

Advances in Modern Chinese Medicine Research

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Exploring Traditional Health Culture Through Classical and Clinical Practice Research

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Abstract

Researching and exploring traditional Chinese medicine (TCM) health culture entails delving into the relationship between culture and health, as well as the impact of culture on health, with the aim of providing a solution to the increasingly severe health and survival crises in modern society. Drawing on nearly four decades of clinical practice experience rooted in townships, this study bases itself on clinical and daily life contexts, utilizing classics to solve problems by seeking thoughts, philosophies, and solutions from them. After years of clinical practice research and verification, it is believed that TCM health culture is the foundation of the health of the Chinese nation. It represents a health culture, a fundamental mindset for health consciousness, ensuring basic health while enabling a leap towards higher levels of health and well-being. It serves as a fundamental method and pathway to guide people towards health. TCM health culture encompasses multi-tiered health preservation methods and a conceptual framework for a healthy lifestyle. It is the essence of health, embodying a healthy outlook on life, values, and worldview. It provides a worldview and methodology for addressing health issues, possessing inestimable economic and social value.

Keywords

Traditional Chinese medicine health culture
Health foundation
Health crisis
Survival crisis
Multi-tiered healthy lifestyle

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1. Introduction

Throughout its history, traditional Chinese medicine has weathered profound historical changes, the ravages of war, the loss of ancient healing rituals (Zhuyou), the stunted development of surgery, and the enigmatic fate of obstetrics. Despite its fragmented state, TCM has remained steadfast in its original purpose, safeguarding

the Chinese nation and making immense contributions to its prosperity and continuation. It remains the most comprehensive form of general medicine in the world today. Classics, as the wellspring and theoretical foundation of TCM, have served as the cornerstone for the theories of medical practitioners throughout history. The ancients said: "Literature carries the "Dao" (the

Way), and language transforms people.” This means that writing serves as a tool to record and convey the “Dao”, while only language that explains and elucidates the “Dao” can change people’s behavior, guiding them to live in accordance with the “Dao” and pursue health. In modern society, with the increasing abundance of material life, diseases have also surged dramatically. Conditions such as high blood lipids, high uric acid, and high blood sugar are prevalent, while diseases like cancer, kidney disease, and cardiovascular and cerebrovascular diseases have erupted in a blowout manner, showing a significant trend of affecting younger populations. These issues cannot be completely resolved by modern medical technology. Data released by the country in recent years shows a gradual decline in birth rates, indicating that the Chinese nation is facing an increasingly severe health crisis and existential crisis.

2. Seeking the “Dao” in classics

The first chapter of “Su Wen • On the True Nature of the Ancients” in The Yellow Emperor’s Classic of Internal Medicine states: “In the time of the Yellow Emperor... I have heard that in ancient times, people lived to be a hundred years old without showing signs of decline in their movements. Nowadays, people often show signs of decline in their movements at the age of fifty. Is this due to a change in the times, or is it because people are losing their way? Qi Bo replied, ‘In ancient times, those who understood the “Dao” followed the principles of “Yin” and “Yang” ... and lived to be a hundred years old before passing away... Therefore, those who decline at fifty do so because they do not follow the teachings of the ancient sages... By cultivating their virtue, they remain free from danger... Women mature at seven... Men mature at eight... In ancient times, there were True Men... In the Middle Ancient times, there were Supreme Men... Next came the Sages... Then the Worthies... who could also extend their lifespan to its fullest extent ^[1].

The Yellow Emperor’s Classic of Internal Medicine begins its discussion with the theme of “The True Nature of the Ancients.” Starting with “xi”, meaning past or ancient times, it implies the origin and essence. The “huang”, meaning yellow or golden represents the central earth, symbolizing righteousness, right mindfulness,

and right awakening. “Di”, meaning emperor signifies the ruler of the world. Since the central earth exists at different levels in heaven, on earth, among the stars, within the body, and in human culture, the term “Yellow Emperor” encompasses multiple layers of meaning. Therefore, “In the time of the Yellow Emperor” implies different levels of connotations.

- (1) The fundamental survival of all things depends on the sound functioning of the earth’s fundamental role
- (2) Whether the earth’s fundamentals are normal depends on the normalcy of heavenly moisture
- (3) The normalcy of heavenly moisture fundamentally depends on the presence of Saturn
- (4) The foundation of the survival and well-being of the Chinese nation lies in the classical thoughts passed down by its cultural progenitor, the Yellow Emperor
- (5) The root of an individual’s health lies in the sound functioning of their spleen and stomach
- (6) It is crucial to enlighten future learners that when studying the classics, they must clarify the different levels and realms of health culture and cultivate a mindset of comprehensive and dynamic management

Therefore, “achieving success and ascending to the heavens” also encompasses various levels and realms, corresponding to different health needs. The cultural progenitor of the Chinese nation reached a celestial position and realm in terms of thought and consciousness. With such breadth of vision and awareness, he planned and envisioned the healthy survival and future of the Chinese nation, and his health culture will undoubtedly become a guardian like Saturn. This leads to the first crucial question concerning the healthy survival of the Chinese nation: “I have heard that in ancient times, people lived beyond a hundred years without declining physical vigor; whereas nowadays, people often experience a decline in physical vigor by the age of fifty. Is this due to a change in times or a loss of human nature?”

The first question implies as below.

- (1) Longevity is not the goal; health is the key
- (2) In a new historical and social context, if the majority of middle-aged individuals face health issues related to aging during its development, it

is an inevitable consequence of the new historical era, where changes in circumstances have led people to forget or even lose the inheritance of health culture in their pursuit of changing their destinies

- (3) Ancient ancestors had long understood the essence of health and longevity
- (4) Such health issues and phenomena seem to have occurred multiple times throughout the millions of years of Chinese history, not just in modern society
- (5) It implies to future learners that they must keep pace with the times, innovate and pass on the classical thoughts, spiritual concepts, and wisdom in plain language, presenting them to contemporaries to meet the needs of different eras and societies

“Acting in accordance with “Yin” and “Yang”, harmonizing with the principles of nature, eating and drinking in moderation, following a regular routine in daily life, avoiding excessive exertion... one may live to be over a hundred years old”; “Taking wine as if it were water... one may decline before reaching fifty.” From this, we can deduce that the objects our ancestors referred to and learned from varied, leading to different perceptions of health, different health education approaches, and consequently, divergences in cultural heritage. These differences further result in distinct lifestyles, health states, and outcomes. Health itself is a state, a result, and even more so, a process. “Su Wen, Chapter 5, On the Correspondence Between “Yin” and “Yang” and the External Manifestations”: “Yin” and “Yang” are the principles governing heaven and earth... Heaven and earth encompass all things above and below. “Yin” and “Yang” represent the male and female aspects of vital energy. Left and right are the pathways of “Yin” and “Yang”. Water and fire are the manifestations of “Yin” and “Yang”...^[2]. From this classic text, we understand that the objects our Chinese ancestors referred to were “Yin and Yang,” encompassing all things in heaven and earth. “Yin” and “Yang” represent laws and principles, they are the parents, the male and female, the whole, the directions, the functions, the goals, the paths, and the beginning and end... Thus, “Yin” and “Yang” are an interdependent and interconnected unity of opposites, where each depends on

the other for its existence. The great “Yin” and “Yang” of heaven and earth mirror the small heaven and earth within the human body.

Everything possesses its own Tai Chi, and all things move and change in accordance with the natural movements of heaven and earth. The “Dao De Jing” also states: “Man follows the earth, the earth follows heaven, heaven follows the “Dao”, and the “Dao” follows nature^[3].” Understanding one’s roots, accepting education and heritage, and shortening the time for cognitive development are crucial for addressing health issues. “The teachings of the ancient sages to the people below” have already informed us that health requires education, and culture demands inheritance. Culture is the foundation of health, and health education and cultural heritage are the best paths to improving health. “Avoiding pathogenic factors when they arise, maintaining tranquility and emptiness, allowing true qi to flow, and keeping the spirit inward, how can illness occur?”... These teachings impart knowledge and methods, inherit cultural foundations and ideologies, and cultivate healthy populations.

To maintain health, one must possess “complete virtue without danger.” “Ling Shu, Chapter 8, On the Essence of the Spirit”: “What heaven bestows upon us is virtue; what earth bestows upon us is “qi”. Virtue flows and “qi” merges to give birth to life...^[4]”. From this classic, we can learn that “heaven” projected onto the human body, or rather, the “heaven” within the human body, is the “virtue” (de) of the “Dao” (Tao) projected onto humans. It represents “yang”, the multi-layered endogenous environment of the human body, and the foundational state of spirit, consciousness, and emotions in the physical form inherited, nurtured, generated, and cultivated by nature through parents. It is the intrinsic state of human health, manifesting as healthy thoughts, consciousness, and emotional-behavioral states within individuals. “Earth”, as manifested in the human body, represents “vessels” (“qi”), “yin,” and the physical body. It is the physical form generated, nurtured, and grown through natural behaviors, influenced by what parents see, hear, smell, taste, and feel from nature. Therefore, only individuals with healthy emotions, thoughts, and conscious behaviors possess a healthy cognitive perspective, along with healthy conscious thinking principles and boundaries. Only those with healthy

conscious principles and boundaries can better control their emotions, manage their diet, lifestyle, and engage in physical exercise. Human life is a process that, like nature, appears constant but is in fact constantly and perpetually changing. Hence, health culture needs to be passed down, and health knowledge and methods need to be learned and reinforced. Health requires accumulation to elevate levels; it requires management to prevent deviations from the path of health and the onset of illness. The opposite is also true. Through nearly four decades of long-term clinical observations of several families spanning three to five generations, it has been concluded that different mentalities and health perceptions lead to the formation of distinct lifestyle and psychological habits.

These habits, in turn, become the health foundation for future generations. This could be the key reason behind the discontinuity in the inheritance of Traditional Chinese Medicine (TCM) culture, the lack of TCM health education, ultimately leading to changes in people's health perceptions and the subsequent emergence of numerous health issues and frequent diseases. The classics outline models of health: the True Person, the Supreme Person, the Sage, and the Worthy. It is not difficult to deduce that below the Worthy are ordinary people; below ordinary people are the weak or frail, also known as the sub-healthy population; and below the weak are the sick, those plagued by illnesses. Individuals at different levels of health states form an idealized, dynamically healthy society. This society encompasses not only authentic beings, embodiments of heaven and earth, who enjoy boundless longevity, but also ordinary people around us who lead healthy and long lives, as well as those who are frail or ill. The consciousness and spirit of health that they embody represent the lifelong health goals pursued by people. This is the very root of why the Chinese nation has always revered health and morality since ancient times. Having goals in mind provides direction in life, ensuring that one's actions and conduct remain steadfast and purposeful. Innovating and inheriting traditional Chinese medicine (TCM) health culture, strengthening TCM health education, and guiding society towards healthy development and progress represent the call of the times for TCM. They also constitute an unshrinkable responsibility and commitment of TCM.

The classics take "Huangdi" (the Yellow Emperor)

as a model of health, discussing the health issues of the Chinese nation from the lofty perspective of the "Dao" of Heaven, standing at the pinnacle of health, and tracing back to the origins. They expound on the fundamentals of heaven and earth and nature, as well as the moral consciousness and ideology of the unity of heaven and humanity in harmony with the "Dao" and nature. They inherit the spirit of heaven and earth, impart healthy lifestyles and methods, and ensure the continuity of the cultural foundation of the Chinese nation over thousands of years. "Su Wen · Chapter Three of On Communication Between Vitality and Heaven": "...Hence, sages transmit their spirit, harmonize with the "Qi" of heaven, and connect with the divine...^[5]". Therefore, the foundation of health lies in a healthy cognitive basis, namely a healthy outlook on life, values, and worldview. It involves inheriting the spirit and will of heaven and earth, adapting medicine and diet to the four seasons, understanding human emotions and principles, and comprehending the true essence of health. "As stated in the I Ching: 'The movement of heaven is vigorous; the superior man strives continuously to strengthen himself.' and 'The earth's capacity is Kun; the superior man carries with him the great virtue of nurturing all things.' These verses both speak to the connotations of a healthy culture. The foundation of health lies in embracing the will and purpose of the heavens, inheriting the tranquility, clarity, and perpetual vitality of the azure sky, as well as the courageous and forward-thinking spirit. It also involves upholding the virtues of the earth's boundless love and sense of responsibility, becoming the behavioral norms, bottom-line thinking, referring to a mindset that considers the worst-case scenario or minimum acceptable outcome, and standards of propriety for individuals. A true man should dare to be the first, with ambitions spanning the four corners of the earth, bravely advancing for the sake of the nation and its people, perpetually thriving.

As a teacher, one should serve as a model of virtue, exemplifying health and educating others. As a husband, one should lead by example, embodying health and responsibility, fostering filial piety and family harmony, and contributing to social harmony. As parents, one should teach by words and deeds, setting an example of healthy standards, respecting the elderly and loving the young, and fostering harmony with neighbors. For the

Chinese nation to thrive and multiply healthily across generations, it is essential to inherit the healthy culture of Traditional Chinese Medicine (TCM), maintain a calm and enlightened mind, harbor lofty aspirations, and bravely advance. Strive to become a role model for children and a paragon for society, persevering through challenges to become the pillar of the nation. By inheriting the healthy culture of TCM, we can reshape the image of China, cultivate Chinese virtues, realize the Chinese Dream of the great rejuvenation of the Chinese nation, and foster a healthy lifestyle, thereby creating a healthy China.

3. Clinical verification (Typical case)

Patient Duan XX, female, aged 23, accidentally caught a cold after giving birth in October 2012. She recovered after self-treatment, but around 10 days later, she developed symptoms of facial and limb edema and discomfort. She was diagnosed with glomerulonephritis at a county-level hospital and was later transferred to a provincial hospital for treatment. The diagnosis was chronic glomerulonephritis with nephrotic syndrome. After hospitalization, her condition improved, and she was discharged with medication. Upon returning home, she noticed significant weight loss and felt fearful when she learned that other patients on the same medication had gained weight. Consequently, she stopped taking the medication on her own and sought help from TCM. Upon examination, she presented with a thin and weak physique, fatigue, a pale complexion with little luster, dizziness, palpitations, soreness in the limbs, drowsiness, poor appetite, frequent urination, loose stools, cold limbs, and a deep and thin pulse. Urinalysis showed: occult blood 2 +, protein 3 +, ketones 2 +, with no other significant abnormalities. Blood routine test: Hemoglobin 85 g/L, with no other obvious abnormalities.

Traditional Chinese Medicine (TCM) diagnosis showed that she has consumptive disease (deficiency of both lung and kidney, impaired digestion and transportation, and weakened ability to control blood). Treatment involved nourishing “qi”, strengthening the spleen, harmonizing the stomach, warming the kidney, and consolidating essence, with adjustments made according to symptoms. Simultaneously, lifestyle

interventions were provided, including guidance on emotions, diet, daily habits, and exercise routines. After nearly five years of intermittent TCM treatment and multiple liver and kidney function tests, as well as blood and urine examinations, no abnormal recurrences were observed, leading to a declaration of cure. Upon learning that the kidney disease had been cured, the patient and her family expressed a desire for another pregnancy. After nearly a year of conditioning, she conceived again and gave birth to a healthy baby girl, resulting in a complete family with both a son and a daughter, bringing joy to the entire household. Follow-up visits to date have confirmed the health of both mother and daughter.

Patient Yang XX, female, aged 65, first visited on March 16, 2017, with the chief complaint of recurrent vaginal bleeding, shortness of breath, dizziness, fatigue, and weakness in the limbs for over half a year. Present illness history showed that the patient experienced recurrent vaginal bleeding of unknown cause, shortness of breath, dizziness, fatigue, and weakness in the limbs half a year ago. She had sought medical attention at both county-level and provincial hospitals, where she was diagnosed with cervical cancer. Tests revealed that the cancer cells had metastasized, and the optimal surgical window had been missed. Additionally, the patient’s family faced financial difficulties, leading to the recommendation for her to return home for palliative care (the family was informed that the patient had a maximum life expectancy of three months). Upon referral through acquaintances, the family sought TCM assistance.

Symptoms observed including the patient had a sallow complexion, was emaciated, showed signs of fatigue and listlessness, had a thin tongue, and presented with deep and thin pulses in all six positions. Diagnosis included as follow.

- (1) Metrorrhagia (deficiency of spleen and lung “qi”, impaired digestion and transportation, and weakened ability to control blood due to “qi” deficiency)
- (2) Consumptive disease (deficiency of spleen and kidney “yang”, impaired “qi” transformation, and blockage by dampness, toxicity, stasis, and turbidity).

Treatment was conducted by nourishing “qi” and promoting blood circulation, warming “yang” and

strengthening the spleen, detoxifying and resolving turbidity. The patient was treated with a modified Buzhong Yiqi Decoction. Given that the patient was aware of her condition, she and her family were informed that in TCM, there are no incurable diseases; the key lies in one's mental state and attitude. They were encouraged to face the disease calmly, adopt healthier lifestyles and dietary habits, and believe in their ability to overcome the illness. After more than two months of TCM treatment, the patient gained weight, her complexion improved, vaginal bleeding significantly decreased, and she reported a marked recovery in strength and vitality. She regained confidence, became fully self-sufficient in daily activities, and was able to perform household chores. The patient has continued with TCM treatment to date, with satisfactory results for both her and her family. She has also become a voluntary promoter of TCM in her village and surrounding areas.

4. Outcome status

Traditional Chinese Medicine (TCM) health culture represents the core essence of TCM's foundational theories and health education. It serves as the intrinsic source that has sustained the Chinese nation's continuous existence for millennia and is the bedrock of health. TCM health culture encompasses fundamental concepts and levels of understanding regarding emotions, diet, daily routines, labor, exercise, and other aspects. In other words, it involves the conscious thinking about health goals, health approaches, and health methods in these domains, thereby forming the basis for self-management of emotions, diet, daily routines, lifestyle, labor, and exercise. This, in turn, fosters an internal restraint that cultivates good living habits and a healthy lifestyle. As material prosperity grows, people's outlooks on life, values, and worldviews evolve, leading to changes in their pursuit of health culture ideals. This has resulted in a

weakening and discontinuity in the transmission of TCM health culture.

TCM itself struggles to articulate its own issues clearly, resorting to language from over two millennia ago to communicate with the present, thereby exacerbating a significant crisis in TCM's inheritance. The lack of TCM health education is the root cause of frequent social diseases, declining physical fitness among the populace, emerging social health crises, and even survival crises. Strengthening the innovative inheritance of TCM health culture will enable TCM to be learned, applied, and explained clearly and understandably. Enhancing the daily application of the "preventive treatment of disease" concept will guide people towards better health.

5. Discussion on inheritance

TCM health culture originates from the unique inventions and insights of the ancestors and sages of the Chinese nation regarding the fundamental awareness and cognition of all things in heaven and earth. It has been documented in classics, forming a system that establishes the unique health outlook on life, health values, and health worldview of the Chinese nation. This, in turn, has given rise to a distinctive methodology for addressing health issues, characterized by a holistic health perspective of "harmony between man and nature"; a dialectical health perspective of "medicine and food as one"; a disease prevention and control perspective of "treating diseases before they arise"; a constant change perspective of "five movements and six 'qi' "; and a professional ethics perspective of "great physicians embody sincerity." Utilizing natural substances, adhering to natural principles, and employing natural methods to heal and benefit the human body and mind, promoting and maintaining comprehensive human health, TCM represents the sole and entirely novel wisdom-based life medicine model in the world today.

Disclosure statement

The author declares no conflict of interest.

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Visualization Analysis of Chinese Traditional Exercise in Preventing and Treating Chronic Obstructive Pulmonary Disease Based on CiteSpace

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Abstract

Objective: Analyze the research status, hot spots and development trends of traditional Chinese exercises in the prevention and treatment of chronic obstructive pulmonary disease (COPD) in recent 15 years based on CiteSpace software and provide some reference for subsequent related research. **Methods:** The China National Knowledge Infrastructure (CNKI) was used to retrieve the relevant literature and periodicals in recent 15 years. CiteSpace software was employed to conduct a visual analysis of authors, institutions and keywords, and its internal meaning was interpreted in combination with corresponding maps. **Results:** A total of 229 articles were included. The number of published articles increased year by year, indicating that the research heat of traditional exercises to prevent and treat chronic obstructive pulmonary disease has gradually increased in recent 15 years. There are 248 research scholars, represented by Jinxiu Chen and Zhenwei Wang, and 209 research institutions, represented by Fujian University of Traditional Chinese Medicine and Yueyang Hospital of Integrated Traditional Chinese and Western Medicine affiliated to Shanghai University of Traditional Chinese Medicine. The cooperation within institutions is relatively close, while the cooperation between institutions is not tightly connected and the research is relatively scattered. Keyword visualization shows 254 nodes and 628 connection lines, among which there are 10 keywords with frequency greater than 10 times and centrality greater than 0.1, and a total of 14 clusters and 10 emergent words, suggesting that the traditional methods more used in COPD prevention and treatment are Wujinxi, Liuzijue, Baduanjin and Tai Ji Chuan, among which Liuzijue and Tai Ji Chuan are particularly prominent. The evaluation criteria of curative effect are mainly sports endurance, quality of life and lung function, taking both objective and subjective indicators into account. **Conclusion:** With conducting a visual analysis of related literature in CNKI by CiteSpace, the general situation of the research on the prevention and treatment of chronic obstructive pulmonary disease by traditional martial arts is intuitively displayed, the cooperative relationship between researchers and institutions is initially revealed, as well as the research frontiers, hotspots and research trends of traditional martial arts prevention and treatment of chronic obstructive pulmonary disease are roughly understood, which provides a certain direction and reference for further research.

Keywords

CiteSpace
Traditional Chinese exercise
Chronic obstructive
pulmonary disease
Visualization analysis

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1. Introduction

Chronic obstructive pulmonary disease (COPD) is a progressive disease limited by persistent irreversible airflow, which is related to the abnormal inflammatory reaction of harmful gases or particles ^[1]. As the main chronic disease in the world, COPD has become the third leading cause of death in global, which main clinical manifestations are cough, expectoration, shortness of breath or dyspnea, decreased exercise endurance and even the daily activities can not be completed alone, thus seriously affects the quality of life ^[2]. In traditional Chinese medicine, COPD belongs to the category of lung distension, which is caused by chronic lung deficiency and endogenous phlegm, resulting in lung qi failing to converge and fullness, resulting in cough and wheezing, and the disease is often aggravated because of reinfecting exogenous pathogens. American Thoracic Society (ATS) and European Respiratory Society (ERS) advocate the use of lung rehabilitation in COPD patients, which includes exercise training, patient education, social psychological support and so on, in order to help COPD patients improve their physical and psychological state and maintain a long-term healthy lifestyle ^[3,4].

Sports training includes endurance training, resistance/strength training, flexibility training, respiratory muscle training and so on. Various sports methods can be adopted, such as swimming, running, cycling and breathing exercises. However, as most COPD patients are elderly people, they may not be able to tolerate high-intensity exercise, resulting in excessive muscle energy consumption and respiratory frequency disorder, which weakens their exercise ability. In COPD patients, there is limited evidence about the optimal intensity of exercise training. It is still unclear who benefits more from high-intensity exercise training or low-intensity exercise ^[5]. While some studies have pointed out that COPD patients can benefit from both high-intensity and low-intensity exercise ^[6,7]. The Metabolic Equivalent of Task (MET) index of traditional exercises is between 1.5 and 2.6, and the maximum cardiac output accounts for 43–49% of the predicted value, which is classified as low-intensity exercise ^[8].

There are many kinds of traditional exercises, among which Tai Ji Chuan is the representative. In addition, in 2003, China's State Sports General Administration

introduced four fitness exercises, including Wuqinxi, Baduanjin, Liuzijue and Yijinjing. Therefore, the traditional techniques mentioned in this paper include Wuqinxi, Baduanjin, Liuzijue, Yijinjing and Tai Ji Chuan. As a safe exercise therapy to prevent and treat COPD, traditional exercises have gradually attracted the attention of researchers in recent years.

CiteSpace is a visual software developed by Professor Chaomei Chen, a computer and information science major at Drexel University in the United States, based on JAVA environment ^[9]. It can analyze the data of scientific literature in a certain field to get valuable information, so as to find its internal laws, and can transform text information into visual maps to show the current situation and hot spots of research intuitively. In this study, CiteSpace 5.8.R software was used to conduct co-occurrence and cluster analysis on the annual number of articles, authors, institutions and key words related to the prevention and treatment of COPD by traditional methods, and draw a visual map, which can intuitively show the development process and research hotspots of traditional methods in the past 15 years, and has certain reference significance for subsequent research ^[10].

2. Data and methods

2.1. Data sources

The CNKI database was used for advanced search, and the search criteria box selected the theme. The search query includes the following terms: (Wuqinxi OR Baduanjin OR Yijinjing OR Liuzijue OR Tai Ji Chuan) AND (Chronic Obstructive Pulmonary Disease). The publication time was set to January 1, 2006 and August 22, 2021 to search Chinese documents. A total of 246 documents were retrieved, and 229 documents were included after manually excluding documents such as conferences and scientific and technological achievements.

2.2. Data transformation

The selected literature in the “Reworks” format was exported, save it to a file, and then name it “download_***”. We utilize the Import/Export function of CiteSpace to perform data conversion.

2.3. Research method

The data were analyzed by using the visualization software CiteSpace 5.8.1R developed by Professor Chaomei Chen, majoring in computer and information science at Drexel University in the United States. Specific Parameter settings: the time interval was 2006–2021. The author, institution and keyword are selected as node types, and the whole atlas is simplified by clipping, and the visual atlas is drawn and analyzed respectively.

3. Results

3.1. Annual publication volume

The published amount of the included documents was analyzed, as shown in **Figure 1**, in which the statistical time of published amount in 2021 is from January 1, 2021 to August 20, 2021. In the past 15 years, the distribution of the annual number of articles has shown two stages, with a steady growth period from 2006 to 2014, during which the number of articles has increased year by year, with an average of 4.9 articles per year. 2015–2021 is a stable period, with an average of 26.5 articles published annually. In 2019, the number of articles published was the highest (38 articles), and in recent 10 years, the number of articles published was 204, accounting for 89% of the total number of articles published, indicating that the recent 10 years was the peak of the research on the prevention and treatment of COPD by traditional methods, which attracted the attention of relevant researchers.

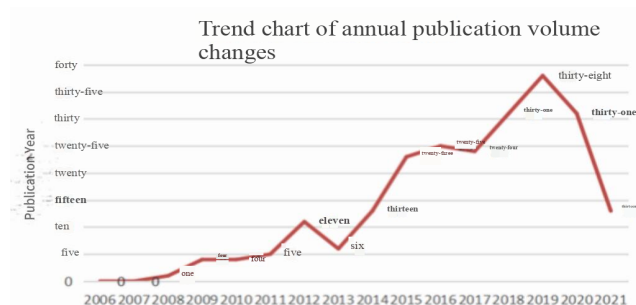


Figure 1. The trend chart of the change of the number of articles published in the prevention and treatment of chronic obstructive pulmonary disease by traditional exercises from 2006 to 2021.

3.2. Author analysis

There are 248 nodes and 317 lines in the co-occurrence

spectrum of authors. In the co-operation spectrum, each node is an author, the font size of the author's name corresponds to the number of articles published, and the thickness of the lines between nodes corresponds to the strength of the cooperative relationship between authors. As shown in **Figure 2**, a total of 248 authors were included for analysis, and six research cooperation teams were formed, mainly including Jinxiu Chen, Zhenwei Wang, Fubing Yang, Haihua Wang, Xin Yan and Tairong Liu. Among them, Zhenwei Wang (10 articles), Jinxiu Chen (9 articles) and Peilan Yang (8 articles) are the top three (as shown in **Figure 3**).



Figure 2. Author's cooperation relationship diagram.

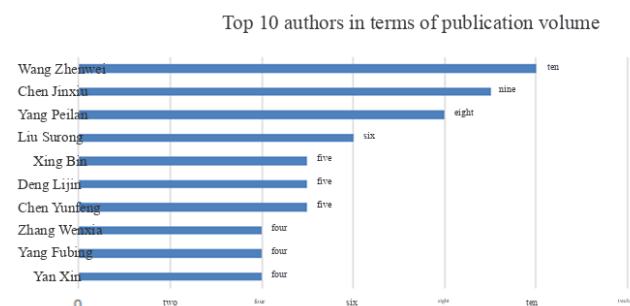


Figure 3. Top 10 authors of published articles.

3.3. Institutional analysis

As shown in **Figure 4**, it is a visual atlas analysis of institutional cooperation for the included criteria, and the nodes of the same research institution are merged, such as Fujian College of Traditional Chinese Medicine and Fujian University of Traditional Chinese Medicine, Chengdu University of Traditional Chinese Medicine and Clinical Medical College of Chengdu University of Traditional Chinese Medicine. There are 209 nodes and 163 connections, suggesting that there are 209 institutions, and little cooperation among them (density = 0.0075). Five close cooperation networks have been

formed, namely Fujian University of Traditional Chinese Medicine, Chengdu University of Traditional Chinese Medicine, Nanjing University of Traditional Chinese Medicine, Yueyang Hospital of Integrated Chinese and Western Medicine affiliated to Shanghai University of Traditional Chinese Medicine, and Sports Rehabilitation Research Center of Wuhan Institute of Physical Education. The main research positions include Fujian, Nanjing, Chengdu and Wuhan. Among them, Fujian University of Traditional Chinese Medicine (14 papers, accounting for 6% of the total number of papers) has the largest number of papers, and the top three are Fujian University of Traditional Chinese Medicine, Yueyang Hospital of Integrated Traditional Chinese and Western Medicine affiliated to Shanghai University of Traditional Chinese Medicine and Chengdu University of Traditional Chinese Medicine (refer **Figure 5**).

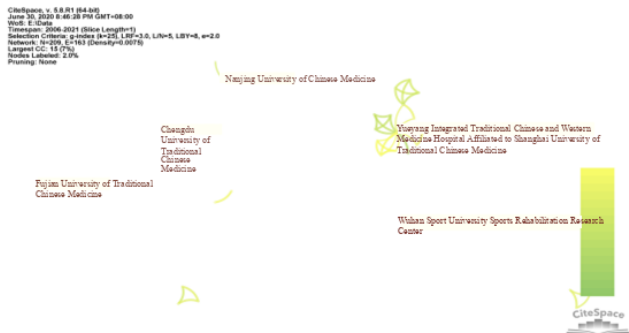


Figure 4. Institutional cooperation diagram.

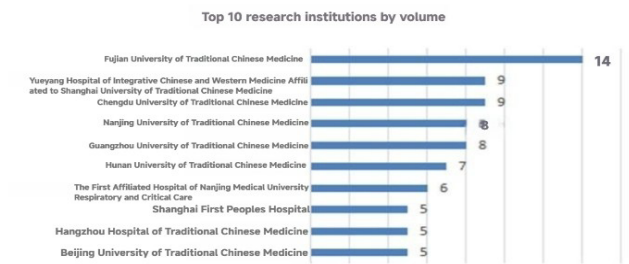


Figure 5. Top 10 research institutions with published papers.

3.4. Keywords analysis

Keywords were selected as nodes to generate the keyword analysis map depicted in **Figure 6**, **7** and **Table 1**.

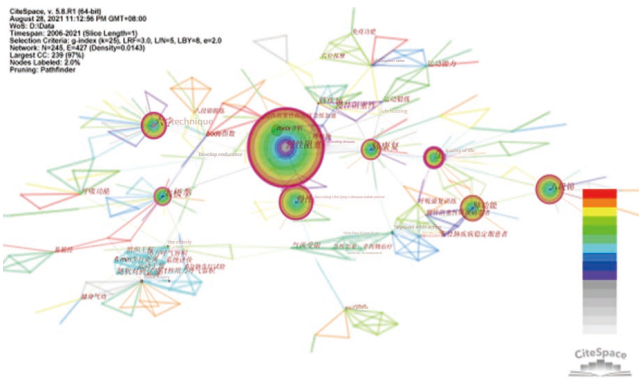


Figure 6. Keyword co-occurrence diagram.

