

**Comment on “Acupuncture: Does it alleviate pain and are there serious risks? A review of reviews” Ernst et al. [Pain 2011;152:755–764]**

Assessing serious risks Ernst et al. presented a list of 95 articles, which reported serious adverse events in association with acupuncture treatments [1]. For each case causality was judged as “certain”, “probable”, and “no information”. However, major doubts arise whether this judgment was done with reasonable diligence, because the Karst-case report [2] was misinterpreted to its opposite. This article described a case, in which a licensed acupuncturist was sentenced to compensation by the trial court because from the point of view of this court thrombosis of the brachial artery occurred due to acupuncture treatment. However, during the proceedings on appeal against this decision two of the authors (AM, MK) came to an opposed conclusion. It could have been shown that neither the localisation of the acupuncture points, which have been used, nor the progression of the symptoms argued for causality. The fatal outcome was rather more likely triggered by the underlying inflammatory bowel disease [2]. Accordingly, in the second level of jurisdiction the claim was comprehensively dismissed. If this single case report was misconstrued, what does this mean for the other reports?

While other aspects of this review will be discussed elsewhere, it should be mentioned, that this review missed to refer to the serious problem that the investigation of complex interventions, such as acupuncture, by means of randomized controlled trials (developed for medication trials) causes inappropriate (false negative) results [3] although efficacy may be greater than efficacy of standard treatments, a scenario called “efficacy paradox” [4].

## References

- [1] Ernst E, Lee MS, Choi TY. Acupuncture: does it alleviate pain and are there serious risks? A review of reviews. *Pain* 2011;152:755–64.
- [2] Karst M, Fink M, Molsberger A. Above elbow amputation due to acupuncture treatment? *Versicherungsmedizin* 2006;58:88–91.
- [3] Paterson C, Dieppe P. Characteristic and incidental (placebo) effects in complex interventions such as acupuncture. *BMJ* 2005;330:1202–5.
- [4] Walach H, Falkenberg T, Fonnebo V, Lewith G, Jonas WB. Circular instead of hierarchical: methodological principles for the evaluation of complex interventions. *BMC Med Res Method* 2006;6:29.

Matthias Karst

*Pain Clinic, Department of Anesthesiology,  
Hannover Medical School, Carl-Neuberg-Str 1,  
30625 Hannover, Germany  
Tel.: +49 511 532 3108.*

*E-mail address: karst.matthias@mh-hannover.de*

0304-3959/\$36.00 © 2011 International Association for the Study of Pain. Published by Elsevier B.V. All rights reserved.  
doi:10.1016/j.pain.2011.05.013

**Comment on Ernst et al. Acupuncture: Does it alleviate pain and are there serious risks? A review of reviews. [Pain 2011;152:755–764]**

To the Editor,

Ernst et al. aim to give a comprehensive overview of systematic reviews of acupuncture in the treatment of pain conditions. This paper also attempts to provide an overview of the serious adverse

effects caused by this therapy [1]. We regrettably found that the article suffers from major scientific shortcomings.

The review of Ernst et al. contains at least 12 formal errors. For example, there are inconsistencies between the text, citations and Table 1 regarding the number of included articles. Citations are also frequently incomplete or do not relate to the respective passage. Furthermore, Table 1 fails to accurately identify the treatment provided. Only one review is referenced as including acupuncture and electroacupuncture trials, but in fact at least 21 systematic reviews explicitly included both types of treatments. The abbreviations AA and AP are not explained.

The list of formal errors can be expanded. However, it is more pertinent to reflect on the fact that this manuscript fails to incorporate basic principles of scientific methodology. For instance, the aim of the overview is vague; it does not ask a specific scientific question. The title “*Acupuncture: Does it alleviate pain...*” suggests that the aim of this review is to assess the effectiveness of acupuncture in the treatment of pain syndromes. The introduction, however, does not provide the explicit questions being addressed. The authors state, “*This overview is aimed at critically evaluating all systematic reviews of acupuncture as a treatment of pain...*” But in what respect? Study eligibility criteria are not provided, but the majority of the systematic reviews included indeed focus on the effectiveness of acupuncture in the treatment of pain syndromes. However, one article published by Zhang et al. concentrates on the evaluation of the quality of reports on acupuncture for migraine prophylaxis [7]. The methodology for including and excluding articles resulting from the literature search appear haphazard and are not described. For example, it is unclear why an article on a single randomized controlled trial is included [5] given that this was meant to be a review of reviews. In addition, for the purported assessment of safety in regard to the acupuncture, the literature seems questionable. An obvious error is that the assessment of acupuncture risk is based on case reports only and excludes the very large database of prospective observational studies [4,6].

