Improvements in both knowledge and competence relevant to the use of new therapeutic options for the management of partial-onset seizures

Thomas F. Finnegan, PhD, Stacey L. Hughes

Medscape, LLC, New York, NY, USA

INTRODUCTION

Epilepsy is a spectrum of neuropsychiatric disorders, characterized by seizures with unprovoked frequency, which significantly affects quality of life (QOL). The etiary etiopathogenesis that are responsible for the treatment of epilepsy vary considerably in their specific indications, contraindications, and potential for interactions with other medications. Despite the broad treatment armamentarium, there are few reliable evidence-based guidelines in creating optimal therapeutic treatment plans for epilepsy. In addition, many clinicians lack knowledge and competence regarding the selection of newer antiepileptic drugs for the management of seizures. The online educational activity was designed to review the mechanisms of action and the clinical efficacy of newer antiepileptic drugs (AEDs) for the treatment of partial-onset seizures.

INSTRUCTIONAL METHOD

The online educational activity was presented in a 30-minute video lecture conducted by an expert faculty using synchronized slides and interactive questions with immediate feedback to encourage learner involvement and participation.

The intervention was designed to review the mechanisms of action and the clinical efficacy of newer antiepileptic drugs for the treatment of partial-onset seizures. For learners wanting to view the program offline, a transcript and slides were made available for downloading/printing.

The activity was available on the Medscape Mobile application, ensuring mobile access for the many clinicians who rely on mobile devices for education.

The educational intervention launched online on September 24, 2014, and data were collected through November 9, 2014.

ASSESMENT METHOD

The study design compared participants’ responses to questions posed before exposure to educational content (pre-assessment measurement) with the same questions after exposure to the educational content (post-assessment measurement).

Liking pre-assessment and post-assessment responses from individual participants allowed each learner to serve as his/her own control. (Figure 1)

A total of 259 neurologists who participated in the activity and completed all pre/post-assessment questions were included in the data analysis (Figure 3). The study design compared participants’ responses to questions posed before exposure to educational content (pre-assessment measurement) with the same questions after exposure to the educational content (post-assessment measurement).

RESULTS

A total of 259 neurologists who participated in the activity and completed all pre/post-assessment questions were included in the data analysis (Figure 3). After completing this online educational intervention, neurologists were 42% more likely to make evidence-based choices compared with the choices made prior to the study (P < .05). An effect size of 0.74 indicated the educational intervention was modestly effective. As a result of participating in the educational intervention, specific areas of improvement included:

- Identification of newly approved antiepileptic therapy that targets the sodium channel: correct post percent improvement: 27% P < .05 (Figure 4)
- Knowledge of the first antiepileptic therapy that targets the potassium channel: correct post percent improvement: 29% P < .05 (Figure 4)
- Recognition of the antiepileptic therapy that is indicated for acutely changing predicted post-ictal improvement: 20% P < .05 (Figure 5)

There was no change in the ability of neurologists to identify the most appropriate therapy for a patient with intractable partial seizures who is not a candidate for surgery (pre/post percent change: 3%–4% improvement, P > .05) (Figure 5).

A paired 2-tailed t-test was used to assess the difference from the mean post-assessment score.

CONCLUSIONS

The use of a web-based video lecture platform as a means of educating neurologists about newer antiepileptic drugs was effective in improving knowledge of available antiepileptic therapies, resulting in clinicians who are better informed and making choices more aligned with evidence. A change was identified in need for further educational programs designed to improve competence of neurologists in applying the improved knowledge for treatment selection in appropriate candidates.

Acknowledgments

The educational intervention and scholarship measurement were funded through an independent educational grant.

For more information, contact Thomas F. Finnegan, PhD, Associate Educational Strategy, Medscape, LLC, MedscapeEducation.net.

References


FIGURE 1. Linked learning assessment.

FIGURE 2. Percentage of participants with correct response by question and summary statistics.

FIGURE 3. Question 1. Which of the newly approved antiepileptic drugs (AEDs) is a 1,5 benzodiazepine acetate? A. Clobazam B. Perampanel C. Ezogabine D. Clobazam and perampanel

FIGURE 4. Question 2. Which of the following is the first AED to act on potassium channels?

- Clobazam
- Clobazam and perampanel
- Ezogabine
- Ezogabine and perampanel

FIGURE 5. Question 3. Which of the following groups of AEDs is indicated for once-daily dosing?

- GABA
- GABA receptor agonist
- Potassium channel
- Calcium channel

FIGURE 6. Question 4: An 18-year-old man with a 12-year history of treatment-resistant epilepsy has tried numerous drug therapies but continues to have seizures. He has been diagnosed with autism spectrum disorder, and urinary retention continues to have seizures. As an alternative therapy, he tried the ketogenic diet, which did not provide seizure control and their use was associated with significant side effects.

The educational intervention and scholarship measurement were funded through an independent educational grant.

For more information, contact Thomas F. Finnegan, PhD, Associate Educational Strategy, Medscape, LLC, MedscapeEducation.net.

References


FIGURE 1. Linked learning assessment.

FIGURE 2. Percentage of participants with correct response by question and summary statistics.

FIGURE 3. Question 1. Which of the newly approved antiepileptic drugs (AEDs) is a 1,5 benzodiazepine acetate? A. Clobazam B. Perampanel C. Ezogabine D. Clobazam and perampanel

FIGURE 4. Question 2. Which of the following is the first AED to act on potassium channels?

- Clobazam
- Clobazam and perampanel
- Ezogabine
- Ezogabine and perampanel

FIGURE 5. Question 3. Which of the following groups of AEDs is indicated for once-daily dosing?

- GABA
- GABA receptor agonist
- Potassium channel
- Calcium channel

FIGURE 6. Question 4: An 18-year-old man with a 12-year history of treatment-resistant epilepsy has tried numerous drug therapies but continues to have seizures. He has been diagnosed with autism spectrum disorder, and urinary retention continues to have seizures. As an alternative therapy, he tried the ketogenic diet, which did not provide seizure control and their use was associated with significant side effects.