



# Cerebellar Glioblastomas Multiforme in Adults: a Rare Cancer Network Study on 45 Patients.

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**Purpose:** To assess the outcome in patients with cerebellar glioblastoma (GBM) treated in 15 institutions of the Rare Cancer Network.

**Methods and Materials:** Data from a series of 45 adult patients with cerebellar GBM were collected in a retrospective multicenter study. Median age was 50.3 years. Brainstem invasion was observed in 9 (20%) patients. Radiotherapy (RT) was administered to 36 patients (with concomitant chemotherapy, 7 patients). Adjuvant chemotherapy after RT was administered in 8 patients. Median RT dose was 59.4 Gy. Median follow-up was 7.2 months (range, 3.4-39.0).

**Results:** The 1-year and 2-year actuarial overall survival (Fig. 1) rate was 37.8% and 14.7%, respectively, and was significantly influenced by salvage treatment ( $p = 0.048$ ), tumor volume ( $p = 0.044$ ), extent of neurosurgical resection ( $p = 0.019$ ), brainstem invasion ( $p = 0.0013$ ), additional treatment after surgery ( $p < 0.001$ ), and completion of the initial treatment ( $p < 0.001$ ) on univariate analysis. All patients experienced local progression: 8 and 22 had progression with and without a distant failure, respectively. The 1- and 2-year actuarial progression free survival (Fig. 2) was 25% and 10.7%, respectively, and was significantly influenced by brainstem invasion ( $p = 0.002$ ), additional treatment after surgery ( $p = 0.0016$ ), and completion of the initial treatment ( $p < 0.001$ ). On multivariate analysis, survival was negatively influenced by the extent of surgery ( $p = 0.03$ ) and brainstem invasion ( $p = 0.02$ ).

**Conclusions:** In this multicenter retrospective study, the observed pattern of failure was local in all cases, but approximately 1 patient of 4 presented with an extracerebellar component. Brainstem invasion was observed in a substantial number of patients and was an adverse prognostic factor

Fig. 2: PFS in 45 patients with cerebellar GBM

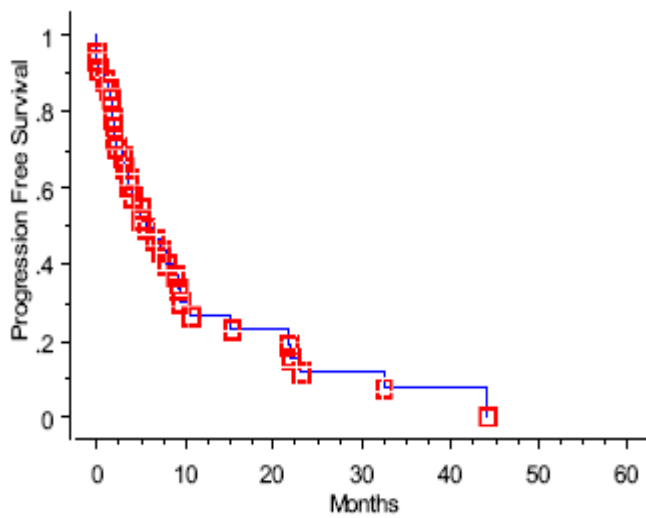


Fig. 1: Overall survival in 45 patients with cerebellar GBM

