

ABSTRACT

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Postoperative epilepsy and survival in glioma patients: a nationwide population-based cohort study from 2009 to 2018.

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PURPOSE: Postoperative epilepsy is common in glioma patients and has been suggested to indicate disease progression, yet knowledge of its role as a prognostic factor is limited. This study investigates the association between postoperative epilepsy and survival amongst patients with gliomas.

METHODS: We included 3763 patients with histopathologically diagnosed grade II, III, and IV gliomas from 2009 to 2018 according to the Danish Neuro-Oncology Registry. Information on epilepsy diagnosis was redeemed from the Danish National Patient Registry, the National Prescription Registry and the Danish Neuro-Oncology Registry. We used Cox proportional hazards models with 95% confidence intervals (CIs) to examine hazard ratios (HRs) for the association between postoperative epilepsy and risk of death. We examined the role of the timing of epilepsy in three different samples: Firstly, in all glioma patients with postoperative epilepsy; secondly, in patients with postoperative de novo epilepsy; thirdly, exclusively in a homogeneous sub-group of grade IV patients with postoperative de novo epilepsy.

RESULTS: Glioma patients with postoperative epilepsy had an increased risk of death, regardless of prior epilepsy status (HR = 4.03; CI 2.69-6.03). A similar increase in the risk of death was also seen in patients with postoperative de novo epilepsy (HR = 2.08; CI 1.26-3.44) and in the sub-group of grade IV patients with postoperative de novo epilepsy (HR = 1.83; CI 1.05-3.21).

CONCLUSIONS: Postoperative epilepsy may negatively impact survival after glioma diagnosis, regardless of preoperative epilepsy status. Postoperative epilepsy may be an expression of a more invasive growth pattern of the gliomas following primary tumor treatment.

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