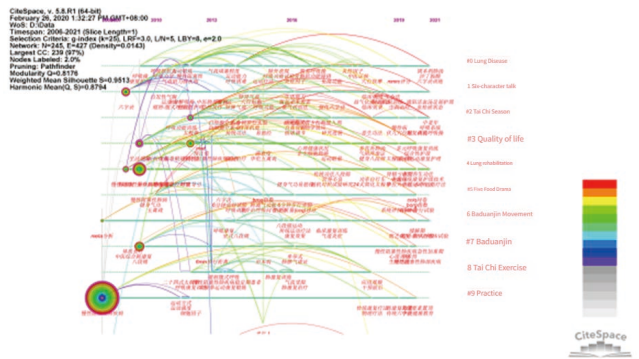


Figure 7. Keyword time zone line chart.

Table 1. Keywords with frequency > 10 and centrality > 0.1

Number	Keyword	Age	Frequency	Centrality
1	COPD	2006	197	0.51
2	Stable phase of COPD	2009	61	0.26
3	Baduanjin	2009	56	0.17
4	Liuzijue	2008	50	0.38
5	Pulmonary function	2012	50	0.10
6	Lung rehabilitation	2008	47	0.29
7	Quality of life	2009	39	0.68
8	Tai chi chuan	2012	29	0.46
9	Exercise endurance	2006	23	0.25
10	Wuqinxi	2010	12	0.30

3.4.1. Co-occurrence analysis

By analyzing the key words, we can get the key research content and direction in this field [11]. Through the analysis of the literature, it is known that there are keywords with the same or similar meanings but different expressions, such as COPD and chronic obstructive pulmonary disease, survival quality and quality of life, which are merged and unified to ensure the accuracy of the results.

As can be seen from **Figure 6**, the visualized graph of keyword co-occurrence includes a total of 254 nodes and 628 connections, with relatively tight connections between nodes. Where the betweenness centrality is greater than 0.1, it indicates that this node occupies an important position in the graph and is more likely to have a significant impact. The purple border around the edge of the tree ring represents the strength of the betweenness centrality, with a thicker border indicating a stronger centrality^[12]. As shown in **Table 1**, there are 10 keywords with a frequency greater than 10 and a centrality greater than 0.1, including chronic obstructive pulmonary disease, stable phase of chronic obstructive pulmonary disease, Baduanjin, lung function, six-character technique, pulmonary rehabilitation, Tai Chi, quality of life, Wuqinxi, and exercise endurance.

By analyzing high-frequency keywords and high centrality keywords in the paper and visualizing them, we can identify research hotspots in this field. The application of traditional techniques such as Eight Baduanjin, Liuzijue, Tai Ji Chuan and Wuqinxi has strong research hotspots in improving lung function and quality of life in chronic obstructive pulmonary disease. The timeline graph in **Figure 7** illustrates the differences in clustering across time spans and time points.

3.4.2. Cluster analysis

Keywords are a highly concise summary of a document. The research hotspots in different periods can be reflected by the high-frequency keywords in this period. The cluster diagram can reflect its structural characteristics, important keywords and connections, and can clearly show the theme of this field and its evolution process^[13]. As shown in **Figure 8**, the keywords are clustered by CiteSpace, and 14 clusters are obtained, including #0 lung disease, #1 Liuzijue, #2 Tai Ji Chuan, #3 quality of life, #4 lung rehabilitation, #5 Wuqinxi, #6 Baduanjin movement, #7 Baduanjin movement, #8 Tai Ji Chuan movement, #9 exercise, #10 elderly people, #11 acute exacerbation of chronic obstructive pulmonary disease, #12 CAT score, #13 exercise endurance. The module clustering value Q is 0.8176 (> 0.3) and the contour value is 0.9513 (> 0.7), which shows that the cluster structure is reasonable and the clustering result is credible. Each color block represents a cluster, and the nodes in each

color block belong to the same cluster. Further analysis, as shown in **Table 2**, shows that the contour value of each cluster is greater than 0.7, indicating that the research is mainly concentrated and the clustering results are credible. Among them, the acute exacerbation of #0 lung disease and #11 chronic obstructive pulmonary disease include the stable period and acute exacerbation of COPD. It indicates the traditional lateral reaction method can be applied not only to the stable period of COPD, but also to the acute exacerbation period. #0 lung disease, #1 Liuzijue, #2 Tai Ji Chuan, #3 quality of life, #4 lung rehabilitation, #5 Wuqinxi, #6 Baduanjin movement, #7 Baduanjin, #8 Tai Ji Chuan movement, #9 exercise reflect the concrete application of traditional exercises in chronic obstructive pulmonary disease. #3 quality of life, #12 CAT score and #13 exercise endurance reflect the evaluation criteria of curative effect in traditional manual therapy for chronic obstructive pulmonary disease. Subjective symptoms and corresponding scores can effectively judge the curative effect.

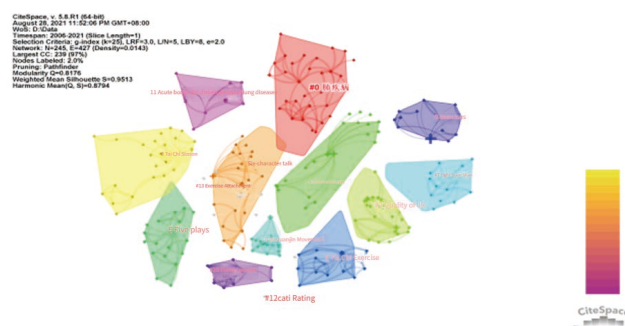


Figure 8. Keyword clustering diagram.

3.4.3. Burst analysis

We can predict the development trend of this field and judge the research hotspots through keyword pop-up analysis. The graph of keyword emergence analysis is shown in **Figure 9**, and a total of 10 emergent words have been obtained. In recent years, the research focus has not lasted long, and the judgment and attention on the degree of dyspnea has gradually shifted from exercise endurance to the study of respiratory mechanics and respiratory muscle strength. From 2006 to 2011, the research methods of Meta-analysis were widely used in this field. The exploration of the specific application of traditional techniques includes the use of Liuzijue, exercise prescription, lip-contraction-abdominal

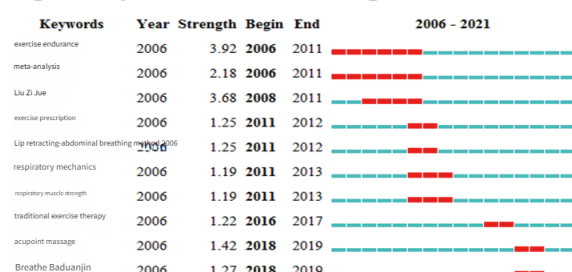
Table 2. Keyword clustering list

Cluster number	Scale	Age	Contour value	Lable(LLR)
#0	32	2015	0.942	Lung disease ($18.45, 1.0 \times 10^{-4}$)
#1	28	2015	0.964	Liuzijue($22.16, 1.0 \times 10^{-4}$)
#2	24	2016	0.946	Tai chi chuan($20.57, 1.0 \times 10^{-4}$)
#3	22	2015	0.936	Quality of life($28.12, 1.0 \times 10^{-4}$)
#4	21	2016	0.973	Lung rehabilitation($31.34, 1.0 \times 10^{-4}$)
#5	18	2015	0.953	Wuqinxi($22.13, 1.0 \times 10^{-4}$)
#6	14	2016	0.924	Baduanjin exercise($18.16, 1.0 \times 10^{-4}$)
#7	14	2015	0.926	Baduanjin($18.09, 1.0 \times 10^{-4}$)
#8	14	2014	0.906	Tai ji chuan movement($14.66, 0.001$)
#9	14	2014	1	exercise($8.18, 0.005$)
#10	11	2015	1	The aged($10.68, 0.005$)
#11	10	2017	0.983	Acute exacerbation of COPD($17.22, 1.0 \times 10^{-4}$)
#12	9	2017	0.957	CAT score($12.47, 0.001$)
#13	8	2017	0.918	Exercise endurance($17.36, 1.0 \times 10^{-4}$)

breathing, acupoint massage and breathing Baduanjin. It can be inferred from the breathing Baduanjin in the pop-up words that it may be more targeted to add breathing coordination while exercising to improve exercise endurance. At the same time, most of the research hotspots are still limited to the clinical efficacy research and literature review research of different traditional methods to prevent and treat COPD, while the mechanism and related experimental research are lesser.

traditional techniques (Wuqinxi, Liuzijue, Yijinjing, Baduanjin and Tai Ji Chuan) in the CNKI nearly 15 years, which intuitively reflects the research status, future research hotspots and development trends of this kind of research.

Judging from the number of papers published each year, the research on the prevention and treatment of COPD with traditional exercises has been increasing year by year since 2008, with an average of more than 4 articles per year, which may be related to the successful hosting of the 2008 Olympic Games, the attention paid to mass sports, and the state and the government vigorously advocating the development of traditional fitness exercises^[14]. From 2015 to 2021, the number of articles published each year was more than 20, and reached the peak in 2019 (38 articles), indicating that the traditional exercises of preventing and treating COPD have been gradually valued. The authors are represented by Zhenwei Wang and Jinxiu Chen (intermediary centrality 0.01), and formed a research team headed by Jinxiu Chen, Zhenwei Wang, Fubing Yang and Haihua Wang. The relationship between teams is close, but the cooperation between teams is not close, and the research is relatively scattered. The number of articles published by high-yield

Top 10 Keywords with the Strongest Citation Bursts**Figure 9.** Keyword pop-up diagram.

4. Discussion

In this paper, CiteSpace is used to visually and bibliometrically analyze the related literatures of the

authors is close. High-yield institutions include Shanghai University of Traditional Chinese Medicine, Yueyang Hospital of Integrated Traditional Chinese and Western Medicine affiliated to Shanghai University of Traditional Chinese Medicine, and Chengdu University of Traditional Chinese Medicine. The University of Traditional Chinese Medicine and its affiliated hospitals are the main research institutions for related research, with an intermediary centrality of 0, indicating that the relationship between authors and institutions is not close, the research is scattered, and there is a lack of communication, which may be related to different research topics and institutional platforms. It is suggested that all institutions can strengthen contact and communication, give play to their own advantages, and provide more powerful clinical services.

According to the keyword co-occurrence chart and high-frequency keywords, there are 10 keywords with frequency greater than 10 times and centrality greater than 0.1, including chronic obstructive pulmonary disease, stable period of chronic obstructive pulmonary disease, Baduanjin, lung function, six-character formula, lung rehabilitation, Tai Ji Chuan, quality of life, wuqinxi and exercise endurance. As for the traditional techniques included in this paper, Baduanjin, Liuzijue, Tai Ji Chuan and Wuqinxi are all high-frequency keywords, among which Liuzijue and Tai Ji Chuan are particularly prominent, which may be related to the training effect of Liuzijue on respiratory function and the high popularization rate of Tai Ji Chuan^[15,16]. Only Yijinjing is not a high-frequency keyword, indicating that Yijinjing is less used in COPD prevention and treatment, which may be related to the difficulty in learning Yijinjing and the low popularization rate compared with the other four traditional methods^[17]. Apart from the key words, the high-frequency keywords include lung function, lung rehabilitation, quality of life and exercise endurance, suggesting that traditional exercises can play an important role in the prevention and treatment of COPD as a specific way of lung rehabilitation^[18]. The evaluation criteria of curative effect can be lung function, exercise endurance and quality of life, which have both objective indicators and subjective evaluation, and the ability to judge curative effect is more accurate. But in addition to the evaluation criteria of curative effect, more evaluation

criteria can be adopted, including self-efficacy, muscle function status and balance of COPD patients.

Through keyword clustering and timeline map, it can be found that the main research population in this paper is the elderly, which is related to COPD being one of the main chronic diseases of the elderly. Traditional exercises can be used not only in the stable period of COPD, but also in the acute exacerbation of COPD^[19,20]. Combined with the emergence of key words, we can make a general prediction on the research content, development and future development direction of the literature related to the prevention and treatment of COPD by traditional methods. Through the comprehensive analysis of related maps, it is concluded that the research hotspots are mainly concentrated in the following aspects.

- (1) Meta-analysis of randomized controlled studies of traditional exercises in preventing and treating COPD, so as to obtain more objective and scientific evidence
- (2) Prescribing different exercise prescriptions according to patients' personal conditions
- (3) To study the internal mechanism of traditional exercise in preventing and treating COPD, the main research directions are respiratory mechanics and respiratory muscle strength
- (4) Using traditional techniques and cooperating with respiratory function training
- (5) Exercise combined with breathing and new treatment methods, such as acupoint massage. According to the trend of BURST diagram, it is predicted that there will be more clinical efficacy evaluation, systematic evaluation and internal mechanism research.

To sum up, based on CiteSpace software, this paper makes a visual analysis of the related research literature on the prevention and treatment of COPD by traditional methods in CNKI (Wuqinxi, Liuzijue, Yijinjing, Baduanjin and Tai Ji Chuan), which intuitively shows the general situation of the research on the prevention and treatment of chronic obstructive pulmonary disease by traditional methods, research frontiers and hot spots, and provides a certain direction and reference for further research. It is concluded that the traditional methods that are widely used in the prevention and treatment of COPD are Wuqinxi, Liuzijue, Baduanjin and Tai Ji Chuan,

among which Liuzijue and Tai Ji Chuan are particularly prominent. The evaluation criteria of curative effect are mainly based on exercise endurance, quality of life and lung function, taking both objective and subjective indicators into account.

At present, the role of traditional exercises in the prevention and treatment of COPD has been recognized, which can improve exercise endurance and quality of life,

while large-sample, multicenter, prospective randomized controlled study and in-depth study of its mechanism are still needed. Due to the late start of the related research on the prevention and treatment of chronic obstructive pulmonary disease with traditional methods, the amount of research literature is relatively small, so there are some limitations, so there may be one-sidedness and shortcomings in the analysis results.

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Disclosure statement

The authors declare no conflict of interest.

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Discussion on the Treatment of Endometrial Polyps in Chinese Medicine Based on the Theory of “Six Depressions”

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Abstract

Endometrial polyps (EPs) are caused by excessive endometrial hyperplasia, and their incidence has gradually increased in recent years, becoming a common gynecological disease in clinical practice. Based on Zhu Danxi's “Six Depressions” theory, this study aims to construct a theoretical system for TCM (Traditional Chinese Medicine) syndrome differentiation and treatment of endometrial polyps, providing new insights for clinical treatment. Through a literature research approach, this study systematically reviews the theoretical connotations of the “Six Depressions” theory and combines it with modern medical understanding of the pathological mechanisms of EPs to analyze their intrinsic connections. Consequently, a TCM syndrome differentiation and treatment system for EPs based on the “Six Depressions” theory is constructed. The study proposes that the core pathogenesis of EPs is “stagnation in the uterine cavity,” with “Qi” depression as the precursor, leading to mutual transformations among blood stasis, phlegm-dampness, fire depression, and food stagnation. A syndrome differentiation and treatment plan encompassing four main syndromes is established. Building on this foundation, the article directly addresses the core pathogenesis of “stagnation in the uterine cavity”, further elucidating the relationship between the “Six Depressions” theory and EPs. This provides a theoretical basis and diagnostic and treatment foundation for the clinical management of endometrial polyps characterized by “Qi” stagnation, internal blood stasis, internal fire depression, and phlegm-food stagnation.

Keywords

Endometrial polyps
Six depressions theory
Traditional Chinese Medicine
Zhu Danxi
Gynecological diseases
Syndrome differentiation and treatment

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1. Introduction

Endometrial polyps (EPs) are a common benign gynecological condition in modern times, accounting for approximately 24% to 25% of gynecological diseases among women in China^[1]. They have a relatively high recurrence rate, ranging from 33.33% to 52.00%, and their incidence increases with age^[2,3]. This condition is more prevalent among women of childbearing age, with approximately 70% to 80% of cases presenting with abnormal uterine bleeding (AUB). AUB is a common gynecological symptom and sign, characterized by abnormal bleeding in the uterine cavity due to excessive estrogen levels. It does not conform to any of the criteria for normal menstrual cycle frequency, regularity, duration, or amount of bleeding.

Among the causes of AUB, 21% to 39% are attributed to endometrial polyps. Due to their prevalence in the female reproductive system, EPs have become a focal point of attention and treatment for gynecologists. Clinical manifestations primarily include intermenstrual bleeding, menorrhagia, prolonged menstruation, or irregular bleeding. Recent studies suggest that during polyp formation, local bleeding, interference with myometrial contraction, or the formation of an abnormal “substrate” can disrupt the normal growth of the endometrium, thereby adversely affecting embryo implantation^[4]. Polyps located in the cervical canal or at the opening of the fallopian tubes may impact pregnancy through mechanical obstruction, but the primary mechanism is the interference with sperm motility and embryo implantation caused by abnormal expression of chemical factors. Pathological diagnosis serves as the basis for confirming EPs^[5].

In Western medicine, the etiology of endometrial polyps (EPs) is not yet fully understood, but it may be associated with factors such as abnormal expression of estrogen receptors (ER), imbalance between cell proliferation and apoptosis, inflammatory stimuli, oxidative stress, genetics, and metabolic diseases^[6–10]. The use of tamoxifen is also one of the important pathogenic factors^[11]. Hysteroscopy is currently the preferred treatment method, offering the advantages of speed and accuracy. However, it is prone to complications such as infection, adhesion, and bleeding postoperatively, and has a relatively high recurrence rate. Repeated

intrauterine procedures may cause endometrial damage and affect fertility^[12,13]. In contrast, traditional Chinese medicine (TCM) treatment offers advantages such as non-invasiveness, holistic syndrome differentiation, bodily regulation, and reduced recurrence, making it worthy of clinical promotion and in-depth research.

2. “Six types of stagnation” theory

In the “Su Wen • Liu Yuan Zheng Ji Da Lun” (Plain Questions • Grand Treatise on the Six Climatic Factors and Their Influence on Health), an in-depth analysis is conducted on the relationship between pathological changes such as the convergence of the five “Qi”, the generation and restraint of the five “Qi”, and the five movements and six climatic factors, and the occurrence and development of diseases. The theory of “treatment for the five types of stagnation” was proposed^[14]. This theory has been widely applied in various clinical disciplines by later generations of physicians and has also provided insights into the pathogenesis of gynecological diseases. Physicians such as Zhu Danxi combined the “five types of stagnation” theory with the concept of “emotional stagnation” from the “Huangdi Neijing” (The Yellow Emperor’s Classic of Internal Medicine) to develop the “six types of stagnation” theory. They believed that stagnation of “Qi”, blood, phlegm, dampness, food, and fire could all lead to diseases and created formulas such as Liuyu Decoction and Yueju Pill to treat stagnation syndromes^[15]. The essence of stagnation syndromes lies in the stagnation of “Qi” circulation, initially manifesting as liver dysfunction in “Qi” regulation, with the middle jiao (spleen and stomach) as the core.

The spleen and stomach serve as the key point for the ascent and descent of “Qi”. Spleen stagnation leads to dampness stagnation and phlegm production, while stomach reflux leads to fire stagnation and food obstruction, resulting in abnormal ascent and descent and congestion of the uterine meridians, forming the basis for polyp accumulation. Stagnation syndromes act on the hypothalamic-pituitary-ovarian axis through their impact on the neuroendocrine system: the hypothalamus secretes gonadotropin-releasing hormone, stimulating the pituitary gland to secrete follicle-stimulating hormone (FSH) and luteinizing hormone (LH). FSH promotes follicular

development and the synthesis of estrogen by granulosa cells. The pre-ovulatory estrogen peak triggers positive feedback, leading to the LH peak and further promoting estrogen elevation. In modern society, women face multiple pressures from work, family, and other aspects, making them more prone to emotional distress and “Qi” stagnation, which can subsequently lead to endocrine disorders, weakened immune function, inflammatory responses, metabolic abnormalities, and other conditions that promote the abnormal proliferation of endometrial polyps.

According to Zhu’s theory, “Qi” stagnation is the root cause of all types of stagnation. “Qi” stagnation can result in poor blood circulation, leading to blood stagnation; impaired fluid transport, causing damp stagnation; dampness accumulating into phlegm, resulting in phlegm stagnation; prolonged “Qi” stagnation transforming into heat, leading to fire stagnation; and disrupted “Qi” flow affecting the spleen and stomach’s transporting and transforming functions, causing food stagnation. These various types of stagnation often interact and coexist.

Clinical case: A 35-year-old female patient, experiencing long-term work-related stress and emotional repression, presented with symptoms such as low mood, chest and rib distension and pain, and premenstrual lower abdominal distension and pain (indicative of “Qi” stagnation). Subsequently, she experienced a gradual decrease in menstrual flow, dark menstrual blood with blood clots (due to “Qi” stagnation causing poor blood circulation and blood stagnation), along with abdominal distension and sticky stools (resulting from disrupted “Qi” flow affecting the spleen and stomach’s transporting and transforming functions and damp stagnation). Later, she developed symptoms such as phlegm in the throat that was difficult to cough up (due to dampness accumulating into phlegm and phlegm stagnation), as well as irritability and bitter taste in the mouth (due to “Qi” stagnation transforming into heat and fire stagnation).

Therefore, when addressing the six types of stagnation in clinical practice, the primary task is to effectively resolve “Qi” stagnation. Through meticulous differentiation of symptoms, appropriate medications and therapeutic approaches are employed to achieve the goal of alleviating patients’ emotions and relieving physical and mental constraints. Additionally, within his

philosophical framework, he posited a subtle relationship between “food” and “Qi”. He proposed that food accumulation leads to “Qi” stagnation, while smooth “Qi” flow promotes food digestion. Therefore, he advocated for emulating this approach to treat various types of stagnation and discomfort, leading to the creation of Yueju Pills, a medication designed to address various symptoms caused by dietary stagnation. Yueju Pills are a classic prescription for treating the “six types of stagnation.” The formula includes *Atractylodes rhizome* to invigorate the spleen and dry dampness, *Cyperus rhizome* to regulate “Qi” and resolve stagnation. When combined, these herbs can regulate the spleen and stomach, smooth “Qi” flow, and thereby achieve the effect of “resolving all types of stagnation.”

3. Pathogenesis analysis of endometrial polyps based on the “six types of stagnation” theory

In ancient Chinese medical literature, there was no specific term for endometrial polyps. Instead, they were often classified under conditions such as “masses and accumulations” (zheng jia), “metrorrhagia and metrostaxis” (beng lou), and “infertility” (buyun) based on their clinical manifestations. Modern research indicates that the most common syndrome pattern observed in clinical cases of endometrial polyps is “Qi” stagnation and blood stasis^[16]. Zhu Danxi’s theory of the “six depressions” (liu yu) provides profound insights into the pathogenesis of “Qi” and blood disharmony, positing that “Qi” depression is the root of all depressions and can lead to the other five types of depression: blood, fire, food, phlegm, and dampness.

These six depressions can also transform into one another. Furthermore, throughout the onset and progression of gynecological diseases, the “six depressions” often play a central role, constituting the core pathogenic mechanism. Based on an accurate differentiation of traditional Chinese medicine (TCM) syndrome types for endometrial polyps and incorporating Zhu Danxi’s theory of the “six depressions”, this study proposes a treatment principle of “emphasizing the soothing of the liver and resolving depression, and flexibly differentiating and treating depression”. The

aim is to provide a new theoretical basis and treatment approach for the clinical prevention and management of endometrial polyps.

3.1. “Qi” depression as the root cause of the disease

“Qi” depression serves as the foundation for the formation of polyps. When the Chong and Ren channels are out of balance, it leads to the entanglement of “Qi” and blood in the uterine vessels. Over time, this stagnation transforms into fire and generates blood stasis, ultimately forming tangible pathological substances. “Jiyin Gangmu” (A Compendium of Gynecology) points out that emotional disharmony can lead to irregular menstruation in women and affect their fertility. Zhu Danxi emphasizes that liver “Qi” stagnation due to impaired liver function in dispersing and regulating “Qi” is the key factor causing “Qi” depression^[17]. The liver is responsible for dispersing and regulating “Qi”. If emotional distress persists and liver “Qi” becomes stagnant, the flow of “Qi” is obstructed, affecting the “Qi” and blood of the Chong and Ren channels. This can result in gynecological disorders such as menstrual irregularities and abnormal endometrial hyperplasia. From an anatomical and biological perspective, endometrial polyps are closely related to the Chong and Ren channels.

The Chong channel, known as the “sea of blood,” originates from the uterus and is referred to as the “sea of the twelve regular channels.” It regulates the abundance and decline of “Qi” and blood and transports essential substances to the uterus. The Ren channel also arises from the uterus, governs pregnancy, maintains the normal physiological function of the uterus, and is interconnected with the liver, spleen, and kidney channels, participating in the distribution of “Qi”, blood, and body fluids. If the Chong and Ren channels are impaired, such as through emotional distress leading to liver “Qi” stagnation or spleen and kidney deficiency resulting in a loss of containment, it can cause poor circulation of “Qi” and blood in the Chong and Ren channels, leading to stagnation and congestion in the endometrium. Local stagnation of “Qi” and blood stimulate abnormal hyperplasia of endometrial glands, stroma, and blood vessels.

At the same time, it affects the distribution of

hormone receptors, exacerbating excessive endometrial proliferation and ultimately forming polyps. This process reflects the regulatory role of the Chong and Ren Meridians in the blood supply, metabolism, and proliferation balance of the endometrium. Dysfunction of these meridians is an important pathogenic mechanism for polyp formation. Additionally, “Qi” stagnation can also lead to imbalances in the “Qi” and blood of the meridians associated with the uterus, causing pathological products such as “Qi” stagnation, blood stasis, and phlegm-dampness to accumulate in the uterus, further exacerbating polyp formation. Clinically, patients with endometrial polyps of the “Qi” stagnation syndrome type often experience liver “Qi” stagnation due to social pressure, low mood, and other factors.

Over time, “Qi” stagnation leads to blood stasis, obstructing the Chong and Ren Meridians and the uterus, ultimately resulting in the onset of the disease^[18]. It is evident that “Qi” stagnation is closely related to the occurrence and development of endometrial polyps, often manifesting clinically as delayed menstruation, amenorrhea, infertility, etc. Therefore, in the clinical treatment of patients with endometrial polyps of the “Qi” stagnation syndrome type, psychological counseling should be emphasized to help patients alleviate negative emotions such as anxiety and depression, thereby soothing the liver and regulating “Qi” flow, improving “Qi” circulation, and enhancing treatment efficacy.

3.2. Blood stasis and obstruction of collaterals

Zhu Danxi emphasized the relationship between “Qi” and blood, believing that “Qi” is the commander of blood, and “Qi” stagnation leads to blood stasis. Blood stasis is an important pathological factor in the development of endometrial polyps. Many medical practitioners have also discussed the role of blood stasis in gynecological diseases. “Jingyue Quanshu · Women’s Rules” states, “Stagnant blood accumulation causes masses, a condition unique to women... Internal exposure to cold and raw foods, external exposure to wind and cold, or anger injuring the liver... or worry and pensiveness injuring the spleen, leading to “Qi” deficiency and blood stasis, which accumulates over time and gradually forms masses.” “Wan’s Gynecology” states, “Worry, pensiveness, anger, and resentment lead to “Qi” stagnation and blood

stasis, causing menstrual irregularities.” Wang Qingren emphasized in “Yilin Gaicuo” that tangible blood stasis is the material basis for the formation of masses such as endometrial polyps. The formation of blood stasis is closely related to dysfunction of the liver, spleen, and kidneys and may also involve pathological changes such as increased blood viscosity and microcirculatory disorders.

The liver is responsible for storing blood and regulating its flow, ensuring smooth “Qi” and blood circulation. Emotional distress, liver “Qi” stagnation, or external pathogenic invasions can all lead to dysfunction of the liver’s regulatory function, thereby affecting its blood-storing capacity and causing poor blood circulation, resulting in internal blood stasis in the uterus. Liver “Qi” stagnation and “Qi”-blood disharmony can easily lead to blood stasis formation in the endometrium, obstructing the Chong and Ren Meridians, and subsequently affecting the normal growth and shedding of the endometrium, promoting polyp formation.

The spleen governs the transportation and transformation of water and grain essences to generate “Qi” and blood, and also controls the circulation of blood. When the spleen “Qi” is weak, its ability to transport and transform is impaired, leading to insufficient production of “Qi” and blood and weakened blood circulation, which can easily result in blood stasis. Weak spleen “Qi” also leads to impaired control over blood, causing blood that has deviated from its proper pathways to not disperse in a timely manner. This blood can accumulate in the uterus, interacting with other pathological factors and promoting the formation of endometrial polyps. The kidney stores essence and governs reproduction. Kidney “Yin” and kidney “Yang” serve as the source of “Qi” and blood production and play a crucial role in blood circulation. Deficiency of kidney “Yin” can generate internal heat, disturb the Chong and Ren meridians and cause irregular blood flow, which may lead to internal blood stasis. Insufficient kidney “Qi” can disrupt “Qi” transformation, leading to impaired fluid metabolism. This can also exacerbate blood stasis, affect the normal function of the endometrium and promoting the formation of endometrial polyps. Therefore, blood stasis is an important pathological factor in endometrial polyps, often manifesting clinically as irregular menstrual cycles,

excessive menstrual flow, dark purple menstrual blood with clots. The presence of blood stasis is also often a significant reason for the prolonged and recurrent course of the disease, emphasizing the importance of promoting blood circulation and removing blood stasis in treatment.

3.3. Fire stagnation generates internally, scorching and injuring “Yin” and blood

Zhu Danxi believed that “excess “Qi” turns into fire,” and women are prone to “Qi” stagnation and “Yù”, which can be translated as “depression” or “stagnation” in this context). Prolonged “Qi” stagnation can easily transform into fire. Clinically, some patients with endometrial polyps are diagnosed with liver meridian stagnation fire syndrome. This fire, as a “Yang” pathogen, easily burns “Yin” and blood, depletes the “Yin” and blood of the Chong and Ren meridians, and leads to impaired blood circulation, resulting in blood stasis. This deprives the endometrium of nourishment, while blood heat causing irregular flow or stagnant blood flow can trigger local tissue abnormalities, forming polyps. From an anatomical and physiological perspective, the endometrium is regulated by estrogen and progesterone, exhibiting characteristics of cyclic proliferation, secretion, and shedding. Its normal metabolism relies on blood supply and endocrine balance. Internal fire can be analogized to endocrine imbalance, such as relatively high estrogen levels, which, when stimulating the endometrium over a prolonged period, can cause excessive proliferation beyond the normal shedding range.

Correspondingly, impaired “Yin” and blood can correspond to local endometrial circulation disorders and inflammatory responses. Blood heat increases vascular permeability, causing blood components to seep out and form stagnation. Meanwhile, inflammatory factors stimulate abnormal proliferation of endometrial stroma and glands, gradually forming pedunculated polypoid tissue. Fire stagnation can also lead to a range of related symptoms, such as menstrual irregularities, abdominal pain, and abnormal vaginal bleeding. Therefore, fire stagnation plays a pivotal role in the entire course of endometrial polyps, significantly influencing their onset, progression, and associated symptoms. During treatment, it is essential to clear deficient heat while avoiding bitter and cold substances that may harm the stomach, and also

to address blood stasis.

3.4. Food stagnation and phlegm-dampness obstruction

“Danxi’s Methods of Medicine” points out that improper diet, characterized by excessive consumption of rich and greasy foods, can easily lead to menstrual irregularities. Improper dietary habits, such as overindulging in spicy, greasy, or cold foods, can easily damage the spleen and stomach, leading to dysfunction in their transporting and transforming functions. This results in the stagnation of food and water, forming food stagnation. Food stagnation obstructs the middle jiao, affecting the spleen and stomach’s transporting and transforming functions, leading to insufficient production of “Qi” and blood and sluggish blood circulation, which can easily result in blood stasis. Dysfunction in the spleen and stomach’s transporting and transforming functions leads to the accumulation of water and dampness internally, which then congeals into phlegm. The combination of phlegm and blood stasis can also obstruct the uterus, affect the normal function of the endometrium and promote the formation of endometrial polyps.

