

ABSTRACT

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Impact of seizures and antiseizure medication on survival in patients with glioma.

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PURPOSE: Seizures are a common presenting symptom among patients with low- and high-grade glioma. However, the impact and inter-relationship between the presence of seizures, anti-seizure medication (ASM) and survival are unclear. We retrospectively analyzed the incidence of seizures and identified the pattern and relationship of anti-seizure medication on survival in our cohort of patients with glioma.

METHODS: We evaluated all glioma patients who underwent treatment at the University of Malaya Medical Centre (UMMC) between 2008 and 2020. Demographic and clinical data of seizures and pattern of ASM administration in comparison to overall survival were analyzed.

RESULTS: A total of 235 patients were studied, with a minimum of one year clinical follow-up post-treatment. The median survival for low-grade glioma was 38 months whereas high-grade glioma was 15 months. One-third of our glioma patients (n = 74) presented with seizures. All patients with seizures and a further 31% of patients without seizures were started on anti-seizure medication preoperatively. Seizure and Levetiracetam (LEV) were significantly associated with OS on univariate analysis. However, only LEV (HR 0.49; 95% CI 0.23-0.87; p=0.02) was significantly associated with improving overall survival (OS) on multivariate analysis. Once ASM was adjusted for relevant factors and each other, LEV was associated with improved survival in all grade gliomas (HR 0.52; 95% CI 0.31-0.88; p=0.02) and specifically high-grade gliomas (HR 0.53; 95% CI 0.30-0.94; p=0.03).

CONCLUSIONS: Pre-operative seizures among patients with glioma indicated a better overall prognosis. The administration of ASM, specifically LEV was associated with a significant survival advantage in our retrospective cohort of patients.

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