✎ POEMs

Topiramate and Amitriptyline Not Effective for Migraine in Children

Clinical Question

Is topiramate (Topamax) or amitriptyline effective for prophylaxis of migraine in children?

Bottom Line

Topiramate, amitriptyline, and placebo all led to a similar, substantial improvement in migraine frequency and disability. How to harness this strong placebo effect for our patients is an important, but unanswered, question. (Level of Evidence = 1b)

Synopsis

Migraine is a relatively common problem in children, but until recently there were no U.S. Food and Drug Administration–approved drugs for migraine prophylaxis in children (topiramate was approved in 2014). The most commonly used drugs are amitriptyline and topiramate. However, these drugs had not been studied in a clinical trial. In this study, the researchers enrolled 361 children (eight to 17 years of age) with chronic migraine, at least mild disability, and at least four headache days in a 28-day period. Their mean age was 14 years, 68% were female, and 70% were white. Their mean migraine disability score was 41.4, consistent with moderate severity, and they had a mean of 11 headaches during the 28-day baseline period. Groups were balanced at the start of the study. Participants were randomized in a 2:2:1 ratio to amitriptyline (in a target dosage of 1 mg per kg per day),

topiramate (2 mg per kg per day), or placebo (twice per day). The trial was ended early because of futility, leading to some patients contributing only a portion of their headache diary data to the results. The mean migraine disability score decreased (from 41.4) to 19 in the amitriptyline group, 14 in the topiramate group, and 19 in the placebo group. Headache frequency declined similarly in all three groups from a mean of 11 to five. Adverse effects were much more common in the active treatment groups, including dry mouth and fatigue. There was a single suicide attempt in the topiramate group, and none in the other groups.

Study design: Randomized controlled trial (double-blinded)

Funding source: Government

Setting: Outpatient (specialty)

Reference: *Powers SW, Coffey CS, Chamberlin LA, et al.; CHAMP Investigators. Trial of amitriptyline, topiramate, and placebo for pediatric migraine.* N Engl J Med. *2017;376(2):115-124.*

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Pelvic Floor Exercises Modestly Improve Pelvic Floor Prolapse Symptoms

Clinical Question

For women with symptomatic pelvic floor prolapse, are pelvic floor exercises better than lifestyle advice to improve symptoms?

Bottom Line

In women with mild to moderate pelvic floor prolapse, a formal program including physiotherapist-guided pelvic floor exercises only modestly improved symptoms. (Level of Evidence = 1b–)

Synopsis

These researchers randomized women (all of whom had been enrolled in a postpartum follow-up study 12 years earlier) to a pelvic floor exercise program plus Pilates (n = 207) or to a control group (n = 207). The women had anatomic evidence of mild to moderately severe prolapse that had not yet been treated. The women in the exercise program were given five sessions over 16 weeks with a physiotherapist, a prolapse lifestyle advice leaflet that focused on weight loss and avoiding triggers (e.g., heavy lifting, constipation, coughing, high-impact exercise), and

tailored lifestyle advice. The women in the control group simply had the lifestyle advice leaflet mailed to them. The main outcome was a change in a validated symptom severity score, with a potential range from 0 to 28 points, one year and two years after enrollment.

At baseline, the women in the intervention group had slightly worse symptom scores and had improvement of 1.2 points after each follow-up period; the women in the control group had no change in symptom scores after the first year and slightly worse scores after two years. On a 28-point scale, a change of approximately three points is clinically important, and these researchers planned their study to have more than 90% power to detect such a difference. Approximately 75% of the women in the intervention group attended at least three exercise sessions, but fewer than 50% attended all of the sessions. Finally, after two years, the researchers found no difference in quality-of-life scores.

Study design: Randomized controlled trial (nonblinded)

Funding source: Foundation

Allocation: Concealed

Setting: Outpatient (any)

Reference: *Hagen S, Glazener C, McClurg D, et al. Pelvic floor muscle training for secondary prevention of pelvic organ prolapse (PREVPROL): a multicentre randomised controlled trial.* Lancet. *2017;389(10067):393-402.*

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More Accurate Prediction of the Pretest Probability of Cardiovascular Disease with European Risk Score

Clinical Question

How accurately do the European Society of Cardiology scores predict the likelihood of cardiovascular disease compared with the older Diamond-Forrester score?

Bottom Line

The European approach to determining the pretest likelihood of coronary artery disease (CAD) in patients with chest pain is superior to that of the Diamond-Forrester approach recommended by U.S. guidelines, and will result in less need for immediate invasive treatment. It will identify more persons who are low risk and do not require further evaluation. The risk calculator is available at http://bit.ly/2je8FBc. (Level of Evidence = 1b)

Synopsis

Current guidelines from the American College of Cardiology and the American Heart Association recommend the use of the familiar Diamond-Forrester classification system to determine the pretest likelihood of CAD. It uses age, sex, and the type of angina (nonanginal, atypical, and typical) to place patients into risk groups for angina. However, the Diamond-Forrester system was developed with data from the 1970s, and much has changed in how we evaluate patients and manage chest pain. This includes changes in the management of risk factors, advances in treatment, and greater awareness of patients that should seek prompt evaluation for chest pain. The European Society of Cardiology has created a modified version of the Diamond-Forrester system that uses the same clinical variables (age, sex, angina), but was developed using contemporary data. They also created an enhanced version that adds additional risk factor variables.

In this study, the authors identified 2,274 patients without known cardiovascular disease who were referred for coronary computed tomographic angiography. Based on the U.S. guidelines, patients with a probability of less than 5% are classified as low risk and do not need further testing, those with a probability of 5% to 70% should undergo noninvasive testing, and those with a probability greater than 70% should undergo invasive angiography. The cutoffs in the European guidelines are 15% and 85% (instead of 5% and 70%), consistent with a less-aggressive approach to evaluation. The key finding was how poorly the Diamond-Forrester model fit the contemporary data. A calibration plot graphs the observed probability of CAD (defined as a greater than 50% lesion in one or more vessels) against the predicted probability. Although calibration was good (and similar) for the European scores, the Diamond-Forrester score greatly overestimated the likelihood of CAD. For example, at a predicted probability of 50%, the actual probability was only approximately 30%. The Diamond-Forrester score classified only 8% of patients as low risk, compared with 25% with the basic European score and 30% with the enhanced European score. Conversely, the Diamond-Forrester system was far more likely to classify a patient as high risk and requiring invasive angiography: 18% vs. 1% for both of the European scores.

Study design: Cohort (prospective)

Funding source: Foundation

Setting: Outpatient (specialty)

Reference: *Bittencourt MS, Hulten E, Polonsky T, et al. European Society of Cardiology–recommended coronary artery disease consortium pretest probability scores more accurately predict obstructive coronary disease and cardiovascular events than the Diamond and Forrester score: The Partners Registry.* Circulation. *2016;134(3):201-211.*

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