Prolonged food stagnation can easily lead to dysfunction in the spleen and stomach’s transporting and transforming functions, resulting in the accumulation of water and dampness internally, which then congeals into phlegm. Phlegm-dampness, being a “Yin” pathogen, is sticky and obstructive, easily blocking the flow of “Qi” and affecting the normal function of the endometrium, leading to menstrual irregularities and promoting the formation of endometrial polyps. Food stagnation, phlegm-dampness, “Qi” stagnation, and blood stasis often interact as both cause and effect, jointly contributing to the pathogenesis of endometrial polyps. Professor Tong Xiaolin believes that “six types of stagnation” represent one of the core pathogenic mechanisms of endometrial polyps, with food stagnation being the precursor^[19].

Additionally, certain patients taking medications such as progestins and GnRH agonists may experience direct irritation of the gastric mucosa, altered gastrointestinal motility, or abrupt changes in hormone levels, all of which can impact the function of the middle jiao, causing rebellious stomach “Qi” and resulting in vomiting. Therefore, when treating endometrial polyps, attention

should be paid to regulating emotions, maintaining a reasonable diet, strengthening the spleen and resolving phlegm to harmonize “Qi” and blood and eliminate pathogenic factors.

4. Flexible diagnosis and treatment based on stagnation

4.1. Emphasis on soothing the liver and regulating “Qi”

Xiaoyao San is a commonly used prescription for treating liver “Qi” stagnation syndrome in endometrial polyps. Patients with this syndrome pattern often exhibit symptoms such as delayed menstruation, amenorrhea, infertility, premenstrual breast tenderness, emotional depression, and frequent sighing. Their tongues are red with a thin, white coating or greasy coating along the edges, and their pulses are wiry and slippery. Some patients may also have thyroid nodules and breast nodules.

The primary treatment approach should focus on soothing the liver and relieving depression, as well as harmonizing “Qi” and blood. The formula consists of: Bupleurum (Chai Hu) 10 g, White Peony Root (Bai Shao) 10 g, Stir-fried *Atractylodes* (Chao Bai Zhu) 10 g, Poria (Fu Ling) 10 g, Prepared Licorice (Zhi Gan Cao) 5 g, plus 3 slices of fresh ginger and 3g of mint. One dose per day, decocted in water to yield 400 mL of juice, taken warm in two divided doses (morning and evening), typically for 4–8 consecutive weeks. Bupleurum acts as the principal herb, soothing the liver and relieving depression while regulating “Qi” flow. White Peony Root nourishes the liver and blood, while Angelica Root (Dang Gui) nourishes and invigorates the blood; together, they serve as adjuvant herbs to enrich the blood, harmonize the nutrients, and alleviate pain. Stir-fried *Atractylodes* and Poria are used as assistants to strengthen the spleen, replenish “Qi”, and eliminate dampness, thereby enhancing the spleen and stomach’s transporting and transforming functions. Mint is added to soothe the liver and regulate “Qi”, assisting Bupleurum in relieving depression. Fresh ginger is used to warm and harmonize the stomach, while Prepared *Licorice* harmonizes all the herbs. When combined, these herbs work synergistically to soothe the liver, relieve depression, strengthen the

spleen, and nourish the blood. For patients with severe liver “Qi” stagnation, additional herbs such as *Cyperus Rotundus* (Xiang Fu) and *Curcuma* (Yu Jin) can be added to enhance the “Qi”-regulating and depression-relieving effects. *Cyperus rotundus* soothes the liver, relieves depression, and regulates “Qi” to alleviate pain, while *Curcuma* promotes “Qi” circulation, dissipates blood stasis, clears the heart, and relieves depression^[20]. Xiaoyao San (Free and Easy Wanderer Powder) is clinically versatile, allowing for differentiation between primary and secondary conditions and flexible modification of the formula to address various diseases with different treatment approaches. On this basis, additional herbs such as Tree Peony Bark (Dan Pi) and Gardenia (Zhi Zi) can be incorporated to enhance the effects of clearing heat, draining fire, nourishing blood, and enriching “Yin”. Modern pharmacological studies have shown that Xiaoyao San regulates central nervous system function, exerting sedative and antidepressant effects, suggesting its potential to improve liver “Qi” stagnation by regulating emotions^[21]. Other studies indicate that Xiaoyao San regulates endocrine function, potentially influencing the development and progression of endometrial polyps. Research by Zhou Hui et al. demonstrated that Xiaoyao San improves ovulatory dysfunction and increases clinical pregnancy rates, suggesting its benefits for patients with endometrial polyps complicated by infertility^[22]. Xiaoyao San is a commonly used formula for treating liver “Qi” stagnation syndrome in endometrial polyps, offering multiple effects such as soothing the liver, relieving depression, harmonizing “Qi” and blood, and regulating endocrine function, with significant clinical efficacy^[23].

4.2. Promoting blood circulation to remove blood stasis, tonifying the liver and kidneys

For patients with endometrial polyps, if their menstrual blood appears dark in color with clots during menstruation, accompanied by stabbing pain in the lower abdomen that is aggravated by pressure or fixed in location, a purple-dark tongue with petechiae, and a rough pulse, they can be diagnosed with the “blood stagnation” syndrome. Prolonged endometrial polyps that do not heal can lead to “Qi” stagnation and blood stasis, often accompanied by liver “Qi” stagnation and kidney

deficiency syndromes. Clinically, the combination of liver “Qi” stagnation, kidney “Qi” deficiency, and blood stasis is commonly observed. Treatment should primarily focus on promoting blood circulation to remove stasis, while also soothing the liver to relieve depression and tonifying the kidneys to regulate menstruation. Lu Su believes that the primary focus in treating this condition should be on “stopping stasis,” combining methods to tonify the kidneys and regulate menstruation with those to promote blood circulation and remove stasis, thereby regulating the menstrual cycle and dispersing stagnation^[24]. Secondly, promoting the expulsion of stagnant blood is crucial. During the early menstrual period, tonifying the kidneys and supporting “Yang”, while taking advantage of the menstrual flow, can facilitate drug-induced curettage.

Clinically, the Modified Taohong Siwu Decoction is often used, which includes ingredients such as peach kernels, safflower, red sage root, and *Ligusticum wallichii* to promote blood circulation and remove stasis, improving local uterine blood circulation, dispersing stagnant blood, reducing the blood supply to polyp tissues, inhibiting their growth, and improving blood viscosity to prevent the formation of new stasis. *Rehmannia* root, dogwood fruit, wolfberries, and dodder seeds, which tonify the liver and kidneys, can nourish the liver and kidneys, regulate the Chong and Ren channels, nourish the uterus, and restore its function. The methods of promoting blood circulation and removing stasis are often used in conjunction with tonifying the liver and kidneys. Promoting blood circulation and removing stasis can create a favorable environment for tonifying the liver and kidneys, facilitating drug absorption. Tonifying the liver and kidneys can enhance the body’s vital energy, improve the efficacy of promoting blood circulation and removing stasis, and promote the dispersion of stagnant blood, thereby achieving the therapeutic goal.

4.3. Clearing liver fire and nourishing “Yin” to regulate menstruation

For patients with endometrial polyps who experience early menstruation with heavy flow, red and thick blood, or prolonged bleeding, or infertility, accompanied by irritability, bitter taste in the mouth, dry throat, insomnia, and dream-disturbed sleep, a red tongue with a yellow coating, and a wiry and rapid pulse, they can be

diagnosed with the “fire stagnation” syndrome. Treatment involves clearing liver fire and nourishing “Yin” to regulate menstruation. Qingjing San, from “Fu Qingzhu’s Gynecology,” has the functions of clearing heat and cooling the blood, nourishing “Yin”, and regulating menstruation. It is commonly used to treat syndromes of kidney deficiency with excessive fire and “Yang” excess with blood heat. The formula consists of: 10 g of moutan bark, 15 g of *Anemarrhena rhizome*, 10 g of white peony root (stir-fried with wine), 10 g of prepared *Rehmannia* root, 6g of sweet wormwood herb, 5 g of white poria, and 3 g of phellodendron bark, taken as one dose per day, divided into two administrations. The course of treatment should be adjusted based on the patient’s symptoms and polyp size, and changes in the endometrium should be monitored during medication. Fangdanpi (*Dianthi herba*) clears heat, cools blood, promotes blood circulation to remove blood stasis, and can clear excessive heat in the blood and disperse stagnation; Digupi (*Lycii cortex*) and Qinghao (*Artemisiae annuae herba*) clear deficient heat and relieve bone-steaming fever, targeting symptoms of internal heat due to “Yin” deficiency; Huangbo (*Phellodendri chinensis cortex*) clears heat, dries dampness, purges fire, and detoxifies, enhancing the heat-clearing effect; Baishao (*Paeoniae radix alba*) nourishes blood, softens the liver, relieves spasms, and alleviates pain. When combined with Shudi (*Rehmanniae radix preparata*), it nourishes “Yin” and blood to nourish the uterus; Fuling (Poria) strengthens the spleen, leaches out dampness, calms the heart, and settles the spirit, preventing the overly bitter and cold heat-clearing herbs from injuring the spleen.

When used together, these herbs work synergistically to clear liver fire, nourish “Yin”, and regulate menstruation. Modern pharmacological studies have shown that Qingjing San possesses anti-inflammatory, sedative, and analgesic effects, potentially exerting therapeutic effects by regulating the endocrine system and improving the endometrial microenvironment. Research indicates that modified Qingjing San (with added *Ecliptae herba* and *Ligustri lucidi fructus* to nourish “Yin” and Shixiao San to resolve blood stasis) not only improves bleeding duration, abnormal menstrual flow, and cycle irregularities after endometrial polypectomy and reduces recurrence rates but also

alleviates adverse reactions caused by long-term oral contraceptive use. This demonstrates the advantages and characteristics of traditional Chinese medicine in treating this condition, making it worthy of clinical promotion and application^[25].

4.4. Strengthen the spleen, resolve turbidity, and eliminate phlegm and dampness

Patients with endometrial polyps who experience heavy menstrual bleeding, prolonged bleeding, accompanied by obesity, a preference for rich and greasy foods, chest tightness and epigastric fullness, heavy limbs, excessive white vaginal discharge, a swollen tongue with a white and greasy coating, and a wiry and slippery pulse may be diagnosed with phlegm-dampness obstruction syndrome. This syndrome is often caused by spleen dysfunction, leading to the internal generation of phlegm and dampness, which obstructs the uterine vessels. Phlegm and dampness blocking the uterus can lead to impaired “Qi” and blood circulation, obstruction of the uterine vessels, and lack of nourishment for the endometrium. Combined with phlegm and dampness accumulation, this easily results in endometrial hyperplasia and the formation of polyps.

Treatment primarily focuses on strengthening the spleen, accompanied by drying dampness and resolving phlegm. Cangfudaotan Decoction from Ye Tian Shi’s Complete Book of Gynecology can be selected and modified. In this formula, Cangzhu (*Atractylodis rhizoma*) dries dampness, strengthens the spleen, and resolves phlegm to expel pathogens, serving as the principal herb; Xiangfu (*Cyperii rhizoma*) soothes the liver, regulates “Qi”, regulates menstruation, and relieves pain, aiding the smooth flow of “Qi” to resolve phlegm and dampness, acting as the ministerial herb; Chenpi (*Citri reticulatae pericarpium*) regulates “Qi”, strengthens the spleen, dries dampness, and resolves phlegm, while Fuling (Poria) strengthens the spleen and leaches out dampness, assisting the spleen in transporting water and dampness to eliminate the source of phlegm production; Banxia (*Pinelliae rhizoma*) and Nanxing (*Arisaematis rhizoma*) dry dampness, resolve phlegm, and descend adverse “Qi” to stop vomiting, enhancing the phlegm-resolving effect; Zhiqiao (*Aurantii fructus*) promotes “Qi” circulation and widens the middle, aiding Xiangfu in regulating “Qi”

and resolving stagnation; Shengjiang (*Zingiberis rhizoma recens*) warms the stomach, disperses cold, descends adverse “Qi” to stop vomiting, and neutralizes the toxicity of Banxia and Nanxing, while Gancao (*Glycyrrhizae radix*) harmonizes all the herbs.

When all the herbs are used together, they collectively achieve the effects of drying dampness and resolving phlegm, regulating “Qi” and menstruation, thereby transforming phlegm-dampness, smoothing “Qi” circulation, and unblocking the meridians of the uterus. Modern pharmacological studies have shown that Cangfu Daotan Decoction has effects such as regulating lipid metabolism and anti-inflammation, which may help improve the phlegm-dampness constitution and inhibit the growth of endometrial polyps. When clinically applying this formula, adjustments should be made based on the specific conditions of the patient. If spleen deficiency is evident, *Codonopsis pilosula* and *Atractylodes macrocephala* can be added to invigorate the spleen and replenish “Qi”. If phlegm-dampness is severe, *Arisaema cum bile* and *Trichosanthes* fruit can be added to resolve phlegm and disperse nodules. In terms of lifestyle, the focus should be on “invigorating the spleen, eliminating dampness, resolving phlegm, and unblocking meridians,” strictly controlling the intake of rich, sweet, and cold foods, and consuming more spleen-invigorating and dampness-eliminating foods such as Chinese yam, roasted coix seed, and red adzuki beans. Engaging in brisk walking, swimming, or the “Raising One Hand to Regulate Spleen and Stomach” movement from the Ba Duan Jin exercise can promote the metabolism of phlegm-dampness through the circulation of “Qi” and blood. Avoiding prolonged exposure to damp environments, keeping the abdomen warm, maintaining a regular routine to nourish spleen “Yang”, and reducing excessive worry can achieve the goal of invigorating the spleen, resolving turbidity, and eliminating phlegm and dampness.

5. The concept of “preventive treatment of disease” runs throughout

Endometrial polyps are not a condition that can be permanently resolved with a single treatment. The traditional Chinese medicine (TCM) preventive treatment system employs a three-stage prevention and control

approach, “preventing occurrence, preventing recurrence, preventing transformation” to treat endometrial polyps, achieving better therapeutic outcomes. For those who have not yet developed the condition, soothing the liver, invigorating the spleen, and warming the kidneys should be implemented to break the foundation of the six types of stagnation.

For those who have already developed the condition, a combination of the four diagnostic methods in TCM and gynecological B-ultrasound should be used to differentiate and treat based on the size and location of the polyps, achieving a combination of disease differentiation and syndrome differentiation. During the perioperative period, prevention and treatment of postoperative blood stasis and adhesion should be carried out. During the rehabilitation period, rebuilding the balance of “Qi” and blood and cutting off the internal environment for polyp regeneration are necessary. Only by consistently implementing prevention can the cycle of “polyp recurrence-surgical recurrence” be broken, truly achieving long-term stability of the uterus.

6. Conclusion and outlook

Based on Zhu Danxi’s “six types of stagnation” theory, this article delves into the TCM syndrome and treatment patterns of endometrial polyps, suggesting that the mutual entrapment of the six types of stagnation “Qi”, blood, fire, food, phlegm, and dampness can block the Chong and Ren meridians and the uterus, leading to menstrual irregularities, infertility, and other conditions. Considering the risk of malignant transformation in endometrial polyps, early intervention is of utmost importance. Grounded in the “Six depression” theory, this study offers novel diagnostic and therapeutic approaches, as well as lifestyle guidance, for endometrial polyps classified into the following types: “Qi” stagnation, blood stasis retention, internal fire stagnation, and phlegm-food stagnation. This research emphasizes treatment based on syndrome differentiation, showcasing the strengths of individualized treatment in Traditional Chinese Medicine (TCM).

In the future, further clinical studies will be conducted to explore TCM syndrome-based treatment protocols for endometrial polyps based on the “Six

depression” theory. These protocols will encompass the composition of herbal formulas, dosage adjustments, and treatment durations. Moreover, multi-center, large-sample clinical trials will be carried out to validate their clinical

efficacy, thereby providing more effective treatment options for endometrial polyps and benefiting a greater number of patients.

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Modified Shengmai Yin Decoction for Treating Dysphagia Due to Bulbar Paralysis

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Abstract

Dysphagia due to bulbar paralysis is a challenging issue in neurology. Professor Zhou Shaohua, through studying ancient medical texts and drawing on years of clinical experience, has employed the method of nourishing “Qi”, nurturing the heart, and controlling saliva, using modified Shengmai Yin Decoction to treat dysphagia caused by bulbar paralysis with remarkable efficacy.

Keywords

Dysphagia due to bulbar paralysis
Shengmai Yin decoction
Typical medical case
Review

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1. Background

Professor Zhou Shaohua, a researcher, chief physician, and postdoctoral supervisor, is a member of the Chinese Academy of Chinese Medical Sciences Committee. He is one of the 500 renowned senior TCM experts nationwide and serves as a mentor for the academic inheritance of outstanding senior TCM experts. With extensive clinical experience in neurology, he specializes in the TCM treatment of difficult and severe cases in neurology. He has developed various new neurology drugs and widely applied them in clinical practice, earning him the Science and Technology Progress Award from the National Administration of Traditional Chinese Medicine and the Special Government Allowance from the State Council.

Dysphagia due to bulbar paralysis encompasses both true and pseudobulbar paralysis and is one of the

challenging issues in neurology. It is present in various conditions such as stroke, multisystem atrophy, motor neuron disease, cranial trauma, Parkinson’s disease, and others. Dysphagia is one of the most common complications following brain injury ^[1]. Symptoms such as drooling, coughing after swallowing, inability to swallow, abnormal coughing, swallowing pain, difficulty in articulation, as well as complications like aspiration, pulmonary infection, malnutrition, and asphyxia, severely impact patients’ quality of life and survival, and may even lead to death ^[2,3]. There have been numerous studies on dysphagia in clinical practice, but the anatomical basis in the brain responsible for dysphagia remains uncertain. It is now known that damage to the swallowing center in the medulla oblongata can result in irreversible swallowing dysfunction. Based on further understanding of brain

functional areas through functional magnetic resonance imaging, it has been discovered that swallowing movements activate not only the medulla oblongata but also the dominant cerebral hemisphere, indicating that the completion of swallowing movements requires the coordinated effort of multiple brain regions to achieve the desired effect^[4,5].

Bulbar paralysis dysphagia falls within the scope of traditional Chinese medicine conditions such as “aphonia and paralysis”, “pseudo-dysphagia”, and “laryngeal obstruction”. Mr. Zhou applied the method of nourishing “Qi”, nurturing the heart, and controlling salivation, using a modified Shengmai Decoction to treat 26 cases of bulbar paralysis dysphagia, all achieving significant results. Among these cases, there were 16 cases of true bulbar paralysis and 10 cases of pseudobulbar paralysis; 7 cases of cerebral infarction, 8 cases of amyotrophic lateral sclerosis, 6 cases of multisystem atrophy, 3 cases of traumatic brain injury, and 2 cases of Parkinson’s disease. Mr. Zhou primarily used a combination of Shengmai Decoction with Inula Flower and Roasted Loquat Leaf, with modifications based on individual cases. In Shengmai Decoction, *Ophiopogon japonicus* targets the heart, lungs, and stomach, promoting fluid production, nourishing “Qi”, and nurturing “Yin”; *Schisandra chinensis* targets the heart, lungs, and kidneys, astringing and consolidating, nourishing “Qi”, promoting fluid production, and calming the kidneys and heart; Inula Flower is salty and warm, primarily lowering “Qi”, resolving phlegm, descending “Qi”, and promoting water circulation; Roasted Loquat Leaf targets the lungs and stomach, clearing heat and resolving phlegm, descending stomach heat, and having antiemetic effects, resolving phlegm and reversing “Qi”^[6]. Combined with individualized medication based on syndrome differentiation, all patients experienced varying degrees of relief from symptoms such as dysphagia, choking on water and food, and excessive salivation. A typical case analysis is presented below:

2. Case 1

2.1. First consultation

Mr. Liu, male, aged 75, presented on March 19, 2013. He had suffered from cerebral infarction for 1.5 years, with brain MRI showing multiple bilateral cerebral infarctions. Post-treatment, he was left with dysphagia, choking on

water and food, indistinct speech, right-sided hemiplegia, accompanied by dry mouth, poor appetite, urinary incontinence, skin itching, and other symptoms. He had been unable to eat for the past two days and was unable to walk when he came for consultation, being wheeled in on a chair. He appeared fatigued, lethargic, irritable, with a low and unclear voice, exhibiting pathological laughter and crying. He had a gastric tube inserted through his nose, with tongue contraction, a red tongue with scanty coating and yellow and putrid root, and a thin and wiry pulse. The syndrome was differentiated as “Qi” and “Yin” deficiency, with phlegm stagnation, dampness obstruction, and internal heat.

2.1.1. Treatment

Nourishing “Qi” and “Yin”, resolving phlegm and harmonizing the stomach, and clearing dampness and heat. The modified Shengmai Decoction was used. The prescription is as followed, 10 g of raw ginseng, 12 g of *Ophiopogon japonicus*, 6 g of *Schisandra chinensis*, 10 g of roasted loquat leaf, 10 g of inulae flower (wrapped), 10 g of *Pinellia ternata*, 10 g of *Adenophora stricta*, 10 g of *Anemarrhena asphodeloides*, 10 g of *Acorus tatarinowii*, 30 g of charred three immortals, 12 g of *Scutellaria baicalensis*, 10 g of *Kochia scoparia*, 10 g of *Dictamnii cortex*, and 10 g of roasted licorice. 14 doses, to be decocted in water and taken once daily.

2.2. Second consultation on April 2, 2013

The patient was able to eat two days after taking the medication, but experienced choking cough. The gastric tube had been removed. Speech remained unchanged, with skin itching, urinary incontinence, dry mouth, coughing, and a reversed day-night rhythm. The tongue was red with a thin coating, and the pulse was wiry and thin. As the treatment was effective, the same prescription was continued with the addition of 10 g of curcuma, 0.1 g of cultivated bezoar (to be taken with water), 10 g of dried tangerine peel, 10 g of *Cnidium monnieri*, and 12 g of *Forsythia suspensa*. 14 doses, to be decocted in water and taken once daily.

2.3. Third consultation on April 16, 2013

The patient’s spirit had improved compared to before, with a louder but still indistinct voice. Difficulty

swallowing persisted, with excessive salivation and choking when drinking water or eating. Skin itching had decreased. The tongue was red with a thin, white coating, and the pulse was slow with irregularities. The diagnosis was deficiency of both the heart and kidneys, with phlegm obstructing the clear orifices.

2.3.1. Treatment

Nourish “Qi” and the heart, warm “Yang” and tonify the kidneys, and resolve phlegm and reverse “Qi”. The modified Shengmai Decoction combined with the Yougui Decoction was used. Prescription includes 10 g of raw ginseng, 12 g of *Ophiopogon japonicus*, 6 g of *Schisandra chinensis*, 10 g of inulae flower (wrapped), 10 g of roasted loquat leaf, 10 g of prepared aconite (decocted first), 30 g of *Rehmannia glutinosa* (cooked), 10 g of *Dendrobium nobile*, 10 g of *Cornus officinalis*, 6 g of cinnamon, 10 g of *Cistanche deserticola*, 10 g of *Morinda officinalis*, 30 g of *Poria cocos*, 10 g of curcuma, 10 g of *Alpinia oxyphylla*, 10 g of oyster shell, and 30 g of *Astragalus membranaceus*. 30 doses, to be decocted in water and taken once daily.

2.4. Fourth consultation on May 21, 2013

The patient’s swallowing had significantly improved, with no choking when eating food but occasional choking when drinking water. Speech was clearer and more forceful, allowing for communication. There was excessive salivation, cold legs, a dark red tongue with a thin, white coating, and an irregular pulse. The diagnosis remained the same, with slight adjustments to the prescription: *Rehmannia glutinosa* (cooked) was replaced with 30 g of *Rehmannia glutinosa* (raw), cinnamon was replaced with 10 g of cassia twig, and 0.1 g of cultivated bezoar (to be taken with water), 10 g of *Eucommia ulmoides*, and 15 g of *Achyranthes bidentata* were added. 30 doses, to be decocted in water and taken once daily.

Follow-up in September revealed significant improvement in the patient’s symptoms. The patient could eat foods like steamed buns and only occasionally choked when drinking water quickly. Speech was clearer than before, with no other discomfort. The same modified prescription was continued.

2.5. Commentary

This patient is a stroke victim who falls under the category of pseudobulbar palsy. The patient is an elderly male with a syndrome characterized by deficiency of both “Qi” and “Yin”, with phlegm-dampness transforming into heat and infiltrating the skin. Mr. Zhou prescribed Sheng Mai “Yin” (a formula to replenish “Qi” and nourish “Yin”), combined with roasted loquat leaves and inula flower to descend “Qi”, resolve phlegm, and harmonize the stomach, supplemented with herbs to clear heat and eliminate dampness.

Additionally, he included *Adenyophora* root, *Anemarrhena rhizome*, and roasted licorice to nourish the stomach “Yin” and boost stomach “Qi”. Although the formula may appear simple, it yielded remarkable effects. The patient was able to eat within two days, and after one month of treatment, the gastric tube was removed. The original formula was adjusted with the addition of herbs to invigorate the spleen and kidney, resolve phlegm, and induce resuscitation based on the patient’s symptoms. As a result, the patient’s choking cough significantly improved, he became more energetic, his speech became clearer, and his skin itching subsided. For this patient with a complex condition, all symptoms were relieved in a short period, an effect attributed to Mr. Zhou’s skill in formulating prescriptions that focused on the primary syndrome while safeguarding the overall condition, using medications that were both gentle and effective.

3. Case 2

3.1. First consultation

Patient Li, female, 25 years old, presented on March 26, 2013. The patient suffered from a car accident on September 26, 2012, resulting in contusions and lacerations of the brain and brainstem, leading to coma. After treatment, she was left with unclear speech, tongue contraction, choking when drinking water, difficulty swallowing, and could only consume semi-liquid food. She also had difficulty holding objects with her hands and experienced muscle atrophy in both hands. Upon presentation, she had a dull facial expression, was emaciated, had unclear speech, drooled, had difficulty eating and choking, trouble falling asleep, and restless sleep. Her tongue was thin and contracted, with a red tip

and yellow, scanty coating, and her pulse was wiry, thin, and rough. The syndrome was differentiated as deficiency of both “Qi” and “Yin”, with phlegm obstructing the meridians.

3.1.1. Treatment

Replenishing “Qi” and nourish “Yin”, resolve phlegm, and restore speech. The formula used was Sheng Mai Yin modified. The prescription was as follows. Raw ginseng 10 g, *Ophiopogon root* 12 g, *Schisandra* fruit 6 g, roasted loquat leaves 10 g, *Pinellia tuber* 10g, tangerine peel 10 g, poria 30 g, *Arisaema* with bile 10 g, bamboo shavings 10 g, immature bitter orange 10 g, white aconite root 6 g, sweetflag rhizome 10 g, turmeric tuber 10 g, *Gastrodia tuber* 10 g, earthworm 10 g, safflower 12 g. Seven doses, decocted in water and taken once daily.

3.2. Second consultation on April 2, 2013

After taking the above medication, the patient’s speech became clearer than before, her tongue movement became more flexible, her facial expression became slightly richer, and her drooling decreased. She felt drowsy and fell asleep slightly faster, but her sleep remained restless. Her tongue was red with a yellow coating, and her pulse was wiry and thin. The differentiation remained the same as before, and the above formula was slightly adjusted by adding 10 g of silkworm, 0.1 g of cultivated ox bile for oral administration, and 0.1 g of musk for oral administration. Twenty-one doses, decocted in water and taken once daily.

3.3. Third consultation on April 23, 2013

The choking cough improved, speech became slightly clearer, sleep quality enhanced, involuntary laughter persisted, tongue contraction reduced, the patient appeared overweight with a red tongue, thin yellow coating, and a thin, wiry pulse. The previous prescription was modified by removing *Arisaematis rhizoma* (Dan Xing) and adding 12 g of *Atractylodis macrocephalae rhizoma praeparatum* (Chao Bai Zhu). Twenty-eight doses were prescribed, to be taken as one decoction per day.

3.4. Fourth consultation on May 21, 2013

Speech became noticeably stronger and clearer, eating

returned to near normal, choking on water significantly improved, mouth ulcers developed, difficulty falling asleep at night, bowel movements occurred every two days without dry stool, red tongue with a thin yellow coating, and a thin, wiry pulse. Syndrome was differentiation as deficiency of both “Qi” and “Yin”, with phlegm transforming into heat.

3.4.1. Treatment

Replenishing “Qi” and nourishing “Yin”, clearing heat, and resolving phlegm. The formula used was Sheng Mai Yin with added herbs for nourishing “Yin” and clearing heat. The prescription was as follows. 10 g of *Ginseng radix et rhizoma rubra* (Sheng Shai Shen, decocted separately), 12 g of *Ophiopogonis radix* (Mai Dong), 6 g of *Schisandrae chinensis fructus* (Wu Wei Zi), 10 g of *Scrophulariae radix* (Xuan Shen), 10 g of *Asparagi radix* (Tian Dong), 30 g of *Salviae miltiorrhizae radix et rhizoma* (Dan Shen), 30 g of *Ziziphi spinosae semen* (Suan Zao Ren), 20 g of *Poria cum radix niuxi* (Fu Shen), 10 g of *Platycladi cacumen* (Bai Zi Ren), 30 g of *Rehmanniae radix* (Sheng Di), 12 g of *Angelicae sinensis radix* (Dang Gui), 10 g of *Acori tatarinowii rhizoma* (Chang Pu), 10 g of *Curcumae radix* (Yu Jin), 30 g of *Gypsum fibrosum* (Shi Gao), 6 g of *Coptidis rhizoma* (Huang Lian), 10 g of *Zaocys dhumnades* (Wu She Rou), 10 g of *Pheretima* (Di Long), 10 g of *Notopterygii rhizoma et radix* (Qiang Huo), 10 g of *Clematidis radix et rhizoma* (Wei Ling Xian), and 0.1 g of Cultivated *Calculus bovis* (Ti Wai Pei Zhi Niu Huang, taken separately). Twenty-one doses were prescribed, to be taken as one decoction per day.

3.5. Fifth consultation on June 18, 2013

The choking cough eased, eating returned to normal, speech was clear, sleep was normal, weakness in the left hand was noted, red tongue with a thin white coating, and a deep, thin pulse. Syndrome was differentiation as phlegm and blood stasis obstructing the meridians, with internal stirring of liver wind. Treatment focused on resolving phlegm and unblocking the meridians, calming the liver, and suppressing wind. The formula used was Jie Yu Dan combined with Tao Hong Si Wu Tang with modifications. The prescription was as follows, 10 g of *Typhonii radix* (Bai Fu Zi, decocted first), 10 g of *Bombyx batryticatus* (Jiang Can), 10 g of *Curcumae radix* (Yu

Jin), 10 g of *Gastrodiae rhizoma* (Tian Ma), 10 g of *Acori tatarinowii rhizoma* (Chang Pu), 10 g of *Notopterygii rhizoma et radix* (Qiang Huo), 10 g of *Persicae semen* (Tao Hong), 10 g of *Carthami flos* (Hong Hua), 12 g of *Angelicae sinensis radix* (Dang Gui), 10 g of *Chuanxiong rhizoma* (Chuan Xiong), 10 g of *Paeoniae radix rubra* (Chi Shao), 30 g of *Rehmanniae radix* (Sheng Di), 0.1 g of Cultivated *Calculus bovis* (Ti Wai Pei Zhi Niu Huang, taken separately), 0.1 g of Moschus (She Xiang, taken separately), 30 g of *Salviae miltiorrhizae radix et rhizoma* (Dan Shen), and 10 g of *Glycyrrhizae radix et rhizoma* (Gan Cao). Thirty doses were prescribed, to be taken as one decoction per day.

