Clinical Advances in Auricular Acupressure for Insomnia Treatment (postprint)

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Date: 2022-09-06T00:00:00+00:00

Abstract

This article reviews the research progress of auricular acupressure in the treatment of insomnia from four aspects: commonly used auricular points, treatment methods, acupressure materials, and combined application with other traditional Chinese medicine therapies, to provide reference for clinical treatment of insomnia.

Full Text

Clinical Progress of Auricular Plaster Therapy in the Treatment of Insomnia

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Abstract

This paper reviews the research progress of auricular point sticking in the treatment of insomnia from four aspects: common auricular points, treatment methods, sticking materials, and combined application with other traditional Chinese medicine therapies, so as to provide reference for clinical treatment of insomnia.

Keywords: Auricular plaster; Insomnia; Overview

Insomnia is a common sleep disorder, currently affecting approximately % of the population in China [1]. The conventional treatment primarily involves oral sedative-hypnotic medications, which demonstrate good short-term efficacy but carry risks of addiction and tolerance with long-term use, and are prone to relapse upon discontinuation [2]. Traditional Chinese Medicine (TCM) posits that the pathogenesis of insomnia mainly involves the imbalance of yin and yang in the heart, liver, spleen, and kidneys, where yang fails to enter yin, qi and

blood become disharmonious, leading to malnourishment or entrapment of the spirit. The kidneys open into the ears, and TCM classics state that "the ear is where all the vessels converge." A literature review of CNKI (China National Knowledge Infrastructure) was conducted to establish a specialized database on auricular plaster for insomnia treatment, encompassing patient visits and treatment sessions. The analysis revealed that the most common syndrome pattern treated with auricular plaster was heart-spleen deficiency, followed by heart-kidney disharmony, heart-gallbladder qi deficiency, and liver fire excess. The most frequently selected auricular points were heart, kidney, spleen, liver, Shenmen, subcortex, sympathetic, and brainstem. Auricular plaster therapy, also known as auricular point pressing, auricular seed embedding, or auricular acupressure, is a traditional Chinese nursing method that stimulates auricular points to balance yin and yang and regulate organ function. It effectively improves sleep quality, is simple to operate, demonstrates clear efficacy, and rarely causes adverse reactions, showing good application value and development prospects. A bibliometric analysis of clinical nursing literature found that insomnia ranked first among diseases or symptoms treated with auricular plaster therapy. This review summarizes the current status of auricular plaster application in insomnia treatment.

1. Commonly Used Auricular Points

A review of literature from the past five years revealed that heart-spleen deficiency is the most common pattern for auricular plaster treatment of insomnia, followed by heart-kidney disharmony, heart-gallbladder qi deficiency, and liver fire excess. The highest frequency auricular points include: subcortex (%), heart (%), kidney (%), pillow (%), gallbladder (%), spleen (%), endocrine (%), neurasthenia point (%), brain point (%), brain (%), triple burner (%), lung (%), small intestine (%), nervous system subcortex (%), deep sleep point (%), ear back heart (%), pancreas-gallbladder (%), brainstem (%), nerve (%), large intestine (%), endogenous %), insomnia (%), and rim center (%). Additionally, the study demonstrated an association between the combination of "subcortex plus heart plus Shenmen" and insomnia treatment.

Regarding syndrome differentiation and point selection for auricular plaster in insomnia treatment, various patterns have been identified with corresponding point selections: heart-spleen deficiency pattern uses heart, spleen, Shenmen, pillow, sympathetic, small intestine, stomach, and subcortex; heart-kidney disharmony pattern uses heart, kidney, Shenmen, neurasthenia area, neurasthenia point, and pituitary; liver fire excess pattern uses liver, gallbladder, and triple burner; phlegm-heat disturbing heart pattern uses spleen, stomach, small intestine, and large intestine; and deficiency of both heart and gallbladder pattern uses heart, gallbladder, Shenmen, and sympathetic.

2. Treatment Methods

Although auricular plaster treatment methods are similar, significant differences exist in the details.

Bilateral Auricular Plaster Application
Most studies employ alternating application between ears. However, Li et al. [6] selected simultaneous bilateral application in 60 insomnia patients. After TCM syndrome differentiation, one ear (Group A) used Shenmen, sympathetic, subcortex, endocrine, and pillow as main points, supplemented by heart, liver, gallbladder, spleen, kidney, stomach, superior triangular fossa, and triple burner according to symptoms. The other ear (Group B) used ear back liver, ear back heart, ear back spleen, ear back kidney, and ear root as main points, supplemented by ear apex, liver yang, and neurasthenia point. Both ears were pressed simultaneously with different emphases, alternating the point groups between left and right ears in subsequent sessions. After treatment, 25 cases were cured with a total effective rate of %, demonstrating good clinical efficacy of bilateral auricular plaster for insomnia.

