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Reirradiation with radiosurgery or stereotactic fractionated radiotherapy in association with regorafenib in recurrent glioblastoma

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Abstract

Purpose: No standard treatment has yet been established for recurrent glioblastoma (GBM). In this context, the aim of the current study was to evaluate safety and efficacy of reirradiation (re-RT) by radiosurgery or fractionated stereotactic radiotherapy (SRS/FSRT) in association with regorafenib.

Methods: Patients with a histological or radiological diagnosis of recurrent GBM who received re-RT by SRS/FSRT and regorafenib as second-line systemic therapy were included in the analysis.

Results: From January 2020 to December 2022, 21 patients were evaluated. The median time between primary/adjuvant RT and disease recurrence was 8 months (range 5-20). Median re-RT dose was 24 Gy (range 18-36 Gy) for a median number of 5 fractions (range 1-6). Median regorafenib treatment duration was 12 weeks (range 3-26). Re-RT was administered before starting regorafenib or in the week off regorafenib during the course of chemotherapy. The median and the 6-month overall survival (OS) from recurrence were 8.4 months (95% confidence interval [CI] 6.9-12.7 months) and 75% (95% CI 50.9-89.1%), respectively. The median progression-free survival (PFS) from recurrence was 6 months (95% CI 3.7-8.5 months). The most frequent side effects were asthenia that occurred in 10 patients (8 cases of grade 2 and 2 cases of grade 3), and hand-foot skin reaction (2 patients grade 3, 3 patients grade 2). Adverse events led to permanent regorafenib discontinuation in 2 cases, while in 5/21 cases (23.8%), a dose reduction was administered. One patient experienced dehiscence of the surgical wound after reintervention and during regorafenib treatment, while another patient reported intestinal perforation that required hospitalization.

Conclusion: For recurrent GBM, re-RT with SRT/FSRT plus regorafenib is a safe treatment. Prospective trials are necessary.

Keywords: Brain neoplasms; Combined regimens; Focal radiotherapy; High grade glioma; Personalized medicine; Target therapy.