

Current Status and Prospects of Clinical Research on Mongolian Medicine in the Treatment of Insomnia

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Abstract: Insomnia is a highly prevalent sleep disorder in modern society and also one of the common clinical symptoms. It is closely associated with various systemic diseases and significantly impacts people's physical and mental health as well as quality of life. Mongolian medicine has a longstanding tradition in treating insomnia, with extensive clinical experience, definite therapeutic effects, and few adverse reactions. According to Mongolian medical theory, insomnia falls within the category of "Khii" disorders, with the core pathogenesis being excessive Khii and imbalance among the three humors (Khii, Shara, Badagan) and seven constituents. This paper provides a comprehensive review and analysis of the etiology and pathogenesis, clinical research progress, oral Mongolian medicines, traditional Mongolian external therapies, and combined internal and external treatments for insomnia. Currently, commonly used Mongolian medicines include classic formulas such as Sugme13 Decoction, Agar35, and Amin Erdun. Traditional external therapies include warm needle acupuncture, moxibustion, herbal baths, and topical rubbing therapies. The overall clinical effectiveness rate usually exceeds 90%, with advantages such as definite efficacy, few adverse reactions, and no drug dependence. However, current studies still face methodological issues including small sample sizes, insufficient implementation of randomization and blinding, lack of unified diagnostic and efficacy criteria, and inadequate followup. Future research should promote multicenter, largesample, highquality randomized controlled trials, establish an evidencebased Mongolian medicine database and clinical guidelines, strengthen research on the material basis and mechanisms of action of Mongolian medicines, and advance the modernization and international development of Mongolian medicine in the treatment of insomnia.

Keywords: Insomnia; Mongolian medicine; Clinical research; Prospects

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1. Introduction

Insomnia disorder is a sleepwake disorder characterized by difficulty initiating sleep, maintaining sleep,

or early morning awakening, combined with daytime functional impairment. Its prevalence ranges from 10% to 30% and is increasing annually ^[1]. Modern medicine primarily employs benzodiazepine receptor agonists, melatonin receptor agonists, and cognitive behavioral therapy for insomnia (CBTI). However, issues such as drug dependence, tolerance, and high relapse rates significantly constrain longterm application ^[2]. In this context, the alternative and complementary value of traditional medicine has drawn increasing attention. Mongolian medicine, as an important component of traditional Chinese medicine, possesses a complete theoretical system and rich clinical experience, with a long history in the diagnosis and treatment of insomnia. According to Mongolian medical theory, the pathogenesis of insomnia mainly involves excessive Khii interacting with blood, and the therapeutic principle is to calm Khii and regulate the balance of the three humors. There are numerous treatment modalities for insomnia in Mongolian medicine, including Mongolian herbal formulas, moxibustion, warm needling, acupuncture, and herbal baths, all of which have demonstrated notable clinical efficacy. In recent years, clinical studies on Mongolian medicine for insomnia have gradually increased; however, systematic evidencebased evaluations and clear future directions remain insufficient. This paper aims to integrate the clinical evidence and modern mechanistic research findings on Mongolian compound prescriptions and distinctive therapies, analyze the major bottlenecks currently faced in research, and propose subsequent research directions, with the goal of providing a reference for the development of Mongolian medical sleep medicine.

