Current Status of Auricular Acupressure in the Treatment of Insomnia

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Abstract

Sleep is a normal physiological activity in humans. Normal sleep can clear potentially neurotoxic waste accumulated in the central nervous system and promote synaptic plasticity, thereby facilitating memory and learning. The mutual transition between sleep and wakefulness is achieved through the interaction of various neurotransmitters in the brain and endogenous sleep-promoting substances, which are regulated by circadian rhythms and homeostasis of the internal environment. However, with the accelerated pace of modern life, circadian disruption caused by various unhealthy lifestyle habits such as staying up late and irregular eating, as well as insomnia triggered by disturbance of the body' s internal and external environment, are becoming increasingly prevalent, directly impacting human physiological and psychological health. Studies have shown that auricular acupressure therapy can stimulate corresponding acupoints, promote the circulation of qi and blood throughout the body, regulate visceral functions, and demonstrates good therapeutic efficacy for insomnia, with simple operation, easy mastery, and no adverse reactions. From a health economics perspective, auricular acupressure pellet therapy meets social needs while not imposing excessive medical expenses on patients, and is suitable for implementation in various medical institutions, including community hospitals and rural health clinics.

Full Text

Title

Research Progress and Clinical Application Status of Auricular Point Pressing Therapy in Elderly Insomnia Patients

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Abstract

Sleep is a normal physiological activity that clears potentially neurotoxic waste accumulated in the central nervous system and promotes synaptic plasticity to enhance memory and learning. The reciprocal transition between sleep and wakefulness is achieved through interactions among various neurotransmitters and endogenous sleep-promoting substances in the brain, regulated by circadian rhythms and homeostasis of the internal environment. However, with the accelerated pace of modern life, circadian disruption and internal environment disturbances caused by unhealthy lifestyle habits such as staying up late and irregular eating have made insomnia increasingly prevalent, directly impacting physical and mental health.

Research demonstrates that auricular point pressing therapy can stimulate corresponding acupoints, facilitate the circulation of qi and blood throughout the body, and regulate organ function, showing favorable efficacy against insomnia with simple operation, easy mastery, and no adverse reactions. From a health economics perspective, auricular point pill-pressing meets social needs without imposing excessive medical costs on patients, making it suitable for implementation in various medical institutions, including community hospitals and rural health centers.

Keywords: auricular point pressing therapy; insomnia; research status; traditional Chinese medicine nursing techniques

1. Research Status of Insomnia at Home and Abroad

Insomnia is a sleep disorder characterized by frequent difficulty falling asleep and/or maintaining sleep, resulting in dissatisfaction with sleep quality [1]. Globally, approximately 25% of adults experience insomnia symptoms, with about 6% to 10% meeting diagnostic criteria for insomnia disorder [2]. According to the 2016 White Paper on Sleep Index of China' s Middle Class, roughly 38.2% of Chinese urban residents suffer from varying degrees of insomnia, with 46.58% reporting insomnia symptoms and 82% experiencing sleep disorders; 4.79% require long-term sleep medication [3]. The same white paper documents the harms of insomnia: 18.7% of surveyed individuals reported memory decline, 16.94% showed tendencies toward mental health issues, and 25% faced risk of major accidents [4].

The 2020 White Paper on Internet Users' Sleep reported an average sleep duration of 7.1 hours among netizens, yet 56% still perceived sleep problems such as frequent dreaming and light sleep, with 37% self-reporting insomnia. Research indicates that insomnia not only increases risks for dementia, pneumonia, diabetes, and cardiovascular disease [5], but also triggers self-loathing, anxiety, and depression [6], while reducing work efficiency [7].

Regarding insomnia treatment, European guidelines identify Cognitive-Behavioral Therapy (CBT) as a first-line clinical intervention [8]. However,

due to limited application, Western medicine still primarily relies on benzodiazepines for insomnia treatment. Long-term use of these medications produces side effects including hangover effects, rebound insomnia, and impaired cognitive function and memory [9]. Moreover, insomnia shows high recurrence rates and low spontaneous improvement [10]. Consequently, there is an urgent need to identify non-pharmacological therapies with good tolerability, low dependence, and minimal adverse effects.

