P17.76. LOW-DOSE RATE STEREOTACTIC IODINE-125 BRACHYTHERAPY FOR THE TREATMENT OF INOPERABLE PRIMARY AND RECURRENT GLOBLASTOMA: SINGLE-CENTER EXPERIENCE WITH 201 CASES

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BACKGROUND: Treatment options for inoperable glioblastoma are limited. Low-dose-rate stereotactic iodine-125 brachytherapy (SBT) has been reported as an effective and low-risk treatment option for circumscribed low-grade gliomas and brain metastases. The present study evaluates this treatment approach for patients with inoperable glioblastoma. METHODS: Between 1990 and 2012, 201 patients with histologically proven glioblastoma were treated with SBT (iodine-125 seeds; median cumulative surface dose, 60Gy; median dose-rate, 6cGy/h; median gross-tumor-volume, 17ml) either as primary treatment (n = 103) or at recurrence (n = 98). In addition to SBT, 90.3% of patients in the primary treatment group received external boost radiotherapy (median dose, 25.2Gy). Adjuvant chemotherapy was added for 30.8% of patients following SBT and consisted of temozolomide for the majority of cases (88.7%). Procedure-related complications, clinical outcome, progression-free and overall survival (PFS, OS) were evaluated. Median follow-up was 9.8 months. RESULTS: The procedure-related mortality was zero. During follow-up, transient and permanent procedure-related morbidity was observed in 7.5% and 2.0%, respectively. Calculated from the time of SBT, median OS and PFS rates were 10.5 and 6.2 months, with no significant differences among primary and recurrent tumors (11.1 vs. 10.4 months for OS and 6.2 vs. 5.9 months for PFS). For OS, multivariate analysis revealed Karnofsky performance score, age, and adjuvant chemotherapy as independent prognostic factors (all p < 0.01). CONCLUSION: Low-dose-rate SBT is a safe and effective local treatment option for patients with circumscribed inoperable glioblastoma initially or at recurrence. It deserves prospective validation since it may potentially improve the outcome for a subset of patients with inoperable GBM.