Observation on the Efficacy of Auricular Acupoint Pressing Therapy in Perimenopausal Insomnia Patients

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Abstract: Objective This study aims to investigate the efficacy of auricular acupoint pressing therapy in perimenopausal insomnia patients and provide ideas for clinical treatment of perimenopausal insomnia. Methods A total of 40 patients who met the diagnostic criteria of perimenopausal insomnia were selected from July 2019 to September 2019 in Luzhou, of which seven patients were lost to follow-up in the study, and 33 patients were finally included in the study for statistical analysis. According to the law of running courses of meridians, the patients were treated with auricular acupoint pressing therapy for one month. The auricular acupoints were selected including shenmen, sympathesis, kidney, occiput, subcortex and endocrine acupoints. Three acupoints were picked up each time and attached with cowherb seed plaster. It was replaced once every three days, with three times as a course of treatment for a total of three courses. The clinical efficacy before and after treatment and the changes of Pittsburgh Sleep Quality Index (PSQI) scores were observed. Results The overall response rate was 76% in 33 patients with auricular acupoint pressing therapy, and the scores of every PSQI item and the total score after the treatment were significantly lower ($P<0.05$) than those before the treatment. Conclusion The auricular acupoint pressing therapy of perimenopausal insomnia patients can effectively improve the symptoms of insomnia, and it is of great significance to improve their quality of life.

1. Research Background and Status

With the rapid pace of life and the emergence of many bad living habits, insomnia is becoming increasingly prominent in the population. Perimenopausal women in this special physiological period are more prone to irritability, insomnia, anxiety and other problems due to ovarian function decline, hormone secretion disorder and pressure from family, work and society. According to the relevant literature, the incidence of sleep disorders in perimenopausal women is as high as 51-54%, and the insomnia accounts for 40% of clinical symptoms. It can be seen that the perimenopausal insomnia has seriously affected the physical and mental health and the quality of life of patients [1]. A large number of literature shows that the main treatment for insomnia is western medicine [2]. Although the treatment based on western medicine works quickly, long-term use will induce the drug resistance, addiction, dependence and so on adverse reactions [3]. Therefore, more non-drug therapies are needed to solve those problems.

Under the guidance of traditional Chinese medicine theory, auricular acupoint pressing therapy, as a simple and non-drug therapy intervention method without obvious adverse reactions, has a long history in the treatment of insomnia [4, 5]. By stimulating the auricular points, it achieves the purpose of balancing yin and yang, regulating the visceral function, and then improving the quality

of sleep [6]. Therefore, this research group adopts auricular acupoint pressing to treat the perimenopausal insomnia and observe the clinical efficacy. It is reported as follows.

2. Clinical Study

2.1. Clinical Data

2.1.1 General Data

Forty patients with perimenopausal insomnia were selected from outpatients and as well as recruited volunteers in the Second Affiliated Hospital of Southwest Medical University from July 2019 to September 2019. In the study, seven patients were lost to follow-up and 33 patients were finally included and analyzed. Their ages ranged from 40 to 60 years old, with a mean age of (50.55±6.36) years old; this study met the requirements of medical ethics and was approved by the Medical Ethics Committee of the Second Affiliated Hospital of Southwest Medical University.

2.1.2 Diagnosic Criteria

Diagnostic criteria of traditional Western medicine: According to the Guidelines for Diagnosis and Treatment of Insomnia in Chinese Adults compiled by Neurology Branch of Chinese Medical Association in 2017, the diagnostic criteria of chronic insomnia are listed as follows. (1) There are one or more of the following sleep abnormalities: a. difficulty in falling asleep b. difficulty in maintaining sleep; c. waking up earlier than expected; d. unwilling to go to bed at the appropriate time. (2) There are one or multiple daytime symptoms associated with insomnia: a. fatigue or general discomfort; b. inattention or memory impairment; c. social contect, family and so on social function impairment; d. easily irritated or agitated; e. daytime drowsiness; f. behavioral problems (e.g. hyperactivity, impulsiveness, or aggression); g. energy and physical power decline; h. prone to errors and accidents; i. excessive attention to sleep problems or dissatisfaction with sleep quality. (3)Abnormal sleep symptoms and associated daytime symptoms cannot be explained solely by the absence of an appropriate sleep time or an inappropriate sleep environment. Daytime symptoms occur at least three times a week and last for at least three months. (4) Sleeping and arousal difficulties cannot be better explained by other types of sleep disorders.

