

# The Treatment Effect of Auricular Acupressure Combined with Evodia Rutaecarpa Powder Paste Yongquan Point in Patient with Insomnia

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**Abstract:** Objective: To assess treatment effect of auricular acupressure combined with evodia rutaecarpa powder paste Yongquan point in patient with insomnia of disharmony between heart and kidney. Methods: From January 2019 to December 2020, we collected valid data from 106 patient with insomnia of disharmony between heart and kidney. Patients were randomly divided into control group and intervention group according to the order of hospitalization. The control group consisted of 27 males and 26 females, and their average age was  $60.23 \pm 5.62$  years old. The participants of control group received common treatment. On the other hand, intervention group participants received treatment of auricular acupressure combined with Evodia rutaecarpa powder paste Yongquan point, they consisted of 29 males and 24 females, and their average age was  $59.35 \pm 9.58$  years old. Result: After treatment, intervention group had lower points in assessment of TCM treatment compare with control group. Before treatment, sleep quality assessments of two groups were no significantly different ( $p > 0.05$ ). After treatment, intervention group participants had better outcome in sleep quality than that of control group participants ( $p < 0.05$ ). Also, in total treatment efficiency, higher percentage of total treatment efficiency in intervention group than in control group [49 (92.45%) vs 42 (79.25%)], and they were significantly different ( $p < 0.05$ ). Conclusion: treatment effect of auricular acupressure combined with evodia rutaecarpa powder paste Yongquan point is better than common treatment for patient with insomnia of disharmony between heart and kidney. Compared with common treatment, this treatment not only had better effect for sleep quality of patient but also had better treatment efficiency.

**Keywords:** Insomnia, Disharmony Between Heart and Kidney, Auricular Acupressure

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## 1. Introduction

Insomnia is the most common sleep disorder, that its characteristics are difficulty in falling asleep or staying asleep [1]. More severe patients may be accompanied with psychiatric disorders, depression, and other psychiatric symptoms during daytime [2]. Base on some reports, approximately one-third of the adult population had the experience of insomnia, and 9–15% have insomnia symptoms accompanied by daytime consequences [3, 4]. Research shows that 27% of people in the world suffer from insomnia, and the incidence of severe insomnia in China is 9.38% [5].

However, different theories of traditional Chinese medicine (TCM) have been developed to explain insomnia event. In recent systematic review, it indicated that the four commonest TCM diagnoses were dual deficiency of the heart-spleen, depressed liver qi transforming into fire, yin deficiency with effulgent fire, and non-interaction between the heart and kidney in people with insomnia [6]. Although TCM diagnoses are used to guide treatment for insomnia, empirical data is fairly scarce. Therefore, exploring the treatment method of Chinese medicine in patient with insomnia will be beneficial

for improving quality of life and treatment effect of insomnia.

According to the report, the common reason for insomnia is that the disharmony between heart and kidney [7]. The dysfunction and imbalance of the heart, brain, kidney, liver, gallbladder, spleen, stomach and other viscera will lead to disharmony between heart and kidney [8, 9]. At present, the main clinical treatments for insomnia are benzodiazepine sedative and hypnotic drugs such as esazolam tablets, but long-term use has certain side effects, easy to produce drug dependence and abuse [10]. In recent years, some reports indicated that TCM also is a good treatment method for insomnia patient, that it has fewer side effects and better treatment effect [11, 12]. Therefore, treatment effect of TCM treatment for patient with insomnia is worthy study. The aim of this study was to assess treatment effect of auricular acupressure combined with Evodia rutaecarpa powder paste Yongquan point in patient with insomnia of disharmony between heart and kidney.

## 2. Methods

### 2.1. Participants Enrollment and Survey Methods

From January 2019 to December 2020, we collected 120 patients from the Department of Traditional Chinese Medicine of the First Affiliated Hospital of Jinan University. But 14 patients lack necessary information so that we exclude their data, so we only collected valid data from 106 patient with insomnia of disharmony between heart and kidney. Patients were randomly divided into control group and intervention group according to the order of hospitalization. The control group consisted of 27 males and 26 females, and their average age was  $60.23 \pm 5.62$  years old. The participants of control group received common treatment. On the other hand, intervention group participants received treatment of auricular acupressure combined with Evodia rutaecarpa powder paste Yongquan point, they consisted of 29 males and 24 females, and their average age was  $59.35 \pm 9.58$  years old. Base on the analysis result, there was no significantly difference in patient characteristic ( $P > 0.05$ ).

Based on the 2012 Guidelines for the Diagnosis and Treatment of Insomnia for Adults in China [10], the diagnostic criteria for insomnia patients in this study were: (1) Difficulty in falling asleep (more than 30 min), sleep maintenance disorders ( $\geq 2$  times of wakefulness throughout the night), early waking, decreased sleep quality (decreased total sleep time, usually less than 6 h), or no sense of recovery after waking up in daily sleep; (2) the above symptoms still appear in the condition of conditioned sleep and the environment is suitable for sleep; (3) patient had sleep related impairment of daytime function, including fatigue or general discomfort, loss of attention, attention maintenance ability or memory, mood swings or irritable, daytime sleepiness, decreased interest and energy, Tension, headache, dizziness, or other somatic

symptoms related to sleep loss, Overfocus on sleep [11, 12]. Sleep quality was assessed by PSQI. PSQI includes 7 aspects such as sleep quality, time to fall asleep and sleep time, etc. The total score is 21 points, and the total score is  $> 7$  as sleep disorder. The higher the PSQI score means poorer sleep quality. Also, the efficacy criteria were based on the efficacy criteria of Guiding Principles for Clinical Research of New Traditional Chinese Medicine (2002), which were divided into complete cure, significant effect cure and ineffective cure.