3.6. Commentary

This patient, a young female, suffered from brain and brainstem injuries due to trauma, presenting with coexisting pseudobulbar palsy and true bulbar palsy. Prolonged trauma led to phlegm obstruction and blood stasis, which over time depleted “Qi” and consumed “Yin”, resulting in a deficiency of both “Qi” and “Yin”. Combining disease differentiation with syndrome differentiation, Master Zhou prescribed Sheng Mai Yin combined with *Eriobotryae folium* (Zhi Pi Ye) to replenish “Qi” and nourish “Yin”, and reinforced the formula with Wendan Tang and Chang Pu Yu Jin Tang to enhance the ability to resolve phlegm and open the orifices, supplemented with *Carthami flos* (Hong Hua) and *Pheretima* (Di Long) to promote blood circulation and unblock the meridians. After three months of treatment, the choking cough eased, eating returned to normal, mental acuity improved, speech became clear, and sleep was peaceful and uninterrupted.

4. Case 3

4.1. First consultation

Mr. Lin, male, aged 52, first consulted on December 25, 2012. The patient had experienced weakness in both lower limbs accompanied by muscle atrophy for one year, with the left lower limb being more severely affected. He also presented with dysarthria, dysphagia, and was diagnosed with motor neuron disease at Xuanwu Hospital. He reported that his symptoms had gradually worsened since March 2012. Upon consultation, he exhibited weakness in

both lower limbs, difficulty in climbing stairs with the left lower limb, inability to lift the left foot, slurred speech, dysphagia, choking when drinking or eating, muscle twitching, occasional sweating (more pronounced on the head), normal bowel and bladder functions, atrophy and tremor of the tongue muscles, a dark red tongue with a thin yellow coating, and a deep, wiry, and thin pulse. It was differentiated as deficiency of “Qi” and blood, decline of the heart, spleen, and kidney.

4.1.1. Treatment

Nourishing “Qi” and “Yin”, warming and tonifying the spleen and kidney. Formula used was Shengmai Decoction combined with Yougui Decoction and Simiao Pills. The prescription was as follows, *Codonopsis pilosula* 12 g, *Ophiopogon japonicus* 12 g, *Schisandra chinensis* 6 g, *Prepared aconite* 10 g (decocted first), Cassia twig 10 g, *Rehmannia glutinosa* 30 g, *Cornus officinalis* 10 g, *Eucommia ulmoides* 12 g, *Cuscuta chinensis* 10 g, Deer Antler Glue 10 g (dissolved), *Angelica sinensis* 12 g, *Lycium barbarum* 10 g, *Achyranthes bidentata* 15 g, Fried *Atractylodes macrocephala* 12 g, *Poria cocos* 30 g, *Licorice* 10 g, *Atractylodes lancea* 10 g, *Phellodendron amurense* 10 g, *Dioscorea septemlobata* 10 g, *Astragalus membranaceus* (roasted) 30 g, *Paeonia lactiflora* 10 g, *Pheretima* 10 g, *Placenta hominis* 10 g. 30 doses, decocted in water and taken once daily.

4.2. Second consultation

January 29, 2013. Sweating reduced, other symptoms remained largely unchanged. The tongue was dark red with a thin white coating, and the pulse was deep and wiry. Differentiation remained the same. The same formula was continued, with the addition of *Scolopendra* 3 g. 30 doses, decocted in water and taken once daily.

4.3. Third consultation on February 26, 2013

Dysphagia and choking reduced, thighs became thinner, walking became strenuous. The tongue was red with a thin white coating, and the pulse was deep and thin. It was differentiation as deficiency of both “Qi” and “Yin”, insufficient kidney “Yang”. Treatment was conducted by nourishing “Qi” and “Yin”, warming “Yang” and tonifying the kidney, strengthening tendons and bones. Formula includes Shengmai Decoction combined

with Jianbu Huqian Pills and Simiao Powder, with modifications. Prescription: Ginseng 10 g, *Ophiopogon japonicus* 12 g, *Schisandra chinensis* 6 g, *Eucommia ulmoides* 12 g, *Cynomorium songaricum* 10 g, *Cistanche deserticola* 10 g, *Dioscorea septemlobata* 10 g, *Atractylodes lancea* 10 g, *Phellodendron amurense* 6 g, *Coix lacryma-jobi* 15 g, *Achyranthes bidentata* 10 g, *Astragalus membranaceus* 30 g, *Polygonatum sibiricum* 30 g, *Cornus officinalis* 10 g, *Morinda officinalis* 12 g, *Gastrodia elata* 10 g, *Pheretima* 10 g, Donkey-Hide Gelatin 10 g (dissolved), Deer Antler Glue 10 g (dissolved), Licorice 10g. 30 doses, decocted in water and taken once daily.

4.4. Four consultation on March 26, 2013

The patient experienced relief from dysphagia, without coughing during eating, occasional difficulty in speaking, no shortness of breath, weakness in both lower limbs, a thinner left leg, muscle twitching, a cold sensation in the left leg, tongue muscle atrophy with fasciculations, a red tongue with a yellow and greasy coating, and a wiry pulse. Syndrome was differentiation as blood deficiency with wind agitation, spleen deficiency with phlegm accumulation, and insufficient kidney “Yang”.

4.4.1. Treatment

Nourish blood and calm wind, strengthen the spleen and resolve phlegm, warm “Yang” and nourish the kidney. Formula used was Modified Jianbu Huqian Wan combined with Simiao San and Jieyu Dan. Prescription was as follow. *Atractylodes* 12 g, *Atractylodes macrocephala* 12 g, *Phellodendron* 10 g, Coix seed 15 g, *Achyranthes bidentata* 10 g, Chinese yam 15 g, *Angelica sinensis* 15 g, White peony root 20 g, *Gastrodia elata* 10 g, Earthworm 10 g, *Cynomorium songaricum* 10 g, *Cistanche deserticola* 10 g, *Eucommia ulmoides* 12 g, *Rhizoma typhonii* 10 g, *Bombyx batryticatus* 10 g, *Acorus gramineus* 10 g, *Curcuma longa* 10 g, *Dioscorea septemloba* 10 g. 30 doses, decocted in water and taken once daily.

4.5. Commentary

This patient is a middle-aged male diagnosed with motor neuron disease, specifically true bulbar palsy. In traditional Chinese medicine, it falls under the category

of “aphonia and paralysis”, presenting with symptoms such as dysphagia, coughing during eating, tongue muscle atrophy, fasciculations, and weakness in the left foot, accompanied by fatigue, perspiration on the head. The syndrome differentiation is deficiency of “Qi” and blood, with decline in the heart, liver, spleen, and kidney. The treatment aims to tonify “Qi”, strengthen the spleen, generate fluids, warm and tonify the spleen and kidney, and strengthen tendons and bones. The formula combines Shengmai Yin with Yougui Wan and Simiao San, with the addition of animal-derived ingredients like placenta (Ziheche) to enhance the warming effect on the muscles. After three months of adjusted treatment, the “Yang” “Qi” was restored, “Qi” and blood became abundant, dysphagia and coughing during eating were alleviated, and the mental state also improved.

5. Discussion

Dysphagia falls under categories such as “laryngeal obstruction”, “esophageal stricture”, “aphonia and paralysis”, and “tongue stiffness”. “Lingshu · Chapter 69 on Melancholy and Speechlessness” states, “The throat is the pathway for water and grain; the larynx is where “Qi” ascends and descends; the epiglottis is the gateway for sound... the uvula is the barrier for sound; the nasopharynx is where “Qi” is dispersed; the hyoid bone is controlled by the spirit and governs tongue movement”. This is the earliest record elaborating on the structure and function of the tongue and pharynx. Yu Chang, in “Medical Door Laws”, emphasized, “Humans are formed by “Qi”; it is only through “Qi” that form is created. When “Qi” gathers, form exists; when “Qi” disperses, form perishes. The relationship between “Qi” and form was indeed significant”, highlighting the crucial role of “Qi” in maintaining bodily functions. As stated, all five internal organs are rooted in the heart and connected to the tongue through the meridians, with the “Yin” and “Yang” “Qi” of the hands and feet also connecting to the tongue. As Fu Naihan of the Qing Dynasty discussed in the preface to “Tongue Coating Compendium”: The tongue cover serves as the general messenger for all the five internal organs and six visceral organs. For instance, the heart’s orifice opens to the tongue; the stomach and pharynx connect to the tongue above; the spleen’s

meridian runs along the base of the tongue; the heart's meridian is attached to the root of the tongue; the spleen's collateral vessels are linked to the sides of the tongue; and the collateral vessels of the kidney and liver also ascend to connect with the base of the tongue. "Ling Shu" states: The tongue is the organ of the heart. Therefore, those with heart disease exhibit symptoms such as a curled and shortened tongue and a flushed complexion. When the heart "Qi" is harmonious, the tongue can discern tastes. When a person bites their own tongue, it is due to the upward flow of stagnant "Qi", with the meridian "Qi" reaching the tongue. When the "Qi" of the Shaoyin meridian reaches, it leads to tongue biting. "Su Wen" states: When the heart's pulse is forceful, firm, and long, it indicates a disease characterized by a curled tongue and inability to speak. Qiao Yue states: When the heart's vitality is exhausted, the tongue cannot retract and speech becomes impossible. When the tongue frequently becomes numb without apparent cause, it should not be hastily treated as wind pathology. Instead, it is due to a deficiency of heart blood, explaining the mechanism of dysphagia as stemming from a stiff tongue that cannot push and transport food. From the perspective of root deficiency and branch excess, Teacher Zhou summarized the views of historical medical experts, believing that the "root deficiency" in dysphagia is caused by a deficiency of "Qi" and blood, insufficient containment of "Qi", and impaired transportation and transformation, primarily centered on the heart and involving the liver, spleen, and kidneys. The "branch excess" refers to pathological products such as wind, fire, phlegm, and blood stasis. Therefore, we can conclude that "Qi" deficiency leading to loss of containment, counterflow of "Qi" and blood, intermingling of phlegm and blood stasis, ascending to the base of the tongue, obstructing the tongue's orifices, and impairing the function of the throat and tongue result in dysphagia ^[7,8].

Shengmai Drink, also known as Shengmai Powder, originates from Li Dongyuan's "Differentiation and Treatment of Internal and External Injuries". It consists of 1.5 g each of ginseng and *Ophiopogon japonicus*, along with seven *Schisandra* berries. This formula is used to treat summer heatstroke and depletion of "Qi" and body fluids, presenting symptoms such as sweating, restlessness and thirst, shortness of breath, fatigue, and a weak pulse.

It is also indicated for the late stage of warm febrile diseases, where both "Qi" and body fluids are depleted, presenting symptoms such as shortness of breath, limb weakness, sweating, thirst, a pale or red tongue, and a thin and weak pulse. Additionally, it is used for chronic cough due to lung deficiency, presenting symptoms such as dry cough without phlegm, shortness of breath, excessive sweating, dry mouth and throat, and a thin and rapid pulse. This formula is a commonly used and effective prescription in clinical practice, widely applied in modern times for conditions such as coronary heart disease, low blood pressure, iron-deficiency anemia, tachycardia, bradycardia, sick sinus syndrome, atrioventricular block, and others, all yielding satisfactory results. There are also reports of its application in dementia and constipation, but its use in treating dysphagia due to bulbar paralysis has not been reported. In recent years, Teacher Zhou has achieved significant therapeutic effects in treating dysphagia due to bulbar paralysis using this method, often combining Shengmai Drink with descending and stomach-harmonizing herbs such as roasted loquat leaves, as discussed in "Zhou Shaohua's Insights on Neurological Prescriptions". The common pathogenesis of this condition is "Qi" deficiency leading to the failure of water and dampness to transform into phlegm, which obscures the clear orifices. Therefore, this formula is applied. "Ben Jing" once recorded the properties of ginseng:

"Ginseng: It nourishes and tonifies the five visceral organs, calms the spirit, alleviates palpitations and fright, dispels pathogenic factors, improves eyesight, and enhances mental clarity and intelligence". *Ophiopogon japonicus*: "It primarily addresses "Qi" stagnation in the heart and abdomen, injuries to the middle jiao and overeating, as well as the obstruction of the stomach's collateral vessels, addressing emaciation and shortness of breath". *Schisandra chinensis*: "It primarily boosts "Qi", addresses cough and reverse "Qi" flow, treats fatigue-induced emaciation, supplements deficiencies, strengthens "Yin", and enhances male reproductive essence".

Together, these three herbs, one tonifying, one clearing, and one astringing work in harmony to tonify "Qi", strengthen the spleen, resolve dampness, and generate fluids. The brilliance of Professor Zhou's prescriptions lie in their flexible and adaptive application, integrating symptom analysis with disease diagnosis,

seeking the root cause through careful examination of symptoms, and tailoring treatments based on syndrome differentiation. Moreover, he comprehensively treats each patient by combining methods such as resolving phlegm, tonifying the kidneys, dispelling blood stasis, calming wind, and strengthening the spleen, fully

embodying the academic philosophy of combining syndrome differentiation with disease diagnosis and adopting a holistic approach. This ensures that complex and challenging conditions in each patient are effectively addressed with prompt results.

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Integrated Acupuncture for Intestinal Obstruction in Pregnancy: A Case Analysis

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Abstract

The incidence of intestinal obstruction during pregnancy is low, but it poses a serious threat to the life safety of both the mother and the fetus. The gastrointestinal tract serves as the initiator and trigger of systemic inflammatory responses. After intestinal obstruction occurs, the absorption and digestive functions of the gastrointestinal tract are impaired, which can easily lead to damage to the intestinal mucosal barrier and subsequently cause a series of physiological and pathological changes. Therefore, timely diagnosis and treatment are necessary. Before 28 weeks of gestation, efforts should be made to resolve the intestinal obstruction while maintaining the pregnancy. Between 28 and 32 weeks of gestation, a decision on whether to terminate the pregnancy should be made based on the condition of the pregnant woman and the degree of fetal development. After 32 weeks of gestation, emergency cesarean section must be performed simultaneously with surgical intervention. This article aims to improve the overall clinical efficacy of acupuncture treatment and reduce the financial burden on patients through the application of "Integrated Acupuncture" and a stepwise clinical treatment model.

Keywords

Pregnancy; Intestinal obstruction; Integrated acupuncture

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1. Case report

1.1. Clinical data

(1) Patient

Ms. Huang, 38 years old.

(2) Chief complaint

35 weeks of amenorrhea, abdominal distension and pain accompanied by nausea and vomiting for 2 days.

(3) Present medical history

The patient established a prenatal care card during early pregnancy and underwent regular prenatal check-ups. Currently at 35 weeks of gestation, she experienced severe upper abdominal colic without obvious cause on the night of February 18th. During her hospitalization at a local hospital, she received symptomatic treatment with 654-2, phloroglucinol, omeprazole, metoclopramide and more. She also received treatment to promote fetal

lung maturity and magnesium sulfate for fetal brain nerve protection. Additionally, she was treated with glycerin enema and saline to promote defecation, acupuncture, and enema to promote gastrointestinal functional recovery. However, she still experienced significant abdominal distension and lacked spontaneous flatulence. She was transferred to our hospital for further diagnosis and treatment and was admitted to the outpatient department with a diagnosis of “late pregnancy”. To assist in the recovery of the patient’s gastrointestinal function, the Department of Traditional Chinese Medicine was consulted for assistance in diagnosis and treatment.

(4) Traditional Chinese medicine diagnosis

Intestinal abscess (spleen and kidney deficiency type).

(5) Treatment course

Integrated acupuncture therapy.

(6) First acupuncture

Baihui, Yintang, Neiguan (bilateral), and Yanglingquan (bilateral).

(7) Second moxibustion

Sihua points (Geslu and Danshu).

(8) Third consolidation

Intradermal needling at points for guiding “Qi” back to its origin (Xiawan, Zhongwan, qihai, and Guanyuan), (Pishu and Shenshu), and auricular point pressing with beans (Shenmen, Stomach, and Intestine).

1.1.2. Operational approach

First, have the patient lie on their side/sit up. Perform routine acupuncture at the Baihui and Yintang points. After acupuncture, instruct the patient to take six deep breaths through the nasal passages, rest for 1 minute, and then take another six deep breaths until the needles are removed. Perform routine acupuncture at Neiguan and Yanglingquan, using even reinforcing-reducing technique, and retain the needles for 25 minutes after achieving “Qi” arrival. Instruct the patient to choose a lateral recumbent position. Perform routine acupuncture at Baihui, Yintang, Neiguan, and Yanglingquan using the even reinforcing-reducing technique. Retain the needles for 25 minutes before removal.

Have the patient lie on their side/sit up. Apply a small amount of Wanhua oil to the Sihua points on the back, then place moxa cones (the size of a grain of wheat) on

the points. Light them with an incense stick. When about two-thirds of the moxa has burned and the patient feels warmth, remove the remaining moxa wool with forceps. Perform moxibustion with five cones at each point. After moxibustion, embed intradermal needles at the following points: Zhongwan, Guanyuan, qihai, Xiawan, Pishu, and Shenshu.

First, routinely disinfect the skin at the target points. Place the left thumb and index finger on either side of the point, and stretch the skin tightly. Hold the intradermal needle (wheat grain type) with forceps in the right hand, align the needle tip with the point, and puncture horizontally into the dermis layer of the point. Then, place a small piece of adhesive tape between the needle handle and the corresponding skin, and cover the needle handle with a larger piece of adhesive tape to prevent the needle from falling out or moving.

Select one ear, routinely disinfect it, and apply an auricular point sticker with cowherb seeds to the painful areas of the Shenmen, Stomach, and Intestine reflex zones. Massage the points 3–5 times a day, for about 1 minute each time, and remove the stickers after 3 days.

1.1.3. Results

During the treatment, the patient’s bowel sounds became active, increasing to 3–6 times per minute. The patient resumed spontaneous flatus three times during treatment and had smooth spontaneous defecation immediately after treatment. On the same day, the gastric tube was removed. The outcome was satisfactory.

2. Summary

Clinically, intestinal obstruction refers to a disease syndrome in which intestinal contents cannot move normally due to any cause. The incidence of intestinal obstruction during pregnancy is not high. According to literature reviews, it is reported that 6% of intestinal obstructions during pregnancy occur in the first trimester, 28% in the second trimester, 45% in the third trimester, and 31% during the postpartum period^[1–3]. The occurrence of intestinal obstruction during pregnancy is associated with factors such as intussusception and intestinal adhesion. Clinical manifestations often include vomiting, inability to pass intestinal contents,

abdominal pain, and in severe cases, can lead to intestinal strangulation and perforation^[1]. The treatment principles are the same as those for non-pregnant patients. For adhesive and incomplete intestinal obstruction, non-surgical treatment is preferred. Fasting and gastrointestinal decompression are the primary measures, along with volume resuscitation, restoration of electrolyte balance, and nutritional support. Total parenteral nutrition can be administered when necessary^[4]. Conservative treatment can reduce the risk of premature labor caused by uterine contractions induced by surgery. The main method of conservative treatment is gastrointestinal decompression, which involves inserting a catheter to continuously apply negative pressure suction, thereby expelling accumulated intestinal gas and pathological products from the body.

2.1. Traditional Chinese medicine perspective on this disease

This disease is equivalent to pregnancy-related disorders in traditional medicine. Based on symptoms such as abdominal distension, abdominal pain, and constipation, it falls into the categories of “distension and fullness”, “obstruction of the upper and lower jiao”, and “intestinal abscess”. The dysfunction of “Qi” movement in the spleen and stomach leads to a disrupted balance between ascending and descending “Qi”, resulting in “Qi” stagnation in the middle. The obstruction of ascending clear “Qi” causes abdominal distension and pain, while the imbalance in descending turbid “Qi” leads to intestinal obstruction.

When stomach “Qi” ascends instead of descends and refluxes to the mouth, it can cause nausea, vomiting, and poor appetite. The “Suwen • Gukonglun” records: “When the Ren Meridian is affected, men may develop seven types of hernias internally, while women may experience leukorrhea and abnormal mass accumulation. When the Chong Meridian is affected, there is rebellious “Qi” and internal urgency”. The Ren, Du, and Chong Meridians originate from a single source but branch into three pathways. When all three meridians are deficient, blood stasis occurs outside their normal pathways, obstructing the “zang-fu” organs and meridians, leading to various symptoms. This subsequently triggers abdominal pain, distension, and difficulty in defecation. Therefore, clinical treatment focuses on nourishing the kidney and

unblocking the Du Meridian. The disease is located in the uterus and is closely related to the liver, spleen, and kidneys, with a pattern of deficiency in the root and excess in the manifestation. The treatment principle involves nourishing the kidney and spleen, promoting bowel movement and “Qi” circulation, and stabilizing the fetus.

2.2. Harmonizing the mind and spirit as the main approach, with regulating the mind and spirit as the core

The diversity of economic and cultural factors and the complexity of lifestyles in modern society determine the multiplicity of pathogenic factors. Emotional disturbances can cause imbalances in “Yin” and “Yang”, leading to psychosomatic diseases.

2.3. One needle, two moxibustions, three consolidations: Integrating acupuncture and moxibustion therapies for guaranteed efficacy

As recorded in the “Ling Shu • Da Huo Lun”, “The heart is the abode of the spirit”. The heart houses the spirit and serves as the sovereign organ, from which consciousness emanates. In the “Five Viscera Penetration Theory”, it is recorded that “the heart is connected to the gallbladder”. Precision moxibustion therapy combines concentrated heat, rapid heat penetration, short treatment time, and strong stimulation. One moxibustion session can achieve the same effect as three sessions of ordinary grain-sized moxibustion, offering precision and efficacy, hence its name. It has a stable regulatory effect on the nervous and metabolic systems. The “Huangdi Nei Jing” emphasizes that “what acupuncture cannot achieve, moxibustion can”, fully illustrating the important role of moxibustion in clinical applications.

The “Four Flower Points” refer to the combination of Geshu (BL17) and Danshu (BL19) points. The former, governing “Qi” and belonging to “Yang”, nourishes and activates blood, while the latter, governing blood and belonging to “Yin”, regulates and harmonizes liver “Qi”. Together, they balance “Yin” and “Yang”, “Qi” and blood, and mutually regulate each other. Superficial needling with intradermal needles (press needles) can stimulate and mobilize the defensive “Yang” “Qi” located on the body’s surface, resisting pathogens and protecting the body,

thereby treating diseases. It has the effects of superficial needling to promote defensive “Qi” and unblock the minute collaterals, as well as prolonged needle retention to nourish defensive “Yang”.

As recorded in the “Ling Shu • Kou Wen Chapter”, “The ears are the gathering place of the zong mai (meridians)”, which are closely connected to the viscera and meridians. Through prolonged stimulation of ear points, the endocrine regulatory role of the brain-heart axis can be fully utilized, achieving the therapeutic effect of treating the root cause of the disease and consolidating the therapeutic outcome.

3. Outlook

Although the clinical incidence of this disease is relatively low, timely diagnosis and treatment significantly contribute to safeguarding the life and health

of pregnant women and their fetuses. The effectiveness of conservative treatment with Traditional Chinese Medicine (TCM) presents both risks and challenges for guiding the diagnosis and treatment of acute abdominal conditions during pregnancy in the future. Professor Fu Wenbin believes that clinical diseases are characterized by their complexity, severity, and difficulty in diagnosis and treatment. Often, a single acupuncture treatment is insufficient to achieve the desired therapeutic effect. However, adopting the TCM-featured integrated treatment model of “one needle, two moxibustions, and three consolidations” can lead to more significant clinical outcomes^[5]. Therefore, integrated acupuncture therapy offers advantages such as minimal pain, high comfort levels, low costs, high patient satisfaction, short treatment durations, and rapid clinical effectiveness. It is expected to provide preliminary data and support for future TCM and Western medicine diagnostic and treatment plans.

Disclosure statement

The authors declare no conflict of interest.

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Study on the Relationship between Distribution of Traditional Chinese Medicine Syndromes and Pathological Changes in Chronic Atrophic Gastritis

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Abstract

Objective: This study aims to investigate the distribution of traditional Chinese medicine (TCM) syndrome types in chronic atrophic gastritis (CAG) and explore the correlation between TCM syndrome types and pathological changes, providing an objective basis for clinical syndrome differentiation and treatment. **Methods:** A retrospective study was conducted, involving the summary and analysis of medical records from 201 CAG patients who met the inclusion criteria. TCM syndrome differentiation was performed, followed by logistic regression analysis of the relationship between TCM syndrome types and pathological changes in the patients' gastric mucosa. **Results:** The distribution of TCM syndrome types among the 201 patients, from highest to lowest, was liver-stomach heat stagnation syndrome, liver-stomach "Qi" stagnation syndrome, spleen-stomach damp-heat syndrome, spleen-stomach weakness syndrome, stomach collaterals stasis syndrome, and stomach "Yin" deficiency syndrome. There was a statistically significant difference in the distribution of intestinal metaplasia among different TCM syndrome types. Compared to the liver-stomach "Qi" stagnation syndrome, the liver-stomach heat stagnation syndrome showed a significant increase in mild intestinal metaplasia ($p < 0.05$). No statistically significant differences were observed in the distribution of inflammation, activity, glandular atrophy, and dysplasia among different TCM syndrome types. In the correlation analysis between syndrome types and pathological changes, the liver-stomach "Qi" stagnation syndrome was negatively correlated with intestinal metaplasia, while the spleen-stomach damp-heat syndrome was positively correlated with glandular atrophy. The remaining syndrome types showed no correlation with pathological changes. **Conclusion:** A certain correlation is observed between TCM syndrome types of CAG and pathological changes of gastric mucosa.

Keywords

Chronic atrophic gastritis
Traditional Chinese medicine syndrome types
Pathological changes

1. Introduction

Chronic atrophic gastritis (CAG) is a chronic gastric disease characterized by atrophy of the intrinsic glandular tissue, with or without intestinal metaplasia and dysplasia. Its clinical manifestations are often atypical, with common symptoms including discomfort, fullness, dull pain, and burning pain in the upper and middle abdomen, as well as dyspeptic symptoms such as loss of appetite, belching, acid regurgitation, and nausea. Traditional Chinese medicine classifies it under conditions such as “stomach ache”, “indigestion with rumbling stomach”, “acid regurgitation”, and “distention and fullness”.

Chronic atrophic gastritis is closely associated with the development of gastric cancer. Traditional Chinese medicine offers unique advantages in the diagnosis and treatment of CAG, effectively improving clinical symptoms, slowing disease progression, and reducing the risk of carcinogenesis. Previous domestic studies have shown a certain correlation between pathological changes in the gastric mucosa of CAG and TCM syndrome types, but a unified consensus has not been reached among the research findings^[1,2]. This study employs a retrospective research method to explore the correlation between the distribution of TCM syndrome types and pathological changes in CAG, providing an important reference for the clinical diagnosis and treatment of this disease.

2. Materials and methods

2.1. Case sources

The clinical and pathological data from 201 cases (confirmed as chronic atrophic gastritis through endoscopic biopsy with complete case data) was collected in this study, at Suining Hospital of Traditional Chinese Medicine from July 2023 to December 2024, including 104 males and 97 females, aged 19–90 years (average age 61.1 years).

2.2. Diagnostic criteria

2.2.1. Western medicine diagnostic criteria

The clinical and pathological diagnostic criteria for chronic atrophic gastritis refer to the “Consensus on Chronic Gastritis in China (2017, Shanghai)”^[3].

2.2.2. Traditional Chinese medicine syndrome differentiation criteria

The diagnostic criteria and syndrome type judgment for traditional Chinese medicine refer to the “Consensus on Integrated Traditional Chinese and Western Medicine Diagnosis and Treatment of Chronic Atrophic Gastritis (2017)”^[4]. There are six main syndrome types of Chronic Atrophic Gastritis (CAG), including liver-stomach “Qi” stagnation syndrome, liver-stomach stagnant heat syndrome, spleen-stomach weakness syndrome (spleen-stomach deficiency-cold syndrome), spleen-stomach damp-heat syndrome, stomach “Yin” deficiency syndrome, and stomach collateral stasis syndrome.

2.3. Inclusion and exclusion criteria

2.3.1. Inclusion criteria

- (1) Meet the Western medical diagnostic criteria for CAG and the diagnostic criteria for TCM syndrome differentiation
- (2) Agree to undergo endoscopic pathological biopsy.

2.3.2. Exclusion criteria

- (1) Acute gastritis with symptoms such as vomiting, hematemesis, abdominal pain, or diarrhea
- (2) Presence of tumors such as gastric or duodenal ulcers, gastric cancer, or esophageal cancer
- (3) Long-term use of hormones, non-steroidal anti-inflammatory and analgesic drugs, anti-rheumatic drugs, anti-tumor drugs, or undergoing chemotherapy
- (4) Pregnant or lactating women
- (5) Concomitant conditions such as heart failure, cirrhosis with portal hypertension, diabetes, uremia, or severe hepatitis.

2.4. Research methodology

A retrospective research approach was employed, involving the retrieval of medical records that met the diagnostic criteria for CAG. Patient information, including basic demographics, clinical symptoms, tongue and pulse conditions, as well as endoscopic and pathological data, was collected. Two associate senior physicians or higher determined the TCM syndrome types based on TCM syndrome differentiation criteria.

2.5. Statistical analysis

Statistical analysis was performed using SPSS 22.0 software. Continuous variable data were expressed as mean $\pm$ standard deviation ($\bar{x} \pm s$).

Basic statistical descriptions of qualitative data utilized frequency tables, percentages, or composition ratios.

Non-normally distributed data were described using maximum values, minimum values, and medians. Categorical variables in univariate analysis were tested using the χ^2 test. The correlation between gastric mucosal pathological changes and TCM syndrome types was analyzed using logistic regression. Hypothesis testing employed one-sided tests, with $\alpha = 0.05$ set as the significance level.

3. Results

3.1. The distribution of TCM syndrome types in CAG

The frequency of distribution of various TCM syndrome types in CAG, from highest to lowest, is as follows: liver-stomach stagnation-heat syndrome at 36.82% (74/201) > liver-stomach “Qi” stagnation syndrome at 23.38% (47/201) > spleen-stomach damp-heat syndrome at 16.42% (33/201) = spleen-stomach deficiency syndrome at 16.42% (33/201) > stomach meridian stasis syndrome at 4.97% (10/201) > stomach “Yin” deficiency syndrome at 1.99% (4/201) (refer **Table 1**).

Table 1. Distribution of TCM syndrome types in patients with chronic atrophic gastritis

TCM Syndrome Type	Cases (n)	Percentage (%)
Liver-stomach “Qi” stagnation	47	23.38%
Spleen-stomach damp-heat	33	16.42%
Liver-stomach stagnant heat	74	36.82%
Spleen-stomach deficiency	33	16.42%
Stomach collateral blood stasis	10	4.97%
Stomach “Yin” deficiency	4	1.99%

3.2. Distribution of different syndrome types in gastric mucosal inflammation, activity, glandular atrophy, intestinal metaplasia, and dysplasia

3.2.1. Distribution of different syndrome types in gastric mucosal inflammation and activity

There is no statistically significant difference in the distribution of inflammation and activity among different syndrome types, as shown in **Table 2**.

3.2.2. Distribution of different syndrome types in gastric mucosal glandular atrophy, intestinal metaplasia, and dysplasia

There is no statistically significant difference in the distribution of glandular atrophy and dysplasia among different syndrome types. However, there is a statistically significant difference in the distribution of intestinal metaplasia among different syndrome types ($p = 0.032$), as shown in **Table 3**. Using pairwise Fisher’s exact test,

Table 2. Distribution of different syndrome types in gastric mucosal inflammation and activity

TCM Syndrome Type	n	Inflammation		Activity		
		Mild	Moderate-Severe	None	Mild	Moderate-Severe
Liver-stomach “Qi” stagnation	47	28	19	30	15	2
Liver-stomach stagnant heat	74	43	31	38	31	5
Spleen-stomach damp-heat	33	22	11	20	12	1
Spleen-stomach deficiency	33	17	16	19	10	4
Stomach collateral blood stasis	10	6	4	6	2	2
Stomach “Yin” deficiency	4	2	2	1	3	0
χ^2 -value			1.72			8.39
p -value			0.886			0.591

compared to the liver-stomach “Qi” stagnation syndrome, the liver-stomach stagnation-heat syndrome showed a significant increase in mild intestinal metaplasia ($p = 0.033$).

