

A Review of Studies on the Treatment of Premature Ejaculation with Traditional Chinese Medicine

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ABSTRACT

By combing the literature and analyzing the current status of traditional Chinese medicine (TCM) treatment for premature ejaculation (PE), the strengths and shortcomings of the existing studies were identified. Building upon this assessment, we put forward a prospect for the establishment of TCM-specific strategies for PE, including more targeted and individualized comprehensive diagnosis and treatment approaches for PE, the establishment of a TCM hierarchical management program, and the exploration of the most effective entry points for collaborative treatment of PE using both TCM and Western medicine. Indeed, integrating therapeutical strategies from the two perspectives in a multifaceted and complex symptom such as PE, would enhance the possibility of success, possibly also reducing side effects. Moreover, with the help of well-established and new scientific and technological tools, we can explore the key links and targets in treating PE by TCM. At the same time, the mechanism of TCM treatment for PE could and should be examined in depth to lay the foundation for widespread clinical application. Finally, we suggest conducting multicenter, nationwide standardized clinical studies on treating PE with TCM. These studies should employ high-quality randomized controlled trial designs to obtain robust evidence-based medical data.

Key words: Premature ejaculation, traditional Chinese medicine, treatment

INTRODUCTION

Premature ejaculation (PE) is a common male sexual dysfunction that significantly impacts the sexual satisfaction and quality of life of both partners. According to the National Health and Social Life Study (NHSLs) in the United States, the prevalence of complaints about the control of ejaculation can reach as high as 31%.^[1] The etiology of PE is not fully understood, and current research suggests its association with various factors. These factors include central nervous system serotonin (5-hydroxytryptamine, [5-HT]) neurotransmitter derangement (an often claimed, albeit controversial, mechanism), a heightened sensitiv-

ity of the glans penis, some genetic variations, concomitant erectile dysfunction (ED), prostatitis, thyroid disorders and psychosexological factors, among others.^[2] For a long time, Western medicine's approach to treating PE has involved psychological counseling and behavioral therapy, but this methodology lacks robust evidence of efficacy. Selective serotonin reuptake inhibitors (SSRIs) and topical anesthetics have become widespread treatments in contemporary PE management; however, their effectiveness varies among individuals and is not always ideal.^[3]

Traditional Chinese medicine (TCM) has a rich record and unique theoretical systems for addressing PE.^[4] Modern research indicates that TCM, through a multi-faceted and multi-target mechanism, holistically regulates the body's functions, offering unique advantages in treating PE. This article provides a comprehensive analysis of the current clinical status of TCM in treating PE, aiming to offer new perspectives for optimizing future PE treatment models.

UNDERSTANDING PE IN THE CONTEXT OF TCM

Ancient Chinese medical texts did not explicitly mention the term "PE" but used phrases describing the early discharge of semen, such as "Zaoliu", "Jijing", and "Weijiaoixie" or "Zhajiaoixie". Throughout the history of Chinese medicine, different views on the etiology of PE have been expressed. For instance, Chao Yuanfang from the Sui Dynasty believed that weakness in kidney Qi, leading to the inability to retain semen, is a primary cause of PE. Meanwhile, Wan Quan from the Ming Dynasty suggested that weakness in heart Qi is a significant factor causing ejaculation disorders like PE, delayed ejaculation (DE), and anejaculation. More recently, Guo Jun proposed that an imbalance in the "brain-heart-kidney-essence

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chamber" axis^[5] is related to the pathogenesis of PE. This theory emphasizes the interconnection of the brain, heart, kidneys, and essence chamber, where an imbalance in the brain and heart, along with kidney deficiency, could lead to the dysfunction of the essence chamber and result in PE. While various medical experts have different theories about PE, they generally agree that it is closely related to the functions of the heart, kidneys, liver, and spleen. When the heart is in harmony, kidney Qi is vigorous, the liver appropriately disperses and excretes, and the spleen functions properly. The opening and closing of the spermatic duct are orderly, and there is a balanced storage and discharge of semen. Based on the most common clinical pattern of PE, being the "Liver Depression and Kidney Deficiency" pattern, the emphasis in treatment is often on regulating the liver, relieving stagnation, calming the heart, clearing the mind, promoting communication between the heart and kidneys, and consolidating Jing to arrest PE.

TCM CHARACTERISTIC TREATMENT

Oral treatment-herbal decoctions

Currently, in China, there is widespread use of oral TCM treatment for PE. Chinese herbal medicine, a crucial component of oral treatment, has been extensively explored in clinical trials for PE within the unique diagnostic and therapeutic framework of TCM. The effectiveness and safety of these approaches have been validated in recent years. Emphasizing evidence-based analysis of drug safety and efficacy, TCM also strongly emphasizes the reliability of "clinical experience".