The control group participants received common treatment, that its measure included that patient take one tablet of esazolam orally 30min before going to bed every night for 4 consecutive weeks. Also, nurses provide medical environment of high quality to patients during treatment.

In intervention group, the participants received treatment of auricular acupressure combined with Evodia rutaecarpa powder paste Yongquan point base on common treatment. The auricular acupressure treat insomnia by stimulating the acupoints near the ear related to heart, liver, god gate, sympathetic, subcortical and endocrine. After routine disinfection of the patient's ear, the doctor pressed vaccaria seed on the ear point. The doctor presses the relevant acupoints of the patient for 1 minute every day, with a frequency of 60-90 times/minute. If the patient feels pain at the acupoint, the doctor stops pressing. Doctor provide same press to the acupoints near the ear of patient. This treatment is to change the pressing position to the contralateral auricle every 3 days, and the auricular points on both sides are carried out alternately. The course of treatment was 4 weeks. The evodia rutaecarpa powder paste Yongquan point also treat insomnia by drug paste Yongquan point. The drugs are made from honey and evodia rutaecarpa powder. Patients took warm water foot bath for 25 minutes every night, and then pasted the drug on Yongquan point, and removed it the next morning. Its treatment cycle is 1 week, patients need four treatment cycle.

### 2.2. Statistical Analysis

Statistical software SPSS 17.0 was used for statistical analysis of the obtained data. Measurement data were expressed as "mean  $\pm$  SD". t test was used to analyze the data, and  $P < 0.05$  was considered statistically significant.

## 3. Result

In assessment result of TCM treatment, the outcomes of two group were no significantly different. Compared with control group, intervention group had lower points in assessment of TCM treatment, that it means the participants who received the treatment of auricular acupressure combined with evodia rutaecarpa powder paste Yongquan point had better outcome compared with the participant who received common treatment (Table 1).

**Table 1.** Assessment of TCM Treatment between two groups (Mean±SD).

	Assessment of before treatment (point)	Assessment of after treatment (point)
Intervention group (n=53)	20.63±6.73	9.12±3.12
Control group (n=53)	20.84±6.78	16.34±4.54
t	0.126	7.814
P value	>0.05	< 0.05

To assess sleep quality of patient, we used PSQI to collected the assessment from patient with insomnia of disharmony between heart and kidney. Before treatment, sleep quality assessments of two groups were no significantly different ( $p > 0.05$ ). After treatment, intervention group participants had better outcome in sleep quality than that of control group participants ( $p < 0.05$ ), as shown in Table 2.

**Table 2.** Sleep quality assessment of patient before and after treatment.

	Sleep quality assessment of before treatment (point)	Sleep quality assessment of after treatment (point)
Intervention group (n=53)	12.67±3.21	6.52±1.44
Control group (n=53)	12.71±3.43	8.71±1.72
t	0.291	14.351
P value	> 0.05	< 0.05

Table 3 shown that treatment efficiency of different treatment for patient with insomnia of disharmony between heart and kidney. In total treatment efficiency, higher percentage of total treatment efficiency in intervention group than in control group [49 (92.45%) vs 42 (79.25%)], and they were significantly different ( $p < 0.05$ ).

**Table 3.** Treatment efficiency of different treatment between two groups [n (%)].

	Complete cure	significant effect cure	Ineffective cure	Total Treatment efficiency
Intervention group (n=53)	31 (58.49)	18 (33.96)	4 (7.54)	49 (92.45)
Control group (n=53)	25 (47.17)	17 (32.08)	11 (20.75)	42 (79.25)
X <sup>2</sup>	-	-	-	8.482
P value	-	-	-	< 0.05

## 4. Discussion

To assess treatment effect of auricular acupressure combined with evodia rutaecarpa powder paste Yongquan point, we establish a randomized controlled trial by comparison of this treatment and common treatment, and analyze the data between two groups.

The cause of insomnia is believed to be the brain stem and thalamus sleep and wakefulness between the regulation is destroyed, disorder, excitement and inhibition is not coordinated, resulting in insomnia [13]. In clinical traditional Chinese medicine, disharmony between heart and kidney is a common insomnia type [14].

The better treatment effect of uricular acupressure combined with evodia rutaecarpa powder paste Yongquan point is the main factor supporting our results in terms of sleep quality and treatment efficiency. First, long-term stimulation of the ear can effectively regulate body functions, this measure provides effective treatment to patient with insomnia of disharmony between heart and kidney [15]. Second, evodia rutaecarpa powder paste Yongquan point has the effect of soothing the patient's mental state [16].

Huang et al [17]. compared the treatment of auricular acupressure combined with evodia rutaecarpa powder paste Yongquan point with common treatment in 106 patients with insomnia of disharmony between heart and kidney. They found that the treatment of auricular acupressure combined with evodia rutaecarpa powder paste Yongquan point

improved sleep quality for patients with insomnia, that the better outcome of sleep quality in this treatment group than that in common treatment group.

In limitation, our subjects were patient with insomnia of disharmony between heart and kidney, so it is not known whether our results are application to other insomnia type.

## 5. Conclusion

In conclusion, treatment effect of auricular acupressure combined with evodia rutaecarpa powder paste Yongquan point is better than common treatment for patient with insomnia of disharmony between heart and kidney. Compared with common treatment, this treatment not only had better effect for sleep quality of patient but also had better treatment efficiency.

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