

Clinical Observation on the Efficacy of Electric Acupuncture Points with Moxibustion in Mild Cognitive Impairment

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Abstract—The purpose of this paper is to understand the efficacy of electric acupuncture points with moxibustion in Sishencong to Mild Cognitive Impairment (MCI). 20 cases were considered. The cases came from The Affiliated Hospital of Changchun University of Traditional Chinese Medicine. At the same time, the patients received medical treatment. It took 8 weeks to treat MCI by using the proposal which is electric acupuncture points with moxibustion. The memory ability of the patients has been improved after evaluations of Mini-mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA-A). Therefore, the proposal may delay MCI's development.

Keywords— *Electric acupuncture points, Moxibustion, Mild cognitive impairment, Sishencong (EX-HN1), Guan yuan(RN4), Qi hai(RN6)*

I. INTRODUCTION

Mild Cognitive Impairment (MCI) is a clinical state between normal aging and mild dementia. About 10% to 15% of MCI patients will be developed with dementia every year. Two-thirds of Alzheimer's (AD) patients are transformed by MCI [1]. Cognitive dysfunction makes patients limit their survival skills and reduces their life quality. In severe cases, cognitive dysfunction causes neurological damage and partially missing in patients of cerebral infarction. Therefore, the early intervention of cognitive impairment can prevent or delay the development of cerebral infarction [2]. The percentage from MCI to AD reaches 80% in 6 years [3, 4]. It can be speculated that the degree of MCI is important and suitable to prevent and treat AD. The high-risk groups of AD can be found and screen by the study of MCI. An optimal treatment period can be provided by doctors. The occurrence of dementia may be prevented and delayed. So far, treatment of patients with mild dementia includes non-medical and medical treatment. Rehabilitation training is as the main way in non-medical treatment such as related cerebral cortex blood flow of 14 persons with impaired memory increased significantly in executive ability, learning, emotion and memory after 8 weeks' training of Viham Yoga [5]. Medication is mainly symptomatic treatment. There is not a universal medical treatment. Moreover, long-term oral drugs have some certain effect on liver and renal function.

Chinese medicine treatment of cognitive dysfunction always uses acupuncture treatment and some Chinese medicinal herb

such as invigorating kidney and replenishing heart, strengthening spleen and benefiting qi, eliminating phlegm and promoting blood circulation. Some of the cells around the lesion are not completely hypoxic-ischemic in the brain with apoplexy. Acupuncture treatment can stimulate the part of the cell's blood oxygen and activity their remaining function. In some certain, symptoms of the cerebral ischemia and hypoxia had been improved [6].

This study proposes an electric acupuncture points with moxibustion treatment. Acupuncture Sishencong (EX-HN1) points of the head by a simple and portable electro-acupuncture therapeutic instrument in order to observe the efficacy of the specific acupuncture points. Effectiveness of this study was evaluated by Mini-mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA-A). The following problems will be understood based on this proposal.

- The degree of the treatment on the specific acupuncture points.
- The efficacy on the electric acupuncture points with moxibustion treatment.
- The degree of delay on cognitive dysfunction by the treatment of the mild cognitive impairment at early intervention.

The remainder of this paper is organized as follows. Section II introduces some concepts on the proposal. Section III introduces the proposal. Section IV gives some clinical results. Section V explains the reason on the effectiveness of the proposal. Section VI draws some conclusions and future work.

II. THE ELECTRIC ACUPUNCTURE POINTS WITH MOXIBUSTION

Electroacupuncture is a kind of treatment method, it refers to the insertion of a needle into the cupuncture point of human body, it is combined with pulse current on acupoints or specific parts. Because of electrical stimulation, the therapeutic effect can be improved to a certain extent, and the clinical application is very extensive at present.

Moxibustion is a method of direct or indirect cauterization of acupoints on the surface of the body after igniting with the main material of moxa. The moxibustion can improve immune functions of human body because the moxibustion can promote metabolism.

