Moving Second Courses of Radiotherapy Forward: Early Re-Irradiation After Surgical Resection for Recurrent Gliomas Improves Efficacy With Excellent Tolerability.

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BACKGROUND: Generally, re-irradiation (Re-RT) is offered to patients with glioma recurrences with macroscopic lesions. Results are discussed controversially, and some centers postulate limited benefit of Re-RT. Re-RT is generally offered to tumors up to 4 cm in diameter. Re-resection is also discussed controversially; however, recent studies have shown significant benefit.

OBJECTIVE: To combine proactive re-resection and early Re-RT in patients with recurrent glioma.

METHODS: We included 108 patients treated between 2002 and 2016 for recurrent glioma. All patients underwent surgical resection for recurrence; Re-RT was applied with a median dose of 37.5 Gy (range 25 Gy-57Gy/equivalent dose in 2Gy fractions [EQD2]) with high-precision techniques. All patients were followed prospectively in an interdisciplinary follow-up program.

RESULTS: Median follow-up after Re-RT was 7 mo. Median survival after surgery and Re-RT was 12 mo (range 1-102 mo). Complete resection had a significant impact on the outcome (P = .03). The strongest predictors of outcome were MGMT-promotor methylation and Karnofsky Performance Score and time interval between primary and second RT.

CONCLUSION: Proactive resection of tumor recurrences combined with early Re-RT conveys into promising outcome in recurrent glioma. Complete resection and early Re-RT lead to improved survival. Thus, moving Re-RT to an earlier timepoint during the treatment of recurrent glioma improves efficacy with excellent tolerability.
glioma, eg after complete macroscopic removal of the tumor, may be crucial for treatment optimization. Using advanced RT techniques, side effects are low. Currently, this concept is evaluated in the GLIOCAVE/NOA 17 trial.

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