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Prognostic Factors for Patients With primary gliosarcoma: A Single-Center Retrospective Study

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Abstract

Background: Primary gliosarcoma is a rare form of malignant central nervous system (CNS) tumor, with limited understanding regarding its prognostic determinants and effective therapeutic interventions.

Methods: The medical records of patients diagnosed with gliosarcoma at Tangdu Hospital between March 2011 and June 2023 were retrospectively analyzed in this study. Patients with a prior history of glioma or those who received preoperative chemoradiotherapy were excluded. Survival analyses were conducted using Kaplan-Meier and Cox regression analysis.

Results: A total of 77 patients were included in the final analysis with a median age of 57 years (range 13-83). The predominant symptom leading to diagnosis was headache, and the temporal lobe was the most frequently affected site. Univariate analysis revealed that age ≤ 65 years, complete resection, Ki67 $\leq 25\%$, postoperative Karnofsky Performance Status (KPS) ≥ 70 , adherence to the Stupp protocol, and additional active therapy upon relapse were associated with enhanced survival. Furthermore, multivariate analysis identified complete resection, aged ≤ 65 years, Stupp protocol treatment, and active therapy following relapse were independent predictors of overall survival (OS). Notably, one patient experienced subcutaneous metastasis during treatment.

Conclusions: The present study's findings suggest that optimal management of primary gliosarcoma entails maximal safe resection, combined with adjuvant radiotherapy and chemotherapy with temozolomide, followed by salvage therapy in case of recurrence. However, the risk of metastases should be carefully monitored during the treatment course.

Keywords: Chemoradiation; Extracranial metastasis; Primary gliosarcoma; Prognosis; Surgical resection.

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