Furthermore, the detailed methods applied to evaluating and recording the quality and outcome categories for each review and their included papers are unclear. No information is given about the underlying criteria for the classification of the respective results emerging from the included reviews. The rating of reviews' conclusions as positive (+), negative (–), or neutral (+/–) is arbitrary. Such an approach then leads to contextual discrepancies, as noted by a comparison of quotes from Table 1 with the conclusions given in the original publications. For instance, the review by La Touche et al. [2] concluded that the evidence shows a short-term benefit for acupuncture, but this review is classed as negative. The authors included four studies on acupuncture in the treatment of temporomandibular disorder (TMD) in a systematic review. All demonstrated that acupuncture was effective for TMD pain, and in three trials acupuncture was significantly superior to sham acupuncture. Thus, they concluded: “*Based on this review, it would seem the evidence (for the efficacy of acupuncture) is (1) limited in amount, (2) shows short-term benefit for acupuncture for TMD pain of muscular origin...*” Ernst et al. cited a selective element of the original conclusion that suggests systemic bias and substantial scientific misunderstanding: “*...evidence is limited...*” Another example of such misrepresentation is given by the classification of a systematic review of acupuncture for migraine prophylaxis [3]. Ernst et al. quote, “*No evidence for an effect of ‘true’ acupuncture over sham intervention.*” An important aspect of the original conclusion is omitted; this states the following: “*Available studies suggest that acupuncture is at least as effective as, or possibly more effective than, prophylactic drug treatment, and has fewer adverse effects. Acupuncture should be considered a treatment option for patients willing to undergo this treatment.*”

This review of reviews seems not to be based on a careful and scientific analysis of the literature. We would not be able to replicate this review process, as the methodology is so inadequately described. The quality of scientific reporting appears surprisingly poor and does not represent the expected quality standards of a respected journal. Given the important role of reviews in evidence-based medicine, more accuracy is essential before publication.

## References

- [1] Ernst E, Lee MS, Choi TY. Acupuncture: Does it alleviate pain and are there serious risks? A review of reviews. *Pain* 2011;152:755–64.
- [2] La Touche R, Angulo-Diaz-Parreno S, de-la-Hoz JL, Fernandez-Carnero J, Ge HY, Linares MT, Mesa J, Sanchez-Gutierrez J. Effectiveness of acupuncture in the treatment of temporomandibular disorders of muscular origin: a systematic review of the last decade. *J Altern Complement Med* 2010;16:107–12.
- [3] Linde K, Allais G, Brinkhaus B, Manheimer E, Vickers A, White AR. Acupuncture for migraine prophylaxis. *Cochrane Database Syst Rev* 2009(1):CD001218.
- [4] Melchart D, Weidenhammer W, Streng A, Reitmayr S, Hoppe A, Ernst E, Linde K. Prospective investigation of adverse effects of acupuncture in 97733 patients. *Arch Intern Med* 2004;164:104–5.
- [5] Usichenko TI, Dinse M, Hermsen M, Witstruck T, Pavlovic D, Lehmann C. Auricular acupuncture for pain relief after total hip arthroplasty – a randomized controlled study. *Pain* 2005;114:320–7.
- [6] Witt CM, Pach D, Brinkhaus B, Wruck K, Tag B, Mank S, Willich SN. Safety of acupuncture: results of a prospective observational study with 229,230 patients and introduction of a medical information and consent form. *Forsch Komplementmed* 2009;16:91–7.
- [7] Zhang Y, Lin HL, Wang LP. Evaluation of the quality of reports on acupuncture for migraine prophylaxis. *Chin J Evidence Based Med* 2008;8:461–5.

Petra Bäumler  
Dominik Irnich\*

*Multidisciplinary Pain Centre,  
Department of Anaesthesiology,  
University of Munich, Munich,  
Germany*

\* Tel.: +49 89 5160 7508.