3.3. Correlation between TCM syndrome types and pathological changes

3.3.1. Correlation analysis between liver-stomach “Qi” stagnation syndrome and pathological changes

Logistic regression analysis was conducted with “liver-stomach “Qi” stagnation syndrome” as the dependent variable and activity, Hp, inflammation, glandular atrophy, intestinal metaplasia, and dysplasia as independent variables. The results indicate a negative correlation between liver-stomach “Qi” stagnation syndrome and intestinal metaplasia (OR = 0.094, $p = 0.001$), as shown in **Table 4**.

3.3.2. Correlation analysis between liver-stomach damp-heat syndrome and pathological changes

Using “liver-stomach damp-heat syndrome” as the dependent variable and activity, Hp, inflammation, glandular atrophy, intestinal metaplasia, and dysplasia as independent variables, a logistic regression analysis was conducted. The results indicated no correlation between liver-stomach damp-heat syndrome and pathological changes, as shown in **Table 5**.

3.3.3. Correlation analysis between spleen-stomach damp-heat syndrome and pathological changes

Using “spleen-stomach damp-heat syndrome” as the dependent variable and activity, Hp, inflammation, glandular atrophy, intestinal metaplasia, and dysplasia as independent variables, a logistic regression analysis was conducted. The results indicated a positive correlation between spleen-stomach damp-heat syndrome and

Table 3. Distribution of different syndrome types in gastric mucosal glandular atrophy, intestinal metaplasia, and dysplasia

TCM syndrome type	n	Glandular atrophy			Intestinal metaplasia			Dysplasia	
		Mild	Moderate-severe	None	Mild	Moderate-severe	None	Low-grade	High-grade
Liver-Stomach “Qi” Stagnation	47	36	11	7	29	11	46	1	0
Liver-Stomach Stagnant Heat	74	62	12	1	61	12	72	0	2
Spleen-Stomach Damp-Heat	33	20	13	1	22	10	32	1	0
Spleen-Stomach Deficiency	33	24	9	2	22	9	30	2	1
Stomach Collateral Blood Stasis	10	9	1	0	9	1	9	1	0
Stomach Yin Deficiency	4	2	2	0	2	2	4	0	0
χ^2 -value			13.31			19.7		8.78	
p -value			0.207			0.032*		0.553	

Table 4. Correlation analysis between liver-stomach “Qi” stagnation syndrome and pathological changes

Pathological indicator	B	SE	Wald χ^2	df	p	OR	95% CI
(Intercept)	1.303	0.742	3.081	1	0.079	3.680	(0.859, 15.770)
Activity	-0.030	0.376	0.007	1	0.936	0.970	(0.464, 2.028)
Inflammation	-0.064	0.340	0.035	1	0.851	0.938	(0.482, 1.828)
Hp	-0.822	0.419	3.854	1	0.050	0.440	(0.193, 0.999)
Intestinal metaplasia	-2.368	0.740	10.247	1	0.001	0.094	(0.022, 0.399)
Glandular atrophy	-0.012	0.395	0.001	1	0.976	0.988	(0.456, 2.142)
Dysplasia	-0.796	1.085	0.539	1	0.463	0.451	(0.054, 3.781)

Table 5. Correlation analysis between liver-stomach damp-heat syndrome and pathological changes

Pathological indicator	B	SE	Wald χ^2	df	p	OR	95% CI
(Intercept)	-2.185	1.068	4.187	1	0.041	0.113	(0.014, 0.912)
Activity	0.498	0.318	2.454	1	0.117	1.645	(0.883, 3.065)
Inflammation	0.043	0.301	0.020	1	0.887	1.044	(0.579, 1.882)
Hp	-0.347	0.330	1.103	1	0.294	0.707	(0.370, 1.351)
Intestinal metaplasia	1.609	1.068	2.270	1	0.132	4.998	(0.616, 40.540)
Glandular atrophy	-0.693	0.374	3.439	1	0.064	0.500	(0.240, 1.040)
Dysplasia	-0.650	0.836	0.604	1	0.437	0.522	(0.101, 2.688)

Table 6. Correlation analysis between spleen-stomach damp-heat syndrome and pathological changes

Pathological indicator	B	SE	Wald χ^2	df	p	OR	95% CI
(Intercept)	-0.545	0.223	5.954	1	0.015	0.580	(0.374, 0.898)
Activity	0.470	0.320	2.155	1	0.142	1.599	(0.854, 2.994)
Inflammation	-0.446	0.407	1.200	1	0.273	0.640	(0.288, 1.422)
Hp	-0.223	0.338	0.435	1	0.510	0.800	(0.412, 1.552)
Intestinal metaplasia	-0.599	0.379	2.502	1	0.114	0.549	(0.261, 1.154)
Glandular atrophy	0.918	0.407	5.085	1	0.024	2.503	(1.128, 5.558)
Dysplasia	-0.249	1.093	0.052	1	0.820	0.780	(0.091, 6.646)

Table 7. Correlation analysis between spleen-stomach deficiency syndrome and pathological changes

Pathological indicator	B	SE	Wald χ^2	df	p	OR	95% CI
(Intercept)	-2.122	1.072	3.916	1	0.048	0.120	(0.015, 0.980)
Activity	0.053	0.408	0.017	1	0.896	1.055	(0.474, 2.347)
Inflammation	0.391	0.388	1.015	1	0.314	1.479	(0.691, 3.165)
Hp	-0.187	0.426	0.193	1	0.661	0.829	(0.360, 1.911)
Intestinal metaplasia	0.561	1.076	0.272	1	0.602	1.753	(0.213, 14.446)
Glandular atrophy	0.273	0.438	0.388	1	0.534	1.314	(0.557, 3.101)
Dysplasia	1.291	0.769	2.820	1	0.093	3.637	(0.806, 16.412)

Table 8. Correlation analysis between stomach collateral stasis syndrome and pathological changes

Pathological indicator	B	SE	Wald χ^2	df	p	OR	95% CI
(Intercept)	-2.859	0.457	39.203	1	<0.001	0.057	(0.023, 0.140)
Activity	-0.203	0.700	0.084	1	0.772	0.816	(0.207, 3.220)
Inflammation	15.726	2061.32	0.000	1	0.994	6753252.872	(0.000, Inf)
Hp	0.240	0.701	0.117	1	0.733	1.271	(0.321, 5.022)
Intestinal metaplasia	0.026	0.672	0.002	1	0.969	1.026	(0.275, 3.828)
Glandular atrophy	-1.017	1.070	0.902	1	0.342	0.362	(0.044, 2.949)
Dysplasia	0.998	1.137	0.770	1	0.380	2.713	(0.292, 25.190)

glandular atrophy (OR = 2.503, $p = 0.024$), as shown in **Table 6**.

3.3.4. Correlation analysis between spleen-stomach deficiency syndrome and pathological changes

Using “spleen-stomach deficiency syndrome” as the dependent variable and activity, Hp, inflammation, glandular atrophy, intestinal metaplasia, and dysplasia as independent variables, a logistic regression analysis was conducted. The results indicated no correlation between spleen-stomach deficiency syndrome and pathological changes, as shown in **Table 7**.

3.3.5. Correlation analysis between stomach collateral stasis syndrome and pathological changes

Using “stomach collateral stasis syndrome” as the dependent variable and activity, Hp, inflammation, glandular atrophy, intestinal metaplasia, and dysplasia as independent variables, a logistic regression analysis was conducted. The results indicated no correlation between stomach collateral stasis syndrome and pathological changes, as shown in **Table 8**. However, due to the occurrence of intestinal metaplasia in all cases of stomach collateral stasis syndrome included, leading to inter-group imbalance, the OR value and standard error were excessively large.

4. Discussion

The etiology of CAG is complex, often resulting from factors such as exogenous pathogenic factors, improper diet, emotional distress, and spleen-stomach deficiency, which damage the spleen and stomach, leading to dysfunction in their ascending and descending functions, as well as disrupted “Qi” flow in the middle jiao, ultimately causing the disease. Clinically, this condition predominantly manifests as a combination of root deficiency and branch excess, with intermingled deficiency and excess syndromes. The root deficiency primarily involves spleen-stomach weakness and stomach “Yin” deficiency, while the excess pathologies mainly consist of “Qi” stagnation and blood stasis, as well as damp-heat. Chao Jun and colleagues explored the evolution pattern of TCM syndromes in CAG and found that during the transition from non-atrophic to atrophic

gastritis, intestinal metaplasia, and dysplasia, there exists a syndrome evolution from excess to deficiency, with the gradual emergence of “Yin” deficiency and blood stasis^[5]. Lu Xiaojie and other scholars believed that in the pathological evolution of gastric mucosa in CAG precancerous lesions, patients with mild pathological changes predominantly exhibit excess syndromes, while those with moderate to severe pathological changes mainly present with a mix of deficiency and excess syndromes^[6]. Wan Yuchen analyzed and suggested that spleen-stomach weakness is the fundamental cause of the disease, with liver “Qi” stagnation and spleen-stomach damp-heat serving as intermediate developmental stages^[7]. As spleen deficiency and liver stagnation progress, blood circulation becomes impaired, or damp-heat steams and scorches, leading to blood stasis and obstruction of the gastric meridians. Furthermore, prolonged blood stasis and obstruction can injure “Yin”, resulting in stomach “Yin” deficiency.

This study, through statistical analysis of the distribution of TCM syndrome types in 201 patients with CAG, found that liver-stomach stagnation-heat syndrome and liver-stomach “Qi” stagnation syndrome are the primary syndrome types of chronic atrophic gastritis, followed by spleen-stomach damp-heat syndrome, spleen-stomach weakness syndrome, gastric meridian blood stasis syndrome, and stomach “Yin” deficiency syndrome. The analysis suggests that CAG may often be caused by liver “Qi” stagnation, impaired spleen function, liver “Qi” transforming into fire, scorching stomach “Yin”, and damp turbidity obstructing the Middle Jiao, ultimately leading to syndromes such as stagnation-heat, deficiency-heat, and damp-heat^[8]. Zhu Yanan found in her survey that liver-stomach disharmony syndrome is the most predominant TCM syndrome type, which is generally consistent with the findings of this study^[9]. Zhang Ruifen, by summarizing the recent research on CAG, discovered that liver “Qi” invading the stomach syndrome and spleen-stomach weakness syndrome have the highest prevalence rates, followed by other syndrome types such as gastric meridian blood stasis, stomach “Yin” deficiency, liver-stomach “Qi” stagnation, spleen-stomach damp-heat, and liver-stomach stagnation-heat^[10].

The results of this study showed no statistically significant differences in the distribution of activity,

inflammation, glandular atrophy, and dysplasia among different syndrome types. However, there were significant differences in the distribution of intestinal metaplasia among different syndrome types. Compared with the liver-stomach “Qi” stagnation syndrome, the mild intestinal metaplasia in the liver-stomach stagnation-heat syndrome increased significantly. In the correlation analysis between syndrome types and pathological changes, the liver-stomach “Qi” stagnation syndrome was negatively correlated with intestinal metaplasia, while the spleen-stomach damp-heat syndrome was positively correlated with glandular atrophy. No correlation was found between the remaining syndrome types and pathological changes. The author speculated that in the early stage of atrophic gastritis, the liver-stomach “Qi” stagnation syndrome predominated. As mild intestinal metaplasia appeared in the gastric mucosa, the liver-stomach stagnation-heat syndrome increased significantly, which was consistent with the evolution of TCM pathogenesis of “Qi” stagnation transforming into heat over time”. Previous scholars have proposed that “damp-heat” was involved in the entire process of gastritis-to-cancer transformation. The persistence of damp and heat pathogens, which were difficult to resolve, was also an important reason for the continued presence of a chronic inflammatory microenvironment. Professor He Xiaohui^[11] believed that damp-heat was the key to initiating CAG, and collateral stasis was the pathological key. The disease was located in the spleen and stomach and was also closely related to the liver and gallbladder in regulating dispersion and dispersal function and the renal insufficiency. Cheng Ruodong and others found that glandular atrophy and intestinal metaplasia of the gastric mucosa were strongly correlated with the spleen-stomach deficiency syndrome, while dysplasia

of the gastric mucosa was strongly correlated with the stomach collateral stasis syndrome^[2]. Another study statistically analyzed the distribution of TCM syndrome types in elderly patients with moderate to severe intestinal metaplasia and found that the syndromes of stomach “Yin” deficiency and stomach collateral obstruction were more prevalent^[12].

This study found that the four syndrome types with the highest proportions were liver-stomach stagnation-heat syndrome, liver-stomach “Qi” stagnation syndrome, spleen-stomach damp-heat syndrome, and spleen-stomach deficiency syndrome. Thus, it can be seen that factors such as stagnation-heat, “Qi” stagnation, damp-heat, and deficiency played crucial roles in the onset and progression of this disease. In the correlation analysis between syndrome types and pathological changes, a certain correlation was observed between the pathological changes of the gastric mucosa and TCM syndrome types in CAG. The liver-stomach “Qi” stagnation syndrome was negatively correlated with intestinal metaplasia, while the spleen-stomach damp-heat syndrome was positively correlated with glandular atrophy. No correlation was found between the remaining syndrome types and pathological changes. In clinical practice, the application of microscopic syndrome differentiation combined with the traditional four diagnostic methods of TCM provides a reliable basis for the early detection and treatment of diseases to intercept their progression. Due to the limitations of time and sample size in this study, fewer patients with the stomach “Yin” deficiency syndrome were included. Therefore, it is necessary to increase the sample size for further in-depth research to provide a more credible reference for the syndrome differentiation and treatment of CAG.

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A Review of the Correlation between Disease Outcomes in Female Patients with Immune Thrombocytopenic Purpura and the Lung-Heat and Kidney-Deficiency Syndrome

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Abstract

Immune thrombocytopenic purpura (ITP) is an autoimmune hematological disorder characterized by excessive peripheral platelet destruction and impaired bone marrow megakaryocyte production. The disease outcomes vary significantly among different genders and age groups, with female patients often exhibiting a more complex disease progression due to factors such as unique endocrine changes, immune dysregulation, and traditional Chinese medicine (TCM) constitutional characteristics. Recent studies have suggested a potential significant association between the TCM Lung-Heat and Kidney-Deficiency syndrome and the progression and prognosis of ITP. However, the underlying mechanisms remain incompletely understood. This review summarizes the characteristics of disease outcomes in female patients with ITP, including clinical phenotypes, treatment responses, and long-term prognosis. It also delves into the pathological basis of the Lung-Heat and Kidney-Deficiency syndrome in TCM and its potential link to the disease outcomes of ITP. Additionally, this review evaluates the potential role of integrated traditional Chinese and Western medicine in improving disease outcomes for female patients with ITP and proposes directions for future research, aiming to provide evidence-based guidance for optimizing individualized treatment plans.

Keywords

Immune thrombocytopenic purpura
Female patients
Disease outcome
Lung heat and kidney deficiency syndrome
Integrated traditional Chinese and Western medicine treatment

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1. Introduction

Immune thrombocytopenic purpura (ITP) is a complex autoimmune disorder characterized by increased platelet destruction and decreased platelet production. Its pathogenesis involves multiple factors, including abnormal B-cell activation, autoantibody production, and T-cell immune dysregulation. Notably, gender plays a significant role in the clinical presentation and treatment response of ITP. Clinical data indicate that female patients, due to hormonal fluctuations and gender-specific immune system characteristics, often exhibit a more prolonged disease course and demonstrate lower response rates to glucocorticoid therapy. This may be associated with estrogen's regulatory effects on B-cell activation and autoimmune responses^[1]. Particularly noteworthy is the significant fluctuation in platelet levels observed in pregnant patients with ITP, suggesting that hormonal environments exert a substantial impact on disease outcomes^[2].

According to traditional Chinese medicine (TCM) theory, the pathological mechanisms of ITP are closely related to the “lung heat and kidney deficiency syndrome”. TCM posits that the lungs govern “Qi” and regulate respiration; lung heat can lead to reckless movement of blood, presenting clinically as bleeding tendencies such as skin purpura and epistaxis. The kidneys govern bones and produce marrow; kidney deficiency impairs hematopoietic function in the bone marrow, resulting in insufficient platelet production. Clinical observations reveal that patients with this syndrome typically exhibit symptoms such as dry mouth and throat, tidal fever, night sweats, and soreness and weakness in the lower back and knees. Modern medical research confirms that patients with this syndrome often display pathological features such as Th1/Th2 cell imbalance, abnormally elevated levels of inflammatory cytokines, and impaired maturation of bone marrow megakaryocytes, aligning with the TCM pathogenesis of “lung heat and kidney deficiency”^[1,3].

In recent years, the association between the use of immune checkpoint inhibitors such as PD-1 inhibitors and ITP has garnered attention. Case reports indicate that such drugs may induce immune thrombocytopenic purpura (ITP) or other thrombotic microangiopathies by disrupting immune tolerance, highlighting the central

role of immune dysregulation in the pathogenesis of ITP^[4]. Furthermore, ITP patients with genetic factors such as LRBA gene mutations and those with concurrent autoimmune diseases such as type 1 diabetes and arthritis exhibit more complex clinical phenotypes, further suggesting the interactive effects of the immune-endocrine network^[5]. Future research directions should integrate multi-omics technologies, including genomics and proteomics, to deeply explore the molecular characteristics of the “lung heat and kidney deficiency” syndrome and provide evidence-based support for the integrated treatment of ITP with traditional Chinese and Western medicine.

2. Main text

2.1. Pathological mechanisms and clinical manifestations of immune thrombocytopenic purpura

2.1.1. Immune dysregulation and platelet destruction

The core pathological mechanism of immune thrombocytopenic purpura (ITP) primarily stems from excessive platelet clearance triggered by immune system dysfunction. Studies have shown that ITP patients possess autoantibodies targeting platelet membrane glycoproteins such as GPIIb/IIIa, which are recognized and cleared by splenic macrophages through Fc receptor-mediated phagocytosis, thereby accelerating platelet degradation. Notably, clinical observations have revealed that immune checkpoint blockade therapy, particularly PD-1 inhibitors may induce ITP-like immune-related thrombocytopenia, such as the recently reported case of pembrolizumab-induced thrombotic thrombocytopenic purpura (TTP), whose mechanism is associated with ADAMTS-13 inhibitory autoantibodies. Immune dysregulation may also involve T-cell dysfunction, such as a shift in the Th1/Th2 balance and a reduction in regulatory T cells (Tregs), further exacerbating platelet destruction^[6,7].

2.1.2. Mechanisms of reduced platelet production

In the pathogenesis of immune thrombocytopenia (ITP), in addition to increased platelet destruction, platelet production is also suppressed in ITP patients. Congenital immune deficiencies may interfere with platelet production through multiple mechanisms such

as chronic infections or autoimmune processes, with impaired maturation of bone marrow megakaryocytes being a significant contributing factor. This impairment may be related to direct targeting of megakaryocytes by autoantibodies or abnormal levels of cytokines including thrombopoietin and TPO. Clinical observations have revealed that in cases of LRBA gene deficiency complicated by immune thrombocytopenia (ITP), abnormal immune regulation not only leads to platelet destruction but may also indirectly inhibit platelet production by affecting megakaryocyte differentiation^[8]. Additionally, when certain immune-mediated diseases such as autoimmune hepatitis or celiac disease coexist with ITP, the systemic inflammatory state may further suppress bone marrow hematopoietic function.

2.1.3. Unique clinical manifestations in female patients

Female patients with ITP exhibit distinct clinical characteristics. Epidemiological data indicate a higher incidence of ITP among women of childbearing age, suggesting a close association with estrogen-mediated immune regulatory mechanisms. For instance, female patients with 22q11.2 deletion syndrome are more prone to developing autoimmune diseases such as ITP and juvenile idiopathic arthritis, a phenomenon linked to immune tolerance defects resulting from thymic developmental abnormalities^[9]. Furthermore, ITP may worsen during pregnancy in female patients, necessitating vigilance for the risk of neonatal thrombocytopenia. Reported cases of immune checkpoint inhibitor-related ITP also predominantly involve female patients, indicating a potential influence of gender factors in immune-mediated thrombocytopenia^[10]. Elderly female patients often present with chronic ITP, characterized by a low rate of spontaneous remission, prolonged disease course, and significant impact from comorbidities, thereby increasing the complexity of diagnosis and treatment^[11].

2.2. Characteristics and influencing factors of disease outcomes in female patients

2.2.1. Impact of hormonal levels on disease outcomes

Changes in female hormonal levels significantly influence the outcomes of various diseases. Sex hormones such as estrogen and progesterone not only participate in the regulation of the reproductive system

but also affect immune homeostasis, inflammatory cascades, and vascular biological properties through multiple mechanisms. Research indicates that estrogen possesses immunomodulatory effects, potentially playing a protective role in certain autoimmune diseases by upregulating the expression of anti-inflammatory cytokines such as IL-10 and inhibiting the expression of pro-inflammatory factors such as TNF- α . However, excessively high levels of estrogen may also lead to overactivation of the immune system, exacerbating the severity of certain diseases^[11].

2.2.2. Gender differences in the immune system and disease outcomes

Gender differences in the immune system are one of the important factors contributing to the characteristics of disease outcomes in female patients. Females typically exhibit stronger immune responses, including higher antibody production capacity, more active cellular immune responses, and more pronounced inflammatory responses. These gender differences in the immune system may be related to the effects of sex hormones, the expression of genes on the X chromosome, and epigenetic regulation^[12]. Collectively, these studies suggest that the stronger immune response in females is shaped by a combination of sex hormones, genetic factors, and immune regulatory mechanisms, but this also leads to an increased risk of autoimmune diseases^[13]. Therefore, when formulating individualized treatment plans, it is essential to fully consider gender differences in the immune system to optimize treatment outcomes and minimize adverse reactions.

2.2.3. The relationship between pregnancy and disease outcomes in ITP

Pregnancy has a complex impact on the disease outcomes of patients with immune thrombocytopenia (ITP). The platelet counts of newborns from patients newly diagnosed with ITP during pregnancy are significantly higher than those from patients diagnosed before pregnancy ($p < 0.05$), suggesting that ITP onset during pregnancy may represent a more benign subtype^[14]. However, while 58% of pregnant women with ITP can maintain relatively stable platelet levels without treatment, some patients may experience a further decline

in platelet counts, increasing the risk of bleeding and requiring intervention until delivery^[15,16]. The incidence of postpartum hemorrhage (PPH) in pregnant women with ITP is 23.2%, significantly higher than in the general population^[17]. Clinical management should be stratified based on medical history, family history of the disease, and treatment responsiveness.

2.3. The pathological basis of traditional Chinese medicine's lung-heat and kidney-deficiency syndrome and its association with ITP

2.3.1. Relationship between lung-heat syndrome and uncontrolled blood heat

In traditional Chinese medicine (TCM) theory, the lungs govern “Qi” and regulate respiration, and are closely related to the body’s defensive functions. When pathogenic heat invades the body externally, it first affects the lungs, causing impaired dispersion and descent of lung “Qi”, which then transforms into heat. Alternatively, fire from other organs, such as liver fire or stomach fire, can ascend and affect the lungs, leading to lung heat. From a pathological perspective, when pathogenic factors invade the lung’s defensive layer and disrupt the dispersion of lung “Qi”, pathogenic heat accumulates in the lungs, condenses fluids into phlegm, and the combination of phlegm and heat damages the lung’s collateral vessels. This, in turn, affects the circulation of “Qi” and blood throughout the body, resulting in uncontrolled blood heat, where heat pathogens force blood to flow irregularly, causing it to deviate from its normal pathways and overflow from the vessels. This shares similarities with the bleeding tendency observed in idiopathic thrombocytopenic purpura (ITP). Modern medicine suggests that ITP is associated with immune abnormalities, and the TCM concept of “uncontrolled blood heat” can partially explain the pathological process of accelerated platelet destruction and bleeding symptoms in ITP patients. Lung-heat syndrome may exacerbate abnormal platelet destruction by influencing immune regulation, thereby relating to the pathogenesis of ITP.

2.3.2. Relationship between kidney deficiency syndrome and bone marrow hematopoietic function

The kidneys are considered the foundation of prenatal constitution, governing the storage of essence and the

production of marrow, and are closely related to bone marrow hematopoietic function. Kidney deficiency syndrome in TCM is characterized by symptoms such as soreness and weakness in the lower back and knees, dizziness, tinnitus, and fatigue. Its essence may be related to abnormalities in the bone marrow hematopoietic microenvironment or decreased hematopoietic stem cell function. In ITP patients, some cases exhibit impaired maturation of bone marrow megakaryocytes or reduced platelet production, which aligns with the TCM theory of “kidney deficiency and marrow depletion”. Modern research indicates that kidney deficiency may indirectly lead to insufficient platelet production by affecting the secretion of hematopoietic growth factors or the proliferation and differentiation of hematopoietic stem cells. Therefore, kidney deficiency syndrome may represent an important pathological basis for thrombocytopenia in ITP patients^[18].

2.3.3. Manifestations of lung-heat and kidney deficiency syndrome in female ITP patients

Among female ITP patients, the clinical manifestations of lung-heat and kidney deficiency syndrome are particularly prominent. Lung-heat syndrome may present with symptoms of uncontrolled blood heat, such as skin purpura, epistaxis, and gum bleeding. Meanwhile, kidney deficiency syndrome often manifests as heavy menstrual bleeding, prolonged menstrual periods, and soreness and weakness in the lower back and knees, indicating insufficient kidney “Qi”. Due to physiological characteristics such as menstruation, pregnancy, childbirth, and lactation, which can easily deplete “Yin” and blood, women are more prone to developing complex pathological mechanisms involving concurrent lung heat and kidney deficiency. Therefore, when treating ITP in women, it is necessary to simultaneously clear lung heat and tonify kidney deficiency to regulate immune function and improve platelet production.

2.4. The impact of integrated traditional Chinese and Western medicine on the prognosis of ITP

2.4.1. Efficacy and limitations of Western medicine treatments

The primary treatment methods for ITP in

Western medicine include glucocorticoids and immunosuppressants. First-line treatment typically involves glucocorticoids such as prednisone, which can significantly increase platelet counts in the short term by inhibiting antibody-mediated platelet destruction, with approximately 70% of patients achieving remission in the initial stages of treatment. However, long-term use of glucocorticoids may lead to elevated blood sugar levels (20–30%), osteoporosis, and an increased risk of infections^[19]. Second-line treatments include thrombopoietin receptor agonists (TPO-RAs, such as romiplostim/eltrombopag), which can enhance platelet production but carry risks of hepatotoxicity (eltrombopag) and thrombosis (with an incidence rate of 3–5%). Rituximab (an anti-CD20 monoclonal antibody) targets and clears B cells, proving effective in some refractory ITP patients with an efficacy rate of 40–60%; however, it poses an increased risk of infections and exhibits significant individual variations in efficacy^[19].

Splenectomy may also be performed for patients who do not respond to drug therapy, achieving a long-term remission rate of over 60%, but its application is limited by surgical complications and postoperative infection risks^[20]. For pregnant patients with ITP, intravenous immunoglobulin (IVIg) or low-dose hormones are preferred to reduce the risk of fetal malformations^[21]. For patients with menorrhagia, a levonorgestrel-releasing intrauterine device (LNG-IUD) can reduce bleeding volume, with a 50% reduction in PBAC scores, although some patients may experience irregular uterine bleeding. Therefore, while Western medicine treatments can rapidly control symptoms, their long-term efficacy and safety still require optimization^[22].

2.4.2. Clinical efficacy of traditional Chinese medicine syndrome differentiation and treatment

Traditional Chinese medicine classifies ITP under the category of “blood disorders” and emphasizes treatment based on syndrome differentiation. For the syndrome type of excessive heat-toxin, clinical practice often employs formulas such as Xijiao Dihuang Decoction with the effects of clearing heat and detoxifying, cooling blood, and stopping bleeding. For the syndrome type of deficiency in both the spleen and kidney, formulas such as Guipi Decoction with the effects of strengthening the

spleen and tonifying the kidney, replenishing “Qi” and nourishing blood are mainly used. Data from multiple clinical studies have confirmed that traditional Chinese medicine (TCM) compound preparations can not only effectively alleviate patients’ bleeding symptoms but also have a significantly lower incidence of adverse drug reactions compared to conventional Western medicine treatments^[9]. The integrated traditional Chinese and Western medicine therapy for treating immune thrombocytopenia (ITP) demonstrates significant advantages across multiple clinical indicators, including increasing peripheral blood platelet counts, regulating levels of regulatory T cells (Tregs) and helper T cells (CD4⁺); it also reduces traditional Chinese medicine (TCM) syndrome scores, levels of cytotoxic T cells (CD8⁺), and platelet-associated immunoglobulin G (PAIgG) levels. Additionally, this therapy exhibits marked advantages in enhancing the stability of long-term efficacy and reducing adverse drug reactions. The core value of TCM in treating ITP lies in its individualized diagnosis and treatment model and holistic regulatory treatment philosophy. However, it has limitations such as a relatively slow onset and longer treatment duration. Currently, the TCM diagnosis and treatment system lacks standardized efficacy evaluation indicators, and the reproducibility of its clinical efficacy still requires further verification through large-sample, multicenter clinical studies^[23].

2.4.3. Synergistic effects of integrated traditional Chinese and Western medicine therapy and improvement in disease outcomes

The integrated traditional Chinese and Western medicine therapy significantly improves disease outcomes in ITP through complementary advantages. Western medicine rapidly increases platelet counts, while TCM reduces hormone dosage and recurrence rates. For example, a retrospective study showed that the overall response rate in the combined therapy group was significantly higher than that in the Western medicine-only group, and the time for hormone reduction was significantly shortened^[24]. Mechanistically, the active ingredients in TCM herbs such as *Astragalus* and *Angelica* can indirectly correct immune imbalances by regulating T cell subset differentiation such as increasing Tregs and

inhibiting inflammatory factors such as TNF- α and IL-17, forming a complement to Western medicine^[25]. Long-term follow-up data indicate that the 5-year progression-free survival rate of patients receiving combined therapy is significantly higher, and their quality-of-life scores are significantly better than those of patients receiving a single therapy^[23].

2.5. Future research directions and clinical practice recommendations

2.5.1. Research on the molecular mechanisms of lung-heat and kidney-deficiency syndrome

As a complex syndrome in Traditional Chinese Medicine (TCM) theory, the molecular mechanisms underlying Lung-Heat and Kidney-Deficiency Syndrome remain in the exploratory stage. Existing literature suggests that immune dysregulation may be a core pathological feature of this syndrome. For instance, adverse events associated with immune checkpoint inhibitor therapy (e.g., PD-1 inhibitors), and thrombocytopenic purpura, indicate a link between excessive immune activation and tissue damage^[26]. Future research could focus on the following directions: first, utilizing multi-omics technologies (e.g., transcriptomics, proteomics) to analyze immune biomarker profiles in patients with Lung-Heat and Kidney-Deficiency Syndrome, clarifying the relationship between Th1/Th2 cell imbalance, inflammatory cytokines including IL-6, TNF- α , and the syndrome; second, exploring the role of coagulation-related molecules, such as ADAMTS-13, in the development of bleeding tendencies associated with this syndrome, providing potential targets for integrated TCM-Western medicine therapies. Additionally, monogenic immune dysregulation disease models, such as LRBA gene deficiency, may offer molecular biological evidence for the TCM concept of “congenital endowment deficiency” in this syndrome^[27].

