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Author reply: the role of academic health centres to inform evidence-based integrative oncology practice

David H. Gorski

I was somewhat surprised by the response to my criticism of integrative oncology (Integrative oncology: really the best of both worlds? *Nature Rev. Cancer* **14**, 692–700 (2014))[1] by the Consortium of Academic Health Centers for Integrative Medicine (CAHCIM; The role of academic health centres to inform evidence-based integrative oncology practice. *Nature Rev. Cancer* http://dx.doi.org/10.1038/nrc3822-c3 (2015))[2]. Specifically, I noted how its acknowledgement of my conclusion — that the effect size reported in a large meta-analysis of patient-level data for trials testing acupuncture for chronic pain[3] was so small as not to be clinically significant (based on common measures of what constitutes clinically significant pain reduction[4,5]) — was immediately followed by an assertion that its interpretation was that "if a patient does not respond to current medical regimens (such as drugs or interventional pain procedures) or prefers to avoid polypharmacy, acupuncture is an acceptable option based on existing evidence" (REF. 2). The CAHCIM seems to be arguing either that the evidence supports the efficacy of acupuncture or that it does not matter that acupuncture effect sizes are so small that they are comparable to placebo effects, as long as the patient wants to avoid drugs or invasive procedures. I disagree on both counts. Certainly few practitioners, least of all I, would argue that it is not important to take into account a patient's wishes when recommending treatments, but I argue that it is at least equally important that the options we, as health-care providers, present to our patients are based on sound scientific and clinical evidence showing efficacy and safety.

Acupuncture fails this very simple test for various reasons (several of which were discussed in my article[1]) that go beyond its extreme biological implausibility. As I discussed, meta-analyses and systematic reviews almost always conclude that there is insufficient evidence to recommend acupuncture for common symptoms experienced by patients with cancer, with the possible exception of nausea[6]. Indeed, the efficacy of acupuncture even for nausea has been called into question by a recent negative trial[7]. Combine equivocal (at best) clinical trial evidence regarding acupuncture with its extreme biological implausibility, and the most parsimonious explanation for the reported effects of acupuncture remains that it is a theatrical placebo[8], regardless of reported functional MRI findings.

The authors conclude by invoking the popularity of 'integrative modalities'. Unfortunately, just because something is popular does not mean it is scientifically supported. For example, the fact that almost half of all Americans do not believe in evolution[9] does not invalidate the theory of evolution. It is also important to look more closely at the conclusion that 66% of patients with cancer report having used integrative medicine. Buried in the study that was cited by CAHCIM[10] to support this figure is the finding that, contrary to the impression given, relatively few cancer patients actually report ever having used 'alternative' modalities, such as homeopathy (4%), naturopathy (1.7%), *reiki* (2.9%), Ayurveda (0.6%), traditional healers (2.4%) and acupuncture (10.2%). Indeed, the study that was cited actually supports my argument[1] that much of integrative medicine consists of modalities that are not alternative at all but were still reported, such as diet (11.5%), massage (19.4%), exercise such as yoga or Tai Chi (13.3%), deep breathing or meditation (31.5%) and support groups (6.2%). Thus, the reported usage of 'non-traditional' modalities in this[9] and other studies of integrative medicine are inflated through the very processes of rebranding science-based medicine and the medicalization of interventions that were not previously considered to be medicine, just as I discussed in my article.

Let no one doubt that I fully support patient-centred care that involves patients as partners with physicians in deciding their care. What I reject is the false dichotomy arguing that to accomplish this end requires the embrace of pseudoscience.

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Competing interests statement
The author declares competing interests: see Web version for details.