Adherence to Prophylactic Anticonvulsants Guidelines for Newly Diagnosed Brain Tumor Patients: A Quality Improvement Study

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Background & Aims

• Seizures are common initial symptoms among patients with brain neoplasm.
• The average continuation of prophylactic AEDs is 12 months after a craniotomy at the project site, which significantly deviates from the evidence to prescribe prophylactic anticonvulsants for up to one week after surgery.

A quality improvement project was implemented to improve adherence to evidence-based prophylactic AED guidelines for newly diagnosed seizure-naive brain tumor patients. The aims were to:
1) determine if the intervention improves adherence rate
2) determine the impact on provider knowledge and attitude
3) determine if the prescribing rate of unnecessary prophylactic anticonvulsant would decrease

Methods

Design: Quasi-experimental, double pre-test and post-test intervention
Setting: 300-bed Neuro-Oncology outpatient clinic in the West Cost
Sample: All providers in the program; newly diagnosed seizure-naive brain tumor patients perioperative started on prophylactic anticonvulsants

Measures:
• Guideline Adherence Rate: #newly diagnosed patients not on seizure prophylaxis and weaned off prophylaxis if started before craniotomy vs total # of newly diagnosed patients post craniotomy
• AED Prescription Rate: # prescribed prophylactic AEDs per patient vs total # of patients
• Provider Survey: 14-item questionnaire on knowledge and attitudes about seizure prophylaxis, very unlikely (1) to very likely (5)

Analyses: Descriptive statistics, Wilcoxon signed-rank, Chi-square

Participants

There was a total of 4 female neuro-oncology provider participants with a median of 6.5 years of experiences (IQR = 4.75).
A total of 15 patients, 53.3% females, average age of 58 years old, 80% were diagnosed with primary brain tumors, and 20% were diagnosed with metastatic brain tumors.

Intervention

Using the RE-AIM translational framework, a multi-phase intervention consisting of provider education sessions, provider alerts, documentation templates, and a weekly audit and feedback was implemented.

Aim 2 Results: Provider Knowledge

• Providers changed their knowledge in the desired directions, however none of the changes were statistically significant.

Aim 3 Results: AED Prescription Rates

AED Prescription rates decreased by 2.2% compared to the four-months pre-implementation rates and decreased by 2.6% when compared to the one-year pre-intervention rates. None of these decreases were statistically significant.

Conclusion

• The intervention may offset barriers to adoption of prophylactic AED guidelines in a neuro-oncology program and decrease prophylactic anticonvulsant prescribing rates.
• Following the AAN, SNO, and ASCO guidelines may help clinicians avoid the potential side effects of anticonvulsant-induced cognitive, behavioral, and psychiatric issues that can impair the patient's quality of life.

References