2.5.2. The necessity of multicenter clinical research

Current research on Lung-Heat and Kidney-Deficiency Syndrome is limited by small sample sizes and inconsistent diagnostic criteria. A cohort study of Iranian patients with DCLRE1C gene deficiency demonstrated the need for multicenter collaboration to accumulate data on rare diseases. The following recommendations

are proposed, where establishing unified TCM-Western medicine diagnostic criteria such as combining tongue and pulse diagnosis with ADAMTS-13 testing and designing prospective registry studies; analyzing clinical characteristics and prognostic differences across age groups (children/adults/elderly) by referencing age-specific management strategies for thrombotic thrombocytopenic purpura (TTP); leveraging real-world data including electronic health record databases to uncover patterns of syndrome evolution^[28]. Furthermore, international collaboration could validate the immunomodulatory effects of TCM herbal formulas and advance mechanistic research through shared biobanks.

3. Conclusion

The disease outcomes of immune thrombocytopenic purpura (ITP) in female patients are influenced by multiple factors, including hormonal levels, immune regulation, and the characteristics of Traditional Chinese Medicine (TCM) constitutional types. Among these, the syndrome of lung-heat and kidney deficiency is closely associated with the onset and progression of ITP. From an expert perspective, integrated traditional Chinese and Western medicine (ITCWM) demonstrates unique advantages in improving the prognosis of female patients with ITP, with mechanisms potentially involving multi-target effects such as immune regulation, inflammation suppression, and platelet production promotion. However, current research still has certain limitations, including small sample sizes, insufficient follow-up durations, and a lack of standardized evaluation systems, leading to variations in conclusions across different studies.

Future research should focus on the following aspects. Firstly, delve into the molecular mechanisms of the lung-heat and kidney deficiency syndrome to clarify its specific associations with the onset and progression of ITP, providing a theoretical basis for precision medicine. Secondly, optimize individualized treatment plans by combining targeted therapies from modern medicine with syndrome differentiation and treatment from traditional Chinese medicine to enhance efficacy and reduce adverse reactions. Finally, conduct multi-center, large-sample clinical studies using unified evaluation criteria to verify the long-term efficacy and safety of ITCWM.

Overall, the treatment strategy for ITP should balance the precision of modern medicine with the holistic perspective of traditional Chinese medicine, offering more effective personalized management plans for female patients through multidisciplinary collaboration. Future research should emphasize the integration of basic and clinical studies to drive innovation in ITP diagnosis and treatment models, ultimately improving patients' quality of life and long-term prognosis.

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Disclosure statement

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Analysis of the Improving Effect of Shenlian Granules on Rats with Chronic Atrophic Gastritis Based on Antioxidant and Liver and Kidney Protection Mechanisms

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Abstract

Objective: To investigate the ameliorative effects of Shenlian Granules on rats with chronic atrophic gastritis from the perspectives of antioxidant and liver and kidney protection. **Methods:** A rat model of chronic atrophic gastritis was established using three combined methods, and then selected the best modeling method for this experiment. That is, chemical method (alternating free access to 0.1% ammonia solution and 20 mmol/L sodium deoxycholate solution) + hunger and satiety method (alternating one day of satiety followed by one day of hunger) + physical stimulation (30-minute tail clamping with a plastic clip on the satiety day). The model was maintained for 10 consecutive weeks. After confirming successful modeling by observing changes in the intrinsic glands of the gastric mucosa of SD rats, the rats were randomly divided into six groups: a model group, a control group, and groups receiving Shenlian Granules at low, medium, and high concentrations. Treatment and observation began at week 11. The treatment groups (low, medium, and high concentration groups) were gavaged with Shenlian Granules (1.65 g/kg, 3.3 g/kg, and 6.6 g/kg, respectively). The control group was gavaged with Morodan (2.43 g/kg). The model and blank groups were gavaged with purified water (2 mL per rat) once daily for 10 weeks. During modeling and treatment, the rats' general condition was observed, and post-treatment weight changes were recorded. Sixteen hours after the last gavage, blood was collected from the abdominal aorta under anesthesia. Serum ALT, AST, BUN, and Cre levels were measured by an automated biochemical analyzer, and serum MDA, T-SOD, and GSH levels were measured by ELISA. **Results:** Shenlian Granules effectively improved the mental activity and body weight of rats with chronic atrophic gastritis. Shenlian Granules reduced serum ALT, AST, BUN, Cre and MDA levels, and increased T-SOD and GSH-Px levels in rats with chronic atrophic gastritis ($p < 0.01$). The differences were statistically significant and concentration-dependent. **Conclusion:** Shenlian granules may restore chronic atrophic gastritis by enhancing antioxidant capacity. It also plays a protective role in liver and kidney function during the drug action process, which further provides a reliable experimental basis for the clinical use of this prescription in the treatment of patients with chronic atrophic gastritis.

Keywords

Shenlian granules
Chronic atrophic gastritis
Antioxidant effect
Liver and kidney
function

1. Introduction

Chronic atrophic gastritis (CAG) belongs to the category of “stomach pain”, “fullness” and “noise” in traditional Chinese medicine (TCM). It is an important link in the transformation of normal gastric tissue into gastric cancer. In recent years, the incidence rate has increased and the incidence rate is younger. It is an internationally recognized precancerous lesion of the stomach. In 2022, the global incidence and mortality of gastric cancer ranked fifth among all cancers in the world, and the incidence and mortality of gastric cancer in China ranked fifth and third among all cancers in China respectively; the incidence and mortality of gastric cancer in China accounted for 37.02% and 39.44% of the global gastric cancer respectively, which is higher than the proportion of the Chinese population in the global population, and needs to be paid close attention. Studies have shown that CAG leads to a 4.12-fold increase in the incidence of gastric cancer and a more than 2-fold increase in the incidence of esophageal cancer and esophageal squamous cell carcinoma ^[1,2]. Therefore, timely control of inflammatory progression and reversal of gastric mucosal atrophy and intestinal metaplasia are key stages in preventing the occurrence of gastric cancer, which belongs to the category of “preventive treatment” in TCM. Currently, modern medicine has no specific treatment for CAG, but TCM has obvious advantages in preventing and treating CAG.

ShenLian Granules is an empirical formula developed by Professor Zhou Sufang, Chief Physician of the Department of Gastroenterology at the First Affiliated Hospital of Guizhou University of TCM, for the treatment of CAG. It consists of 12 herbs: *Pseudostellariae radix*, *Scutellariae scutellariae*, stir-fried *Atractylodes macrocephalae*, Poria, Coix Seed, *Hedyotis diffusa* Herba, *Curcuma atractylodes*, *Fritillariae thunbergii*, calcined *Corundum fructus*, stir-fried Malt, *Gallus gallus domesticus*, and roasted Licorice Root. Over many years of clinical practice, this formula has demonstrated robust clinical efficacy, but its underlying mechanism remains unclear. This study aimed to investigate the efficacy of ShenLian Granules in improving CAG through the lens of antioxidant activity and liver and kidney protection.

2. Materials and methods

2.1. Materials

2.1.1. Experimental animals

94 SPF-grade Sprague-Dawley rats, half male and half female, weighing 180–220 g each, were purchased from the Laboratory Animal Research Institute of Guizhou University of TCM. Laboratory Animal Production License Number: SCXK (Qian) 2021-0003; Laboratory Animal Use License Number: SYXK(Qian) 2021-0005. They were housed in individual cages at the Animal Experimental Center of Guizhou University of TCM at a room temperature of $(23 \pm 1) ^\circ\text{C}$, an air humidity of 55–65%, and a 12-h light-dark cycle. All rats in this study were anesthetized and sacrificed by cervical dislocation. Experimental procedures adhered to the principles of animal experimentation ethics and were approved by the Laboratory Animal Ethics Committee of Guizhou University of TCM (Ethics Approval Number: 20240307001).

2.1.2. Medication

Pseudostellariae pseudoginseng, stir-fried *Atractylodes macrocephala*, Poria cocos, Coix seed, *Hedyotis diffusa*, *Scutellaria barbata*, vinegared *Curcuma zedoaria*, *Fritillaria thunbergii*, calcined *Cortex roxburghii*, stir-fried Malt, stir-fried *Gallus gallus domesticus*, and roasted Licorice root (granules, purchased from the First Affiliated Hospital of Guizhou University of TCM); Morodan honey pills (9 g × 9 bags/box, Handan Pharmaceutical Co., Ltd., approval number: National Medicine Standard Z13021324); sodium deoxycholate (Shanghai Aladdin Biochemical Technology Co., Ltd., product number S104198), 1% ammonia solution (Solarbio, product number G1822), N-methyl-N-nitro-N-nitrosoguanidine (MNNG) (Shanghai Aladdin Biochemical Technology Co., Ltd. product number M105583), 10% chloral hydrate solution (Legen Biotechnology, product number R00635), and 4% paraformaldehyde (Biosharp, product number BL539A).

2.1.3. Reagents and instruments

Alanine aminotransferase assay kit, aspartate aminotransferase assay kit, urea assay kit, and creatinine assay kit were all purchased from Shenzhen Raydu Life Science Co., Ltd. with catalog numbers S03030, S03040,

S03036, and S03076. Malondialdehyde (MDA) assay kit, total superoxide dismutase (T-SOD) assay kit, and reduced glutathione (GSH) assay kit were all purchased from Nanjing Jiancheng Bioengineering Institute with catalog numbers A003-1-2, A001-3-1, and A006-2-1, respectively. H1-16KR tabletop high-speed refrigerated centrifuge (Hunan Kecheng Instrument Equipment Co., Ltd.), SPX70B III (Fisher Instruments (Hebei) Co., Ltd.), ICV-450 electric constant temperature incubator (ASONE, Japan), EnVision microplate reader (PerkinElmer); Rayto fully automatic biochemical analyzer (Chemray240), Tissuelyser-24L multi-sample tissue grinder (Shanghai Jingxin Industrial Development Co., Ltd.), DK-20000-III electric constant temperature water bath (Fisher Instruments (Hebei) Co., Ltd.), Clever-S15 superpure water meter (Zhiang Instruments (Shanghai) Co., Ltd.), FA1204 FA series multifunctional analytical electronic balance (Changzhou Lucky Electronic Equipment Co., Ltd.), ND-100 ultra-micro UV-visible spectrophotometer (Hangzhou Miou Instrument Co., Ltd.).

2.2. Methods

2.2.1. Drug preparation

(1) Shenlian granules (no decoction)

Pseudostellariae radix 15 g, stir-fried *Atractylodes macrocephalae* 15 g, Poria 15g, Coix Seed 20 g, *Hedyotis diffusa* Grass 15 g, *Scutellariae scutellariae* 15 g, Curcuma 10 g, *Fritillariae thunbergii* 10 g, calcined *Corrugated fructus* 15 g, stir-fried Malt 18 g, Chicken Gizzard Stone 10 g, roasted Licorice Root 6 g. Dissolve in warm water.

(2) Morodan honey pills

Lily bulb, Poria cocos, *Scrophularia ningpoensis*, *Lindera striata*, *Alisma orientalis*, *Ophiopogon japonicus*, *Angelica sinensis*, *Atractylodes macrocephala*, *Artemisia capillaris*, White peony root, *Dendrobium candidum*, *Acorus calamus*, Chuanxiong rhizome, *Panax notoginseng*, *Sanguisorba officinalis*, *Corydalis yanhusuo*, Pollen pollen, Chicken gizzard lining. Dissolve in warm water.

2.2.2. Model establishment

(1) Modeling method

The experimental animals were divided into three groups using the random function method in the preliminary experiment, with 6 animals in each group. Three males and three females were housed in separate cages at the Animal Experimental Center of Guizhou University of TCM. The room temperature was $(23 \pm 1)^\circ\text{C}$, the air humidity was 55–65%, and the light intensity was 12 h day and night. The animals were fed freely for one week before modeling.

Group A: First, the rats were allowed to drink 0.1% ammonia solution and 20 mmol/L sodium deoxycholate solution alternately; second, the rats were fed with food on one day of satiety and the next day of starvation to create an abnormal state of hunger and satiety; third, the rats were clamped by the tail with a plastic clamp once every 30 minutes on the satiety day.

Group B: First, MNNG was prepared into a 1 g/L aqueous solution (stored at 4°C in the dark), diluted to 100 $\mu\text{g/mL}$ immediately before use, and the rats were allowed to drink freely in brown bottles (protected from light). The drinking amount was recorded every time the solution was changed (changed every 24 hours). Second, the rats were fed with food on a one-day full diet and one-day starvation schedule to create a state of abnormal hunger and satiety.

Group C: First, MNNG was prepared into a 1 g/L aqueous solution (stored at 4°C in the dark), diluted to 200 $\mu\text{g/mL}$ before use, and the rats were allowed to drink freely in brown bottles (protected from light). The drinking amount was recorded every time the solution was changed (changed every 24 hours). Second, the rats were fed with a one-day full meal and one-day starvation diet to create an abnormal state of hunger and satiety.

On the first day of the 7th week, the first day of the 8th week, the first day of the 9th week, and the first day of the 10th week of modeling, gastric mucosa of one rat or one male and one female rat in each group were taken for tissue sections to observe the pathological changes of gastric mucosa in rats.

(2) Result determination

The success of the model was determined by thinning of the gastric mucosa, reduction or shrinkage of the intrinsic glands of the mucosa, and inflammatory cell

infiltration. At the same time, changes in the appearance and behavior of the rats were observed as a reference. Based on the comparison of the results of the three groups of preliminary experiments, the modeling method of Group A, “chemical method + physical stimulation method + hunger and satiety disorder method”, was determined as the modeling method for the formal experiment, and the continuous modeling time was 10 weeks.

2.2.3. Animal experiments

(1) Modeling method and animal grouping

Replica modeling method was as follows. 76 SD rats were housed separately, male and female. After one week of adaptive feeding, five rats of each sex were randomly selected as blank groups. The remaining 66 rats were then recreated using the pre-experimental CAG rat modeling method. Firstly, 0.1% ammonia solution and 20 mmol/L sodium deoxycholate solution were alternately given free access to food. Then, a diet was administered on a one-day satiety cycle followed by a one-day starvation cycle to create a state of hunger and satiety imbalance. After that, the tails of rats were clamped with a plastic clip once every 30 minutes on the satiety day. This “chemical method + physical stimulation method + hunger and satiety imbalance” modeling method was used to replicate the modeling for 10 weeks. On the fifth day of the sixth, eighth, and tenth weeks of modeling, one rat of each sex was observed for changes in the intrinsic glands of the gastric mucosa. Drug administration was initiated after successful replication of the modeling method. One female rat died in the ninth week of modeling, and one male rat died in the tenth week of modeling, leaving 58 rats in the modeling group. For animal grouping, 10 rats in the blank group, 58 model rats were randomly divided into 10 model group, 12 rats in the Morodan group, and 12 rats in the low-concentration group, medium-concentration group, and high-concentration group of Shenlian Granules.

(2) Administration method

Treatment group: The low-concentration

group, medium-concentration group, and high-concentration group were given Shenlian granules at a concentration of 1.65 g/kg, 3.3 g/kg, and 6.6 g/kg, respectively, dissolved in 2 mL of pure water according to the body surface area of humans and rats, and administered orally once a day; Model group : administered orally with 2 mL of pure water, once a day; Blank group: administered orally with 2 mL of pure water, once a day; Positive control group: administered orally with Morodan, dissolved in 2 mL of pure water at a concentration of 2.43 g/kg (based on the body surface area of humans and animals), once a day; The treatment time for each group was 70 days. During the treatment period, the rats in each group were fed with normal feed and drinking water.

(3) General observation

Observe the changes in the appearance and behavior of the rats, and weigh the rats in each group once every 10 days.

(4) Specimen collection

After the animals were anesthetized by intraperitoneal injection of 10% chloral hydrate solution, the abdomen was disinfected with 75% alcohol, and the abdomen was cut open along the linea alba. Blood was first collected from the abdominal aorta. After standing at room temperature for 2 hours, the blood was centrifuged at 3500 rpm for 10 minutes, and the supernatant was collected for testing.

(5) Automatic biochemical analyzer to detect ALT, AST, BUN, Cre

Whole blood specimens should be placed at room temperature for 2 hours or at 4°C overnight, then centrifuged at 3000 rpm for 15 minutes at 2–8°C. The supernatant can be immediately tested. Alternatively, the specimens can be aliquoted and stored at -20°C or -80°C, avoiding repeated freezing and thawing. Thawed specimens should be centrifuged again before testing.

(6) ELISA method to detect MDA, SOD, and GSH content

SD rat serum was collected and centrifuged

at 3000 rpm for 10 min. The supernatant was collected and tested according to the operating procedures of the three ELISA kit instructions.

2.3. Statistical analysis

The experimental results were analyzed using SPSS26.0 statistical software. For data that were in line with the normal distribution, the *t*-test was used between the two groups, and the univariate or multivariate analysis of variance was used for comparison between multiple groups. The data were expressed as $\bar{x} \pm s$, $p < 0.05$ indicated that the difference was statistically significant, and $p < 0.01$ indicated that the difference was statistically significant.

3. Experimental results

3.1. Effects on the general condition of animals

During the modeling period, the fur color of SD rats gradually changed from smooth and white to rough and withered. Their overall behavior was quiet (sleepy) the day after a full meal and restless such as scratching and biting the day after a hunger. The blank group rats showed a trend of gaining weight, while the modeling group showed a thin state, which may be related to spleen and stomach weakness and insufficient “Qi” and blood production [3]. However, during the treatment period, the fur color and texture of SD rats in the treatment group and the control group gradually became smooth and white. It was particularly obvious that the SD rats in the model group showed a state of restlessness, resistance to scratching, and even running, which was similar to the manifestation of “liver depression and fire transformation” in TCM.

At the same time, the weight of rats in the blank group and the treatment group showed a gradual increase trend. The weight of rats in the model group did not change significantly before and after treatment; the weight of rats in the control group and the low-concentration group showed a gradual increase trend, but there was no statistical difference. Starting from the 21st day, the *p*-value of the medium-concentration group and the high-concentration group of Shenlian Granules was less than 0.01 compared with the model group, which was statistically significant. Starting from day 41,

the low-concentration Shenlian Granule group and the control group showed statistically significant differences compared to the model group (p -values < 0.01). The high-concentration group showed statistically significant differences compared to days 1 and 11 (p -values < 0.05) on day 71 (**Table 1**).

This indicates that the body weight of SD rats is positively correlated with drug concentration and treatment duration after treatment. However, on day 71, all groups except the high-concentration group showed a downward trend, indicating that the dependence on treatment duration is relative.

3.2. Effects on rat serum ALT, AST, BUN, and Cre

This experiment used an automated biochemical analyzer to measure serum ALT, AST, BUN, and Cre levels in CAG rats. The results showed that the differences between the model group and the blank group were statistically significant ($p < 0.01$), further confirming the successful modeling. Furthermore, compared with the model group, ALT, AST, BUN, and Cre levels decreased in all Shenlian Granule groups.

The differences in ALT, AST, and BUN between the medium and high Shenlian Granule concentration groups were statistically significant ($p < 0.05$). Cre levels decreased in the high Shenlian Granule concentration group ($p < 0.05$), indicating that Shenlian Granule can reduce serum ALT, AST, BUN, and Cre levels in CAG rats, with a positive correlation with increasing concentration.

This suggests that Shenlian granule can restore liver and kidney function in rats with chronic atrophic gastritis caused by chemical drugs, physical stimulation (emotional disorders), and other factors (refer **Table 2**).

3.3. Effects on rat serum MDA, T- SOD, and GSH -Px

In this experiment, the ELISA method was used to detect the levels of MDA, T- SOD, and GSH -Px in the serum of CAG rats.

The results showed that: compared with the blank group, the model group had a $p < 0.01$ difference, which was statistically significant, further indicating that the modeling method of this experiment was feasible;

Table 1. Changes in rat body weight during treatment ($\bar{x} \pm s$)

	Day 1	Day 11	Day 21	Day 31	Day 41	Day 51	Day 61	Day 71 [*]
Blank group (n = 9)	430.33 ± 40.202	417.22 ± 39.358	457.78 ± 40.882	459.67 ± 39.061	474.33 ± 48.422	479.33 ± 48.845	503.11 ± 50.434	462.222 ± 42.728
Model group (n = 10)	291.74 ± 11.973	284.93 ± 11.812	319.69 ± 12.413	289.77 ± 15.405	319.12 ± 13.544	306.36 ± 13.875	316.00 ± 15.546	309.20 ± 16.239
Control group (n = 10)	303.75 ± 17.748	301.42 ± 17.260	331.75 ± 18.188	340.00 ± 17.330	367.73 ± 23.002 [▲]	373.91 ± 25.038 [▲]	384.55 ± 26.268 [▲]	368.00 ± 25.159 [▲]
Low concentration group (n = 10)	308.69 ± 14.160	304.69 ± 15.307	337.31 ± 22.506	344.31 ± 18.101	370.31 ± 22.506 [▲]	376.62 ± 24.065 [▲]	380.42 ± 26.856 [▲]	359.00 ± 24.733 [▲]
Medium concentration group (n = 10)	312.38 ± 17.086	316.08 ± 17.191	364.92 ± 20.264 [▲]	370.85 ± 19.690 [▲]	383.46 ± 21.751 [▲]	391.16 ± 25.622 [▲]	399.00 ± 26.358 [▲]	380.92 ± 25.449 [▲]
High concentration group (n = 10)	322.54 ± 18.500 [△]	324.92 ± 19.913 [△]	372.31 ± 25.811 [▲]	378.00 ± 30.090 [▲]	383.18 ± 35.211 [▲]	387.45 ± 35.735 [▲]	385.57 ± 29.371 [▲]	424.86 ± 41.531 [▲]

*Specimen collection day. [△]Comparison between day 71 (note: specimens were collected on this day, and the animals were fasting) and days 1 and 11, p -value < 0.05, statistically significant. [▲]Comparison with the model group, p -value < 0.01, statistically significant.

Table 2. Effects of Shenlian granules on ALT, AST, BUN, and Cre in the serum of CAG rats ($\bar{x} \pm s$)

Group	ALT	AST	BUN	Cre
Blank group	39.127 ± 4.024	87.148 ± 10.089	15.739 ± 1.287	31.568 ± 4.074
Model Group	96.907 ± 7.614*	235.383 ± 12.319*	36.343 ± 2.670*	70.533 ± 7.914*
Shenlian granule low concentration group	89.616 ± 6.123	217.666 ± 14.110	33.089 ± 2.023	66.047 ± 6.521
Shenlian granules Medium concentration group	72.995 ± 5.837 [▲]	183.053 ± 9.957 [▲]	29.214 ± 1.902 [▲]	60.996 ± 5.698
Shenlian granule high concentration group	60.713 ± 6.103 [▲]	156.841 ± 11.193 [▲]	23.696 ± 1.901 [▲]	54.256 ± 5.739 [▲]
Positive control group	46.098 ± 3.147 [▲]	139.362 ± 11.659 [▲]	22.030 ± 1.932 [▲]	45.983 ± 6.366 [▲]

*Compared with the blank group, p < 0.01, the difference is statistically significant; [▲]Compared with the model group, p < 0.01, the difference is statistically significant.

Table 3. Effects of Shenlian granules on MDA, SOD, and GSH-Px in the serum of CAG rats ($\bar{x} \pm s$)

Group	MDA	T-SOD	GSH-Px
Blank group	2.737 $\pm$ 0.429	62.100 $\pm$ 3.390	76.089 $\pm$ 3.862
Model group	9.005 $\pm$ 0.501 *	31.683 $\pm$ 2.655 *	29.227 $\pm$ 3.708 *
Shenlian granule low concentration group	7.727 $\pm$ 0.428 $\blacktriangle$	37.669 $\pm$ 2.376 $\blacktriangle$	36.499 $\pm$ 4.182 $\blacktriangle$
Shenlian granules medium concentration group	6.027 $\pm$ 0.463 $\blacktriangle$	43.395 $\pm$ 2.804 $\blacktriangle$	47.466 $\pm$ 6.299 $\blacktriangle$
Shenlian granule high concentration group	4.531 $\pm$ 0.470 $\blacktriangle$	49.476 $\pm$ 2.672 $\blacktriangle$	65.511 $\pm$ 7.479 $\blacktriangle$
Positive control group	4.228 $\pm$ 0.361 $\blacktriangle$	56.823 $\pm$ 3.159 $\blacktriangle$	67.131 $\pm$ 2.366 $\blacktriangle$

*Compared with the blank group, $p < 0.01$, the difference is statistically significant; $\blacktriangle$ Compared with the model group, $p < 0.01$, the difference is statistically significant.

compared with the model group, the low, medium, and high concentration groups of Shenlian Granules had a $p < 0.01$ difference, which was statistically significant.

This indicates that Shenlian granules could significantly reduce the MDA content in the serum of CAG rats and increase the levels of T- SOD and GSH -Px, and were positively correlated with the increasing concentration, suggesting that Shenlian granules can treat chronic atrophic gastritis through antioxidant effects (refer **Table 3**).

4. Discussion

chronic progressive gastric disease characterized by atrophy of gastric mucosal glands, intestinal metaplasia or dysplasia, and is a very important link in the transformation of chronic gastritis to gastric cancer. Studies have shown that the occurrence of this disease may be related to *Helicobacter pylori* (Hp) infection, bile reflux and intestinal flora imbalance, poor eating habits, anxiety, depression and other emotional factors ^[4-7]. This experiment used a “chemical method + hunger and satiety disorder + physical stimulation” composite model, in which 0.1% ammonia solution simulated Hp infection, 20 mmol/L sodium deoxycholate solution simulated bile reflux, “one day of fullness and one day of hunger” simulated irregular diet, and physical tail clamping stimulation simulated “emotional disorder” ^[8,9]. In our preliminary experiment, we set up different concentrations of “N-methyl-N’-nitro-N-nitrosoguanidine (MNNG) + hunger and satiety disorders + physical stimulation” groups for control.

The animals also showed different degrees of intrinsic gland reduction, but the stability was not as good as the modeling method finally selected in this experiment, which is consistent with the views in the literature ^[10,11].

Professor Zhou Sufang’s “Shenlian Granules” are designed to nourish the stomach and spleen, dissipate blood stasis, and detoxify. The formula, comprised of *Pseudostellaria baicalensis*, *Poria cocos*, stir-fried *Atractylodes macrocephala*, and roasted Licorice root, is a “Four Gentlemen Decoction” that nourishes the stomach and spleen. Roasted malt and chicken’s gizzard lining invigorate the spleen and stimulate appetite, while coix seed invigorates the spleen and dissipates dampness. *Scutellaria barbata* and *Hedyotis diffusa* clear away heat and detoxify. *Curcuma zedoaria* activates blood circulation and dissipates blood stasis. *Fritillaria thunbergii* and calcined Corrugated Barley seed resolve phlegm, reduce acidity, and relieve pain. Modern pharmacological studies have shown that *Houttuynia cordata* combined with *Scutellaria barbata* can exert its anti-gastric cancer effects by inhibiting inflammatory cytokines, inducing cell apoptosis, inhibiting cell proliferation, and improving the immune microenvironment ^[12,13]. *Atractylodes macrocephala* combined with *Poria cocos* is the most commonly used drug pair for the treatment of CAG ^[14]. Coix seed combined with chicken gizzard lining can strengthen the spleen, remove dampness, and eliminate tumors ^[15]. *Curcuma zedoaria* is pungent in taste, can move around, guide the meridians and dredge the collaterals, and specializes in “blood stasis in the “Qi” ”, and can also

inhibit the activation of the NF- κ B signaling pathway and improve the atrophic state of the gastric mucosa^[16,17].

MDA is a product of peroxidation damage, reflecting the degree of lipid peroxidation damage in the body; SOD can scavenge oxygen free radicals and reduce cell apoptosis; GSH-Px is widely present in the cell fluid and mitochondrial matrix, and can catalyze the reaction of reduced glutathione (GSH) with hydrogen peroxide (H_2O_2), which helps protect cells from oxidative stress^[18]. Overexpression of oxygen free radicals plays an important role in gastric mucosal damage in CAG patients. MDA can aggravate mucosal damage, while SOD can enhance the body's ability to scavenge oxygen free radicals^[19]. Modern studies have confirmed that Chinese herbal formulas, Du channel fire dragon moxibustion, and Chinese herbal formulas combined with acupuncture can promote the recovery of chronic atrophic gastritis by improving serum BUN, Cr, MDA, SOD, GSH-Px and other indicators in SD rats^[20–24].

Emotions have a significant impact on the

development and progression of CAG. Clinically, many CAG patients experience symptoms such as anxiety and irritability. This study used tail clamping to create a “liver dysfunction” model. During treatment, rats in the untreated model group exhibited significant irritability, frantic behavior, aggression (running), and screaming. However, CAG rats treated with Shenlian Granules were significantly more docile (easily grasped during medication administration). This suggests that clinical attention should be paid to the psychological factors of CAG patients, including strengthening psychological counseling and disease awareness education to improve clinical treatment efficacy and compliance.

In conclusion, Shenlian Granules can better regulate multiple substances in the serum of CAG rats to resist oxidation and repair liver and kidney function, and significantly improve the behavioral state and body weight of CAG rats, thereby achieving the purpose of treating CAG.

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Analysis of Lu Lihuan's Experience in Treating Chronic Pharyngitis Using the "Three-Step Pharyngitis-Relieving" Method

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Abstract

Lu Lihuan, the son of Lu Shouyan, the founder of the national intangible cultural heritage "Lu's Acupuncture", is a representative inheritor of this traditional technique. The author of this paper had the privilege of studying under Master Lu, absorbing his teachings, and inheriting his academic thoughts. This paper summarizes Master Lu's clinical experience in treating chronic pharyngitis using the "three-step pharyngitis-relieving" method, introducing his experience in syndrome differentiation, acupoint selection principles, and other clinical insights related to this condition.

Keywords

Chronic pharyngitis
Lu's acupuncture, Combining
acupuncture and medication

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1. Introduction

Chronic pharyngitis is a common clinical condition characterized by diffuse inflammation of the pharyngeal mucosa, submucosa, and lymphatic tissues. In traditional Chinese medicine, it falls under the categories of "plum-stone "Qi" " and "laryngeal obstruction". Statistics indicate that with increasing life stress and worsening air pollution, the incidence of chronic pharyngitis has been rising annually, with prolonged disease courses. The prevalence rate among adults is approximately 20% ^[1].

Director Lu Lihuan is a representative successor of "Lu's Acupuncture Therapy", a national and Shanghai

municipal intangible cultural heritage, and the son of Lu Shouyan, a leading authority in acupuncture. Mr. Lu has comprehensively inherited the academic thoughts of Lu's Acupuncture and, through decades of consistent clinical practice, he has adhered to traditional methods while not being bound by them, incorporating many innovations into the passing down. This paper provides a brief summary and analysis of Director Lu Lihuan's academic thoughts on chronic pharyngitis.

2. Lu Lihuan's understanding of chronic pharyngitis

Chronic pharyngitis, known as “deficiency fire throat obstruction” or “beaded throat obstruction” in traditional Chinese medicine, falls under the category of throat obstruction ^[2]. Mr. Lu believes that chronic pharyngitis generally has a long course and often occurs on the basis of deficiency in the “Yin” and “Yang”, “Qi”, and blood of the internal organs. It is commonly caused by prolonged unresolved wind-heat or warm-heat conditions, with residual pathogens remaining, which over time damage the “Yin”. Therefore, this condition is predominantly characterized by deficiency, with “Yin” deficiency being more prominent. When water fails to restrain fire, deficiency fire rises and scorches the throat, leading to “Yin” deficiency symptoms such as sore throat, burning sensation, worsening symptoms with excessive speech or in the afternoon. Additionally, “Qi” deficiency is also commonly observed, so attention should also be paid to invigorating the spleen and replenishing “Qi”. In most patients, on the basis of deficiency, the body's fluids and blood are unable to circulate properly, accumulating in the throat, thus forming phlegm retention and blood stasis. This results in symptoms such as a sensation of a foreign body or obstruction in the throat, and dark red or deep red congestion of the throat mucosa, indicating symptoms of phlegm-dampness or blood stasis.

