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SpringerLink FULL-TEXT ARTICLE

Hypofractionated Stereotactic Reirradiation of Recurrent Glioblastomas : A Beneficial Treatment Option after High-Dose Radiotherapy?

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BACKGROUND AND PURPOSE: : Recurrent malignant gliomas have a very poor prognosis. This trial aimed to evaluate the benefits of reirradiation in case of recurrent glioblastoma multiforme (GBM) using hypofractionated stereotactic radiotherapy (hFSRT) after primary high-dose percutaneous irradiation. PATIENTS AND METHODS: : Between 1998 and 2008, 53 patients with recurrent GBM were treated by hFSRT based on CT and MR imaging. At the time of recurrence, a median total dose of 30 Gy (20-60 Gy) was delivered in median fractions of 3 Gy/day (2-5Gy). RESULTS: : The reirradiation was well tolerated (no acute or late toxicity > grade 2), despite the relatively large median tumor volume (35.01 ml). Karnofsky Performance Score was the strongest predictor for survival after reirradiation ($p = 0.0159$). Tumor volume ($p = 0.4690$), patient age ($p = 0.4301$), second operation ($p = 0.6930$), and chemotherapy ($p = 0.1466$) at the time of reirradiation did not affect survival. After hFSRT, the median survival was 9 months, and the 1-year progression-free survival (PFS) amounted to 22%.The median overall survival from initial diagnosis was 27 months. 1-year survival from first diagnosis was 83%, 2-year survival 45%. The median time to progression from the end of initial irradiation to recurrence was 12 months. 1-year PFS before reirradiation was 40%. CONCLUSION: : hFSRT as a secondary treatment of recurrent GBM is a feasible and effective treatment option. Only minor side effects were observed with prolonged life expectancy of 9 months.

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