The electric acupuncture points with moxibustion can be implemented on the condition that the following 3 items should be satisfied.

The conditions of patients should be judged as Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition from the U.S.A. [7]. The following conditions should be satisfied.

- To confirm whether cognitive impairment or not.
- To confirm whether cerebrovascular disease or not.
- To confirm the relationship between cognitive impairment and cerebrovascular disease, if the patient has cognitive impairment.
- Age should from 50 to 75 years old.

The conditions of patients were evaluated by MMSE and MoCA-A.

- MMSE assessment: When the scores are between 19 and 26, the patient has cognitive impairment.
- MoCA-A assessment: When the scores are less than 30, the patient has cognitive impairment.

The patient need acupuncture and moxibustion intervention treatment on the basis of medical treatment when cognitive impairment has been confirmed according to the assessments of MMSE and MoCA-A.

III. THE PROPOSAL OF THIS PAPER

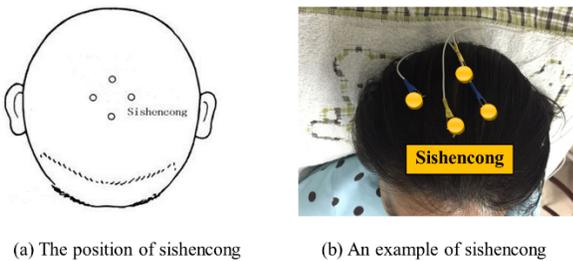


Fig. 1. Acupuncture the Sishengcong of the patient

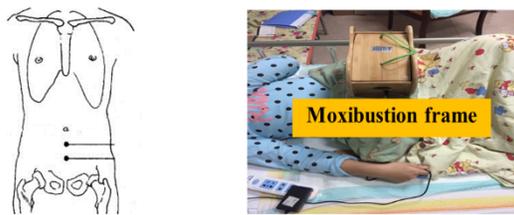


Fig. 2. Moxibustion treatment to the patient

The following instruments were prepared for the proposal:

- Sterile disposable needle of 40mm×0.25mm
- Meridian acupuncture point therapeutic instrument
- A moxibustion frame

Fig. 1(a) and Fig. 2(a) show the position on Sishengcong (EX-HN1)of the head and Guan yuan(RN4) and Qi hai(RN6)of the abdomen. The processes are showed as below.

Step1: Patient was required to lie faceup.

Step2: Doctor acupunctures Sishengcong with 1.5 inch needles showed Fig. 1(b).

Step3: Power the needles with meridian acupuncture point therapeutic instrument.

Step4: The abdomen of the patient was put with the moxibustion frame which had burning moxibustion showed Fig. 2 (b).

Step5: Treatment time is 30 min. once. Every week has 6 times. Duration is 8 weeks.

IV. CLINICAL RESULTS

20 cases were collected from The Affiliated Hospital of Changchun University of Traditional Chinese Medicine. The ages of the patients were from 50 to 75. The efficacy of electric acupuncture points with moxibustion in Mild Cognitive Impairment was evaluated by MMSE and MoCA-A.

“M” means male and “F” means female. “Date before treatment” means that the patients had been test before they received the treatments. “Date after treatment” means that the patients had been test after they received the treatments. “MMSE before treatment” and “MOCA-A before treatment” are the values of evaluation in MMSE and MOCA-A before the patients received the treatments. “MMSE after treatment” and “MOCA-A after treatment” are the values of evaluation in MMSE and MOCA-A after the patients received the treatments. The result was showed in Table I.

