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1: [Tumori](#). 2009 May-Jun;95(3):317-24.

**Long-term outcome of postoperative irradiation in patients with newly diagnosed WHO grade III anaplastic gliomas.**

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**PURPOSE:** Patients with anaplastic gliomas have a more favorable overall survival than patients with glioblastomas. In most analyses, WHO grade III and IV tumors are not analyzed separately. The present analysis reports outcome after postoperative radiotherapy in patients with WHO grade III gliomas. **PATIENTS AND METHODS:** Between January 1988 and January 2007, 127 patients with WHO grade III tumors were treated with radiotherapy; the histological classification was pure astrocytoma in 104 patients, oligoastrocytoma in 12 and pure oligodendroglioma in 11 patients. Median age was 48 years. After the primary diagnosis, a biopsy had been performed in 72 patients; subtotal and total resections were performed in 37 and 18 patients, respectively. In all patients radiotherapy was applied with a median dose of 60 Gy in conventional fractionation. The median follow-up time was 18 months. **RESULTS:** Median overall survival was 17 months. Overall survival was significantly influenced by the extent of surgery. Median overall survival was 32 months after complete resection, 36 months after subtotal resection, and 12 months after biopsy. Median overall survival was 7 months for patients with anaplastic astrocytomas, 44 months for patients with mixed tumors, and 47 months for those with pure oligodendrogliomas. Age significantly influenced overall survival. Median progression-free survival was 9 months; the extent of neurosurgical resection significantly influenced progression-free survival. **CONCLUSION:** Patients with WHO grade III anaplastic astrocytomas, oligodendrogliomas and oligoastrocytomas show favorable overall survival after postoperative radiotherapy compared with glioblastoma patients and should therefore be analyzed separately. Radiochemotherapy might further improve outcome.

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