

ABSTRACT

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Duration of Prophylactic Levetiracetam After Surgery for Brain Tumor: A Prospective Randomized Trial.

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BACKGROUND: Levetiracetam is commonly used as a prophylactic antiseizure medication in patients undergoing surgical resection of brain tumors.

OBJECTIVE: To quantitate side effects experienced in patients treated with 1 week vs 6 weeks of prophylactic levetiracetam using validated measures for neurotoxicity and depression.

METHODS: Patients undergoing surgical resection of a supratentorial tumor with no seizure history were randomized within 48 hours of surgery to receive prophylactic levetiracetam for the duration of either 1 or 6 weeks. Patients were given oral levetiracetam extended release 1000 mg during the first part of this study. Owing to drug backorder, patients enrolled later in this study received levetiracetam 500 mg BID. The primary outcome was the change in the neurotoxicity score 6 weeks after drug initiation. The secondary outcome was seizure incidence.

RESULTS: A total of 81 patients were enrolled and randomized to 1 week (40 patients) or 6 weeks (41 patients) of prophylactic levetiracetam treatment. The neurotoxicity score slightly improved in the overall cohort between baseline and reassessment. There was no significant difference between groups in neurotoxicity or depression scores. Seizure incidence was low in the entire cohort of patients with 1 patient in each arm experiencing a seizure during the follow-up period.

CONCLUSION: The use of prophylactic levetiracetam did not result in significant neurotoxicity or depression when given for either 1 week or 6 weeks. The incidence of seizure after craniotomy for tumor resection is low regardless of duration of therapy.

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