Diffuse brainstem glioma: prognostic factors.

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Abstract

Object Brainstem gliomas were regarded as a single entity prior to the advent of MRI; however, several studies investigating MRI have recognized that these lesions are a heterogeneous group, and certain subgroups have a better prognosis for long-term survival. The aim of this study was to conduct a retrospective analysis of prognostic factors of patients with brainstem gliomas confirmed by histopathological diagnosis, particularly regarding assessment of whether histological grade, age, and MRI findings are prognostic factors for patient survival. Methods The study evaluated 100 patients diagnosed with brainstem glioma. There were 63 adults (40 men and 23 women; age range 18-75 years, mean 41 years) and 37 children (19 boys and 18 girls; age range 2-12 years, mean 6.9 years). Results The mean overall survival of this population, measured from the date of biopsy, was 57 months for diffuse low-grade glioma and 13.8 months for diffuse high-grade glioma (p < 0.001). The mean survival among patients with nonenhancing contrast lesions on MRI was 54.2 months, whereas for patients with enhancing lesions, it was 21.7 months (p < 0.001). Comparisons between the Kaplan-Meier survival curves of adults and children revealed similar median survival periods of 25 and 16 months, respectively (p > 0.05). The multivariate analysis (Cox proportional hazards regression) revealed that only histological grade was a significant prognostic factor (p < 0.001). Conclusions The study revealed that histological grade and MRI features were significant prognostic factors for survival in these patients, but in multivariate analysis, only histological grade remained a significant factor.

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