

Analysis of the Efficacy and Compliance of Traditional Chinese Medicine Combined with Cinnamon Powder/Zizao Seed Powder Acupoint Application in the Treatment of Community Insomnia (Heart and Spleen Deficiency Syndrome, Heart and Kidney Disharmony Syndrome)

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Abstract: *Objective:* To analyze the efficacy and compliance of traditional Chinese medicine combined with cinnamon powder/zizao seed powder acupoint application for insomnia disease (heart and spleen deficiency syndrome, heart and kidney disharmony syndrome) in the community. *Methods:* From August 2024 to July 2025, 84 patients with insomnia (heart and spleen deficiency syndrome, heart and kidney disharmony syndrome) in the community were selected for data analysis in our hospital. They were divided into groups using the random number table method, with 42 cases in each group. The experimental group was treated with traditional Chinese medicine combined with cinnamon powder/jujube kernel powder acupoint application, and the control group was treated with traditional Chinese medicine. The data differences between the groups were compared. *Results:* Compared with the control group, the total effective rate of treatment in the experimental group was significantly higher, the PSQI score after treatment was significantly lower, the TCM syndrome score after treatment was significantly lower, and the compliance was significantly higher, $P < 0.05$; comparing the PSQI scores and TCM syndrome scores before treatment between the two groups, $P > 0.05$. *Conclusion:* The application of traditional Chinese medicine combined with cinnamon powder/zizao seed powder acupoint application in the treatment of community insomnia (heart and spleen deficiency syndrome, heart and kidney disharmony syndrome) has high efficacy and compliance, and is worthy of clinical promotion and use.

Keywords: Traditional Chinese medicine treatment; cinnamon powder / jujube kernel powder acupoint application treatment; community insomnia disease; heart and spleen deficiency syndrome; heart and kidney disharmony syndrome; efficacy; compliance

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1. Introduction

Sleep disorders are highly prevalent in clinical practice. Among them, the core characteristics of insomnia are difficulty

falling asleep, easy waking up after falling asleep, and difficulty returning to sleep after waking up. Severe cases will cause patients to stay awake all night. If things go on like this, patients will not only suffer from physical discomforts such as dizziness, fatigue, and memory loss, but also experience negative emotions such as anxiety and depression, and the quality of daily life and work will be significantly reduced. In the prevention and treatment of insomnia, the community plays an important role as the main scene. Middle-aged and elderly people are common among people suffering from insomnia in the community^[1]. Two common syndrome types are heart and spleen deficiency syndrome and heart and kidney disharmony syndrome. The pathogenesis is related to insufficient qi and blood, a lack of nourishment of the mind and spirit, an imbalance of yin and yang, and heart and kidney disharmony. At present, clinical practice mainly provides oral treatment with traditional Chinese medicine for patients with insomnia (heart and spleen deficiency syndrome, heart and kidney disharmony syndrome) in the community. Although syndrome differentiation and overall conditioning can be achieved, some patients have low compliance due to factors such as discomfort in the taste of long-term medication, forgetfulness of medication, etc., which affects the overall efficacy. Clinical research has shown that acupoint application^[2], a characteristic external treatment method of traditional Chinese medicine, can effectively make up for the deficiencies of oral drugs through meridian conduction and drug penetration, exert a synergistic effect, and provide targeted improvements in patients' insomnia symptoms. Based on this, this study selected 84 patients to analyze the efficacy and compliance of traditional Chinese medicine combined with cinnamon powder/zizao seed powder acupoint application for community insomnia (heart and spleen deficiency syndrome, heart and kidney disharmony syndrome).

2. Materials and methods

2.1. Information

In our hospital from August 2024 to July 2025, 84 community patients with insomnia (heart and spleen deficiency syndrome, heart and kidney disharmony syndrome) were selected for data analysis. They were divided into groups using random number tables, with 42 cases in each group. The experimental group was 20/22 men and women, aged 27–56 (35.89 ± 6.98) years old, and the control group was 21/21 men and women, aged 25–58 (35.84 ± 6.95) years old. Comparing the two sets of data, $P > 0.05$ was obtained.