2. Mongolian medical understanding of the etiology and pathogenesis of insomnia

In Mongolian medical classics, insomnia has not been recorded as an independent disease entity, but rather as symptoms such as “insomnia,” “easy awakening,” “poor sleep,” “inability to fall asleep,” and “reduced sleep”, which are sporadically documented under categories such as “Khii disorders” and “heart disorders” ^[3]. For instance, The Spring of Sweet Dew states: “The manifestations of excessive Khii include emaciation, preference for warmth, shivering, abdominal distension, constipation, dizziness, talkativeness, feeling powerless, restless sleep, and dull senses” ^[4]. Blue Lapis Lazuli mentions that “Khii disorders generally present with sleeplessness at night, yawning accompanied by shivering; if the disease is located in the heart, there may also be generalized trembling, chest tightness, dizziness, reduced night sleep, and sighing” ^[5]. In addition, ancient texts such as Zhe Dui Ning Nuo Er, Lan Ta Bu, Mongolian Medical Golden Cabinet, and Golden Light Annotations also contain relevant records. In the 1980s, Teacher Ce. Sürenzhabu, in his Mongolian Internal Medicine, for the first time established insomnia as an independent disease entity. According to Mongolian medical theory, insomnia results from imbalances in the three bodily humors (Khii, Shara, Badagan) caused by disturbances in “body, mind, and speech” functions, thereby giving rise to “Khii disorders” characterized by an imbalance among the three humors and predominance of Khii ^[6]. When Khii becomes excessively predominant and disturbed, the balance of the three humors is disrupted, leading not only to elevation of Khii but also to dysfunction in the interrelationships, pathways, and functions of the five subtypes of Khii ^[3].

Based on etiology, insomnia in Mongolian medicine can be classified into Khiipredominant type, Sharapredominant type, and Badaganpredominant type; according to the site of involvement, it can be classified into cardiac type, renal type, and whitechannel type ^[7].

3. Current status of clinical research on Mongolian medicine for insomnia

3.1. Mongolian herbal medicine for insomnia

Aochier randomly divided 88 insomnia patients into a treatment group and a control group, with 44 cases in each ^[8]. Both groups received basic medications: oryzanol 20 mg, vitamin B1 20 mg, and doxepin 25 mg, taken orally three times daily. The treatment group additionally received a Mongolian herbal compound consisting of Gaoyou13 Pills, Amin Erdun, and Chenxiang35 as core components. The treatment course was 10 days per cycle, for a total of 3 cycles. The total effective rate in the treatment group was 93.18%, significantly higher than the 72.73% in the control group. Deng Siqin et al. divided 60 patients with Khiitype insomnia equally into two groups ^[9]. The treatment group received 3 g of Sugmel3 Decoction boiled in 100 mL of pure milk taken orally before bedtime, while the control group received the same dose of Sugmel3 Decoction boiled in 100 mL of water, once nightly for 10 consecutive days. After treatment, the total effective rate was 93.3% in the treatment group and 83.3% in the control group. Mu Ren et al. enrolled 56 insomnia patients and treated them with Mongolian medicine primarily containing Chenxiang37, achieving a total effective rate of 94.6% ^[10]. Bao Gerile et al. divided 60 patients with cardiactype insomnia into an experimental group and a control group, with 30 cases each ^[11]. The experimental group received Shunqi Buxin11 Pills orally daily, while the control group received Tianmeng Oral Liquid. Both groups were treated for 21 days. After treatment, the Athens Insomnia Scale scores decreased in both groups compared with baseline; the total effective rate was 76.7% in the experimental group, slightly higher than 73.3% in the control group. Sa Riga studied 224 insomnia patients, divided into an observation group and a control group ^[12]. The control group received Western medications, while the observation group received formulas such as Amin Erdun, Sugmel3 Decoction, and Chenxiang35. Comparison of sleep quality scores between the two groups showed that the observation group had significantly better efficacy than the control group ($p < 0.05$). Bai Bisina enrolled 80 insomnia patients and randomly assigned them to a treatment group and a control group. The treatment group received oral Mongolian medicines (Wuwei Qingzhuo Pills, JiruhengAgaru8, Shunqi Anshen Pills, Sugmel3 Decoction), while the control group received zopiclone tablets, both for 4 weeks ^[13]. The total clinical effective rate was 85% in the treatment group and 87.5% in the control group. Wu Rihan selected 64 insomnia patients and divided them into an observation group and a control group, with 32 patients each ^[14]. The control group received a Western medication regimen, while the observation group received Amin Erdun, 3 g each time, twice daily (upon waking and before bedtime), for 28 consecutive days. The total effective rate was 87.5% in the observation group and 78% in the control group.