Oral treatment is chosen according to the combination of syndrome differentiation and symptom identification. Depending on symptoms such as poor erection hardness, anxiety, lumbosacral soreness, fatigue, and others, the treatment is tailored accordingly. For example, for those primarily experiencing anxiety, the focus is on soothing the liver, regulating Qi, and resolving stagnation. Individuals with lumbosacral soreness and fatigue may benefit from the emphasis on strengthening tendons and bones, while those with poor erection hardness may benefit from increasing the kidney's tone and blood activation. Clinical practice has demonstrated that Chinese herbal medicine can increase intravaginal ejaculatory latency time (IELT), enhance control over ejaculation, and improve sexual satisfaction.^[6] In addition, Guo *et al.* found that a formula containing *Paeonia lactiflora* and *Cyperus rotundus* could prolong IELT in PE rats, possibly related to an increase in 5-HT levels.^[7] Han *et al.* postulated that a formula to soothe the liver and benefit the gallbladder could improve behavioral characteristics in PE rats, reduce the expression of dopamine receptor messenger ribonucleic acid (mRNA) and protein, and simultaneously enhance the levels of dopamine transporter.^[8]

External treatment-herbal sprays, soaking therapy, and massage treatment

External treatment in TCM for PE is characterized by distinct features, namely simplicity, efficacy, and excellent safety. Herbal sprays, soaking therapy, and massage treatment have shown beneficial effects in managing PE. Cui *et al.* revealed that a herbal spray composed of eight Chinese herbs, including *Radix Aconiti* (Chuanwu), *Herba Asari* (Xixin), and *Pericarpium Zanthoxyli* (Chuanjiao), demonstrates good safety and efficacy in the

external treatment of primary PE.^[9] Modern studies suggest that applying herbal compresses can inhibit pathological impulses of peripheral nerves and alleviate the subjective symptoms of PE.

Reports suggest that massage techniques, such as abdominal vibration therapy, can directly influence abdominal regions through specific frequencies and intensities of vibration. This approach regulates the neural functions of the abdominal and pelvic cavities, reduces sympathetic nervous system excitability, and aims to delay ejaculation. These external treatment methods in TCM provide a safe and effective approach to managing PE.

Acupuncture therapy

The efficacy of acupuncture in treating PE has been acknowledged by international guidelines. While it is often considered a complementary approach to PE treatment, there is undeniable evidence supporting the effectiveness of acupuncture in alleviating anxiety and improving ejaculation latency.^[10] Electroacupuncture, which involves the application of weak electrical currents to acupuncture points, is known to regulate and activate the flow of meridian Qi and blood, enhancing therapeutic effects. Research indicates that electroacupuncture can improve symptoms of PE, possibly through its regulatory effects on serum testosterone levels.^[11] Furthermore, low-frequency electroacupuncture (2 Hz) at the Guanyuan (CV4) and Zhongji (CV3) acupoints has been shown to prolong ejaculation latency in male rats. This effect may be associated with increased levels of luteinizing hormone (LH) and serotonin in the body following acupuncture stimulation.^[12]

Fangzhongshu

Ancient Chinese sexual techniques, rooted in Taoist philosophy, hold significant value, with numerous reports suggesting their remarkable efficacy and safety in treating PE.^[13] These techniques, known as Taoist sexual techniques or "fangzhongshu", are based on Taoist principles and primarily aim to promote sexual harmony. They emphasize the importance of foreplay, flirting, and the artistic nature of sexual behavior. These techniques have gained increasing attention internationally and are considered valuable in treating PE. Behavioral therapies guided by Taoist sexual techniques have the potential to positively impact individuals with PE. Promoting and applying these techniques could contribute to a broader approach to treating PE.

DEFICITS IN TCM RESEARCH

Quantity and quality of research

There is a multitude of research on TCM for treating PE, but the quality of studies varies, making it challenging to establish high-level proof in evidence-based medicine. Clinical studies often focus on traditional formulas, have small sample sizes, are single-centered, and lack rigorous randomized control trials and large-scale cohort studies. Basic research is relatively weak, and the unclear mechanisms of herbal efficacy hinder the integration of theoretical and mechanistic exploration with clinical applications. These factors make it difficult to systematically compile and evaluate research outcomes, thereby limiting the development of TCM. Strengthening collaboration between regions and research teams and conducting large-sam-

ple, high-quality clinical studies and mechanistic explorations are essential to address these shortcomings.