Inclusion criteria: consistent with Western medicine diagnostic standards, TCM diagnosis of heart and spleen deficiency syndrome, heart and kidney disharmony syndrome; voluntary participation, informed consent; not allergic to the drugs used in the study.

Exclusion criteria: secondary insomnia caused by mental illness and systemic disease; recent treatment for related diseases; severe heart, liver, kidney and other organic diseases.

2.2. Method

The control group was treated with traditional Chinese medicine: the heart and spleen deficiency syndrome was treated with Guipi Decoction, Radix Astragali 20 g, Codonopsis pilosula, Poria, semen Ziziphi Spinosae 15 g each, Atractylodes Macrocephalae, angelica 12 g each, Polygala tenuifolia, longan meat 10 g each, Radix Aucklandiae, roasted Glycyrrhizae 6 g each, insomnia 20 g plus cauliflower, obvious fatigue, and Shengshashen 5 g; heart and kidney Disharmony Syndrome: the heart and kidney Disharmony Syndrome was treated with Liuwei Dihuang pills and Jiaotai pills, radix rehmanniae, yam, semen Ziziphi Spinosae 15 g each, Cornus officinalis, Poria 12 g each, Cortex Moutan, Rhizoma alismatis 10 g, Rhizoma Coptidis 6 g, Rhizoma cinnamon 3 g (lower back), obvious upset plus Gardenia 10 g, hot night sweats plus Anemarrhena asphodeloides, Cortex Phellodendri 10 g each. One dose a day, add 500 ml of water to soak for 30 min, then boil with fire, turn to slow fire, boiling time 20 min, take 200 ml of juice, and then add 400 ml of water for 15 min slow fire decoction, take 200 ml of juice, mix the liquid twice and take it in the morning and evening, 200 ml each time, for 4 weeks.

The experimental group was treated with Acupoint Application of traditional Chinese medicine combined with cinnamon powder/semen Ziziphi Spinosae powder. On the basis of the treatment of the control group, it was added that

cinnamon powder and semen Ziziphi Spinosae powder were mixed evenly according to the mass ratio of 1:2, and then an appropriate amount of medical Vaseline was added to blend into paste, following the principle of ready to use. Select Shenque point, bilateral Yongquan point, bilateral Shenmen point and bilateral Sanyinjiao point, and disinfect the local skin with Iodophor. After drying, take about 3 g of medicine paste and evenly smear it on the sterile application center, and then fix it properly. Apply it every night before going to bed and remove it in the morning of the next day. Each application time is 8–10 h, once a day, for 4 weeks.

2.3. Observation indicators

- (1) Compare the total effectiveness of treatment between the two groups. Recovery: After treatment, sleep is normal and daytime symptoms disappear; Effective: After treatment, sleep is significantly improved, the time to fall asleep is within 30 minutes, and the number of nighttime awakenings is 1 or less; Effective: After treatment, sleep is improved and symptoms are relieved; Ineffective: In other cases. Total efficiency = 100% - inefficiency.
- (2) Compare the PSQI scores of the two groups. Assessment using the Pittsburgh Sleep Quality Index.
- (3) Compare the TCM syndrome scores between the two groups. Main symptoms are scored from 0 to 6, with higher scores indicating more severe symptoms.
- (4) Compare the compliance of the two groups. Statistics from the self-made questionnaire are divided into complete compliance (90 points and above), partial compliance (60–89 points) and non-compliance (below 60 points). Total compliance = 100% - non-compliance.

2.4. Statistical analysis

Use SPSS 28.0 software, use $\bar{x} \pm s$ (mean $\pm$ standard deviation) to describe measurement data, t test; use rate (%) to describe count data, χ^2 test, $P < 0.05$, statistically significant.

