Getting High on Acupuncture Research

After reading a recent opinion piece in the prestigious journal *Headache* the other day called 'Acupuncture Is All Placebo and Here is Why'(1), I have to say I was pretty darn confused. And a bit hungry. Perhaps both were down to the spliff I had just smoked prior to reading it (purely medicinal purposes, of course). You see, that afternoon, I had had a headache, a very rare occurrence for me, and so I did the only sensible thing: I Googled my symptoms.

Trying not to get sidetracked by the very real possibility that I had lupus encrusted cancer with a side of Ebola, I eventually found myself on an island of pot scented serenity in a Medscape article [http://www.medscape.com/viewarticle/781651] extolling the virtues of Cannabinoids and Hallucinogens for Headache by Dr Brian E McGeeney.

While robust clinical trials on cannabis etc. in the treatment of headache disorders have yet to be conducted, Dr McGeeney, a neurologist practising in Boston, seems to be something of a maverick and does not let the lack of robust trial data get in the way of good medicine.

Reading through the review article he's written on the subject (2), his recommendations seem to be centred around three primary lines of logic:

1) Cannabinoids and hallucinogens are used by a lot of headache sufferers and that number is growing all the time, which is to say, it's a popular treatment, so there must be something to it

2) Cannabis has been used for a really, really long time for all kinds of things. Dr McGeeney tells us that it 'is found in the ancient writings of Galen and Hippocrates, who both prescribed cannabis. Chinese writings from the first two centuries CE refer to Emperor Shen Nung in the third millennium BC using cannabis medicinally" etc etc. He goes on to mention Ayurvedic use in India, 12th Century German mystics right through to

influential 19th century physicians spreading the love. Seriously, guys, this stuff has been used for thousands of years, so there *must* be something to it.

3) He mentions cannabinoid receptors and indole rings in hallucinogens and some complicated stuff about the brain which he says means that even though there are no double-blind RCTs demonstrating efficacy, these surrogate markers mean that cannabinoids appear to be 'a good migraine treatment, albeit with health concerns in connection with smoking and overuse.'

Based on these recommendations, I caught up with my dealer and I have to say, I know it's just an n=1, but Dr McThingy was right! Headache = totally gone.

So, totally impressed by Dr McGeeney's clinical intuition, I decided to see what else he had to say about treating headaches and migraines and that's when I came across his opinion article about acupuncture in *Headache*. And here's where I got *very very* confused:

First, the article is entitled 'Acupuncture is All Placebo and Here is Why' so I was expecting a discussion of the considerable experimental evidence on acupuncture, expectation and the physiological differences between different types of acupuncture needling and different sham controls. But actually, he hardly mentioned any of this at all. He just went on about how some people use faulty logic when discussing acupuncture's benefits, which really has nothing to do with whether or not acupuncture is in fact a placebo. I mean, some people might believe that gravity exerts its effects through invisible fairies batting their wings, but that doesn't mean that gravity doesn't exist.

Second, I was slightly disoriented by an odd sensation of *deja vu*. The words in McGeeney's opinion piece were extremely familiar, uncomfortably flirting with too familiar. I had read these same arguments,

supported by the same exact examples, laid out using identically faulty logic, scaffolded by identical phraseology (such as 'prescientific gobbledygook' [http://www.bmj.com/rapid-response/2011/11/02/vested-interests-and-wishful-thinking]; gotta love that one) but not written by Dr McGeeney. This entire editorial was actually an unoriginal repetition of points made by David Colquhoun, David Gorski, Steven Novella and others without adding a single new insight or interpretation. I was unable to find any evidence of Dr McGeeney having expertise in the area of acupuncture and by his own admission he seems to be uncomfortable with basic research methods. So as example of 'expert opinion' it seemed to miss the mark.

And third, I was confused because what Dr McGeeney had considered a solid line of logic in the context of cannabis, namely that its popularity, its long history of use, its support from the most respected medical professionals, and its biological plausibility as demonstrated through surrogate markers were all positive factors in recommending its further study and its clinical use. And yet, identical lines of reasoning were now somehow fundamentally flawed when applied to acupuncture. So the identical arguments that were valid support for a treatment that the author advocates, but in reality have no bearing whatsoever on whether the intervention is in fact efficacious or entirely placebo, are a series of dirty 'logical traps' when used by acupuncture sympathisers. This analysis seemed a bit inconsistent to me, to say the least.