Therefore, Mr. Lu summarizes the pathological factors of this condition as deficiency, phlegm, and stasis, with “Yin” deficiency as the root cause and phlegm and stasis accumulation as the manifestations. He emphasizes the key points of acupuncture as “treating deficiency, phlegm, and stasis, and selecting acupoints based on discomfort”, and has developed the “Three-Step Throat-Relieving” method to further standardize the acupuncture treatment pathway for chronic pharyngitis.

3. Lu Lihuan's “three-step throat-relieving” characteristic therapy for chronic pharyngitis

Through years of clinical practice, Mr. Lu has summarized the “Three-Step Throat-Relieving” method based on the characteristic techniques of Lu's Acupuncture, which includes “direct needling at the site of discomfort”,

“treating deficiency, phlegm, and stasis”, and “combining acupuncture with medication to consolidate the foundation”. This method has shown good efficacy in treating chronic pharyngitis, and is described in detail below.

3.1. Characteristics of Lu's acupuncture

The Lu's Acupuncture School has always emphasized acupuncture manipulation techniques. Inspired by the lines from “Biao You Fu”, press firmly and repeatedly with the left hand to disperse “Qi”, and insert gently and slowly with the right hand to avoid pain” and from “Liu Zhu Zhi Wei Fu”. The needle should be inserted quickly and advanced slowly once in place”, the Lu's School commonly employs the “claw-cutting needle insertion technique” with both hands in clinical acupuncture practice ^[3]. Building on this foundation, Elder Lu innovated the “sequential force application” needle manipulation technique. This involves, during needle insertion, the left hand (the pressing hand) applying a strong lateral pressure on the acupoint with the thumb while the right hand (the inserting hand) holds the needle and applies sequential force from the chest, upper arm, forearm, wrist, to the fingertips, with the needle tip slightly rotating as it is inserted into the acupoint to the desired depth. This is followed by small-amplitude lifting-thrusting and twirling to facilitate “Qi” movement, combining the effects of manipulation and “Qi” activation ^[4]. Additionally, the Lu's School strongly advocates for warm needle acupuncture, believing that it not only has the effect of warming and promoting the flow of meridian “Qi” but also supplements the insufficient strength of the needle ^[5]. Elder Lu strictly adheres to the operational techniques of Lu's Acupuncture in clinical practice and, through years of clinical experience, has developed a distinctive clinical diagnosis and treatment approach.

3.2. “Three-step throat-benefiting” characteristic therapy

3.2.1. Direct needling at the site of discomfort

(1) Acupoint selection

Dongfeng acupoint (an extra meridian acupoint located on the neck, below the lower border of the mandible, anterior to the carotid artery, and 0.5 cun anteroinferior to Tianrong acupoint of the Small Intestine Meridian)

(2) Operation

The patient assumes a supine position, and the local area is routinely disinfected. A disposable acupuncture needle of 0.3 mm × 40 mm is selected, and the needle tip is inserted directly towards the throat for a depth of one to one and a half cun. The patient may experience a sensation of heaviness and distension radiating towards the throat at the needling site. Warm needle acupuncture is applied by twisting moxa wool the size of a jujube pit onto the needle tails on both sides, followed by retaining the needles for 20 minutes.

Despite being nearly ninety years old, Elder Lu has a profound understanding of Western anatomy. Influenced by Western anatomical knowledge, Elder Lu proposed the key point of needling “at the site of discomfort”, emphasizing acupuncture treatment around the area of discomfort. Elder Lu believes that, in a diseased state, the location of discomfort most accurately reflects the nature of the disease. After fully grasping the anatomy of the affected area, direct needling at the site of discomfort can produce immediate effects in unblocking meridians and dispersing pathogenic factors. Therefore, when treating chronic pharyngitis, Mr. Lu always applies acupuncture at the Dongfeng acupoint. This acupoint is located in the submandibular triangle, and a straight needle insertion can reach the posterior pharyngeal wall. The area behind the mandible is innervated by branches of the lingual nerve and glossopharyngeal nerve. Straight needle insertion at this location can effectively alleviate uncomfortable symptoms such as pharyngeal itching and dryness, showing better clinical efficacy compared to the traditional use of the Tiantu acupoint.

3.2.2. Treatment based on deficiency, phlegm, and blood stasis

(1) Acupoints

Chize (bilateral), Zhongwan, Hegu (bilateral), and Baihui

(2) Operation

The patient lies in a supine position. After routine skin disinfection, disposable acupuncture needles measuring 0.35 mm × 40 mm are used for needle insertion. The straight insertion depth for Chize, Zhongwan, and Hegu is approximately one cun. Zhongwan is stimulated with twirling reinforcing

manipulation upon “Qi” arrival, while Chize and Hegu are stimulated with twirling reducing manipulation. A disposable acupuncture needle measuring 0.25 mm × 25 mm is used for oblique insertion at Baihui, with the needle tip reaching the subgaleal layer. After “Qi” arrival at these acupoints, warm needle technique is applied, and all needles are retained for 20 minutes.

Numerous discussions on chronic pharyngitis can be found in medical texts throughout history, particularly in the Huangdi Neijing. Mr. Lu is well-versed in the Neijing and strongly agrees with statements such as “Rebellion of the Hand Yangming channel leads to laryngeal obstruction and swelling” (Su Wen: Jue Lun Pian) and “Dryness of the throat and pharynx indicates a disease in the spleen earth” (Su Wen: Yin Yang Lei Zheng)^[6]. Mr. Lu believes that chronic pharyngitis often arises from deficiencies in the five viscera, leading to the formation of pathogenic factors such as phlegm-dampness, fire-evil, and blood stasis. During the course of the disease, it is highly prone to the intertwining and transformation of deficiency and excess conditions. Therefore, when treating chronic pharyngitis, Mr. Lu not only focuses on clearing pathogenic factors but also pays great attention to nourishing deficiencies. Only by strengthening the foundation and consolidating deficiencies can the disease be controlled at its source and treatment efficacy be consolidated. Hence, he selects Chize to nourish “Yin” and moisten the lungs, Zhongwan to strengthen the spleen and resolve dampness, Baihui to fortify the body and consolidate deficiencies, and Hegu to regulate “Qi” and blood circulation.

3.2.3. Combination of acupuncture and medication to strengthen the foundation

(1) Medication preparation

BCG Polysaccharide Nucleic Acid Injection, 1 mL (Manufacturer: Hunan Siqi Biopharmaceutical Co., Ltd.; Drug Approval Number: Guoyao Zhunzi S20020019; Specification: 1ml/ampoule).

(2) Acupoints

Bilateral Zusanli for acupoint injection, with 0.5 mL injected per acupoint, twice a week.

In clinical practice, Mr. Lu selects different drugs for acupoint injection based on the patient’s symptoms. He believes that acupoint injection, guided by the dialectical

thinking of Traditional Chinese Medicine (TCM), utilizes injections of Western medicine or proprietary Chinese medicines to further enhance therapeutic effects. Chronic pharyngitis has a long duration and is prone to recurrent episodes, strongly related to the patient's own immune capacity. Both Zusanli (ST36) acupoint and Bacillus Calmette-Guerin Polysaccharide Nucleic Acid Injection have immune-boosting effects. The combined use of these two can integrate the stimulation of acupuncture, the properties of the drugs, and the penetrating effect on acupoints, thereby exerting their comprehensive effects and achieving the purpose of strengthening the body's foundation.

4. Case examples

Ms. Li, female, aged 36, first consultation date on March 19, 2023.

The patient has a history of chronic pharyngitis. Two weeks ago, after a high fever from COVID-19 infection, she developed symptoms of sore throat, itchy throat, and dry throat. Currently, her COVID-19 antigen test has turned negative, but she still experiences itchy throat, dry throat, and a foreign body sensation in her throat. She is also prone to fatigue, has dry stools, and poor sleep quality. Her tongue is red, especially at the tip, with tooth marks on the sides, a thin coating, and a thin and wiry pulse.

(1) Western medicine diagnosis

Chronic pharyngitis; TCM diagnosis: Chronic laryngeal obstruction; Dialectical classification: Heat excess damaging "Yin", "Qi" deficiency and phlegm accumulation;

(2) Treatment principle

Nourishing "Yin" and reducing fire, strengthening the spleen and resolving phlegm, clearing and benefiting the throat.

Following the aforementioned ideas and treatment principles, Mr. Lu formulated the main acupuncture points for chronic pharyngitis as Dongfeng (bilateral), Chize (bilateral), Zhongwan, Hegu (bilateral), and Baihui. Based on the patient's symptoms and condition, he tailored the prescription, selecting Ningshen, Tianshu (bilateral), Qihai, Sanyinjiao (bilateral), Taichong (bilateral), Zusanli (bilateral), and Zhaohai (bilateral). Technique is by wisting reinforcement and reduction. Warm needle acupuncture was added to bilateral

Dongfeng, Hegu, Tianshu, Zusanli, Zhaohai, as well as Zhongwan and Qihai. Acupoint injection: Bilateral Zusanli; Drug: Bacillus Calmette-Guerin Polysaccharide Nucleic Acid Injection 1 mL, with 0.5 mL injected per acupoint, twice a week.

On her second consultation, the patient's sensation of a foreign body in the throat significantly improved, and her sleep quality also improved compared to before. The previous prescription was maintained. Subsequently, modifications were made based on the prescription according to the symptoms, and all symptoms resolved after one month.

Needling the Dongfeng acupoint (a specific acupuncture point) in a straight manner can reach the tonsils and the posterior pharyngeal wall. The posterior part of the mandible is innervated by branches of the glossopharyngeal nerve and the lingual nerve. Therefore, straight needling at this point can effectively alleviate throat discomforts such as itching and dryness, making it an empirically effective acupoint used by Mr. Lu in treating pharyngitis. The Chize acupoint (LU5) is the He-sea point of the Lung Meridian of Hand Taiyin. According to the Huangdi Neijing (The Inner Canon of Huangdi), "It enters the Chize, which is the artery in the elbow, serving as the He-sea point of the Hand Taiyin Meridian". Its operational pattern involves, on one hand, transporting and transforming water "Qi" through the lung to the Kongzui acupoint (LU6), and on the other hand, transforming water into "Qi" and circulating it in the upper regions. Throat pain and itching caused by lung dryness can be alleviated by needling this point, which moistens the lung and dispels fire to reverse the adverse flow. The Baihui acupoint (GV20) is a commonly used acupoint in Mr. Lu's clinical practice. Mr. Lu believes that the Baihui, located at the vertex of the head, is the convergence point of numerous meridians. It can not only treat neurological disorders such as insomnia and headaches but also enhance the body's vital energy ("Qi"). It is particularly suitable for patients who have recovered from illness but whose vital energy has not fully restored. When combined with acupoints like Ningshen (a calming acupoint) and Sanyinjiao (SP6), it can induce calmness and sleep. The Zhongwan acupoint (CV12) is the Fu-gathering point among the eight influential points, which has the function of invigorating the spleen and resolving

dampness. When combined with the Hegu acupoint (LI4), it regulates the function of the Fu organs. When paired with the Baihui and Qihai acupoints (CV6), it can elevate “Yang” and replenish “Qi”. The Zhaohai acupoint (KI6) belongs to the Kidney Meridian of Foot Shaoyin and is the intersection point of the Foot Shaoyin and Yinqiao Meridians, where the water of the Kidney Meridian converges. It is a commonly used acupoint by Mr. Lu in treating “Yin”-deficiency diseases. When combined with the Tianshu (ST25) and Sanyinjiao acupoints, it can moisten the intestines and facilitate bowel movements. The Zusanli acupoint (ST36) can regulate the body’s immunity and enhance disease resistance. When combined with the Baihui and Zhongwan acupoints, it can regulate the spleen and stomach and replenish “Qi”. When paired with the Hegu acupoint, it can dredge the meridians and activate collaterals. Additionally,

considering the high work pressure patients usually face, Mr. Lu selects the Taichong acupoint (LR3) to soothe the liver and regulate “Qi”, ensuring that tonification is accompanied by dispersion, preventing stagnation, and accelerating the dispersion of pathogenic factors in the throat. The combination of these acupoints collectively nourishes “Yin”, reduces fire, strengthens the spleen, resolves phlegm, and clears and benefits the throat.

In summary, Mr. Lu’s treatment of chronic pharyngitis is characterized by rigorous differentiation of symptoms, a combination of traditional Chinese and Western approaches in acupoint selection, and an emphasis on integrating traditional Chinese medicine with modern medical practices. This approach has opened up new avenues for clinical acupuncture treatment, achieved favorable clinical outcomes, and received unanimous recognition from patients.

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Clinical Application of Fire Needle Therapy in Dermatological Diseases: A Research Progress

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Abstract

The clinical treatment of skin disorders follows the principle of “internal and external dual therapy” in traditional Chinese medicine (TCM). Fire needle therapy, as a millennium-old traditional external treatment method, has been widely used in dermatology due to its advantages of simple operation, significant efficacy, low cost, and high safety. This paper systematically reviewed relevant literature from the past five years (2020–2025) to analyze the clinical efficacy of fire needle therapy in common skin diseases such as acne, folliculitis, herpes zoster, flat warts, psoriasis, vitiligo, eczema, neurodermatitis, and nodular prurigo. The focus was on exploring its mechanisms of action and therapeutic advantages, aiming to provide theoretical evidence for optimizing clinical treatment strategies.

Keywords

Dermatosis
Fire needle
External treatment

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1. Introduction

Fire needle therapy, as a gem of traditional Chinese external treatment, traces its origins back to the era of Huangdi Neijing (Yellow Emperor's Inner Canon). The Lingshu·Guanzhen (Spiritual Pivot • Needle Techniques) documented (cui-ci) and the Suwen (Simple Questions) described (fan-zhen jie-ci), both illustrating this unique needle-heating technique. Physician Yang Jizhou in Zhenjiu Dacheng (Complete Works of Acupuncture and Moxibustion) emphasized the critical procedure of burning the needle until it glows red over a lamp, a standard that aligns with modern clinical requirements of heating the needle to a white-hot state. This method,

which involves puncturing lesions with heated needles at specific temperatures, not only preserves the meridian-regulating effects of traditional acupuncture but also achieves bidirectional regulation of clearing heat-toxins and warming “Yang”-dispersing cold through thermal effects. In dermatology, fire needle therapy has become a vital treatment for stubborn skin conditions such as acne, herpes zoster, and flat warts, owing to its simple operation, low cost, and minimal adverse reactions. Recent clinical studies over the past five years have further demonstrated its significant efficacy in immune-related dermatoses like psoriasis and vitiligo. The mechanisms, involving local microcirculation promotion

and immune response modulation through thermal stimulation, are gradually being elucidated by modern medicine.

2. Herpes zoster

Herpes zoster (HZ), known as waist encircling fire cinnabar or snake-like sores in traditional Chinese medicine, exhibits distinct pathogenesis characteristics. In the early stage, the disease primarily manifests as damp-heat accumulation and fire-toxin invasion, while the later stage often involves “Qi” deficiency with concomitant blood stasis and dampness retention. The pathogenesis is typically attributed to emotional disturbances leading to liver depression and heat transformation, downward migration of damp-heat, and stagnation of “Qi”-blood circulation. Zhang Yanling et al. conducted a clinical trial on acute-phase HZ patients with liver-channel heat stagnation syndrome ^[1]. The control group received oral valacyclovir hydrochloride dispersible tablets, mecobalamin tablets, and gabapentin capsules for 10 consecutive days, while the intervention group underwent thread-fire needle Zhan puncturing combined with cupping therapy (daily for the first 3 days, then every other day for a total of 10 sessions).

The results demonstrated that the intervention group showed significantly shorter vesicle cessation, crusting, and desquamation times compared to the control group (all $p < 0.01$). Additionally, the intervention group exhibited markedly lower VAS pain scores, PSQI sleep quality scores, and PHN incidence rates (all $p < 0.05$), suggesting that thread-fire needle Zhan puncturing effectively alleviates pain, promotes lesion healing, improves sleep quality, and reduces PHN risk. Gao Ning et al. randomized 92 acute-phase HZ patients into painless thread-fire needle and conventional thread-fire needle groups ^[2]. Both groups received thread-fire needle shallow puncturing with bloodletting, while the painless group received lidocaine cream pretreatment. The painless group demonstrated superior outcomes in pain scores during treatment and comprehensive efficacy improvement (both $p < 0.05$), with no significant adverse reactions observed in either group.

This indicates that painless thread-fire needle therapy not only maintains therapeutic efficacy but also

enhances patient compliance. These findings collectively demonstrate that thread-fire needle therapy achieves dual therapeutic effects, clearing heat-toxins and dissipating blood stasis through its thermal action, while simultaneously regulating “Qi”-blood circulation and supplementing vital “Qi” to dispel pathogenic factors. The clinical evidence confirms its significant value in acute-phase intervention for HZ.

3. Acne

Acne, known as “Fen Ci” in Traditional Chinese Medicine (TCM), is primarily attributed to lung-stomach heat accumulation, damp-heat stagnation, and phlegm-blood coagulation in the skin interstitium. Yang Wenfen et al. conducted a randomized controlled trial involving 100 children aged 8–12 years with lung-channel wind-heat pattern ^[3]. The treatment group received fire needle therapy (once every 4 weeks) combined with internal administration of “Acne Mixture” (derived from Pipa Qingfei Yin, 10 mL tid), while the control group only applied Qimei Huanghua Liniment externally. After 8 weeks, the treatment group demonstrated a significantly higher total effective rate of 94% compared to 70% in the control group ($p < 0.05$). Additionally, GAGS scores, VISIA red area values, and porphyrin levels were markedly reduced, with only one case of local infection due to improper postoperative care. These findings suggest that fire needle combined with Pipa Qingfei Yin can safely and effectively control childhood acne while reducing recurrence rates.

Bao Jianzheng et al. enrolled 102 patients aged 18–35 years with liver-channel stagnation-heat pattern ^[4]. The observation group received fire needle therapy (Ashi point scattered needling, once weekly) in addition to Fufang Huangboye wet compress and tretinoin cream, while the control group only underwent wet compress and topical medication. After 8 weeks, the observation group achieved a total effective rate of 96.08%, significantly higher than the control group’s 84.31% ($p < 0.05$). Scores for papules, pustules, nodules, itching, and various skin lesion parameters (quantity, size, color, hardness, and location) were all significantly reduced, with no statistically significant difference in adverse reaction rates between the two groups. This indicates that fire needle

combined with Fufang Huangboye can significantly improve the efficacy of moderate-to-severe acne without noticeable side effects.

4. Flat warts

Flat warts, referred to as “Bian Hou” in Traditional Chinese Medicine (TCM), are primarily caused by disharmony of “Qi” and blood, disordered skin pores, and invasion of wind-heat toxins into the skin. Sheng Rong et al. treated 120 cases with coarse fire needles ($\phi 2.0$ mm) for single-point carbonization of warts, achieving a cure rate of 58.3% and a total effective rate of 91.7%, both significantly superior to the control group receiving intramuscular BCG polysaccharide nucleic acid ($p < 0.05$), with fewer adverse reactions [5]. Yang Guowei et al. employed flat-tip fire needles ($\phi 0.35$ mm) twice weekly for 3 weeks in 35 patients, resulting in a total effective rate of 94.3%, with significantly better scores for rash count, size, color, and isomorphic reaction compared to the topical tretinoin group ($p < 0.05$), along with more pronounced improvements in DLQI quality of life [6]. Both studies demonstrated that fire needles, through their mechanism of “heat guiding heat and warming meridians”, can instantly destroy warts with high temperature and activate local immunity. This approach offers advantages including simple operation, rapid healing, low recurrence, safety, and cost-effectiveness, providing an efficient and feasible new external TCM treatment option for flat warts.

5. Eczema

Eczema, categorized as “Shi Chuang” (wet sores) or “Xue Feng Chuang” (blood wind sores) in Traditional Chinese Medicine (TCM), is primarily characterized by internal damp-heat accumulation and blood deficiency with wind-dryness. He Peiyi et al. conducted a randomized controlled trial involving 80 chronic eczema patients, comparing fire needle perilesional needling (once daily for 7 days) with topical triamcinolone acetonide and econazole cream [7]. The results demonstrated a significantly higher total effective rate of 95% in the fire needle group compared to 75% in the control group ($p <$

0.05). Additionally, lesion and pruritus scores, as well as inflammatory markers (CRP, IL-6, IL-4), were markedly reduced, while IFN- γ levels increased. Notably, the 12-month recurrence rate was only 2.5% in the fire needle group, significantly lower than the control group’s 17.5%. Ge Hao et al. employed digitally controlled electro-fire needles (650 °C, twice weekly for 2 weeks) to treat DNCB-induced chronic eczema in mice, comparing them with clobetasol propionate cream [8].

The study found that electro-fire needles achieved comparable reductions in EASI scores and TEWL (trans-epidermal water loss) while improving stratum corneum hydration and skin moisture. Histopathological analysis revealed significant reductions in epidermal hyperplasia and inflammatory cell infiltration. Importantly, the electro-fire needle protocol required fewer treatment sessions and avoided steroid dependence. Both studies consistently demonstrated that fire needle therapy (including electro-fire needles) exerts anti-inflammatory and immunomodulatory effects through multiple mechanisms: “warming meridians to promote circulation, activating blood to dissipate stasis, regulating Th1/Th2 balance, and repairing the skin barrier”. This approach offers rapid short-term efficacy with low long-term recurrence rates, presenting a novel, safe, efficient, and reproducible external treatment option for clinical practice.

6. Neurodermatitis

Neurodermatitis, categorized as “Niu Pi Xuan” (ox-hide psoriasis) or “She Ling Chuang” (capture collar sores) in Traditional Chinese Medicine (TCM), is primarily attributed to liver depression transforming into fire, blood deficiency with wind-dryness, and damp-heat stagnation. Ming He et al. conducted a randomized controlled trial involving 60 patients, comparing fine fire needle superficial scattered needling (0.35 mm $\times$ 25 mm, 1–2 sessions weekly for 2 weeks) combined with oral loratadine against topical desonide [9]. The results demonstrated comparable total efficacy rates (93.3% vs 96.7%), but notably, the 6-month recurrence rate was significantly lower in the fire needle group (10%) compared to the steroid group (30%, $p < 0.05$). Wang Yuemei et al. expanded the study with 132 patients,

combining fire needle therapy with desloratadine for 4 weeks^[10]. The intervention achieved a total efficacy rate of 97.0%, superior to the medication-only group's 84.9%. Furthermore, serum levels of pro-inflammatory cytokines (TNF- α , IL-6, IL-8) and pruritus mediators (histamine, substance P, 5-HT, β -EP) showed significantly greater reductions, accompanied by marked improvements in HAMA, HAMD, and DLQI scores (all $p < 0.05$).

These studies demonstrate that fire needle therapy exerts its therapeutic effects through multiple mechanisms: "heat guiding heat, warming meridians to promote circulation, and purging fire toxins". This approach improves local microcirculation, inhibits inflammatory and pruritogenic mediators, and modulates the immune-neuro-endocrine network. While achieving comparable or superior immediate efficacy to corticosteroids, fire needle therapy significantly reduces recurrence rates, minimizes steroid dependence, and alleviates anxiety-depressive symptoms.

7. Vitiligo

Vitiligo, termed Bai Ban Feng in Traditional Chinese Medicine (TCM), arises from liver "Qi" stagnation, constitutional cold-deficiency, or "Yin"-deficient heat, compounded by wind pathogen invasion, leading to disrupted "Qi"-blood harmony and cutaneous malnourishment. Zhao Xueqi et al. demonstrated that fine-fire needle therapy (once weekly for 12 weeks) in 26 stable vitiligo patients significantly reduced Vitiligo Area Scoring Index (VASI) scores ($p < 0.05$), restored basal layer pigment rings (69% efficacy via reflectance confocal microscopy), and lowered serum TNF- α levels by 31% compared to 0.1% tacrolimus ointment, with only 7.7% adverse events^[11]. This aligns with TCM's "treating cold with heat" principle, where thermal stimulation enhances blood circulation, disperses cold, and mitigates inflammatory apoptosis of melanocytes. Li Jingjing et al. elucidated that Lingnan fire needles activated the Hippo-YAP pathway in hydroquinone-induced C57BL/6 vitiligo models, upregulating YAP1 and TP73 expression while suppressing oxidative markers (MDA, MAO) and boosting tyrosinase (TYR) activity^[12]. This resulted in a 94% increase in basal melanocytes and > 50% depigmentation score reduction, outperforming

clobetasol.

8. Malassezia folliculitis

Malassezia folliculitis (MF) corresponds to the traditional Chinese medicine (TCM) pattern of "lung-wind acne" and is attributed to accumulated damp-heat in the gastrointestinal tract complicated by wind-heat toxins lodging in the skin. Jiang et al. conducted a randomized trial in which 27 patients with gastrointestinal damp-heat-type MF received weekly fire-needle blood-letting plus a self-formulated dampness-purging acne decoction (DPAD) for four weeks. The marked-effective rate reached 88.89%, significantly higher than the 65.38% achieved by DPAD alone ($p < 0.05$)^[13].

Compared with baseline, the combined intervention markedly reduced lesion scores, pruritus, pain and seborrhoea, and achieved an 81.48% fungal clearance rate without noticeable adverse events. In a pediatric case report, Chu et al. treated a 12-year-old boy diagnosed as "lou-gu jie" (scalp dissecting cellulitis with abscess) manifesting the same damp-heat pattern^[14].

After eight sessions of multi-point superficial fire-needling plus the "old-ten-needles" abdominal regimen to fortify the spleen and eliminate dampness, nodulocystic lesions resolved completely and hair regrew; no relapse was observed during three months of follow-up.

9. Psoriasis

Plaque-type psoriasis falls under the categories of Bai Bi (white scales) and Gan Xuan (dry eczema) in Traditional Chinese Medicine (TCM). Chronic cases often involve blood stasis, closely linked to emotional distress, latent consumption of nutrient blood, and external invasion by wind-cold. Liu Jiuli et al. conducted a retrospective analysis of 221 patients with blood stasis in the stationary phase, treating them with Huoxue Sanyu Decoction as the base, supplemented respectively with fire needle, standard acupuncture, or herbal decoction alone for 8 weeks^[15]. The fire needle group achieved a total effectiveness rate of 94.23%, significantly outperforming the acupuncture group (89.74%) and the herbal group (80.22%, all $p < 0.05$). Moreover, the fire needle group showed greater reductions in PASI, VAS,

and DLQI scores, suggesting that the warmth of fire needles can warm meridians, promote blood circulation, and nourish the skin by facilitating “Qi”-blood flow. Li Jingjing et al. randomized 60 plaque-type psoriasis patients into Lingnan fire needle group and calcipotriol ointment control group for 8 weeks ^[16]. The fire needle group achieved a cure-marked rate of 86.67%, surpassing the control group (66.67%, $p < 0.05$). Improvements in PASI, DLQI, GAD-7 scores, and dermoscopic vascular globule diameter were also more pronounced. The study highlights that fire needles, leveraging fire to invigorate “Yang”, can open pores, expel heat, resolve stasis, and regenerate tissues, while also modulating immunity, reducing inflammatory factors, and alleviating anxiety.

10. Conclusion

In conclusion, fire-needle therapy stands at a pivotal crossroads between centuries-old empirical wisdom and twenty-first-century evidence-based dermatology. Its

documented clinical utility across a broad spectrum of skin disorders, coupled with compelling economic and safety advantages, positions FNT as a prime candidate for integrative medicine programs worldwide. Yet realizing this potential will require a coordinated research agenda that couples rigorous mechanism-of-action studies with robust, internationally recognized clinical-trial platforms. By embracing quantitative thermal engineering, systems-immunology profiling, and AI-assisted image analytics, the field can transform an artisanal technique into a precision intervention. We therefore call for multidisciplinary consortia, uniting acupuncturists, dermatologists, biomedical engineers, and regulatory scientists to establish standardized operating protocols, biomarker-driven outcome matrices, and high-quality randomized evidence. Such efforts will not only elevate FNT to the echelons of global dermatologic therapeutics, but also enrich the broader dialogue on how traditional medicines can be systematically modernized for the benefit of patients worldwide.

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Disclosure statement

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Clinical Study on the Treatment of Erectile Dysfunction of Heart Gallbladder Qi Deficiency Type with Ethnic Medicine Huixin Grass Loading

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Abstract

Objective: To observe the therapeutic effect of traditional Chinese medicine (TCM) loaded with Western medicine on erectile dysfunction (heart and gallbladder “Qi” deficiency type), explore its clinical efficacy and safety, and provide new clinical ideas and methods for the application of TCM in the treatment of erectile dysfunction based on syndrome differentiation. **Method:** 80 patients who met the inclusion criteria for this clinical study and received treatment at the Men's Outpatient Department of Zhuhai Hospital of Guangdong Provincial Hospital of Traditional Chinese Medicine from December 2023 to December 2024 were selected and divided into two groups using a random number table method, with 40 patients in each group. The control group received daily basic treatment medication: Tadalafil tablets, orally taken after lunch, 5 mg/time, once a day, for 8 weeks; The observation treatment group added 15g of *Houttuynia cordata* to the control group, which was decocted in water twice a day and taken orally in the morning and evening. The treatment course is 8 weeks, and the clinical efficacy of the two groups of patients is objectively evaluated by observing the clinical efficacy rate (primary efficacy indicator), the efficacy rate of traditional Chinese medicine syndrome (secondary efficacy indicator), the improvement of international erectile function (IIEF-5) score, traditional Chinese medicine syndrome score, audio-visual stimulation erection test (AVSS), and erection hardness (EHS) score before and after treatment. **Result:** The treatment group completed 40 cases, while the control group completed 39 cases. After treatment, the clinical effective rates of the observation group and the control group were 85.00% and 69.23%, respectively, and the difference between the observation group and the control group was statistically significant ($p < 0.05$); The effective rates of traditional Chinese medicine syndrome in the observation group and the control group were 87.50% and 33.33%, respectively, and the difference between the observation group and the control group was statistically significant ($p < 0.01$); After treatment, the IIEF-5 scores of the observation group and the control group were 21.00 (19.25–23.75) and 18.00 (14.00–21.00) points, respectively. The difference between the observation group and the control group was statistically significant ($p < 0.05$); After treatment, the TCM syndrome scores of the observation group and the control group were 2.00 (2.00–6.00) points and 12.00 (6.00–20.00) points, respectively. The difference between the observation group and the control group was statistically significant ($p < 0.01$); After the treatment, the results of AVSS showed that the tip average rigidity of the observation group and the control group were 53.91 ± 11.98

and 47.63 ± 14.80 , respectively, and the base average rigidity was 68.00 (53.75, 74.50) and 57.13 ± 9.38 , respectively. The duration of tip erection was 11.53 ± 4.85 and 6.22 ± 1.93 , respectively, and the duration of base erection was 11.28 ± 4.11 and 8.81 ± 3.50 , respectively. The tip penile tumescence was 38.27 ± 6.48 and 33.44 ± 5.82 , respectively, and the base penile tumescence was 38.64 ± 6.49 and 34.44 ± 5.80 , respectively. The differences between the observation group and the control group were statistically significant ($p < 0.005$, $p < 0.001$); After treatment, the EHS scores of the observation group and the control group were 3.00 (3.00–4.00) points and 2.00 (2.00–3.00) points, respectively. The difference between the observation group and the control group was statistically significant ($p < 0.05$). *Conclusion:* Western medicine loaded with Huixincao can significantly improve the clinical efficacy of erectile dysfunction of heart and gallbladder “Qi” deficiency type, and can significantly improve ED and its associated clinical symptoms, improve patients’ traditional Chinese medicine symptoms, and have a good drug safety.