Time-Optimized Auricular Plaster Application
Liang et al. [7] investigated the clinical efficacy of midnight-noon ebb-flow auricular plaster for elderly insomnia patients with heart-spleen deficiency pattern. Patients were randomized into two groups: a control group receiving auricular plaster alone, and an intervention group receiving auricular plaster combined with time-optimized pressing according to the midnight-noon ebb-flow theory. This involved pressing corresponding auricular points during specific time periods when qi and blood flow were strongest in the related organs: the heart point was pressed at noon (11:00-13:00) when the pericardium meridian' s function peaked; the small intestine point at un-time (13:00-15:00); and the spleen point at si-time (9:00-11:00), with each session lasting 3-5 minutes. Results showed the intervention group' s efficacy was significantly superior to the control group, indicating that time-optimized auricular plaster better improves sleep quality and alleviates TCM symptoms.

Pressing Frequency
Literature indicates daily pressing sessions [8], but Liu et al. [9] randomized 90 elderly insomnia patients into three groups receiving different frequencies (once, twice, or three times daily) of auricular plaster application, with a 10-day treatment course. The study compared sleep quality index scores and therapeutic outcomes across groups, finding no significant differences in improving sleep quality index or efficacy among the different frequencies. Therefore, considering economics, time consumption, and patient acceptance, once-daily application (before bedtime) is recommended for elderly insomnia patients.

3. Different Materials for Auricular Plaster

Clinical auricular plaster commonly uses materials such as Wangbuliuxingzi (Semen Vaccariae) and magnetic beads, which can effectively improve sleep quality

despite differing specific effects.

Wangbuliuxingzi (Semen Vaccariae)
Chen et al. [10] selected 30 insomnia patients with gallstone disease, applying Wangbuliuxingzi to points including subcortex, spleen, heart, kidney, liver, sympathetic, and Shenmen. After treatment, 18 cases were cured with a total effective rate of %, indicating good therapeutic effect of Wangbuliuxingzi auricular plaster for gallstone-induced insomnia. Chen et al. [11] applied Wangbuliuxingsi auricular plaster to 60 perimenopausal patients with non-organic insomnia and liver depression pattern, selecting Shenmen, pillow, subcortex, endocrine, sympathetic, and liver points. After two months, significant differences were observed in PSQI scores, liver depression syndrome differentiation scores, and serum TNF-α levels compared to before treatment, with a total effective rate of %. This suggests Wangbuliuxingzi auricular plaster can alleviate liver depression symptoms and improve sleep by regulating sleep-related cytokines.

Magnetic Beads
Tan [12] analyzed the value of magnetic bead auricular plaster in 80 insomnia patients, randomly dividing them into treatment and control groups. The control group received conventional Western medicine, while the treatment group added magnetic bead auricular plaster to main points Shenmen, heart, sympathetic, and endocrine, plus supplementary points brain, spleen, and kidney. Assessment using PSQI, SDS, and HAMD scales showed the treatment group' s sleep quality and sleep onset time scores were significantly better than the control group, demonstrating high application value of magnetic bead auricular plaster. Huang et al. [13] studied 60 hepatitis B cirrhosis patients with insomnia, with the treatment group receiving magnetic bead auricular plaster and the control group using adhesive tape only. After continuous treatment for 2 weeks, the treatment group showed significant improvement in ISI scores and a total effective rate of % compared to % in the control group, confirming good efficacy of magnetic bead auricular plaster for cirrhosis-related insomnia.

Other Materials
Additional materials used for auricular plaster include Suanzaoren (Ziziphi Spinosae Semen), Borneol, Baijiezi (Sinapis Albae Semen), and Baiziren (Platycladi Semen). However, some scholars have noted that the pressing material does not affect therapeutic outcomes, with no correlation between efficacy and the medicinal properties of the materials. The author found no recent studies examining the relationship between different auricular plaster materials and therapeutic efficacy.

4. Auricular Plaster Combined with Other TCM Therapies

Auricular plaster demonstrates unique clinical advantages in insomnia treatment, and combination with other TCM therapies can more effectively reduce recurrence rates and improve sleep quality [15].

Combined with Acupuncture

Li et al. [16] randomly divided 60 depression-related insomnia patients (heart-spleen deficiency pattern) into acupuncture alone and acupuncture plus auricular plaster groups. After one month, the combination group showed a total effective rate of %, significantly higher than the acupuncture alone group. Both groups improved sleep quality, but the combination group demonstrated greater improvement in total sleep time (TST), sleep efficiency, daytime function, and SDS scores, with more significant reductions in anxiety, somatization, sleep disorder, and hopelessness factors. This indicates acupuncture combined with auricular plaster has good efficacy for depression-related insomnia.