Follow the References

Once I had slept off my 'headache meds,' I decided to take a fresh look at Dr McGeeney's passionate prose on acupuncture. One thing I like to do when starting to read a fully referenced scientific opinion piece, is to play a little game called 'Follow the References' (it's definitely as much fun as it sounds). Basically, the article starts out by making a series of statements, followed by tiny suprascript numbers. The game is to follow the numbers,

read the articles that are being used to support the statements and find out whether the references actually support what the author is saying or are merely decorative.

The first referenced statement of interest (and literally the only six words in the entire article that were directly relevant to his stated objective) was: 'Acupuncture works by placebo mechanisms only' followed by two references. The only type of evidence that could scientifically support such a statement would be experimental evidence or some kind of review of experimental and/or clinical research. In actual fact, McGeeney supports this bold pronouncement with two opinion articles. One is an editorial by Colquhoun and Novella that makes the case that acupuncture is a placebo by entirely sidestepping all experimental mechanism research performed on acupuncture.(3) If you have to avoid literally hundreds of high quality studies to maintain your position, you may want to rethink your position. The other reference is to an editorial by Gorski and Novella about homeopathy and reiki. Based on this, I would characterise the referencing as incompetent at best.

Not to jump to conclusions, I decided to follow the next reference, just to see if the prior misuse might have been accidental. He writes: 'there is no role for the cruel practice of acupuncture on children (at least below the age of understanding) or on animals.' And this statement is supported by a reference.

Now play along with me here, what kind of evidence would you reasonably expect someone to use to support such an emotive and inflammatory statement? I personally was expecting to see some evidence of harm from acupuncture to either children or animals or both. But what I actually found was a reference to a review entitled 'Efficacy and safety of acupuncture in preterm and term infants,' (4) which found: "The limited data available suggests that acupuncture could be a safe nonpharmacologic treatment option for pain reduction in term and

preterm infants and could also be a non-pharmacologic treatment option to treat infantile colic.' In discussing the safety of acupuncture in this population, the authors write: 'No study using needle acupuncture described any skin breakdown, infection, hematoma, or allergic reactions. In addition, no patient distress or discomfort was observed.' In other words, this review found that acupuncture when used on infants effectively reduced pain and had no adverse effects. And this study is being used by Dr McGeeney to support his statement that acupuncture is 'cruel' and there's no place for using it in this population.

Most of the other references in this article follow a similar pattern – the studies are of an inappropriate design to support the claim that he is making or, worse, studies are being used to support statements that they in fact contradict, which one could argue is unethical and dishonest and at the very least voids the author of any credibility.

But seriously, why?

The introduction ends with a series of statements that pretty much sum up the entire article and were most likely written under the influence of recreational 'migraine medication': 'In explaining why acupuncture is just placebo, it is important to go further than just stating the reasons why. One should explain how to deconstruct the arguments from acupuncture proponents.'

This sentence is truly bizarre because Dr McGeeney does not actually state *a single reason* why acupuncture is all placebo in this article. Not a one.

I couldn't find a single example in Dr McGeeney's article that could be classified as evidence or support of acupuncture's placebo-ness, with a slight exception in the first paragraph where he argues that acupuncture is all placebo because some skeptics that he admires say so. Every single

argument in the entire piece seems to fall under the category of rhetorical devices for arguing with acupuncture supporters.

The bulk of McGeeney's article discusses 16 'Logical Traps' used by supporters of acupuncture. I've already addressed many of these elsewhere when they were made by their original authors. But I will address them each in turn again in a separate article.

A discussion about the research base for acupuncture's efficacy and the role of placebo needs to be centred around experimental and trial data, you know, 'science.' That Dr McGeeney steered completely clear of the research literature and instead repeated other people's opinions on 'logical flaws,' which have nothing to do with the non-specific effects of acupuncture, is decidedly unimpressive and unconvincing.

1. McGeeney BE. Acupuncture Is All Placebo and Here Is Why. Headache: The Journal of Head and Face Pain. 2015 Feb 6;:n/a–n/a.

2. McGeeney BE. Cannabinoids and Hallucinogens for Headache. Headache: The Journal of Head and Face Pain. 2012 Dec 20;53(3):447–58.

3. Colquhoun D, Novella SP. Acupuncture Is Theatrical Placebo. Anesthesia & Analgesia. 2013 Jun;116(6):1360–3.

4. Raith W, Urlesberger B, Schmölzer GM. Efficacy and Safety of Acupuncture in Preterm and Term Infants. Evidence-Based Complementary and Alternative Medicine. 2013;2013(6):1–7.