Biomarkers for PE diagnosis and prevention

Currently, the diagnosis of PE in TCM relies on clinical symptoms and the assessment of healthcare professionals, lacking specific biomarkers for definitive diagnosis. Diagnosis of PE typically considers factors such as duration of sexual activity, ejaculation control ability, and impact on the patient's quality of life. Biomarkers for the prevention of PE also pose challenges due to the complex etiology of PE, involving physiological, psychological, and environmental factors.^[14] Although there are no established biomarkers for diagnosing and preventing PE, ongoing research aims to identify more accurate and reliable biomarkers to enhance diagnostic and preventive strategies.^[15]

PROSPECTS FOR THE ESTABLISHMENT OF TCM DIAGNOSTIC AND THERAPEUTIC STRATEGIES FOR PE

Hierarchical diagnosis and treatment management scheme in TCM

Establishing a hierarchical management standard for TCM in the treatment of PE is currently a prevailing trend.

Tailoring to local conditions

Geographic variations can result in differences in syndrome differentiation and treatment. Recognizing the distinct regional characteristics of PE syndromes and establishing region-specific diagnostic and therapeutic protocols can meet the needs of patients more accurately. This approach is beneficial for providing precise clinical guidance while leveraging regional academic advantages. For example, the significant climate differences between northern and southern China or eastern and western regions may lead to variations in syndrome presentations. Coming up with region-specific TCM treatment plans can address these differences and complement general guidelines.

Personalized treatment

Considering individual differences, treatment preferences, and satisfaction levels of patients and their partners is essential. When selecting treatment methods, taking into account the patient's individual characteristics, treatment goals, duration of illness, and constitution allows for more personalized and precise medical interventions.^[16] For instance, patients with a desire for fertility may focus on treatments that promote reproduction, while those without fertility goals may prioritize disease management and prevention of recurrence. Adjusting treatment emphasis based on the duration of illness and the strength of the constitution allows for a more tailored approach, emphasizing either prolonging IELT for shorter courses or reinforcing vital energy for longer courses.

Adapting to the seasons

Emphasizing the importance of regulated sexual activities aligns with TCM principles. Moderation in sexual activities contributes to both physical and mental well-being,

supporting reproductive health. TCM emphasizes the harmonious unity between the human body and the natural world, implying that the state of Qi, blood, yin, and yang in the body varies with different seasons, subsequently affecting sexual function. Aligning sexual activity frequency and duration with seasonal changes and age-related physiological variations is essential. Recognizing the fluctuations of Qi, blood, Yin, and Yang in the body during different seasons allows for corresponding adjustments in the frequency and timing of sexual activities. Educating patients on the concept of timing in sexual activities aligns with the traditional Chinese belief in harmonizing with nature. Encouraging healthy sexual practices based on individual education levels and age groups, possibly through the development of sexual health handbooks, is considered an effective strategy for preventing PE.^[17]

Integrated TCM and Western medicine diagnostic and treatment standards

The complementary strengths of TCM and Western medicine play a pivotal role in devising diagnostic and treatment strategies for various conditions. The organic integration of TCM and Western medicine can synergize their effects, mitigate adverse reactions, and enhance medication safety.^[18] Studies have found that the combination of Chinese herbal medicine and SSRIs is more effective in treating PE compared to SSRIs alone, with generally favorable tolerability.^[19]

In cases where PE is accompanied by infertility, the use of Western medicine may be limited. TCM, guided by its holistic approach to adjusting the overall pathogenesis, can concurrently address both PE and infertility concerns. This approach not only improves IELT but also enhances semen quality. This integrated strategy is particularly advantageous, especially in treating PE associated with prostatitis. Topical medications commonly used in Western medicine primarily consist of local anesthetics. These medications often exert localized effects and have minimal impact on other symptoms. Moreover, there is a risk of local allergic reactions, as well as of partner transmission. TCM intervention can improve the patient's overall condition, consolidating treatment effects and achieving a holistic therapeutic outcome. The combined use of TCM and Western medicine in the management of PE can deliver comprehensive and effective results.^[18]

DISCUSSION

Research on TCM theories for PE demonstrates diverse characteristics. Various diagnostic approaches, experiences of renowned practitioners, and treatment plans have enriched the academic discussion on the role of TCM in treating PE. Clinical effectiveness has been confirmed from multiple dimensions.^[20] Currently, the field of TCM is standardizing diagnostic criteria for different patterns and establishing a simplified diagnostic process. On this basis, the development of individualized treatment protocols is continuously evolving through practical application.