3.2. Traditional Mongolian external therapies for insomnia

Wu Hongying conducted a randomized study of 116 insomnia patients, in which the control group received routine Western medication, and the treatment group received Mongolian herbal foot baths; the nursing outcomes were compared between the two groups ^[15]. The study showed that the PSQI score in the treatment group was significantly lower than that in the control group, with statistically significant differences ($p < 0.05$); intergroup comparison of efficacy also showed statistical significance ($p < 0.05$). Mongolian herbal foot baths had a definite effect on improving insomnia symptoms and enhancing patients' sleep quality. Jin Qiu et al. studied 80 patients with Khiipredominant insomnia, dividing them into a treatment group and a control group with 40 cases each ^[16]. The treatment group received Mongolian warm needling, while the control group received placebo acupuncture. The Insomnia Severity Index (ISI) scores and sleep electroencephalogram parameters were recorded before and after treatment. Results showed that after treatment, the treatment group

had increased total sleep time, shortened sleep latency, improved sleep efficiency, and altered sleep structure, namely a decreased proportion of N1 sleep and an increased proportion of REM sleep (all $p < 0.05$). Sa Chula selected 60 insomnia patients and divided them into a treatment group and a control group, with 30 cases each. The control group received 3 mg of eszopiclone orally before bedtime each night, while the treatment group received Mongolian hot oil therapy at the Khii acupoint, Dinghui acupoint, Heibaiji acupoint, and Heart acupoint (or Kidney acupoint), once every other day. Both groups were treated for 4 consecutive weeks^[17]. The total effective rate was 83.33% in the treatment group and 26.67% in the control group, with a highly statistically significant difference between the groups ($p < 0.01$).

3.3. Mongolian herbal medicine combined with traditional external therapies for insomnia

Te Rigèle selected 82 insomnia patients and treated them with moxibustion combined with Mongolian medicines, including Tonglaga5, Gaoyou13, Amin Erdun, Sugmel3 Decoction, Zadi5, Yihehari12, and Yihe Decoction, achieving a total effective rate of 98.78%^[18]. Ao Fu used Mongolian herbal compounds and acupuncture to treat insomnia. The Mongolian herbal compounds included ErdunWurile, Chenxiang15, and Amin Erdun; acupuncture was applied to the Dinghui acupoint with warm needling^[19]. The total effective rate was 98.78%, indicating significant efficacy. Li Xia studied 248 patients with Khiipredominant insomnia, randomly divided into an observation group (134 cases) and a control group (114 cases)^[20]. The observation group received Mongolian warm needling combined with oral Mongolian medicines, mainly including Tonglaga5, Amibaqir11, Gaoyou13, and Sugmel3 Decoction. The total effective rate in the observation group reached 100%. Chen Pingping treated insomnia patients with moxibustion alone or Mongolian herbal compounds (ErdunWurile, Gaoyou13, Shunqi Buxin ElevenIngredient Pills, Amin Erdun, Sugmel3, etc.) combined with moxibustion^[21]. The results showed that the combination group had a significantly higher total effective rate than the moxibustionalone group, indicating that Mongolian herbal compounds combined with moxibustion exerted a synergistic therapeutic effect and improved clinical outcomes. Bao Liming selected 120 insomnia patients, of whom 60 received oral Mongolian medicines combined with warm needling^[22]. The Mongolian medicines included Sugmel3 Decoction, Chenxiang35 Decoction, ErdunWurile, and Yihe25 Decoction. The total effective rate in the observation group was 98.33%. Dao Rina divided 88 patients with clearly diagnosed Khiipredominant insomnia into a treatment group and a control group according to randomization principles. The treatment group received Mongolian moxibustion combined with oral Sugmel3 Decoction and Gaoyou13 Pills, while the control group received the same Mongolian medicines orally only. Both groups took the medicines once daily, and the treatment group received moxibustion once every 2 days, for a treatment course of 20 days. The Pittsburgh Sleep Quality Index (PSQI) and Mongolian medical symptom scores were used as the primary outcome measures. Results showed that, based on Mongolian medical symptom criteria, the total effective rate was 87.8% in the treatment group and 76.2% in the control group; after 20 days of treatment, improvements in symptoms such as insomnia, fatigue, dizziness, blurred vision, yawning, and dreaminess were superior in the treatment group compared with the control group.

