

BEHAVIORAL THERAPY IS NECESSARY FOR THE COMPLETE TREATMENT OF MIGRAINE AND CHRONIC MIGRAINE: NO

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NZ is a 23 year old female without health insurance. She gets, on average one headache a month, often lasting two days, generally associated with the onset of menses. She experiences nausea, but no vomiting, moderate light sensitivity and mild sound sensitivity during her attacks. She finds that exercise makes her headaches worse. Her headaches are throbbing, usually, but not always, right-sided.

Her headaches have not changed in frequency or character since they began ten years earlier.

Clearly, this patient has low frequency episodic, menstrually-related migraine. She would benefit from an appropriate rescue medicine and some advice on lifestyle, perhaps. Does she need Cognitive-Behavioral Therapy? Biofeedback Training? I would argue not, particularly given that her headaches are stable, her resources limited, and her disability minor. Will she need behavioral therapy in the future? Possibly. She may also need chemotherapy or surgery, but we hope not. Would we consider her "completely" treated having received an appropriate acute medication and in-office education? Yes.

MA is a 44 y.o female diagnosed with chronic migraine three years ago, who has been managed with a combination of onabotulinumtoxinA and nortriptylene. She continues to have near daily headaches which she describes as "much improved" since starting her current regimen. She is able to work, care for her family, exercise regularly. In the past, she has seen psychiatry, psychology, pain medicine and a variety of "alternative" practitioners. She is satisfied with her treatment strategy for the present.

Does MA have Chronic Migraine? She does. Is she receiving complete treatment? Both she and her physician feel she is. Is it likely she would benefit from additional interventions or repeated trial or interventions she has explored previously? Perhaps. How important is the opinion of the patient in assessing the "completeness" of a treatment plan? Are there established guidelines for adequacy of treatment and goals of treatment? In the age of personalized medicine, every patient is an "n of one" study.

How then do we address the negative of this proposition? There is no way to prove that all patients with migraine require behavioral therapy and more than one could prove that no patient benefits from a given intervention. There is ample data to support the benefit of behavioral therapy within a given population, but there is no evidence to support a claim that it is an essential treatment in every migraine sufferer, any more than one could argue preventive therapy is appropriate in every migraineur.

So if we can agree that the rule of non-contradiction does not apply (Behavioral is either an essential element or is not an essential element) of migraine therapy, then the question becomes clearer: When, if ever, is behavioral therapy an essential part of migraine therapy? The evidence is strong that some patients benefit from behavioral therapy. I would even argue that the majority of patients could benefit from behavioral therapy. That being said, one cannot say that EVERY patient would benefit from behavioral therapy, and for better or worse, that is the proposition and it is unprovable, based on the Rule of Contradiction, a rule of logic.

For example, if we want to argue that an abortive plus behavioral therapy is better than an abortive alone in every case, then we must show that the absolute value of an abortive plus behavior is greater than the value of an abortive alone. However, if a case exists in which the value of the abortive is 0 (in this case no more migraine), then, at best, abortive plus behavioral therapy can only be equal to abortive in this case, and if that is so, then behavioral therapy can not offer an absolute value beyond abortive therapy in that case. And, of course, the obverse is true as well.

This can be demonstrated mathematically as follows: $|a - b| > |a| + |b|$ Both sides are > 0 because the right hand side cannot be negative, and if the right hand side equals 0, $a = b = 0$, which cannot be because both sides would then equal 0, but 0 is not greater than 0.

If the right hand side is positive, it follows that the left hand side is also positive because the left hand side is greater than the right hand side. Since both sides are positive, squaring both sides will not change anything: $|a - b|^2 > |a|^2 + |b|^2 + 2|a||b|$

Removing all the absolute value signs (except for the ones on the last term because any real number squared is always ≥ 0), leaves $(a - b)^2 > a^2 + b^2 + 2|a||b|$

$a^2 + b^2 - 2ab > a^2 + b^2 + 2|a||b| - 2ab > 2|a||b| - ab > |a||b|$

Both sides are positive because the right side can't be negative, and if the right side = 0, then the left side = 0, which can't be (because 0 is not greater than 0). By squaring both sides the result is: $a^2b^2 > a^2b^2$

Hence, the contradiction – a number cannot be greater than itself.

This is a classic argument in logic used here to demonstrate the non-equivalency of any two modalities in the treatment of migraine. One cannot demonstrate the equivalency of a single modality, but if we accept the premise that there is evidence to support an absolute value for a given modality (abortive, preventive, behavioral) then, by this argument the necessity of two modalities in every case can not be proven.

That being said, one would have to be a total idiot not to recognize the importance of having behavioral therapy as an option in the treatment of migraine!