Key aspects of individualized TCM diagnosis and treatment protocol- analysis of causes

Assessments of PE should focus on the patient's chief complaints and medical history, considering sexual partner conditions,

sexual history including masturbation, family history, and the patient's psychological health. Additionally, attention should be given to the correlation between PE and other conditions, such as chronic prostatitis or pelvic pain syndrome, ED, and infertility, as well as addressing PE-related issues in non-PE primary complaints. Sexual partners should accompany patients during consultations to provide more comprehensive and objective information, which is crucial for determining the specific causes and types of PE.^[21]

Comprehensive treatment plan covering physiological and psychological aspects

The treatment plan typically includes medication, behavioral therapy, psychological counseling, and sexual education. Medication treatment is tailored to the patient's condition, involving Chinese herbal formulations, sprays, soaks, etc. Behavioral therapy includes known techniques, such as the sexual pause-squeeze method, stop-start techniques, and reducing sexual stimulation, all aimed at prolonging intercourse duration.^[22] Behavioral therapy, especially under the guidance of ancient Chinese sexual techniques, requires further optimization and adjustment based on patient response for optimal results. Emphasis is placed on emotional regulation, taking into account the duration of the ejaculation latency period and the presence of anxiety or depression. TCM's focus on treating PE from the perspective of resolving emotional constraints is gaining attention, with studies indicating its effectiveness in not only inhibiting PE symptoms but also significantly improving anxiety and depressive moods.^[23] Sexual education, imparting patients with knowledge about sex and fostering reasonable expectations, is also integral to individualized treatment. Patients and their partners can participate together to enhance understanding and communication.

Regular Follow-ups and Adjustments

PE treatment is a dynamic process that requires regular follow-ups to evaluate treatment effectiveness and make adjustments

based on the patient's response. Effective communication and collaboration between the doctor and patient are crucial for achieving successful treatment.^[24]

In summary, TCM treatment protocols and pathways for PE are gradually advancing. They involve a comprehensive assessment based on the patient's etiology, symptoms, and physiological conditions, employing multi-layered and multidimensional therapeutic strategies to achieve the best individualized treatment outcomes. As shown in Figure 1, the process of improving stratified management plans in the future needs to be advanced by considering the patient's region, age, and needs. Systematic collaborative diagnosis and treatment measures combining traditional Chinese and Western medicine will be further optimized and established. Addressing issues such as varying research quality in TCM treatment for PE requires exploring key aspects and targets through advanced scientific techniques. Deepening our understanding of treatment mechanisms will lay the foundation for clinical application, while conducting high-quality randomized controlled trials will contribute to evidence-based medicine in the field of TCM for PE. In conclusion, there is still a long way to go in both research and application of TCM in treating PE.

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Authors contribution

Wang F and Emmanuele JA: Conceptualization, methodology and article framework construction. Ma DY: Writing-Original draft. Wang AM: Writing- Reviewing and Editing. Wang H: Writing- Reviewing and Editing. Yang JT: Legend modification. Luo DC: Data management. Zhao ZW: Reference management.

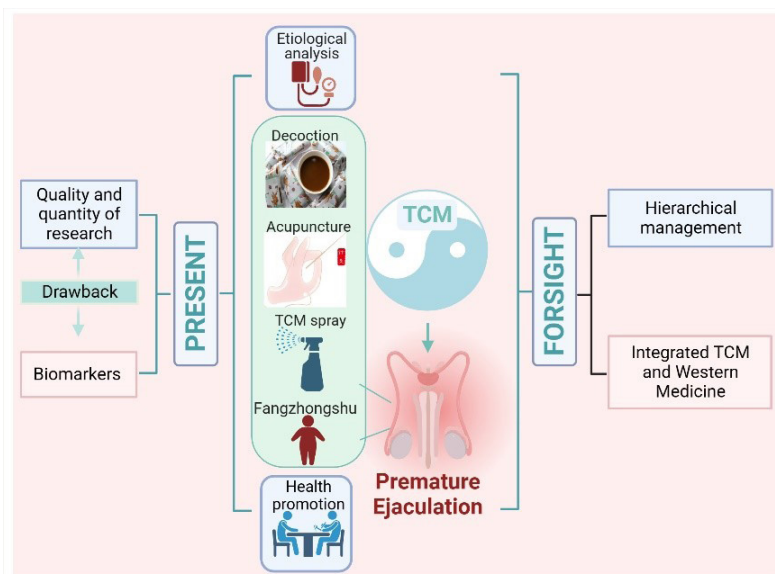


Figure 1. Research overview on TCM for premature ejaculation treatment. TCM, traditional Chinese medicine.

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Conflicts of interest

Jun Guo is the Associate Editor-in-Chief of the journal. The article was subject to the journal's standard procedures, with peer review handled independently of the editor and the affiliated research groups.

Data availability statement

No additional data.

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