4. Problems and prospects

4.1. Existing problems

Although Mongolian medicine has accumulated considerable clinical practice in the treatment of insomnia,

its clinical research still has numerous methodological deficiencies. The overall sample sizes in clinical studies are relatively small, and there is a shortage of multicenter, large sample randomized controlled trials, which limits the level of evidence based medicine. The efficacy evaluation criteria for Mongolian medicine in treating insomnia are not yet unified; most studies rely primarily on scales such as the Pittsburgh Sleep Quality Index, lacking objective laboratory indicators and standardized assessment systems. Existing research has explored the molecular mechanisms of certain herbal medicines and warm needling, but the integrated regulatory mechanisms of multicomponent, multitarget, and multipathway actions of Mongolian herbal compound formulas remain poorly understood, and the dose response relationship between active substance bases and pharmacological effects has not been fully elucidated. The standardization and normalization of Mongolian medicine treatment protocols are insufficient, and the criteria for syndrome differentiation are not uniform, which hinders clinical promotion and academic exchange.

4.2. Prospects

Future research on Mongolian medicine interventions for insomnia should be advanced in several key directions. First, high quality multicenter, large sample, randomized double blind controlled clinical trials should be conducted, incorporating a variety of sleep assessment tools into the comprehensive efficacy evaluation system to enhance the level of clinical evidence. The construction of an evidence based Mongolian medicine database, the development of clinical guidelines, and the translation of research findings into practice are important pathways for the internationalization of Mongolian medicine. Systematic collation of ancient texts and existing clinical literature should be undertaken to build a shared resource evidence based database. With reference to international evidence evaluation standards, clinical guidelines and diagnostic treatment protocols for Mongolian medical treatment of insomnia should be formulated. The development of new Mongolian medicines and the standardization of traditional therapies should be advanced, and industry university research collaborative innovation should be leveraged to promote the translation of achievements, thereby facilitating the internationalization of Mongolian medicine.

5. Conclusion

Mongolian medicine treats insomnia based on the theory of “three humor balance,” with the core pathogenesis being excessive Khii and dysregulation of the seven constituents and three wastes. It emphasizes holistic regulation and individualized syndrome based treatment. Current evidence indicates that oral Mongolian medicines, warm needling, and moxibustion can all improve sleep, with overall effective rates mostly exceeding 90%. These modalities are characterized by rapid onset, few adverse reactions, and low dependence liability, and combined use of multiple methods yields even better outcomes. However, most current studies are single center with small sample sizes, and deficiencies remain in randomization, blinding, diagnostic and evaluation criteria, and long term follow up, which constrain the improvement of evidence quality and clinical dissemination.