Traditional Chinese Medicine (TCM) attributes insomnia' s pathogenesis primarily to yang excess, yin deficiency, and yin-yang disharmony. Therefore, treatment focuses on harmonizing yin and yang to achieve a state of balanced equilibrium. Auricular point pressing technology is widely used clinically due to its non-toxic side effects, simplicity, and cost-effectiveness. Its greatest strength lies in emphasizing holistic functional regulation and syndrome differentiation, tailoring treatments such as acupuncture, moxibustion, massage, and cupping to individual patient differences to tonify deficiency, drain excess, and restore yin-yang balance.

2. Research Status of Auricular Point Therapy for Insomnia

2.1 Auricular Point Pressing Therapy

Auricular point pressing therapy is a TCM intervention based on modern medicine and TCM meridian theory. It uses non-reactive vaccaria seeds to stimulate auricular acupoints, thereby regulating the circulation of qi and blood throughout the body, balancing organ yin and yang, and achieving sedative, calming, and spirit-tranquilizing effects [11]. TCM meridian theory holds that "the twelve meridians connect to the ear" and "the ear is the convergence of meridians," establishing that the ear maintains close associations with the body' s meridians and organs. Each auricular point corresponds to specific organs and meridians, and pathological changes in any body region manifest reactions at corresponding auricular points [12].

2.2 Development of Auricular Point Pressing Technology

In China, auricular point therapy boasts a long history in disease prevention and treatment, with earliest records appearing in the Han Dynasty medical texts *Moxibustion Classic of Foot and Arm Eleven Meridians* and *Moxibustion Classic of Yin-Yang Eleven Meridians* unearthed from Mawangdui. Although ancient auricular point nomenclature and location appeared sporadically, the gradually formed diagnostic framework and therapeutic experience guided by holistic medical thought laid the foundation for modern auricular diagnosis and treatment systems [13]. In modern times, Professor Zhang Yingqing proposed holographic biology in 1973. In 1992, China promulgated the *National Standard of the People' s Republic of China - Ear Point Names and Locations*, implemented in 1993 as the "93 Ear Point National Standard." In 2008, the

General Administration of Quality Supervision, Inspection and Quarantine and the Standardization Administration issued the *National Standard - Ear Point Names and Location*, establishing auricular point standards.

Over the subsequent four years, to promote continuous and in-depth development of TCM medical technology, the Medical Administration Department of the State Administration of Traditional Chinese Medicine established a TCM Medical Technology Collaboration Group, which in 2012 selected, organized, and standardized over 100 mature TCM techniques, including auricular point pressing technology, and organized collaborative group member units to draft technical operation protocols. To facilitate promotion and dissemination, the *TCM Medical Technology Handbook (Popular Edition)* was compiled in 2013 [14]. As this technology continues to demonstrate clinical value, the Chinese Nursing Association initiated development of standardized operation specifications for auricular point pressing technology for constipation in 2019, with Beijing University of Chinese Medicine Dongfang Hospital as a primary drafting unit, clearly defining basic technical requirements, assessment, and operation key points. This demonstrates China' s growing emphasis on standardizing auricular point pressing technology, which will consequently expand its clinical application.

2.3 Mechanism Analysis of Auricular Point Pressing for Insomnia

From a TCM perspective, insomnia etiology includes improper diet, emotional disorders, imbalance between work and rest, and post-illness deficiency. In modern research, although insomnia's pathogenesis remains incompletely elucidated, its connection to the nervous system is certain. Preliminary imaging studies of healthy adult brain function show [15] that electrical stimulation through auricular point pressing may trigger vagal regulation to correct excessive sympathetic activity. The auricular branch of the vagus nerve represents the only peripheral pathway to the brain [16]. Vagal regulation of insomnia occurs because stimulation of vagal afferent fibers projects to the nucleus tractus solitarius, which directly or indirectly connects to brain structures [17] including the locus coeruleus, cerebral cortex, hippocampus, thalamus, and cerebellum [18]. Currently, these brain regions are also implicated in sleep disorder pathogenesis [19-20], establishing the foundation for vagal stimulation [21] in insomnia treatment.