Combined with Ear Copper Needle Scraping

Zeng et al. [17] randomly divided 120 insomnia patients into four groups: medication (Group A), ear copper needle scraping plus auricular plaster (Group B), auricular plaster alone (Group C), and ear copper needle scraping alone (Group D). After treatment, Groups B, C, and D showed reduced PSQI scores compared to baseline. Group D demonstrated superior sleep quality, sleep onset time, and sleep efficiency compared to other groups. Polysomnography revealed reduced sleep onset latency (SOL), awakening times (AT), and NREM Stage 1 sleep, with increased total sleep time (TST), NREM Stage 2, and REM sleep. Group D' s improvements in NREM Stage 2, REM, TST, SOL, and AT were significantly better than other groups, with a higher total effective rate. These results indicate auricular plaster combined with ear copper needle scraping effectively improves sleep quality and structure.

Combined with Moxibustion

Chen et al. [18] randomly divided 60 insomnia patients with hepatitis B cirrhosis (liver-kidney yin deficiency pattern) into control and observation groups. The control group received oral Estazolam, while the observation group received moxibustion combined with auricular plaster. After 4 weeks, both groups showed reduced awakening times and easier sleep onset, with increased sleep duration. The combination therapy improved insomnia symptoms in cirrhosis patients with simple operation, low cost, and minimal side effects.

Combined with Herbal Foot Bath

Zhang et al. [19] randomly divided 60 insomnia patients into observation and control groups. The observation group received auricular plaster combined with herbal foot bath, while the control group received herbal foot bath alone. After 4 weeks, the combination group showed better PSQI scores and overall efficacy, with superior scores in sleep quality, sleep onset time, and sleep duration, and a total effective rate of % compared to % in the control group.

Combined with Five-Element Music Therapy

Wang et al. [20] randomly divided 64 elderly insomnia patients (heart-spleen deficiency pattern) into test and control groups. The control group received Estazolam, while the test group received Estazolam combined with auricular plaster and midnight-noon ebb-flow five-element music therapy. After 4 weeks, the test group showed a TCM syndrome total effective rate of % and PQSI total effective rate of %, significantly higher than the control group, with all

scores markedly lower than baseline and the control group. This demonstrates superior efficacy of auricular plaster combined with five-element music therapy for elderly insomnia.

Combined with Acupoint Catgut Embedding
Wu et al. [21] randomly divided 90 chronic insomnia patients into treatment and control groups. The control group received catgut embedding alone, while the treatment group received catgut embedding combined with auricular plaster. The treatment group achieved cure and total effective rates of % and % respectively, significantly higher than the control group' s % and %. Both groups improved sleep quality, time, efficiency, and onset time, but the treatment group required significantly shorter total hospital visits. This indicates catgut embedding combined with auricular plaster is more effective.

Combined with Back Bladder Meridian Cupping
Li et al. [22] randomly divided 60 chronic insomnia patients into treatment and control groups. The treatment group received auricular plaster combined with back bladder meridian cupping every other day, while the control group received oral Diazepam nightly. After 30 days, the treatment group showed better total effective rate and PSQI scores, with superior daytime function improvement compared to the control group.

Combined with Warm Acupuncture
Ye [23] randomly divided 90 insomnia patients into two groups. The study group received auricular plaster combined with warm acupuncture, while the control group received body acupuncture alone. The study group showed lower PSQI scores and TCM syndrome scores, higher total effective rate, and lower 3-month recurrence rate, demonstrating that auricular plaster combined with warm acupuncture effectively improves sleep and reduces recurrence.

Combined with Meridian Patting Exercise
Ren et al. [24] studied 90 perimenopausal insomnia patients randomized into meridian patting exercise group, auricular plaster group, and combined group. All received conventional intervention, with the patting group performing hand meridian patting exercises, the auricular group receiving auricular plaster, and the combined group receiving both interventions. The combined group showed significantly higher total effective rate and lower PSQI and SAS scores than the other groups, indicating significant efficacy of the combined intervention.

Combined with Baduanjin
Yang et al. [25] randomly divided 60 COVID-19 patients with insomnia into control and observation groups. The control group received oral Estazolam, while the observation group received auricular plaster combined with daily Baduanjin practice. The observation group showed lower scores for sleep disturbance, irritability, phlegm, bitter taste, abdominal distension, and fatigue, demonstrating that auricular plaster combined with Baduanjin improves sleep quality, anxiety, depression, and TCM symptoms better than medication.

Combined with Yang-Introducing Massage

Zou [26] randomly divided 60 insomnia patients into control and observation groups. The control group received conventional medication, while the observation group received "Yang-introducing" massage combined with auricular seed embedding. The observation group achieved a total effective rate of %, significantly higher than the control group's %, with significantly lower post-treatment PSQI scores, indicating this combined therapy effectively improves sleep quality.

Conclusion

Clinical studies have confirmed the good efficacy of auricular plaster for insomnia treatment, but several issues require improvement: limited research on syndrome differentiation-based treatment, insufficient basic research, non-unified efficacy evaluation criteria, and inadequate application and promotion. As the research team continues to grow, studies on auricular plaster at various levels will continuously improve. Future research should further develop animal experiments to explore mechanisms, improve clinical comparative efficacy studies, and provide more solid theoretical foundations to enable broader application of auricular plaster technology in insomnia treatment.

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Note: Figure translations are in progress. See original paper for figures.