3. Results

Compared with the control group, the total effective rate of treatment in the experimental group was significantly higher, the PSQI score after treatment was significantly lower, the TCM syndrome score after treatment was significantly lower, and the compliance was significantly higher, $P < 0.05$; comparing the PSQI scores and TCM syndrome scores before treatment between the two groups, $P > 0.05$.

Table 1. Comparison of the total effective rate of treatment between the two groups (%)

Group	Recover	Effective	Valid	Invalid	always efficient
Experimental group (n = 42)	16 (38.10)	18 (42.86)	6 (14.29)	2 (4.76)	95.24
Control group (n = 42)	9 (21.43)	14 (33.33)	10 (23.81)	9 (21.43)	78.57
χ^2	-	-	-	-	5.1258
P	-	-	-	-	< 0.05

Table 2. Comparison of PSQI scores (points) between two groups

Group	Sleep quality		Bedtime		Sleep time	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Experimental group (n = 42)	2.17 $\pm$ 0.45	1.07 $\pm$ 0.31	2.26 $\pm$ 0.55	1.15 $\pm$ 0.25	2.05 $\pm$ 0.33	1.01 $\pm$ 0.22

Control group (n = 42)	2.22 ± 0.47	1.42 ± 0.42	2.31 ± 0.62	1.42 ± 0.37	2.02 ± 0.26	1.38 ± 0.45
<i>t</i>	0.4980	4.3452	0.3910	3.9186	0.4628	4.7871
<i>P</i>	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05

Continued:

Group	Sleep efficiency		Sleep disorders		Daytime dysfunction	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Experimental group (n = 42)	1.88 ± 0.51	0.87 ± 0.23	1.85 ± 0.51	0.95 ± 0.25	1.87 ± 0.81	0.85 ± 0.18
Control group (n = 42)	1.85 ± 0.47	1.26 ± 0.36	1.86 ± 0.46	1.32 ± 0.42	1.76 ± 0.78	1.21 ± 0.25
<i>t</i>	0.2803	5.9164	0.0944	4.9059	0.6340	7.5735
<i>P</i>	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05

Table 3. Comparison of TCM syndrome scores (points) between the two groups

Group	Difficulty falling asleep		Easy to wake up from sleep		Palpitations, forgetfulness	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Experimental group (n = 42)	3.84 ± 0.71	1.22 ± 0.36	3.77 ± 0.67	1.17 ± 0.33	3.61 ± 0.74	1.06 ± 0.27
Control group (n = 42)	3.81 ± 0.71	2.02 ± 0.52	3.76 ± 0.66	1.95 ± 0.47	3.66 ± 0.71	1.88 ± 0.44
<i>t</i>	0.1936	8.1976	0.0689	8.8023	0.3160	10.2941
<i>P</i>	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05

Table 4. Comparison of compliance between the two groups (%)

Group	Complete compliance	Partial compliance	Noncompliance	Total compliance
Experimental group (n = 42)	38 (90.48)	3 (7.14)	1 (2.38)	97.62
Control group (n = 42)	27 (64.29)	8 (19.05)	7 (16.67)	83.33
χ^2	-	-	-	4.9737
<i>P</i>	-	-	-	< 0.05

3. Discussion

The main syndrome types of insomnia are deficiency of both the heart and spleen and disharmony of the heart and kidney. Long term oral administration of traditional Chinese medicine will lead to reduced compliance and affect the overall therapeutic effect. Therefore, the advantages of combined acupoint application therapy are noninvasive, convenient and high compliance^[3]. The two complement each other. This paper studies the measures and effects of Acupoint Application Therapy of traditional Chinese medicine combined with cinnamon powder and semen Ziziphi Spinosae powder. The results show that compared with the control group, the total effective rate of the experimental group is significantly higher, the PSQI score is significantly lower after treatment, the TCM syndrome score is significantly lower after treatment, and the compliance is significantly higher, $P < 0.05$, It can provide empirical basis for clinical standardized treatment of similar patients.