Furthermore, parasympathetic excitation from the vagus nerve stimulates pineal melatonin secretion [22], while insomnia closely correlates with decreased central melatonin function. The mutual promotion between parasympathetic excitation and melatonin secretion forms the basis for insomnia treatment [23]. Research confirms [24-26] that auricular therapy can treat insomnia by regulating the body' s naturally secreted nocturnal melatonin. Animal studies demonstrate that auricular point pressing can essentially restore the sleep-wake cycle in sleep-deprived rats, possibly by downregulating Toll-like receptor 4 (TLR4) expression, thereby improving immune function and indirectly enhancing sleep

[27-29]. Studies by Yang Meilian [30] and Song Huifeng [31] both demonstrate the unique advantages of auricular point pressing in improving sleep conditions.

3. Clinical Research Progress of Auricular Point Pressing for Insomnia

Related research indicates that auricular point pressing is simple, safe, economical, and effective without adverse reactions, making it readily accepted by patients, particularly elderly insomnia patients with low immunity and reduced organ function. Huang Limei et al. [32] selected 60 elderly insomnia patients for auricular point pressing therapy, finding that average sleep time increased by approximately 3 hours post-treatment, with a total effective rate reaching about 92%. Tu Changying [33] treated two groups of elderly insomnia patients with auricular point pressing therapy and estazolam medication respectively; after one treatment course, the auricular therapy group achieved a 94% total effective rate, significantly higher than the 72% rate in the medication group.

Moreover, patients expressed greater willingness to accept auricular point pressing, reporting not only improved sleep disorders but also enhanced daytime vitality and increased participation in outdoor activities such as walking, fishing, and tai chi. Zhang Xuefeng [34] applied auricular point pressing to nephrotic syndrome patients with insomnia, observing that sleep onset time decreased by half, nocturnal sleep duration increased by half, and daytime fatigue symptoms markedly improved, with patients also reporting good appetite and peaceful, optimistic mood. Zhong Pin [35] used auricular point pressing for chronic obstructive pulmonary disease patients with insomnia, finding significant improvements in sleep quality and quality of life after two weeks.

Wang Guiling [36] observed clinical efficacy of vaccaria seeds for elderly insomnia, randomly dividing 90 patients into auricular and body acupuncture groups using a random number table; the auricular pressing group demonstrated superior overall efficacy ($P<0.05$) and advantages in improving TCM symptoms. Jin Linhong et al. [37] observed the effect of magnetic bead auricular pressing in severe elderly insomnia patients compared with oral estazolam, showing statistically significant differences in effective rates between the observation and control groups (87.5% vs. 62.5%, $P<0.05$). Regarding adverse effects, the auricular group exhibited only 2 cases of pressing site redness with no other adverse reactions, while the medication group showed drug dependence in 25 cases. Research indicates that magnetic bead auricular pressing can achieve magnetic therapy effects through its own magnetic stimulation of acupoints, demonstrating significantly better insomnia improvement than medication with fewer adverse effects and no dependence.

In summary, applying auricular point pressing therapy to sleep disorders from various causes can improve patient sleep status to varying degrees, reduce sleep onset time, extend nocturnal sleep duration, alleviate anxiety, improve daytime fatigue symptoms, promote outdoor activities, and stabilize mood, thereby en-

hancing quality of life. The therapy is simple, effective, has few adverse effects, and is readily accepted by patients, making it worthy of clinical promotion and application. Meanwhile, with societal development and medical progress, healthcare workers increasingly emphasize auricular points in their fast-paced lifestyle, with numerous developments and innovations emerging in clinical nursing practice based on auricular points. However, standalone use of this method may prove insufficient in future development, necessitating continued exploration of targeted, effective interventions combined with other approaches.

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