologic deficits ( $p = 0.044$ ), multiple brain lesions or corpus callosum invasion ( $p = 0.003$ ), subtotal resection ( $p = 0.001$ ), no RT ( $p < 0.001$ ), and no temozolomide ( $p = 0.001$ ) were significant prognostic factors for predicting poor OS of these patients. In multivariate analysis, multiple neurologic deficits ( $p = 0.008$ ), multiple brain lesions or corpus callosum invasion ( $p = 0.007$ ), subtotal resection ( $p = 0.005$ ), no RT ( $p < 0.001$ ), and no temozolomide ( $p = 0.007$ ) remained independent worse prognostic factors for OS of these patients.

**Conclusion** : Our results indicated that multiple neurologic deficits, image findings of corpus callosum invasion or multiple brain lesions, and single modality treatment were important factors for predicting poor prognosis.

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