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# Revisiting prognostic factors of gliomatosis cerebri in adult-type diffuse gliomas

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## Abstract

**Purpose:** There is lack of comprehensive analysis evaluating the impact of clinical, molecular, imaging, and surgical data on survival of patients with gliomatosis cerebri (GC). This study aimed to investigate prognostic factors of GC in adult-type diffuse glioma patients.

**Methods:** Retrospective chart and imaging review was performed in 99 GC patients from adult-type diffuse glioma (among 1,211 patients; 6 oligodendroglioma, 16 IDH-mutant astrocytoma, and 77 IDH-wildtype glioblastoma) from a single institution between 2005 and 2021. Predictors of overall survival (OS) of entire patients and IDH-wildtype glioblastoma patients were determined.

**Results:** The median OS was 16.7 months (95% confidence interval [CI] 14.2-22.2) in entire patients and 14.3 months (95% CI 12.2-61.9) in IDH-wildtype glioblastoma patients. In entire patients, KPS (hazard ratio [HR] = 0.98, P = 0.004), no 1p/19q codeletion (HR = 10.75, P = 0.019), MGMTp methylation (HR = 0.54, P = 0.028), and hemorrhage (HR = 3.45, P = 0.001) were independent prognostic factors on multivariable analysis. In IDH-wildtype glioblastoma patients, KPS (HR = 2.24, P = 0.075) was the only independent prognostic factor on multivariable analysis. In subgroup of IDH-wildtype glioblastoma with CE tumors, total resection of CE tumor did not remain as a significant prognostic factor (HR = 1.13, P = 0.685).

**Conclusions:** The prognosis of GC patients is determined by its underlying molecular type and patient performance status. Compared with diffuse glioma without GC, aggressive surgery of CE tumor in GC patients does not improve survival.

**Keywords:** Glioma; Gliomatosis cerebri; Magnetic resonance imaging; Survival; World Health Organization.

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