

Clinical Efficacy and Medication Patterns of Chinese Herbal Bath Combined with Head Massage in Treating Insomnia

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Abstract [Objectives] To systematically evaluate the clinical efficacy of head massage combined with Chinese herbal bath in treating insomnia and analyze its herbal medication patterns. [Methods] Clinical data of 200 chronic insomnia patients treated at the Sleep Disorder Center of Taihe Hospital from January 2020 to December 2024 were retrospectively analyzed. Patients were randomly divided into observation group and control group ($n = 100$ each). The observation group received head massage combined with Chinese herbal bath therapy, while the control group received Chinese herbal bath alone. The Pittsburgh Sleep Quality Index (PSQI) was used for efficacy evaluation, and statistical analysis was performed on the frequency of herbal medications in herbal bath formulas. [Results] The PSQI score improvement in the observation group (8.44 ± 1.87) was significantly better than that in the control group (5.74 ± 1.93) ($P < 0.01$). Herbal formulas for external bath primarily contained mind-calming and heart-nourishing herbs (fried Ziziphi Spinosae Semen, Concha Margaritifera) and heat-clearing herbs (Rhizoma Coptidis, Radix Scutellariae). [Conclusions] The combination of head massage and Chinese herbal bath can significantly improve sleep quality in insomnia patients, demonstrating superior clinical efficacy compared with Chinese herbal bath alone. This combined therapy shows good safety and operability, warranting promotion in primary and specialized medical institutions.

Key words Head massage, Chinese herbal bath, Insomnia, TCM treatment, Clinical efficacy, PSQI score

1 Introduction

Insomnia is a common sleep disorder characterized by difficulty falling asleep, easy awakening, excessive dreaming, early awakening, and decreased sleep quality, with severe cases experiencing complete sleeplessness^[1]. Chronic insomnia not only severely affects patients' daily life and work efficiency but may also lead to emotional disorders, memory decline, immune dysfunction, and systemic diseases such as cardiovascular disorders^[2]. With accelerating lifestyles, its incidence is increasing annually. Western medical treatments relying on sedative-hypnotic drugs present issues of dependence and drug resistance^[3–5]. Traditional Chinese Medicine (TCM), centered on holistic treatment based on syndrome differentiation, has demonstrated good efficacy and fewer side effects in insomnia treatment, gaining wide recognition.

Among traditional TCM therapies, head massage and Chinese herbal bath are commonly used for managing sleep disorders. Head massage stimulates acupoints such as Baihui (GV20) and Yintang (EX-HN3), regulating the nervous system and calming the mind^[6]; Chinese herbal bath utilizes thermal energy and herbal penetration to exert heart-nourishing and mind-calming effects^[7]. However, there is insufficient systematic research on the combined use of these two therapies for insomnia. This study aims to clarify the clinical value of combining head massage with Chinese herbal bath for insomnia through retrospective analysis of clinical cases, explore medication patterns in

herbal bath formulas, and provide evidence for optimizing TCM therapeutic regimen.

2 Data and methods

2.1 Data sources Clinical data were collected from 200 chronic insomnia patients who met Chinese and Western diagnostic criteria at the Sleep Disorder Center of Taihe Hospital from January 1, 2020 to December 30, 2024, with primary insomnia accounting for approximately 80%.

2.2 Diagnostic criteria Western diagnostic criteria followed the Chinese Classification of Mental Disorders (CCMD-3): Main manifestations including difficulty falling asleep persisting for over 3 weeks with impaired daytime functioning^[8]. TCM diagnostic criteria were based on *Internal Medicine in Traditional Chinese Medicine*: Sleeplessness with accompanying dizziness and fatigue^[9].

2.3 Inclusion and exclusion criteria Inclusion criteria: Meeting insomnia diagnosis, age ≥ 18 years, complete pre-treatment and post-treatment data. Exclusion criteria: Patients with severe organic diseases, psychoactive substance dependence, or in pregnancy/lactation period.

2.4 Treatment methods The observation group ($n = 100$) received head massage combined with Chinese herbal bath therapy: Massage once daily for 20 min; Chinese herbal bath once daily with water temperature $38 - 42\text{ }^{\circ}\text{C}$ for 20-min immersion, both treatments lasting 2 weeks. The control group ($n = 100$) received Chinese herbal bath therapy alone.

2.5 Data organization and analysis Patient medical records were retrieved from the hospital information management center. Herbal names were standardized and recorded using Excel. A

Received: February 13, 2025 Accepted: April 25, 2025

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standardized Excel database was established, and SAS 9.4 software was used for frequency statistical analysis and herbal clustering analysis. The Pittsburgh Sleep Quality Index (PSQI) was employed to evaluate therapeutic efficacy by comparing pre-treatment and post-treatment changes.

3 Results and analysis

3.1 General data The 200 patients were randomly divided into two groups. No statistically significant differences were observed between the observation and control groups in gender, age, or disease duration ($P>0.05$), indicating comparability (Table 1).

