



Introduction

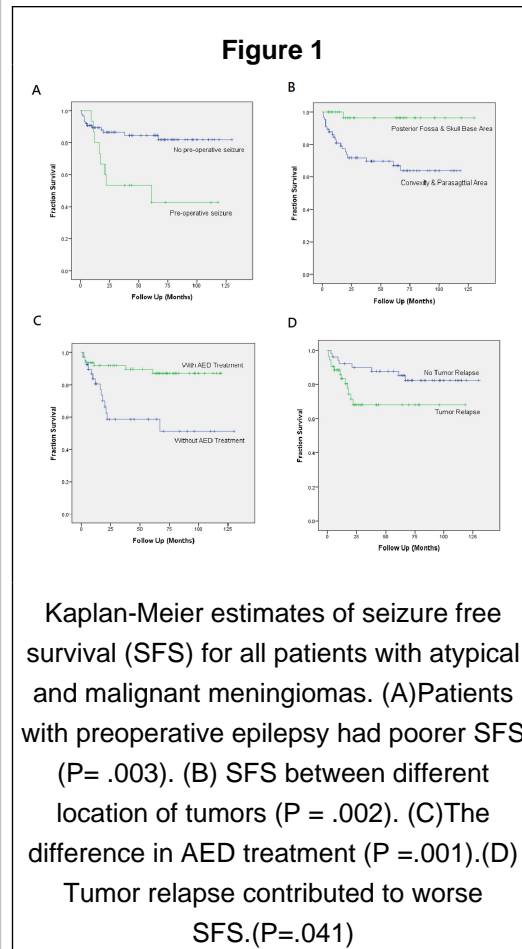
Epilepsy in the rare atypical (WHO grade II) and malignant (WHO grade III) meningiomas has been significantly understudied. Our aim was to examine the rates, predictors, and epilepsy control in these two subtypes of meningiomas, and to analyze associations between clinical characteristics and seizure free survival (SFS) following surgical resection in an Asian population.

Methods

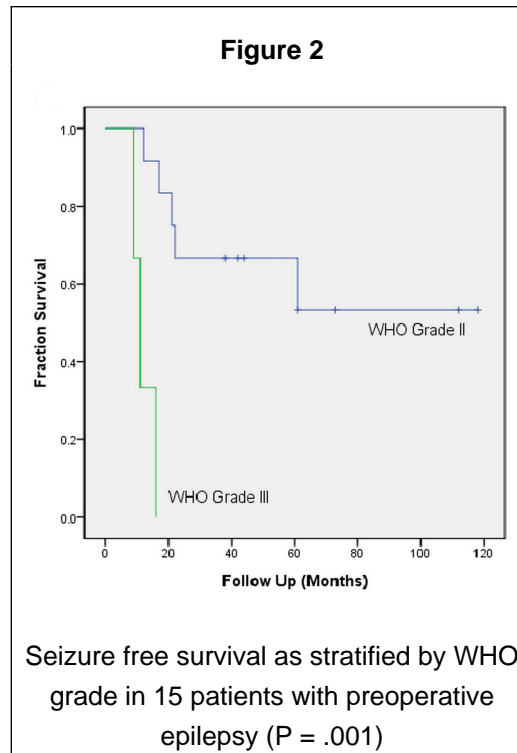
We retrospectively analyzed 102 patients with atypical or malignant meningiomas, treated between June 2001 and November 2009. Epilepsy occurring before and after the operation was reviewed. We compared demographic data and clinical characteristics including antiepileptic drugs (AEDs) treatment to extract potential risk factors for epilepsy.

Results

Preoperative epilepsy occurred in 15 (14.7%) patients, and postoperative early seizures (early seizures, within 7 days) occurred in 13 (12.7%). All cases of preoperative epilepsy occurred with tumors located at the convexity or parasagittal area (P = .001), and was influenced by the presence of peritumor edema (odds ratio [OR] = 3.90; P = .027). Preoperative epilepsy was predictive of early seizures (OR = 4.94; P = .016). Twenty-one patients (20.6%) had postoperative late epilepsy (from postoperative 8th day and later). SFS was significantly influenced by preoperative epilepsy, tumor location, AED use, and tumor relapse (P = .003, .001, .013, and .046, respectively). Among 15 patients with preoperative epilepsy, malignant meningiomas were associated with shorter SFS than atypical meningiomas (P = .001). Fifty one of 87 patients without pre-operative epilepsy had prophylactic AEDs, and none

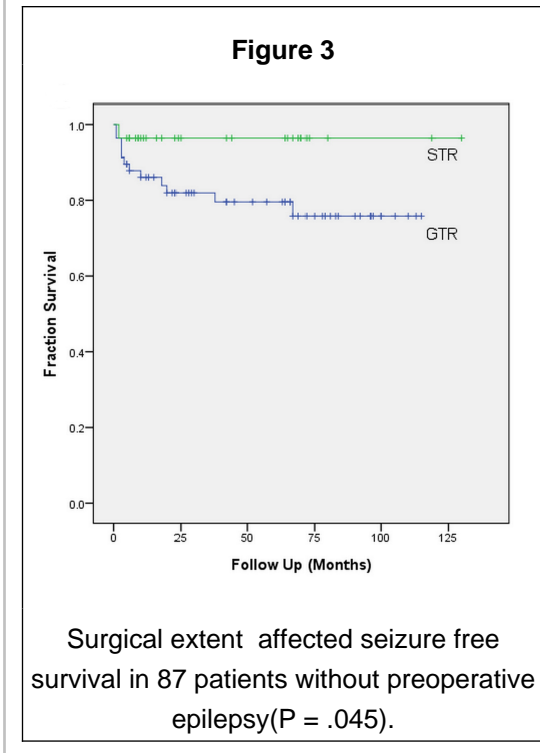


had early epilepsy (P=.001). Postoperative epilepsy control was not influenced by prophylactic AEDs (P=.226). Gross total resection (GTR) of tumors was associated with shorter SFS than subtotal resection (STR; hazard ratio = 5.62; P = .045). **Conclusions** Convexity and parasagittal area tumors as well as peritumor edema strongly induce epilepsy. Pre-operative epilepsy predicts epilepsy after surgery. Malignant meningiomas contributed to poorer seizure control than atypical lesions. AEDs improve SFS, and prophylactic AEDs eliminate peri-operative epilepsy. Radical excision correlates with a higher seizure rate.



References

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Learning Objectives

- By the conclusion of this session, participants should be able to:
- Knowing the incidence of epilepsy in patients with atypical and malignant meningiomas
 - Identify the factors of seizure occurrence and outcome in atypical and malignant meningiomas
 - Discuss about effective treatment with AEDs for seizure control in these patient group.