Diagnostic criteria of traditional Chinese medicine: The criteria of TCM diagnosis of insomnia refer to the *Diagnosis and Treatment Criteria of TCM Diseases and Syndromes* issued by the State Administration of Traditional Chinese Medicine in June 1994. (1) Those mild patients who have a sleep difficulty or easy to wake up, sleepless after waking up; and those severe patients who are up all night. (2) Patients are often accompanied by headaches, dizziness, palpitations, amnesia and dreaminess, etc. (3) No abnormalities have been found after the various system examinations and laboratory tests.

2.1.3 Inclusion Criteria

Perimenopausal women with an age range of 40-60 years old, total Pittsburgh Sleep Quality Index (PSQI) score >7; those who meet the above diagnostic criteria; no sedative and hypnotic drugs have been taken within one month; those who agree to join clinical observation and sign an Informed Consent Form.

2.1.4 Exclusion Criteria

Patients who do not meet the inclusion criteria; those who have the secondary insomnia caused by physical or psychological disorders; those who have suffered from the broken auricle skin, ulceration, inflammation, blisters, abscesses or allergies to alcohol and adhesive tape; those who are complicated with severe gynecological diseases; those who are complicated with mental disorders and heart, brain, kidney and other major diseases; those who have major negative life events affecting sleep recently.

2.1.5 Elimination Criteria

Those who are unable to cooperate with clinical observers; those who are unable to attend the follow-up on time; in the course of clinical observation, serious complications have occurred; those who give up halfway; those who cannot or are not willing to objectively fill in the study effect index.

2.2. Treatment Methods

Among shenmen, sympathesis, kidney, occiput, subcortex and endocrine acupoints, three acupoints were selected alternately for auricular acupoint pressing in each treatment. After alcohol disinfection, a probe stick was used to find out a positive point of the acupoint and apply a cowherb seed plaster. It was replaced once every three days, with three times as a course of treatment for a total of three courses. Patients were told to press their acupoints three times a day and 10-15 times per acupoint, until feeling sour, numbness, swelling, pain and auricle flushing. If there are skin damages, redness, allergies or other discomfort, it shall be timely treated. Do not use other psychotropic drugs or psychological or behavioral therapies during the treatment.

2.3. Observation of Curative Effect

2.3.1. Observation Index

Before and after treatment, the study subjects were assessed by PSQI, including sleep quality, sleep latency, sleep time, sleep efficiency, sleep disorders and daytime dysfunction. The changes of PSQI scores before and after the treatment were analyzed.

2.3.2 Efficacy Evaluation Standard

According to the changes of PSQI scores before and after the treatment, the therapeutic effect was evaluated. Recovery: Total PSQI score reduction rate≥75%; Obvious effectiveness: 50%≤total PSQI score reduction rate <75%; effectiveness: 25%≤total PSQI score reduction rate <50%; Ineffectiveness: Total PSQI score reduction rate ＜25%.

$$\text{Total PSQI score reduction rate} = [(\text{pre-intervention score} - \text{post-intervention score})] / \text{pre-intervention score}] \times 100\% \quad (1)$$

$$\text{Efficiency} = [(\text{number of cures} + \text{number of significance} + \text{number of response})]/\text{total} \times 100\% \quad (2)$$

2.3.3 Statistic Process

SPSS 17.0 was used for statistical analysis. The quantitative data were statistically described by mean and standard deviation. The t test was used for comparison between groups and statistical inference, with $\alpha=0.05$ as the significant level. $P<0.05$ means the difference was statistically significant.

2.3.4 Therapeutic Result

Table 1. Comparative analysis of evaluation results of insomnia before and after the treatment.

Items	Before treatment	After treatment	t	P
Sleep quality	2.30±0.53	1.03±0.64	9.125	<0.001
Time to fall asleep	2.36±0.93	1.30±0.95	6.775	<0.001
Sleeping time	2.27±0.91	1.24±0.94	4.516	<0.001
Sleep efficiency	2.09±1.01	1.64±0.86	2.218	0.041
Sleep disorders	1.58±0.50	0.97±0.30	6.266	<0.001
Daytime dysfunction	1.70±0.95	0.97±0.85	4.977	<0.001
PSQI total score	12.30±2.44	7.15±2.67	10.377	<0.001

Clinical efficacy comparison of auricular acupoint pressing after the treatment: After three cycles of therapy, according to the comparative analysis method, one of 33 patients was cured, 14 of significance, 10 of response, 8 of ineffectiveness, with an overall response rate of 76%. The results showed that the sleep quality of perimenopausal patients was certainly improved after the treatment.

PSQI scores after auricular acupoint pressing therapy: Subjects: The sample size was 33, with a minimum age of 40, a maximum age of 60, and a mean age of (50.94±7.03) years old.