Table 1 Comparison of general data about the two groups ($n=100$)

Group	Male	Female	Age//year	Course of disease//month
Observation	42	58	45.8 ± 10.4	26.1 ± 8.3
Control	39	61	46.3 ± 11.0	25.7 ± 9.0

3.2 Frequency analysis of herbal usage Analysis of 200 Chinese herbal bath formulas revealed the top 10 most frequently used herbs: Fried Ziziphi Spinosae Semen (235 times), raw Os Draconis (230 times), Concha Margaritifera (217 times), Caulis Polygoni Multiflori (214 times), Schisandra Chinensis Fructus (112 times), Bulbus Lilii (91 times), Semen Platycladi (90 times), Poria Cocos (90 times), Rhizoma Coptidis (86 times), and Radix Scutellariae (83 times).

3.3 PSQI scores After 2 weeks of treatment, the PSQI score in the observation group decreased from 15.26 ± 2.34 to 6.82 ± 1.47 , while the PSQI score in the control group decreased from 15.12 ± 2.11 to 9.38 ± 2.04 . Both groups showed significant improvement ($P<0.01$), with a greater magnitude of improvement in the observation group ($P<0.01$). Details are shown in Table 2.

Table 2 Comparison of post-treatment PSQI scores between groups ($n=100$)

Group	Before treatment	After treatment	P
Observation	15.26 ± 2.34	6.82 ± 1.47	<0.01
Control	15.12 ± 2.11	9.38 ± 2.04	<0.01

NOTE $^{\Delta}P<0.05$ indicates statistically significant differences compared to the control group.

4 Conclusion and discussion

With the rising incidence of insomnia and the limitations of Western medical treatments, the advantages of TCM have become increasingly prominent. The study results demonstrate that the combination of head massage and Chinese herbal bath significantly outperforms Chinese herbal bath alone in improving sleep quality, highlighting a synergistic therapeutic effect.

4.1 Synergistic mechanisms from TCM theoretical perspectives

4.1.1 Regulatory effects of head massage. From a TCM perspective, insomnia is often attributed to "mental restlessness", with pathological roots in the heart, liver, spleen, and kidneys. Com-

mon syndromes include disharmony between the heart and kidney, liver fire disturbing the heart, spleen deficiency with phlegm accumulation, and qi-blood deficiency^[10]. Massage therapy stimulates acupoints on the head to regulate the flow of qi and blood in meridians, balance yin and yang, soothe liver qi stagnation, and calm the mind. Key acupoints such as Baihui (GV20), Yintang (EX-HN3), and Shenting (GV24)—located at the intersections of the Governor Vessel, Bladder Meridian, and Conception Vessel—are effective in clearing the mind and alleviating restlessness. Modern studies confirm that massage regulates autonomic nervous function, reduces sympathetic nerve excitability, and thereby enhances sleep^[11].

4.1.2 Multifunctional effects of Chinese herbal bath. Chinese herbal bath adheres to the TCM principle of "treating internal diseases externally". Heat dilates pores, allowing herbal components to penetrate the skin and reach internal organs, thereby warming meridians, activating blood circulation, resolving stasis, and nourishing the heart to calm the mind. Core herbs in the herbal bath formulas, such as fried Ziziphi Spinosae Semen, raw Os Draconis, and Concha Margaritifera, are central to their sedative and calming effects. Studies show that the fatty acids in fried Ziziphi Spinosae Semen prolong sleep duration and enhance deep sleep. Heavy sedatives like raw Os Draconis and Concha Margaritifera are particularly effective for insomnia caused by deficiency-induced restlessness^[12]. Combinations of Caulis Polygoni Multiflori, Schisandra Chinensis Fructus, and Semen Platycladi synergistically nourish the heart, calm the mind, and replenish yin and blood. The combined therapy embodies a holistic TCM approach of "simultaneous internal and external treatment" and "addressing both symptoms and root causes". It not only alleviates insomnia rapidly but also fundamentally regulates constitutional imbalances, aligning with TCM's holistic and syndrome-differentiation principles.

4.2 Analysis of medication patterns of Chinese herbal bath formulas Frequency analysis of 200 Chinese herbal bath formulas revealed that the top 10 herbs (fried Ziziphi Spinosae Semen, raw Os Draconis, Concha Margaritifera, Caulis Polygoni Multiflori, Schisandra Chinensis Fructus, Bulbus Lilii, Semen Platycladi, Poria Cocos, Rhizoma Coptidis, and Radix Scutellariae) primarily fall into the categories of mind-calming, heat-clearing, heart-nourishing, and spleen-strengthening. This reflects clinical consensus on insomnia patterns such as "heart-mind deficiency" and "liver fire disturbing the heart". These herbs are common components of classical formulas like Suanzaoren Decoction, Emperor's Heart – Nourishing Pill, and Bupleurum plus Dragon Bone and Oyster Shell Decoction. Their compatibility aligns with the principles of "nourishing the heart, calming the mind, clearing heat via yin-nourishing, and resolving phlegm via spleen strengthening". Modern studies validate their mechanisms in sleep regulation and central nervous system inhibition, demonstrating the scientific validity of TCM formulas.

4.3 Efficacy evaluation and mechanism exploration Using

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