Efficacy of fractionated stereotactic reirradiation in recurrent gliomas: long-term results in 172 patients treated in a single institution.

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Abstract

PURPOSE: To evaluate the efficacy of fractionated stereotactic radiotherapy (FSRT) performed as reirradiation in 172 patients with recurrent low- and high-grade gliomas.

PATIENTS AND METHODS: Between 1990 and 2004, 172 patients with recurrent gliomas were treated with FSRT as reirradiation in a single institution. Seventy-one patients suffered from WHO grade 2 gliomas. WHO grade 3 gliomas were diagnosed in 42 patients, and 59 patients were diagnosed with glioblastoma multiforme (GBM). The median time between primary radiotherapy and reirradiation was 10 months for GBM, 32 months for WHO grade 3 tumors, and 48 months for grade 2 astrocytomas. FSRT was performed with a median dose of 36 Gy in a median fractionation of 5 x 2 Gy/wk.

RESULTS: Median overall survival after primary diagnosis was 21 months for patients with GBM, 50 months for patients with WHO grade 3 gliomas, and 111 months for patients with WHO grade 2 gliomas. Histologic grading was the strongest predictor for overall survival, together with the extent of neurosurgical resection and age at primary diagnosis. Median survival after reirradiation was 8 months for patients with GBM, 16 months for patients with grade 3 tumors, and 22 months for patients with low-grade gliomas. Only time to progression and histology were significant in influencing survival after reirradiation. Progression-free survival after FSRT was 5 months for GBM, 8 months for WHO grade 3 tumors, and 12 months for low-grade gliomas.

CONCLUSION: FSRT is well tolerated and may be effective in patients with recurrent gliomas. Prospective studies are warranted for further evaluation.

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