Treatment of recurrent glioblastoma multiforme using fractionated stereotactic radiosurgery and concurrent paclitaxel.

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Abstract

Despite the progress in neurosurgery and radiotherapy, almost all patients treated with malignant gliomas develop recurrent tumors and die of their disease. Eighty-eight patients (median age 56 years) with recurrent glioblastoma (median tumor volume 32.7 cm³) were treated with noninvasive fractionated stereotactic radiosurgery and concurrent paclitaxel used as a sensitizer. The median interval between diagnosis of primary glioblastoma and salvage radiosurgery was 7.8 months. Four weekly treatments (median dose: 6.0 Gy) were delivered after the 3-hour paclitaxel infusion (median dose: 120 mg/m²). Survival was calculated by the Kaplan-Meier method from radiosurgery treatment. Overall median survival was 7.0 months, and the 1-year and 2-year actuarial survival rates were 17% and 3.4%, respectively. When grouped by performance status, there was no difference in survival between the patients with low and high Karnofsky score. Patients with tumor volume less than 30 cm³ survived significantly longer than those with tumor greater than 30 cm³ (9.4 vs. 5.7 months, p = 0.0001). Their 1-year survival rate was 40% and 8%, respectively. Eleven patients (11%) had reoperation because of expanding mass. Stable disease was seen in 40% of patients (n = 34), and increase in radiographically detected mass was observed in 41 patients (48.8%). Although the treatment of recurrent GBM is mostly palliative, the fractionated radiosurgery offers a chance for prolonged survival, especially in patients with a smaller tumor volume.

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