Prognostic factors influencing clinical outcomes of glioblastoma multiforme.

Li SW, Qiu XG, Chen BS, Zhang W, Ren H, Wang ZC, Jiang T.

Department of Neurosurgery, Beijing Tiantan Hospital Affiliated to Capital Medical University, Beijing 100050, China.

BACKGROUND: Glioblastoma multiforme (GBM) is the most malignant kind of astrocytic tumors and is associated with a poor prognosis. In this retrospective study, we assessed the clinical, radiological, genetic molecular and treatment factors that influence clinical outcomes of patients with GBM. METHODS: A total of 116 patients with GBM who received surgery and radiation between January 2006 and December 2007 were included in this study. Kaplan-Meier survival analysis and Cox regression analysis were used to find the factors independently influencing patients' progression free survival (PFS) time and overall survival (OS) time. RESULTS: Age, preoperative Karnofsky Performance Scale (KPS) score, KPS score change at 2 weeks after operation, neurological deficit symptoms, tumor resection extent, maximal tumor diameter, involvement of eloquent cortex or deep structure, involvement of brain lobe, Ki-67 expression level and adjuvant chemotherapy were statistically significant factors (P < 0.05) for both PFS and OS in the univariate analysis. Cox proportional hazards modeling revealed that age <or= 50 years, preoperative KPS score >or= 80, KPS score change after operation >or= 0, involvement of single frontal lobe, non-eloquent area or deep structure involvement, low Ki-67 expression and adjuvant chemotherapy were independent favorable factors (P < 0.05) for patients' clinical outcomes. CONCLUSIONS: Age at diagnosis, preoperative KPS score, KPS score change at 2 weeks postoperation, involvement of brain lobe, involvement of eloquent cortex or deep structure, Ki-67 expression level and adjuvant chemotherapy correlate significantly with the prognosis of patients with GBM.