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References

- [1] Morin C, Jarrin D, 2022, Epidemiology of Insomnia: Prevalence, Course, Risk Factors, and Public Health Burden. *Sleep Medicine Clinics*, 17(2): 173–191.
- [2] Qaseem A, Kansagara D, Forciea M, et al., 2016, Management of Chronic Insomnia Disorder in Adults: A Clinical Practice Guideline from the American College of Physicians. *Annals of Internal Medicine*, 165(2): 125–133.
- [3] Editorial Board of Encyclopedia of Mongolian Studies, Editorial Board of Medicine, 2012, Encyclopedia of Mongolian Studies: Medicine. Hohhot: Inner Mongolia People's Publishing House, 106 + 242.
- [4] Yixibalazhu, 1998, Four Sections of Sweet Dew. Hohhot: Inner Mongolia People's Publishing House, 5–6 + 124 + 132–139 + 150 + 209.
- [5] Diba Sangjiejiacuo, 2016, Blue Lapis Lazuli. Chifeng: Inner Mongolia Science and Technology Press, 42 + 85.
- [6] Ce S, 2011, Mongolian Internal Medicine. Hohhot: Inner Mongolia People's Publishing House, 31.
- [7] Ce S, 2011, Mongolian Internal Medicine. Hohhot: Inner Mongolia People's Publishing House, 3, 30.
- [8] Ao Qier, 2018, Efficacy Analysis of 44 Cases of Insomnia Treated with Mongolian Medicine. *World Latest Medical Information Abstracts*, 18(53): 181–182.
- [9] Deng Siqin, Chun Na, Shan Dan, et al., 2019, Clinical Observation on Treating Khii-Type Insomnia with Pure Milk-Decocted Mongolian Medicine Sugmel-3 Decoction. *Journal of Chinese Ethnic Medicine*, 25(3): 22 + 27.
- [10] Mu Ren, Haoburiqiqige, Huang Jiren, 2023, Brief Discussion on Treating Insomnia with Mongolian Medicine Agar-37 as the Main Therapy. *Chinese Mongolian Medicine (Mongolian)*, 18(9): 24–29.
- [11] Bao Gerile, Ma Shiyue, 2023, Efficacy Observation of Mongolian Medicine Shunqi Buxin Eleven-Ingredient Pills in Treating Cardiac-Meridian-Type Insomnia. *Journal of Chinese Ethnic Medicine*, 29(1): 8–10.
- [12] Sarigai, 2022, Efficacy Observation of Syndrome-Differentiated Mongolian Medicine in Treating Insomnia. *Journal of Chinese Ethnic Medicine*, 28(7): 26–27.
- [13] Bai Basina, 2023, Efficacy Observation of Mongolian Medicine in Treating Insomnia, thesis, Inner Mongolia University for Nationalities.
- [14] Wurihan, 2024, Clinical Efficacy Observation of Amin Erdun in Treating Cardiac-Source-Type Insomnia, thesis, Inner Mongolia Medical University.
- [15] Wu Hongying, 2019, Discussion on Mongolian Herbal Foot Bath Therapy for Insomnia. *World Latest Medical Information Abstracts*, 19(70): 212 + 238.
- [16] Jin Qiu, Sileg, Agula, 2020, Randomized Controlled Trial of Mongolian Warm Needling in Treating Khii-Predominant Insomnia. *Yunnan Journal of Traditional Chinese Medicine and Materia Medica*, 41(1): 77–81.
- [17] Sachula, 2024, Clinical Study on Mongolian Hot Oil Therapy for Khii-Predominant Insomnia, thesis, Inner Mongolia Medical University.
- [18] Terigele, 2019, Clinical Observation of Mongolian Medicine in Treating Insomnia. *Journal of Chinese Ethnic Medicine*, 25(9): 18–19.
- [19] Ao Fu, 2020, Experience in Treating Insomnia with Warm Needling Combined with Mongolian Medicine. *Chinese*

Mongolian Medicine (Mongolian), 15(6): 33–35.

- [20] Li Xia, Jin Shan, 2020, Efficacy Observation of Mongolian Warm Needling Combined with Oral Mongolian Medicine in Treating Khii-Hyperactive Insomnia. *Journal of Chinese Ethnic Medicine*, 26(1): 25–26.
- [21] Chen Pingping, 2021, Efficacy Observation of Mongolian Medicine Combined with Moxibustion in Treating Insomnia. *Journal of Chinese Ethnic Medicine*, 27(6): 30–31.
- [22] Bao Liming, 2022, Clinical Study on Mongolian Medicine Combined with Warm Needling in Treating Insomnia. *Journal of Chinese Ethnic Medicine*, 28(11): 11–13.

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