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Commentary

"Acupuncture for motor symptom improvement in Parkinson's disease and the potential identification of responders to acupuncture treatment"

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1. Summary of Focal Article

1.1. Focal Article

Wang F, Sun L, Zhang XZ, Jia J, Liu Z, Huang XY, Yu SY, Zuo LJ, Cao CJ, Wang XM, Zhang W. Effect and Potential Mechanism of Electroacupuncture Add-On Treatment in Patients with Parkinson's Disease. Evid Based Complement Alternat Med. 2015;2015:692795. doi: 10.1155/2015/692795. Epub 2015 Aug 13[1]

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2. Aim

The authors aimed to evaluate the effectiveness of electroacupuncture (EA) and explore its mechanisms in Parkinson's disease (PD) patients when used as an adjunctive therapy to conventional drugs.

3. Design

This study was a randomized, controlled (EA + drug vs. drug alone), assessor-blind, single-center, pilot trial.

4. Setting

PD patients were recruited from May 2011 to May 2012 in the Department of Geriatrics and Neurology of Beijing Tiantan Hospital at Capital University.

5. Participants

Fifty PD patients using a stable dosage of anti-PD medication for at least two months without adverse effects were recruited. Patients were diagnosed by a neurologist according to the UK Parkinson's Disease Society Brain Bank criteria[2]. Patients with Parkinson plus syndrome or secondary Parkinson syndrome were not included.

Thirty patients were allocated to the treatment group (EA + drug). Twenty patients were allocated to the control group (drug only). During the clinical trial period, patients were not allowed to change their medication. Two patients dropped out due to PD medication changes.

6. Intervention

Needles 0.25 mm in diameter and 40 mm in length (Huatuo) were inserted into the following 6 acupoints based on previous studies: [3,4] bilateral GB20 (Pungji) and LI4 (Hapgok), and central GV16 (Pungbu) and GV14 (Daechu). The needles were stimulated using the following parameters for 30 minutes: 9 V, 1 A, 9 W, and 100 Hz (KWD-808-II; Yingdi, China). One acupuncture treatment course is composed of 10 sessions that occur every 3 days. Two treatment courses, equating to a total of 20 sessions of acupuncture treatment, were performed over 2 months. Participants who skipped more than 2 sessions of treatment were eliminated from the trial.

7. Main Outcome Measures

7.1. *Assessment schedule*

Assessments were performed 12 hours after the latest intake of PD medication. Treatment group patients were assessed after the completion of the entire EA treatment course. Control group patients were assessed 2 months after the baseline assessment date.

7.2. *Motor symptoms and motor complications*

The following items from the Unified Parkinson's Disease Rating Scale (UPDRS) III were used: total score, items 20 and 21 (tremor), item 22 (rigidity), and items 23-26 (bradykinesia). Hoehn–Yahr (H-Y) stage ratings were used to indicate the severity of PD and the UPDRS IV was used to assess motor complications.

7.3. *Non-motor symptoms*

Non-motor symptoms were assessed using the following tests: Nonmotor Symptoms Quest (NMSQ), including the Montreal Cognitive Assessment (MoCA); Mini-Mental State Examination (MMSE) for the assessment of cognitive function; Hamilton

Depression Scale (HAMD) 24-item test for the assessment of depression, Hamilton Anxiety Scale (HAMA) 14–item test for the assessment of anxiety, and Pittsburgh Sleep Quality Index (PSQI) for the assessment of sleep quality. [1]

7.4. *Activity of Daily Life (ADL) and Quality of Life (QOL)*

The UPDRS II and the ADL scale were used to assess ADL. QOL was evaluated using the Parkinson's Disease Quality of Life Questionnaire (PDQ) 39 item test.

7.5. *Neuroinflammatory factors and Neurotransmitters in Serum*

The following neuroinflammatory factors were measured: nitric oxide (NO), tumor necrosis factor-α (TNF-α), interleukin-1β (IL-1β), and prostaglandin (PG) E2.

The following neurotransmitters were measured: dopamine (DA), acetylcholine (Ach), norepinephrine (NE), and 5-hydroxytryptamine (5-HT).

8. Main Results

8.1. *Comparison between treatment and control groups*

The UPDRS III score changes were significantly different before and after treatment. The change in the UPDRS III score was 4.9 ± 4.8 in the treatment group and 2.3 ± 3.0 in the control group. The change in the PSQI was 1.0 (0.0-2.0) in the treatment group, which was significant, while it was 0 in the control group. However, the H-Y stage, HAMD, HAMA, MMSE, and MoCA were not different between the two groups. The only biomarker that was significantly different following the treatment was the NO level (treatment group, 53.18 [6.42-64.51]; control group, 80.49 [62.15-107.57]).

8.2. *Within-group comparisons (before vs. after comparison in the treatment group)*

The motor symptoms evaluated using the UPDRS III score (25.6 ± 2.8 to 20.6 ± 2.7), and the tremor (4.9 ± 4.4 to 3.4 ± 3.9),

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