Online Medical Education Program Improves Neurologist Knowledge of Evidence-Based Recommendations on Dose Reductions of Anti-Seizure Medications in Epilepsy

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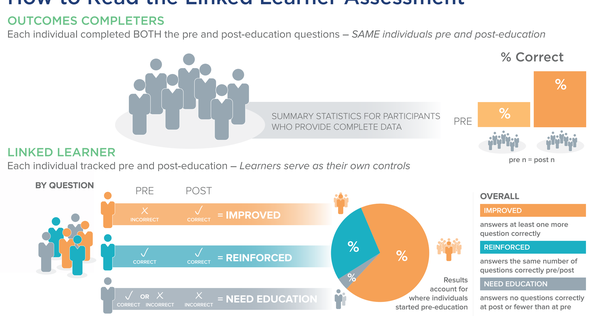
BACKGROUND

Approximately 3 million adults in the United States have an epilepsy diagnosis.[1] The primary goals of treating epilepsy are the cessation of seizures with minimal adverse events.[2] It is estimated that 20% to 40% of people with epilepsy do not achieve adequate seizure control despite the appropriate use of anti-seizure medications (ASMs).[3,4] Additionally, many patients also report experiencing substantial adverse events to their ASMs, which itself may compromise the efficacy of a treatment regimen.[1,5,6] To increase the likelihood of patients experiencing the full benefit of an ASM regimen, clinicians need to utilize strategies, including those related to appropriate dosing, designed to maximize efficacy and minimize adverse events. A study was undertaken to evaluate the effectiveness of an online educational intervention to improve knowledge and confidence among neurologists regarding evidence-based approaches to the dosing of ASMs for the management of seizures.

METHODS

This online educational activity was presented in a 30-minute video-based discussion format between 3 epileptologists. Educational effect was assessed by comparing a matched sample of neurologists' responses to four identical questions presented before and directly after exposure to the intervention. A paired samples t-test was used for overall average number of correct responses and for confidence rating and a McNemar's test was used to identify significant differences between pre- and post-assessment question responses. Cohen's d was used to calculate the effect size of the online education. Data were collected between March 11, 2023 and May 16, 2023.[7]

How to Read the Linked Learner Assessment

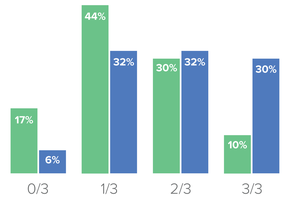


RESULTS

OVERALL

Neurologists (n = 71)

TOTAL # OF CORRECT RESPONSES AT PRE VS POST



COHEN'S d

0.59

EFFECT SIZE	EDUCATIONAL IMPACT
< .20	MODEST
.20 - .49	SMALL
.5 - .79	**MODERATE**
≥0.80	LARGE

CHI-SQUARE TEST

***P* <.001**

SIGNIFICANCE (*P* <.05)

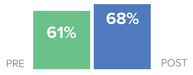
QUESTION 1 RESULTS

Clinical factors involved in reducing ASM load in patients with epilepsy

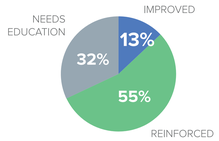
QUESTION: What is a key factor in determining whether to consider simplifying an antiseizure medication (ASM) regimen?
(Correct Answer: Adverse events (AEs))

Neurologists (n = 71)

AGGREGATED RESULTS



LINKED LEARNING RESULTS



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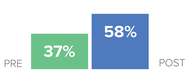
QUESTION 2 RESULTS

Greater knowledge of ASM dosing based on clinical trial outcomes

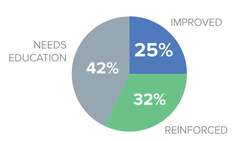
QUESTION: Based on results from clinical trials, at what dose of lacosamide can conversion to monotherapy be considered?
(Correct Answer: 400 mg/d)

Neurologists (n = 71)

AGGREGATED RESULTS



LINKED LEARNING RESULTS



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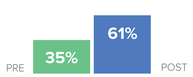
QUESTION 3 RESULTS

Improvements in awareness of appropriate dose adjustments with ASM combination therapy

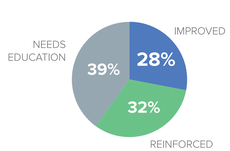
QUESTION: According to recent expert consensus recommendations, dose reduction should be proactive for which of the following medications upon adding cenobamate?
(Correct Answer: Clobazam)

Neurologists (n = 71)

AGGREGATED RESULTS



LINKED LEARNING RESULTS



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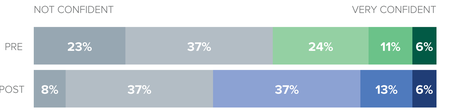
SELF-EFFICACY RESULTS

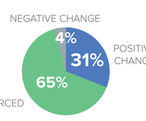
Improved confidence in the use of strategies to reduce adverse events associated with ASM use

QUESTION: How confident are you right now in your ability to use appropriate strategies to reduce the risk of ASM-related adverse events in people with epilepsy? (Select ranking from 1 [Not confident] to 5 [Very confident])

Neurologists (n = 71)



LINKED LEARNING RESULTS



TOTAL AVERAGE CONFIDENCE SHIFT FOR THOSE WHO INCREASED CONFIDENCE

CONCLUSIONS

Neurologist participation in this, 3-faculty CME-certified program on the optimization of ASMs in people with epilepsy demonstrated improvements on several questions related to the dosing of ASMs in people with epilepsy. In particular, the program was successful in improving the following:

- Knowledge of appropriate dosing of lacosamide when transitioning from combination therapy to monotherapy
- Dosing of cenobamate when added to an ongoing treatment regimen that includes clobazam
- Greater confidence in utilized strategies that reduces the risk of adverse events associated with the use of ASMs for the treatment of epilepsy

The outcomes data showed substantial variability in the main clinical criteria used by neurologists to identify clinical situations for which a simplification of ASM treatment may be beneficial. Based on these outcomes, the greatest need for future education is related to how ASM dosing can be optimized to reduce adverse events and to maximize efficacy. Many neurologists would also benefit from education reviewing clinical scenarios for which a simplification of the therapeutic plan for the management of epilepsy may be warranted.

ACKNOWLEDGEMENTS

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