Parkinsonism and Related Disorders xxx (2013) 1–2

Contents lists available at SciVerse ScienceDirect

Parkinsonism and Related Disorders

journal homepage: www.elsevier.com/locate/parkreldis

Letter to the Editor

Acupuncture: It is time for scientifically well-designed study

Keywords:
Parkinson disease
Acupuncture
Bee venom
Clinical trial

Clinical trials on new treatment modalities for Parkinson disease (PD) should be welcomed and encouraged, given that conventional treatment has significant limitations. However, substantiating the efficacy of new therapy should be done with scientifically sound methods.

Recently we read with an interest the article by Cho et al. [1] describing the effectiveness of acupuncture and bee venom acupuncture (BVA) in PD. In that pilot study, 43 patients with PD under stable medication were divided into three groups and each group received acupuncture or BVA at ten "acupuncture points" twice a week for 8 weeks, or no treatment. Effect of each treatment was assessed by applying the Unified PD Rating Scale (UPDRS), PD Quality of Life Questionnaire, Beck Depression Inventory (BDI), Berg Balance Scale (BBS), and 30-m walking test before and after treatment period. The authors found that patients in VBA group had significant improvement in UPDRS, BBS, and 30-m walking test and that improvement in UPDRS is greater than that in control group. In acupuncture group, UPDRS and BDI improved after treatment. With these results, the authors concluded that "both acupuncture and VBA showed promising results as adjuvant therapies for PD".

Although seemingly promising, several issues should be addressed regarding the scientific soundness of their conclusion.

It is well known that neural pathways related to positive anticipation involve dopaminergic pathways [2], which mediates positive placebo response in PD [3]. Actually, placebo-associated improvements have been documented in many PD clinical trials and the placebo response rate, defined as the proportion of patients with at least 50% improvement in motor UPDRS score, was 16% in one pooled analysis [4], with some studies reporting $\geq$50% placebo response rate. In this regard, placebo group blinded to treatment should be included in PD clinical trial. However, in Cho et al.'s study, although the assessor was blinded, the patients were not blinded to the treatment and the control group did not receive any treatment. Given this and the mean improvement in motor UPDRS of 24% and 33% for acupuncture group and VBA group respectively, we cannot exclude that the improvements in the treatment groups were due to placebo response. For scientifically valid comparison, the effect of acupuncture should have been compared with control treatment, such as acupuncture at non-acupuncture point. Similarly, VBA should have been controlled by injection of vehicle solution. These controls could have been included easily and were a necessity to be scientifically valid.

In the results section, the authors did not provide the data for the dropped-out patients. However, if the drop-out in the treatment group (which occurred in 9 of 35 patients) was related to 'no improvement' or 'worsening of parkinsonism', then excluding those patients in the final analysis would have biased the results toward positive effect of treatment. Actually, more than half (5 of 9) drop-outs in treatment groups were due to 'missed more than five treatments', suggesting non-compliance, which one may suspect in patients who did not feel benefit from treatment. Furthermore, in VBA group, two patients were dropped out due to medication change, which suggest the aggravation of the patients' parkinsonian symptom during study period. Therefore, it appears that the patients who experienced improvement with treatment, one of the mechanisms of which is placebo response, were more likely to be included in the final analysis, whereas patients without improvement were excluded. In addition, the authors did not report whether and how long the benefit lasted after treatment, which is needed for this acupuncture and VBA to be useful in clinical practice. The authors did not even report when the evaluation was made after the treatment. It also should have been stated with clarity that there was no meaningful benefit from adding bee venom, which we suspect was the main motive of this article from reading the introduction and discussion.

Acupuncture has been in the scene for a long time, but there has been no good clinical study validating its efficacy and value [5]. It is time for its investigators to conduct scientifically well-designed studies.

Acknowledgments

This study was supported by grant No 04-2011-0920 from the SNUH Research Fund (BSJ).

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1353-8020/$ – see front matter
http://dx.doi.org/10.1016/j.parkreldis.2013.03.018

Please cite this article in press as: Kim H-J, Jeon BS, Acupuncture: It is time for scientifically well-designed study, Parkinsonism and Related Disorders (2013), http://dx.doi.org/10.1016/j.parkreldis.2013.03.018

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8 February 2013

Please cite this article in press as: Kim H-J, Jeon BS, Acupuncture: It is time for scientifically well-designed study, Parkinsonism and Related Disorders (2013), http://dx.doi.org/10.1016/j.parkreldis.2013.03.018