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Hypofractionated stereotactic re-irradiation: treatment option in recurrent malignant glioma.

Vordermark D, Kölbl O, Ruprecht K, Vince GH, Bratengeier K, Flentje M.

Dept. of Radiation Oncology, University of Würzburg, Germany. vordermark_d@klinik.uni-wuerzburg.de

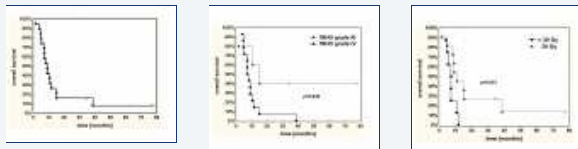
Abstract

BACKGROUND: Hypofractionated stereotactic radiotherapy (HFSRT) is one salvage treatment option in previously irradiated patients with recurrent malignant glioma. We analyzed the results of HFSRT and prognostic factors in a single-institution series.

METHODS: Between 1997 and 2003, 19 patients with recurrent malignant glioma (14 glioblastoma on most recent histology, 5 anaplastic astrocytoma) were treated with HFSRT. The median interval from post-operative radiotherapy to HFSRT was 19 (range 3-116) months, the median daily single dose 5 (4-10) Gy, the median total dose 30 (20-30) Gy and the median planning target volume 15 (4-70) ml.

RESULTS: The median overall survival (OS) was 9.3 (1.9-77.6+) months from the time of HFSRT, 15.4 months for grade III and 7.9 months for grade IV tumors ($p = 0.029$, log-rank test). Two patients were alive at 34.6 and 77.6 months. OS was longer after a total dose of 30 Gy (11.1 months) than after total doses of <30 Gy (7.4 months; $p = 0.051$). Of five (26%) reoperations, none was performed for presumed or histologically predominant radiation necrosis. Median time to tumor progression after HFSRT on imaging was 4.9 months (1.3 to 37.3) months.

CONCLUSION: HFSRT with conservative total doses of no more than 30 Gy is safe and leads to similar OS times as more aggressive treatment schemes. In individual patients, HFSRT in combination with other salvage treatment modalities, was associated with long-term survival.

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