Interpretation of results: Through the analysis of paired design t test, the difference in each index item was statistically significant ($P<0.05$) before and after the treatment, and the scores before the treatment were higher than those after the treatment.

Discussion

Perimenopause is a special physiological period that every woman must have. “Perimenopausal insomnia” belongs to the TCM category of “perimenopause syndrome”, scattered in “insomnia”, “hysteria”, “depression syndrome” and “lily disease”, etc. Its physiological change is related to the function of “kidney-tiangui-chongren-baogong” axis. By the age of forty-nine or so in women, the ren meridian is weak and void, the chong meridian is lack of qi and blood, and the menstruation is stopped, showing amenorrhea and aging, therefore, the women will lose the ability of fertility, described in *Suwen· Shanggu Tianzhen Theory*. The ups and downs of “menstruation” dominate a woman's physiology. During the perimenopausal period, the woman’s menstruation is stopped and her qi and blood decline. Therefore, the clinical manifestations are mainly difficult to fall asleep or easy to wake up, waking up early, sleepless after waking up, or accompanied by tension, anxiety, dizziness, irritability, palpitation, sweating and so on symptoms. From the perspective of modern medicine, the perimenopausal syndrome refers to syndromes characterized by endocrine disorder and vegetative nerve functional disturbance, which occurs before and after menopause due to the changes of hypothalamic-pituitary-gonadal axis, the decline of ovarian function, and the decrease of estrogen level. The incidence of the disease is 10.92%, and premenopausal and postmenopausal women aged 40-60 years old are the high risk population [7]. At the same time, the imbalance of neurotransmitter and endovascular environment will easily lead to vasomotor disorders, such as cold hands and feet, palpitations and being flustered, hot flashes and sweating, etc. These symptoms tend to lead to nocturnal arousal and sleep disruption, with a series of psychosocial influences induce insomnia. At present, the clinical therapeutic methods mainly include benzodiazepine receptor agonists. However, there are some side effects. It tends to result in drug dependence, negative emotions and even beyond the therapeutic effect, the patient is intolerable [8]. Therefore, the advantages of TCM therapy in treating perimenopausal insomnia are increasingly prominent [9]. Some researchers found that it could significantly improve the clinical symptoms of insomnia patients through the application of the holism concept and dialectical concept to adjust the function of the body's visceral Qi and blood. *Lingshu* suggests that “the qi and blood of 12 meridians and 365 collaterals will accordingly express on the face and go through the acupoints”; “the main and large meridians of the human body gather in the ear.” Modern studies have also shown that auricles have a large number of nerves and vascular tissues. Therefore, auricular acupoint therapy can be an important means to treat insomnia [10]. It is mainly through stimulating the auricular acupoints to dredge the whole body visceral meridians, regulate the nerve and endocrine function, and achieve the purpose of improving insomnia symptoms. The researchers concerned used TCM auricular acupoint therapy to intervene the symptoms of insomnia in perimenopausal women, and achieved better results.

In this study, six acupoints were selected as the major acupoints, including shenmen, sympathesis, kidney, occiput, subcortex and endocrine acupoints. Pressing shenmen and sympathesis acupoints regulates the stimulation and inhibition function of cerebral cortex and plays a role of tranquilizing and allaying excitement, relaxing chest and regulating qi. Pressing subcortex and endocrine acupoints can control the balance of yin and yang by regulating the body hormones. Pressing kidney acupoint is warmly kidney yang, tonifying kidney qi, regulating Chong and Ren meridians, as well as matching with the occiput acupoint to promote the sleep. The role of six acupoints is complementary. Then the Pittsburgh Sleep Quality Index (PSQI) was used to compare the patient’s sleep quality scores before and after the intervention so as to evaluate the effect of auricular acupoint therapy on perimenopausal insomnia. The results showed that the auricular acupoint pressing therapy could effectively improve the insomnia symptoms in perimenopausal

insomnia patients. Because the author is lack of experience and the research funds are limited, the sample size of this study is small and lack of horizontal comparison. The subjective feelings and objective efficacy exist differences in the course of treatment, resulting in a certain deviation in the results. However, this study has taken into account the possible related problems before carrying out the research, and the relevant factors have been brought under control to minimize the impact on this study. The results of this study show that auricular acupoint pressing therapy can effectively improve insomnia symptoms in perimenopausal insomnia patients, and it has many advantages, such as simpleness, safety, convenience and inexpensiveness, which is worthy of clinical promotion. The author expects more evidence-based medical evidences to improve the study of auricular acupoint pressing therapy in patients with perimenopausal insomnia.

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