In this study, the total effective rate of the experimental group was 95.24%, which was significantly higher than that of the control group. The causes of the results were analyzed: the control group was treated with Guipi Decoction and Liuwei Dihuang pills combined with Jiaotai pills according to the principle of syndrome differentiation. The former was beneficial to Qi and spleen, nourishing blood and calming nerves, while the latter was nourishing yin and reducing fire, and communicating heart and kidney^[4], which could adjust the balance of Qi and blood and Yin and Yang in the patients' viscera as a whole. On this basis, the experimental group was mixed with cinnamon powder and Suanzaoren powder in a ratio of 1:2 to carry out acupoint application treatment for patients. The efficacy of cinnamon was to warm the kidney and help Yang, induce fire and restore the yuan^[5], while ziphus spinosa seed could nourish the heart and liver the pathogenesis of heart spleen deficiency and heart kidney disharmony plays a role in relieving symptoms. Shenque, Yongquan, Shenmen, Sanyinjiao and other important acupoints were selected to help patients quickly calm their nerves and resolve their minds by using skin penetration and meridian conduction. The above treatment scheme achieved internal treatment and external treatment^[6], internal and external coordination, so the experimental group significantly improved the sleep improvement effect.

After treatment, PSQI scores showed that the improvement in sleep quality in the experimental group was significantly better than that in the control group. The decrease in PSQI sub scores confirmed that the combined treatment scheme had comprehensively optimized the sleep structure of patients. The causes of the results were analyzed: oral administration of traditional Chinese medicine can help patients regulate the heart and spleen, traffic the heart and kidney from the root, effectively correct the deficiency of Qi and blood and the imbalance of yin and Yang in patients, and eliminate the internal pathogenesis. Acupoint application can promote the percutaneous penetration of effective components of semen ziphi Spinosae and Cinnamomum cassia through meridian conduction, directly reaching the disease site, making the patients' nerves relax rapidly, and playing the role of calming and tranquilizing^[7]. It can alleviate the surface symptoms of patients such as difficulty in falling asleep, easy to wake at night, and dreaminess. The two work together to treat the same symptoms.

The TCM syndrome scores obtained in this study also support the advantages of combined treatment. The scores in the experimental group decreased more significantly. The causes of the results were analyzed: Guipi Decoction, Liuwei Dihuang pills and Jiaotai pills can play a role in regulating the core pathogenesis of patients, while cinnamon and semen Ziziphi Spinosae can play a direct role in calming the nerves of patients^[8] and quickly relieve clinical symptoms, so the experimental group can improve TCM syndrome more thoroughly.

The clinical research shows that the key influencing factor of community chronic disease treatment is compliance. The results of this study show that the total compliance of the experimental group is 97.62%, which is significantly higher than that of the control group. The reasons for the analysis results are: due to poor taste, busy work, and poor memory, patients treated with traditional Chinese medicine are prone to miss and stop taking, and the operation of acupoint application is simple. It can be applied before bed and removed in the morning, which is safe, noninvasive and painless, and easy for patients to adhere to. The most important point is that the onset speed of combined treatment is faster, patients have more obvious subjective feelings, and the indicators are significantly improved, so the degree of treatment coordination is further improved.

This study focused on the most common clinical syndromes of heart spleen deficiency and heart kidney disharmony, which were confirmed to be community insomnia. The combined treatment does not need complex equipment, and is simple to operate. It is consistent with the characteristics of community home treatment and primary medical services. The cost of medical treatment for patients is reduced, and the treatment is continuously improved, which can effectively improve the sleep quality and life status of community insomnia patients.

In conclusion, the efficacy and compliance of Acupoint Application of traditional Chinese medicine combined with cinnamon powder/semen Ziziphi Spinosae powder in the treatment of community insomnia (heart and spleen deficiency syndrome, heart and kidney Disharmony Syndrome) are high, the PSQI score is significantly lower after treatment, and the TCM syndrome score is significantly lower after treatment, which is worthy of clinical promotion and use.

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Disclosure statement

The author declares no conflict of interest.

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