V. DISCUSSION

The symptoms of MCI are showed the following: impaired concentration, poor execution and so on. The characters of MCI will result in unresponsive, memory impairment and so on. Traditional Chinese Medicine (TCM) considers that the disease location exists in the brain because the function of the brain have the relationship with the functions of the heart, kidney, liver system and so on. Kidney stores the renal yin and renal yang as well as essence. It affects the production of marrow in bone. Spirit governs the functional activities of viscera and tissues as well as the circulation of Qi and blood. Pathological changes of the Zang-fu organs may not only lead to qi-blood disturbance, but also affect qi and blood of the whole body. Imbalance between yin and yang, disorder of Qi and blood as well as dysfunction of the viscera and meridians. That influence the change of spirit and memory. The method of tonifying kidney and essence replenishment was used in the clinic, and pattern syndrome differentiation was also emphasized. Sishengcong points can treat headache, dizziness, insomnia and so on while electron acupuncture acting on it, strengthen the effect of treatment and extended needle sensation .

The scores after treatment are almost close to the scores before treatment. Or the scores after treatment were a little higher than the scores before treatment depended on the evaluation of MMSE and MoCA-A. 20 cases after treatment, all

the scores were improved from Table I. There is a worthy of attention is that the scores may probably be affected by the different evaluators who test the MMSE and MoCA-A for the patients. The 37-year-old and 45-year-old patients with cognitive impairment is after cerebrovascular disease, the symptoms were improved by electroacupuncture and moxibustion. The results suggest that this method can be used in the clinic and the long-term effect can be observed.

Cerebrospinal fluid (CSF) and functional nuclear magnetic resonance (FNMR) were not examined in 20 patients, It was not clear that cognitive impairment was related to the injury of brain tissue structure. 20 patients' family members indicated that the patients had cognitive impairment. According to the theory of traditional Chinese medicine, this study put forward the treatment method with the characteristics of traditional Chinese medicine, and observed the curative effect.

TABLE I. THE EVALUATION WITH MMSE AND MOCA-A

	Sex	Age	Date before treatment	MMSE before treatment	MOCA-A before treatment	Date after treatment	MMSE after treatment	MOCA-A after treatment
1	M	37	2017.03.27	22	13	2017.5.23	23	14
2	M	55	2017.03.28	24	18	2017.05.24	24	19
3	M	56	2017.03.28	23	18	2017.05.25	23	19
4	M	68	2017.03.29	25	19	2017.05.25	26	20
5	M	63	2017.03.31	24	24	2017.05.29	25	24
6	M	65	2017.04.07	25	22	2017.06.05	26	23
7	F	65	2017.04.07	19	7	2017.06.05	23	8
8	M	74	2017.04.12	20	13	2017.06.08	20	12
9	M	65	2017.04.17	20	14	2017.06.14	22	13
10	F	53	2017.05.04	19	12	2017.06.30	21	13
11	M	67	2017.05.05	21	14	2017.07.02	21	15
12	M	78	2017.05.10.	25	18	2017.07.06	26	18
13	F	64	2017.05.18	21	11	2017.07.17	22	10
14	F	62	2017.05.22	26	13	2017.07.18	26	15
15	M	45	2017.06.02	26	24	2017.07.31	27	24
16	M	75	2017.06.13	24	15	2017.08.10	25	15
17	M	68	2017.06.19	25	18	2017.08.16	25	19
18	F	62	2017.08.16	23	15	2017.10.12	25	17
19	F	75	2017.08.22	20	13	2017.10.18	20	13
20	M	62	2017.09.01	25	24	2017.10.30	28	26

VI. CONCLUSIONS

Cognitive dysfunction may be delayed by the treatment of electric acupuncture points with moxibustion in mild cognitive impairment. Therefore, the proposed treatment can be applied in clinical.

However, it is not clear on the degree of the treatment on the specific acupuncture points and the efficacy on the electric acupuncture points with moxibustion treatment.

The future work will be studied.

- Electroencephalography and magnetic resonance imaging will be used to understand the change of head function after the proposed treatment to evaluate the degree of the treatment on the specific acupuncture points in future.
- The study cases will be added to understand the effective degree of the proposed treatment.
- Follow up to determine the long-term effect

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