

Introduction

With increasing use of antidepressants (AD) among neurosurgical patients, multiple studies have noted a small protective effect of AD for glioma patients, but their impact on meningiomas has not been established. The study aims to evaluate the role of AD in the context of additional clinical factors in relation to long-term risk of meningioma recurrence.

Methods

105 patients with an intracranial meningioma presenting from 2011-2014 with at least 3 years of follow-up (median=4.2 years) post-resection were reviewed. AD use along with demographics, tumor characteristics, and outcomes were recorded. Multivariate logistic regression analyzed AD use on tumor recurrence, including other clinical measures significantly associated with recurrence as covariates.

Conclusions

AD use was an independent predictor of meningioma recurrence. The association may be due to mood or affective changes caused by tumor location in CPF regions that may be a sign of early recurrence. The finding calls attention to AD use in the management of meningioma patients, and warrants further exploration of an underlying relationship.

Results

Twenty-nine patients (27.4%) were taking AD (27 SSRIs, 2 NDRIs) prior to tumor recurrence. Their tumors largely affected the frontal (31.0%) or parietal lobe (17.2%) and were located in convexity, parasagittal, or falcine (CPF) areas more frequently than skull base areas relative to non-AD users ($p=0.035$). AD use was found to be an independent predictor of recurrence, in addition to subtotal resection and WHO grade II/III classification ($p's < 0.05$). Median time from AD prescription to recurrence was 36.6 months (IQR=20.9-62.9) and median length of use was 41.4 months (IQR=24.7-62.8).

Learning Objectives

By the conclusion of this session, participants should be able to:

- 1) Understand the patterns of antidepressant use among meningioma patients and their potential correlation with tumor progression
- 2) Describe the relationship among meningioma location and grade with antidepressant use during long-term follow-up
- 3) Identify a possible role of antidepressant use in predicting patients who are at higher risk for a tumor recurrence

References

1. Liu KH, Yang ST, Lin YK, et al. Fluoxetine, an antidepressant, suppresses glioblastoma by evoking AMPAR-mediated calcium-dependent apoptosis. *Oncotarget*. 2015;6(7):5088.
2. Cea-Soriano L, Wallander MA, Garcia Rodriguez LA. Epidemiology of meningioma in the United Kingdom. *Neuroepidemiology*. 2012;39(1):27-34.