*E-mail address:* Dominik.Irnich@med.uni-muenchen.de (Dominik Irnich)

Klaus Linde<sup>1</sup>  
Antonius Schneider<sup>1</sup>  
George Lewith<sup>2</sup>  
Vitaly Napadow<sup>3</sup>  
Florian Pfab<sup>3</sup>  
Mike Cummings<sup>4</sup>  
Matthias Karst<sup>5</sup>  
Ji-Sheng Han<sup>6</sup>  
Andreas Michalsen<sup>7</sup>  
Phyllis Berger<sup>8</sup>  
Taras Usichenko<sup>9</sup>  
Thomas Lundeberg<sup>10</sup>  
Irene Lund<sup>11</sup>  
Kien Trinh<sup>12</sup>  
Joseph F. Audette<sup>13</sup>  
Markus Bäcker<sup>14</sup>  
Gustav Dobos<sup>14</sup>  
Stefanie Joos<sup>15</sup>  
Mist Scott<sup>16</sup>  
Winfried Banzer<sup>17</sup>  
Frauke Musial<sup>18</sup>  
Claudia M. Witt<sup>19</sup>  
Benno Brinkhaus<sup>19</sup>

<sup>1</sup> Institute of General Practice, Technical University of Munich, Munich, Germany.  
<sup>2</sup> Complementary Medicine Research Unit, Aldermoor Health Centre, Southampton, United Kingdom.

<sup>3</sup> Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, USA.

<sup>4</sup> British Medical Acupuncture Society (BMAS), London, United Kingdom.

<sup>5</sup> Pain Clinic, Department of Anesthesiology, Hannover Medical School, Hannover, Germany

<sup>6</sup> Neuroscience Research Institute, Peking University, Beijing, People's Republic of China.

<sup>7</sup> Department of Internal and Complementary Medicine, Immanuel Hospital Berlin, Berlin, Germany.

<sup>8</sup> The Pain Management Practice, Johannesburg, Gauteng, South Africa.

<sup>9</sup> Department of Anesthesiology and Intensive Care Medicine, Ernst Moritz Arndt University of Greifswald, Greifswald, Germany.

<sup>10</sup> Foundation of Acupuncture and Alternative Biological Treatment Methods, Sabbatsbergs Hospital, Stockholm, Sweden.

<sup>11</sup> Department of Physiology and Pharmacology, Karolinska Institutet, Stockholm, Sweden.

<sup>12</sup> Office of MD Admissions, McMaster University, Hamilton, Ontario, Canada.

<sup>13</sup> Harvard Medical School, Harvard Vanguard, Boston, MA, USA.

<sup>14</sup> Department of Internal and Integrative Medicine, Essen, Germany.

<sup>15</sup> Department of General Practice and Health Services Research, University Hospital Heidelberg, Heidelberg, Germany.

<sup>16</sup> Fibromyalgia Research Group, School of Nursing, Arthritis and Rheumatic Diseases Department, School of Medicine, Oregon Health & Science University, Portland, OR, USA.

<sup>17</sup> Department of Sports Sciences, Johann Wolfgang Goethe-University, Frankfurt, Germany.

<sup>18</sup> National Research Center in Complementary and Alternative Medicine (NAFKAM), Department of Community Medicine, Faculty of Health Science, University of Tromsø, Tromsø, Norway.

<sup>19</sup> Institute for Social Medicine, Epidemiology, and Health Economics, Charité University Medical Center, Berlin, Germany.

## Certain doubts and uncertain fears of acupuncture

*To the Editor,*

Our attention was attracted by the unusual approach to providing the evidence about various effects of acupuncture, in the otherwise very informative and highly valuable review of reviews by Ernst et al. [1]. On one hand, the *effectiveness* of acupuncture for the treatment of pain was estimated by using the methods of the systematic reviews of randomized controlled trials (RCTs), which are recognized to provide the highest level of evidence. On the other hand, the conclusions about serious *adverse effects* of acupuncture were based on the series of case reports, including even the articles from local tabloids (eg, reference 87 from South China Morning Post in Ernst et al. [1]). Also it remains unclear why the authors have chosen the case reports lacking relevant medical details (eg, references 124, 136, 162 in Table 3).

Thus, the authors provided double standards for proving the therapeutic effectiveness and for proving the negative side effects. To prove the therapeutic effectiveness, they use rigorous method and “demonstrate” little or no effectiveness. However, to prove the negative effects, they use quite permissive methods. This approach may be justified for the therapies that produce life-threatening side effects and for which therapeutic merits are low. The first is false in this case: acupuncture is certainly NOT dangerous. The data available from the prospective studies on the complications of acupuncture showed that the risk of serious complications of acupuncture was 0.001%, indicating very low risks [4]. The second may be true: acupuncture does not produce strong therapeutic effects. Therefore, exactly the inverse should be applied: more permissive evaluation for the positive effects, and more rigorous evaluation for the side effects. How a permissive evaluation may