Keywords

Erectile dysfunction; Heart-gallbladder “Qi” deficiency; Huixincao; Tadalafil; Efficacy

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1. Introduction

Erectile dysfunction (ED) refers to the persistent inability of men to achieve or maintain sufficient penile erection to complete satisfactory sexual activity, and is a common and frequently occurring disease in adult males ^[1]. Penile erection is closely related to neurological, endocrine, and vascular factors, and psychological and psychological factors also play important roles ^[2]. In recent years, many scientific studies have shown that ED is an early symptom and danger signal of cardiovascular diseases (CVD), which can affect the quality of life of patients and their partners ^[3]. ED and CVD share common risk factors, and most CVD treatments can also improve erectile function ^[4]. Huixin Grass is a traditional herbal medicine of ethnic minorities in China. It is good at nourishing the heart and calming the nerves, calming and invigorating the “Yang”, clearing the liver and improving the eyesight. At present, its research and application are mainly concentrated in the field of cardiovascular diseases, with antioxidant, hypolipidemic, anti-atherosclerosis and other effects. Given the efficacy of Huixincao in treating CVD and our experience in using traditional Chinese medicine formulas containing Huixincao to treat ED in clinical practice, this study observed the effect of Huixincao loaded with tadalafil in the treatment of ED and explore its role in treating heart gallbladder “Qi” deficiency type ED ^[5,6].

2. Data and methods

2.1. Clinical data

80 patients who received treatment at the Men’s Clinic of Zhuhai Hospital of Guangdong Provincial Hospital of Traditional Chinese Medicine from December 2023 to December 2024 met the inclusion criteria for this trial. They would be randomly divided into an observation group and a control group, with 40 patients in each group, using a random number table method. The average age of the observation group was 35.45 ± 7.45 years, with a disease course of 12.50 (6.00 to 26.00) months; The average age of the control group was 35.00 ± 8.58 years, with a disease course of 12.00 (6.00 to 26.00) months. There was no statistically significant difference in age and disease duration between the two groups ($p > 0.05$). This study was approved by the Ethics Committee of Guangdong Provincial Hospital of Traditional Chinese Medicine (Approval Number: BF2023-199). All operations strictly comply with relevant ethical regulations.

2.2. Diagnostic criteria

2.2.1. Diagnostic criteria for erectile dysfunction

According to the 2022 edition of the Diagnosis and Treatment Guidelines for Erectile Dysfunction by the Chinese Medical Association, the diagnostic criteria are as follows the penis cannot sustain and maintain sufficient erection to complete satisfactory sexual activity, and the

disease course is more than 3 months ^[1].

2.2.2. Diagnostic and differentiation criteria for heart and gallbladder “Qi” deficiency syndrome

The differentiation criteria for heart and gallbladder “Qi” deficiency syndrome: According to the “Andrology of Traditional Chinese Medicine” and the “Guiding Principles for Clinical Research of New Chinese Medicine Drugs”, the traditional Chinese medicine differentiation criteria for heart and gallbladder “Qi” deficiency syndrome are formulated as follows ^[7,8].

(1) Main symptoms (main efficacy indicators)

Weak or short erection, or even inability to achieve erection for more than 3 months

(2) Symptoms (secondary efficacy indicators)

Palpitations, timidity, easy startle, good fear and anxiety, insomnia, frequent dreams, fatigue and shortness of breath

(3) Tongue veins

The tongue texture is light, the coating is thin and white, and the veins are thin

According to the three main symptoms and syndromes, combined with tongue and pulse, it can be diagnosed as heart gallbladder “Qi” deficiency type impotence. Establish the following symptom grading and

quantification table for erectile dysfunction (heart and gallbladder “Qi” deficiency type), as shown in **Table 1**.

2.3. Inclusion criteria

- (1) Male aged 20–50 years old
- (2) Meets the Western diseases and Traditional Chinese Medicine diagnostic criteria for erectile dysfunction
- (3) The total score of the International Index of Erectile Dysfunction-5 (IIEF-5) is ≤ 21 points
- (4) Voluntarily participate and sign an informed consent form

2.4. Exclusion criteria

- (1) Erectile dysfunction caused by spinal cord injury or severe organic diseases
- (2) Abnormal genitalia and secondary sexual characteristics
- (3) Patients with underlying diseases such as hypotension or hypertension, diabetes and other serious cardiovascular and cerebrovascular diseases
- (4) History of pelvic surgery
- (5) Long term use of drugs that affect sexual function

Table 1. Quantitative grading table of symptoms of erectile dysfunction (heart gallbladder “Qi” deficiency type)

Heart and Gallbladder “Qi” Deficiency Type Erectile Dysfunction	Symptoms	Absent (0 points)	Mild (2 points)	Moderate (4 points)	Severe (6 points)
Primary symptom	Erectile dysfunction		Transient erection	Erection not firm enough	Unable to achieve or maintain erection during intercourse
	Timidity and palpitations		Occasional	Frequent	Persistent
	Insomnia with vivid dreams		Occasional	Frequent	Persistent
Secondary symptoms	Dizziness		Occasional	Frequent	Persistent
	Shortness of breath		Occasional	Frequent	Persistent
	Spontaneous sweating		Occasional	Frequent	Persistent
	Fatigue and lassitude		Occasional	Frequent	Persistent
Tongue and pulse (1 point if present)	Pale or red tongue				
	Thin white coating				
	Thin pulse				

- (6) Participants in other clinical trials
- (7) Other special patients, such as those with mental illnesses, allergies, and those who abuse drugs on a regular basis

2.5. Elimination criteria

- (1) Those whose syndrome types change during the treatment process
- (2) Those with poor compliance
- (3) Automatically withdraw from this trial
- (4) Those with incomplete information

2.6. Standard for detachment

- (1) Automatically exit the experimenter
- (2) Missing persons
- (3) Concurrent with other diseases or adverse reactions

2.7. Treatment methods

All enrolled patients were treated with conventional Western medicine in accordance with the 2022 edition of the Diagnosis and Treatment Guidelines for Erectile Dysfunction ^[1]. The control group patients took the western medicine Tadalafil tablets alone (Menarini International Trading (Shanghai) Co., Ltd., product batch number: D451385). Take orally after lunch, 5 mg/time, once a day; On the basis of Western medicine treatment, the observation group patients were given 15 g of Huixincuo decoction pieces (Yunnan Xinglin Tang Biotechnology Co., Ltd., product batch number: 211103), one dose per day, 300 mL of water decoction juice, and 150 mL in the morning and 150 mL in the evening. Both groups were treated and observed for 8 weeks. Sexual activity can be carried out during the treatment period without additional requirements.

2.8. Observation indicators

Statistically analyze two main efficacy indicators (clinical effective rate), secondary efficacy indicators (traditional Chinese medicine syndrome score), IIEF-5 score before and after treatment, erection hardness score, and safety indicators.

2.8.1. Clinical efficacy rate

- (1) Clinical cure

IIEF-5 score ≥ 22 points after medication

- (2) Significant effect
Total score increased by ≥ 5 points
- (3) Effective
The total score has been increased to 2–4 points
- (4) Invalid
Total score increase ≤ 1 point

2.8.2. TCM syndrome score

- (1) Complete relief
TCM primary and secondary symptoms disappear or disappear basically, TCM syndrome score $\geq 95\%$
- (2) Partial relief
Both the primary and secondary symptoms of traditional Chinese medicine have been significantly improved, and the symptom score has been reduced by $< 95\%$
- (3) Effective
Both the primary and secondary symptoms of traditional Chinese medicine have improved, and the symptom score has decreased by $< 70\%$
- (4) Invalid
The main and secondary symptoms of traditional Chinese medicine have not shown significant improvement, and even worsened, with a decrease in symptom scores of less than 30%.

2.8.3. IIEF-5 score

The International Erectile Dysfunction Rating Scale is used for evaluation, with a total of 5 questions, each worth 0–5 points. IIEF-5 score ≤ 7 points is severe, 8–11 points are moderate, 12–16 points are mild to moderate, 17–21 points are mild, and 22–25 points are no ED.

2.8.4. Audiovisual stimulus erectile testing (AVSS)

Rigiscan Plus system (GOTOP Medical Inc.) is used to measure the average rigidity and duration of the tip and base penile erection. The normal values are: tip average rigidity $\geq 40.5\%$, duration of tip penile erection ≥ 4 minutes and 45 seconds, base average rigidity of the root $\geq 48.5\%$, duration of base penile erection ≥ 7 minutes and 45 seconds ^[9, 10].

2.8.5. Erection hardness score (EHS)

It is divided into 5 levels, with scores ranging from 0 to 4.

2.8.6. Safety indicators

Safety indicators include blood routine, urine routine, liver function, kidney function, electrocardiogram, and adverse reactions or events.

3. Statistical methods

SPSS 22.0 was used for data statistics processing and analysis. If the measurement data follows a normal distribution and conforms to homogeneity of variance, one-way analysis of variance will be used for intergroup comparison, LSD method for pairwise comparison, paired sample *t*-test for intra group comparison, and mean $\pm$ standard deviation ($\bar{x} \pm s$) will be used; The distribution is non normal. K-W test is used for intergroup comparison, Bonferroni correction is used for pairwise comparison, and Wilcoxon test is used for intra group comparison, expressed as median (M) and quartiles (P25, P75); Rank sum test is used for grade data, represented by [example (%)]. $p < 0.05$ indicates statistical significance.

4. Results

A total of 80 patients were included, with 1 automatically withdrawing from the control group. Ultimately, a total of 79 patients were included, including 40 in the observation group and 39 in the control group.

4.1. Comparison of clinical efficacy between two groups after treatment

(1) Main efficacy indicators

After treatment, 16 cases were cured, 15 cases showed significant improvement, 3 cases were effective, and 6 cases were ineffective in the observation group, with a clinical effective rate of 85.00%; In the control group, 7 cases were cured, 14 cases showed significant improvement, 6 cases were effective, and 12 cases were ineffective, with a clinical effective rate of 69.23%. The difference in efficacy levels between the two groups was statistically significant ($p < 0.01$).

(2) Secondary efficacy indicators

After treatment, 20 cases were clinically controlled, 11 cases showed significant improvement, 4 cases were effective, and 5 cases were ineffective in the observation group.

The effective rate of traditional Chinese medicine syndrome was 87.50%; In the control group, 4 cases were clinically controlled, 3 cases showed significant improvement, 6 cases were effective, and 26 cases were ineffective. The effective rate of traditional Chinese medicine syndrome was 33.33%. The difference in efficacy levels between the two groups was statistically significant ($p < 0.01$), as shown in **Table 2**.

Table 2. Comparison of clinical efficacy between two groups of patients

Group	No. of case	Cure	Primary efficacy indicators markedly		Efficacy rate	Cure	Secondary Efficacy Indicators Markedly		Efficacy rate
			Effective	Ineffective			Effective	Ineffective	
Observation	40	16	15 3	6	85.00%#	20	11 4	5	87.50%#
Observation	39	7	14 6	12	69.23%	4	3 6	26	33.33%

Compared with the control group, # $p < 0.01$

Table 3. Comparison of IIEF-5 scores between two groups of patients before and after treatment [score, M (P25, P75)]

Group	Number of cases	Pre-treatment	Post-treatment
Observation	40	10.00 (8.25,15.00)	21.00 (19.25, 23.75)*
Control	39	10.00 (7.00, 13.00)	18.00 (14.00, 21.00)

Compared with the control group * $p < 0.05$

4.2. Comparison of IIEF-5 scores between two groups of patients before and after treatment

There was no statistically significant difference in IIEF-5 scores between the two groups of patients before treatment ($p > 0.05$); After treatment, the IIEF-5 scores of both groups of patients significantly increased ($p < 0.05$), and the IIEF-5 score of the observation group was better than that of the control group ($p < 0.05$), as shown in Table 3.

4.3. Comparison of traditional Chinese medicine syndrome scores between two groups of patients before and after treatment

The comparison of TCM syndrome scores between the two groups of patients before treatment showed no statistically significant difference ($p > 0.05$); After treatment, the TCM syndrome scores of both groups significantly decreased ($p < 0.01$), and the TCM syndrome scores of the observation group were significantly better than those of the control group ($p < 0.01$), as shown in Table 4.

4.4. Comparison of AVSS test values before and after treatment between two groups of patients

Tip and base average rigidity, duration of tip and base erection, tip and base penile tumescence were compared between the two groups of patients before and after treatment, and there was no statistically significant difference ($p > 0.05$); After treatment, the detection values of AVSS in both groups improved significantly ($p < 0.005$, $p < 0.001$), and the improvement degree in the observation group was significantly better than that in the control group ($p < 0.05$, $p < 0.01$, $p < 0.005$, $p < 0.001$), as shown in Table 5–10.

4.5. Comparison of EHS scores between two groups of patients before and after treatment

There was no statistically significant difference in EHS scores between the two groups of patients before treatment ($p > 0.05$); After treatment, the EHS scores of both the observation group and the control group patients significantly increased ($p < 0.01$), and the EHS scores of the observation group were better than those of the control group ($p < 0.01$), as shown in Table 11.

4.6. Safety indicators

There were no changes in blood routine, liver and kidney function, electrocardiogram, etc. before and after treatment in both groups of patients, and no adverse reactions or events occurred during the treatment period.

5. Discussion

ED is a common male disease, and according to statistics, over 150 million men worldwide suffer from varying degrees of ED; Among males aged 40 and above in China, 40.6% suffer from ED^[11,12]. The risk factors for ED are related to age, lifestyle, genetics, and cardiovascular disease^[13].

The traditional Chinese medicine disease of erectile dysfunction (ED) is called “impotence” or “muscle weakness”. This disease often occurs due to improper sexual activity, emotional disorders, and irregular diet, resulting in dampness, heat, blood stasis, depression, deficiency, and other factors affecting the tendons^[14]. In ancient times, medical practitioners believed that the treatment of erectile dysfunction was mainly attributed to the kidneys, and the syndrome differentiation was often based on kidney “Yang” deficiency and decline. The rule of law for tonifying the kidneys and strengthening “Yang” was commonly used. However, modern people have depression, anxiety and fear due to high work pressure, family conflicts and other factors, or psychological impotence caused by excessive inhibition of sexual excitement in the cerebral cortex due to failure of first sexual intercourse and excessive mental pressure, or mixed impotence caused by primary diseases such as diabetes, high blood pressure, cardiovascular and cerebrovascular diseases, so the diagnosis and treatment of this disease has changed significantly compared with the traditional kidney “Yang” deficiency type. Traditional Chinese Medicine believes that the heart contains the spirit, which is an official of the monarch and governs the physiological activities of the human body; Gallbladder “Qi” flows through the heart, and when the gallbladder “Qi” is abundant, one can make a decision.

The “Collection of Famous Physicians” records: “The storage and release of essence are nothing but obedience to the heart.” When Jun Huo is aroused by desire, the corresponding fire follows, and the heart “Qi” flows

Table 4. Comparison of traditional Chinese medicine syndrome scores between two groups of patients before and after treatment [Score, M (P25, P75)]

Group	Number of cases	Pre-treatment	Post-treatment
Observation	40	21.00 (14.50, 37.50)	2.00 (2.00, 6.00)#
Control	39	24.00 (14.00, 38.00)	12.00 (6.00, 20.00)#

Compared with the control group # $p < 0.01$ **Table 5.** Tip average rigidity before and after treatment for both groups [$\bar{x} \pm s$ or M (P25–P75)]

Group	Number of cases	Pre-treatment	Post-treatment	<i>t</i>	<i>p</i>
Observation	40	34.91 $\pm$ 8.23	53.91 $\pm$ 11.98	-8.186	0.000
Control	39	33.91 $\pm$ 9.56	47.63 $\pm$ 14.80	-4.091	0.000

Table 6. Base average rigidity before and after treatment for both groups [$\bar{x} \pm s$ or M (P25–P75)]

Group	Number of cases	Pre-treatment	Post-treatment	<i>t/Z</i>	<i>p</i>
Observation	40	39.50 $\pm$ 13.24	68.00 (53.75, 74.50)	-4.762	0.000
Control	39	40.82 $\pm$ 11.04	57.13 $\pm$ 9.38	-6.217	0.000

Table 7. Duration of tip erection before and after treatment for two groups ($\bar{x} \pm s$)

Group	Number of cases	Pre-treatment	Post-treatment	<i>t/Z</i>	<i>p</i>
Observation	40	0.50 (0.00, 2.00)	11.53 $\pm$ 4.85	-4.911	0.000
Control	39	0.00 (0.00, 3.75)	6.22 $\pm$ 1.93	-3.718	0.000

Table 8. Duration of base erection before and after treatment for two groups [$\bar{x} \pm s$ or M (P25–P75)]

Group	Number of cases	Pre-treatment	Post-treatment	<i>t/Z</i>	<i>p</i>
Observation	40	0.50 (0.00, 3.00)	11.28 $\pm$ 4.11	-4.933	0.000
Control	39	1.75 (0.50, 4.12)	8.81 $\pm$ 3.50	3.806	0.000

Table 9. Tip penile tumescence before and after treatment in two groups ($\bar{x} \pm s$)

Group	Number of cases	Pre-treatment	Post-treatment	<i>t/Z</i>	<i>p</i>
Observation	40	29.74 $\pm$ 11.66	38.27 $\pm$ 6.48	-4.180	0.000
Control	39	27.15 $\pm$ 7.63	33.44 $\pm$ 5.82	-3.646	0.001

Table 10. Base penile tumescence before and after treatment in two groups [$\bar{x} \pm s$ or M(P25–P75)]

Group	Number of cases	Pre-treatment	Post-treatment	<i>t/Z</i>	<i>p</i>
Observation	40	29.32 $\pm$ 6.09	38.64 $\pm$ 6.49	-6.752	0.000
Control	39	28.50 (25.00, 34.00)	34.44 $\pm$ 5.80	-1.520	0.128

Table 11. Comparison of EHS scores between two groups of patients before and after treatment [score, M (P25, P75)]

Group	Number of cases	Pre-treatment	Post-treatment
Observation	40	2.00 (1.00, 2.00)	3.00 (3.00, 4.00) #
Control	39	2.00 (1.00, 2.00)	2.00 (2.00, 3.00) #

Compared with the control group # $p < 0.01$

down to the liver and kidneys, leading to the development of “Yang” affairs ^[15]. In addition, modern people have high mental pressure and heavy psychological burden, so heart gallbladder “Qi” deficiency type impotence is more common in clinical practice. This type of patient is often due to weak heart and “Qi”, and often manifests as physical timidity, timidity when faced with problems, suspicion and anxiety, palpitations and insomnia, hesitation and hesitation, and fear of sexual activity; Or due to mental disturbance, unable to communicate with the liver and kidneys, and unable to excite the “Yang” pathway; Or due to poor emotions, inability to make decisions, weak gallbladder “Qi” leading to poor “Qi” flow, insufficient heart and gallbladder “Qi”, weak and timid heart can cause weak and weak tendons, and even complete inability to achieve erection ^[16]. Traditional Chinese medicine can differentiate it as heart and gallbladder “Qi” deficiency syndrome, while modern medicine is more common in psychological and mixed erectile dysfunction.

Modern medicine believes that penile erection relies on peripheral neurovascular and non-adrenergic non-cholinergic mechanisms (NANC). When sexually stimulated, the parasympathetic nervous system, NANC nerve endings, and endothelial cells in the penile sponge synthesize and release nitric oxide (NO) under the catalysis of nitric oxide synthase (NOS). On the one hand, NO activates potassium ion channel ATPase to induce smooth muscle cell membrane overactivation, blocking the opening of voltage dependent calcium ion channels, thereby reducing intracellular calcium ion concentration; On the other hand, NO activates soluble guanylate cyclase (GC) in the cytoplasm, which converts 5-guanine triphosphate (GTP) into cyclic guanosine monophosphate (cGMP). cGMP, as the second messenger molecule in cells, can reduce the calcium ion concentration in the cytoplasm of smooth muscle cells, causing smooth muscle relaxation and inducing penile erection ^[17-19].

ED and CVD have the same risk factors, such as age, hyperlipidemia, smoking, etc., and can also induce endothelial dysfunction due to depression, diabetes, hypertension, obesity, metabolic syndrome and bad lifestyle, so ED is closely related to CVD ^[18, 19]. Meanwhile, ED is an independent risk factor for CVD and also a warning signal for the body to develop

other chronic diseases ^[20]. Therefore, in clinical practice, the first choice for ED treatment is phosphodiesterase type 5 inhibitor (PDE5i), which mainly produces type 5 phosphodiesterase and can promote the hydrolysis of cyclic guanosine monophosphate in the corpus cavernosum, maintain the tension of smooth muscle in the corpus cavernosum of the penis, and improve the blood flow and endothelial function of the cavernous arteries. Secondly, with the growth of age, or some metabolic diseases such as diabetes, the body is mostly in a state of oxidative stress, which can cause the reduction of NO and the increase of endothelin-1 (ET-1), resulting in the weakening of relaxation and the strengthening of contraction of the smooth muscle of the penis cavernous body, and at the same time damaging the vascular endothelium of small vessels, thereby aggravating ED ^[13]. Therefore, PDE5i such as tadalafil are commonly used in clinical practice to treat this disease. Although PDE5i is a first-line treatment drug, some patients still have poor efficacy after taking it, and there are also some patients whose initial use of PDE5i treatment is effective and improves erectile dysfunction. However, various physical adverse symptoms can easily lead to poor efficacy or recurrence of ED ^[21]. ED patients, due to long-term and recurrent physical symptoms, also experience increased psychological burden, forming a vicious cycle ^[21,22]. Therefore, it is urgent to introduce drugs that can improve erectile function and relieve psychological and physical symptoms in combination with tadalafil for the treatment of ED.

Based on the above reasons, our department has used of Heartwarming Grass loaded Tadalafil to treat ED and achieved satisfactory therapeutic effects. Hui Xin Cao is a traditional medicine used by ethnic minorities in Yunnan. It has a light, slightly bitter, and calming nature, and can nourish the heart and liver meridians. It has the effects of nourishing the heart and calming the mind, promoting “Yang” and restoring the pulse, clearing the liver and improving vision, and calming the mind. According to the Yunnan Chinese Herbal Medicine Selections, Huixincao is “mild bitter in nature, with anti-inflammatory, sedative, and aphrodisiac properties. The whole plant is used as medicine, mainly for heart disease, neurasthenia, impotence, and other diseases.” At present, it is clinically used to treat cardiovascular diseases such as

coronary heart disease, myocardial ischemia, arrhythmia, as well as mental and neurological diseases such as insomnia, dementia, and neurasthenia ^[23–26]. It contains chemical components such as triterpenoids, amino acids, flavonoids, steroids, fatty acids, alkaloids, and has pharmacological effects such as reducing blood lipids and atherosclerosis, protecting myocardium, lowering blood pressure, eliminating free radicals, and anti-hypoxia ^[23]. First of all, Huixin Grass can significantly increase the activity of NOS in vascular endothelial cells, thereby promoting the synthesis of NO. The increase in the content of NO can relax vascular smooth muscle, inhibit the proliferation of vascular smooth muscle cells, and has an anti-atherosclerosis effect. NO participates in oxidative stress, promotes vasodilation, and plays a decisive role in penile erection, but its production requires catalysis by superoxide dismutase (SOD) ^[24]. Secondly, the extract of *Houttuynia cordata* can increase SOD activity and protect myocardial cells from hypoxia damage ^[25]. In addition, studies have shown that the active ingredients in *Houttuynia cordata* can block the aggregation of reactive oxygen species, clear reactive oxygen species free radicals, alleviate vascular smooth muscle and endothelial cell dysfunction, and improve erectile state ^[5].

According to the visual and auditory stimulation erection test (AVSS), it can be fully seen from **Tables 5, 6, 9, and 10** that after loading *Houttuynia cordata*, the average hardness and erectile swelling of the head and root of the penis in the treatment group were significantly improved compared to the control group treated with tadalafil alone; From **Tables 7 and 8**, it can be seen that on the basis of improved penile blood supply, the duration of erection at the head and root is also prolonged. In addition, the treatment of ED with Hui Xin Cao may also be related to regulating the central nervous system. Symptoms such as palpitations, timidity, anxiety, insomnia, and shortness of breath are common adverse psychological states in ED patients in clinical practice, directly leading to a decrease in penile rigidity, tumescence, and duration of erections.

Research has found that the chemical component ursolic acid in *Houttuynia cordata* can regulate the central monoaminergic system and improve negative emotions ^[26]. In this clinical study, the IIEF-5 score, EHS score, and effective rate of traditional Chinese medicine (TCM) syndrome in ED patients were significantly higher than those in the control group after treatment with Huixin grass. The TCM syndrome score was lower than that in the control group, indicating that Huixin grass can improve the central nervous system adverse psychological state of ED patients with heart and gallbladder “Qi” deficiency, thereby improving erection hardness and duration. From the above, it can be seen that Huixin Grass improves erectile dysfunction by regulating vascular and nervous system function, which is related to stimulating the release of NO in the corpus cavernosum of the penis, relaxing the smooth muscle of the corpus cavernosum, clearing reactive oxygen species, antioxidation, relieving vascular smooth muscle and endothelial cell dysfunction, and regulating the central nervous system to alleviate the adverse psychological state of ED patients.

This clinical study showed that the observation group treated with Huixincao loaded with tadalafil had significantly higher clinical total effective rate, TCM syndrome effective rate, IIEF-5 score, and EHS score than the control group, while the TCM syndrome score was significantly lower than the control group. This indicates that Huixincao can play a significant synergistic role in the treatment of heart gallbladder “Qi” deficiency type ED. In summary, loading tadalafil into Huixincao can significantly improve the clinical efficacy of ED in heart gallbladder “Qi” deficiency syndrome, which is significantly better than using tadalafil alone, and can significantly improve ED and its associated clinical symptoms. The mechanism by which Huixincao improves heart gallbladder “Qi” deficiency type ED may be related to increasing NO content, antioxidant stress, and regulating the central nervous system. It can provide a new method for clinical treatment of ED and is worth further research and promotion in clinical practice.

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Disclosure statement

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Research on the Management Status, Problems, and Optimization Paths of the “Preventive Treatment of Disease” Technical System in Traditional Chinese Medicine—Based on Perspectives of Policy, Standards, and Service Models

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Abstract

The “Preventive Treatment of Disease” in Traditional Chinese Medicine (TCM), as a core concept and distinctive health service model, is rooted in traditional Chinese culture. Through millennia of development, it has formed five core components: emotional regulation, daily living regulation, dietary regulation, exercise regulation, and appropriate TCM techniques. Under the background of the Healthy China strategy, it holds significant public health value and industrial development potential. From the perspective of TCM management research, and integrating theoretical foundations from historical medical texts with contemporary practices, this paper systematically analyzes the achievements and shortcomings in the current management of the “Preventive Treatment of Disease” technical system across five dimensions: policy guidance, standard construction, service provision, quality supervision, and informatization. It focuses on key issues such as the contradiction between individualized technology promotion and standardized management, the gap between traditional experience and modern evidence-based systems, and the coordination mechanisms among diverse service providers. Ultimately, it proposes a new management system for “Preventive Treatment of Disease” technologies based on Professor Wang “Qi’s” TCM constitution theory, constructing a framework of “Constitution Identification-Categorized Management-Standard Output-Smart Services”. This aims to provide references for promoting the transition of “Preventive Treatment of Disease” technologies from clinical practice to standardized, industrialized, and informatized management, thereby contributing to the high-quality development of TCM health services.

Keywords

TCM “preventive treatment of disease”
TCM management
Technical standards
Constitution theory
Informatization construction

1. Introduction: The management value and research background of the TCM “preventive treatment of disease” technical system

The concept of “Preventive Treatment of Disease” in TCM originated in ancient times through the Spring and Autumn and Warring States periods, with its theoretical framework established in the Yellow Emperor’s Inner Canon. Enriched by medical practices from the Eastern Han to the Ming and Qing dynasties, it evolved into a complete system encompassing “preventing disease before it occurs, preventing deterioration when disease is present, and preventing relapse after recovery”. After the founding of the People’s Republic of China, with the integration of modern theories such as Academician Wu Yiling’s Collateral Disease Theory and Academician Wang Qi’s TCM Constitution Theory, “Preventive Treatment of Disease” gradually transitioned from traditional health preservation practices to a disciplinary and professional health service field, becoming a crucial vehicle for TCM’s participation in the Healthy China initiative^[1,2].

From the perspective of TCM management research, the management of the “Preventive Treatment of Disease” technical system involves not only the clinical efficacy of the technologies themselves but also multidimensional issues such as policy orientation, standards and norms, resource allocation, and quality control. Currently, China’s “Preventive Treatment of Disease” services have initially formed a pattern of “government leadership, institutional participation, and market supplementation”. However, three core contradictions persist in technology promotion: first, the conflict between the advantage of individualized treatment and the need for standardized management, hindering large-scale application; second, the disconnection between traditional experience-based techniques and modern evidence-based systems, affecting the scientific nature of management decisions; third, insufficient coordination among diverse service providers (public medical institutions, private health preservation institutions, research institutes), leading to resource waste and regulatory gaps. Furthermore, the lack of standardization for TCM products and services further constrains the informatization management process of “Preventive Treatment of Disease” technologies^[3].

Based on the paradigm of TCM management research,

this paper integrates the theoretical essence of “Preventive Treatment of Disease” across history with contemporary management practices. Starting from the management status of the five core technical components (emotion, daily living, diet, exercise, appropriate TCM techniques), it systematically analyzes problems and proposes optimization paths, aiming to provide theoretical support and practical solutions for the standardized management of the “Preventive Treatment of Disease” technical system.

2. Analysis of management status of core technical components in TCM “preventive treatment of disease”

2.1. Management of emotional regulation techniques: exploration from “experience inheritance” to “standardized promotion”

Emotional regulation, as the core means of psychological intervention in “Preventive Treatment of Disease”, is based on the theory of “Internal Injury by Seven Emotions”. It encompasses technical methods such as rational explanation and guidance, emotion restriction therapy, and recreational therapies (e.g., playing musical instruments, chess, calligraphy, painting, travel)^[3]. Its management status is characterized by “mature theory but loose practice”.

2.1.1. Management foundation: Theoretical origins and practical basis

From a management perspective, the concept of “Tranquillness and Emptiness, the Genuine “Qi” Follows” in the Yellow Emperor’s Inner Canon established the management principle of emotional regulation, emphasizing the intervention goal of “body-mind synergy”. Sun Simiao’s Essential Formulas for Emergency Worth a Thousand Gold explicitly regarded “nurturing nature” as the foundation of “Preventive Treatment of Disease”, incorporating emotional regulation into the overall health management system. Zhang Congzheng’s Confucians’ Duties to Their Parents featured “emotion restriction therapy”, providing an early practical template for technical standardization^[4]. You Cheng’s Compilation for Longevity proposed that “clearing the heart and diminishing desires, cultivating temperament are good methods for eliminating disease and prolonging

life”, further enriching the management connotation of emotional regulation ^[5]. In contemporary research, the TCM psychotherapy system has been gradually refined, including rational explanation therapy, mental transformation therapy, and evidential dispelling of doubts therapy, providing theoretical support for the categorized management of emotional regulation techniques ^[6].

2.1.2. Management shortcomings: Technical fragmentation and lack of supervision

Current management of emotional regulation techniques faces two major problems. First, technical classification is unclear. Techniques like rational explanation, music therapy, and horticultural therapy lack unified management classification standards, leading to medical institutions and health preservation institutions “working separately”, making it difficult to form synergy in technology promotion. Second, quality supervision is absent. As the effectiveness of emotional regulation relies on the practitioner’s experience and lacks objective efficacy evaluation indicators such as quantified psychological state scores, visceral function monitoring standards, some institutions exhibit phenomena like “excessive promotion” and “technical alienation”, damaging the credibility of the techniques. Additionally, the management system for professionals in emotional regulation is not yet perfected, lacking unified training, assessment, and practice standards, which restricts the standardized provision of technical services. The root cause of this problem lies in the complexity of the impact of the “Seven Emotions” on visceral function, making it difficult to measure technical effects precisely ^[7,8].

2.2. Management of daily living regulation techniques: Combining standardization and contextualization under the “correspondence between human and heaven” theory

Daily living regulation is based on the theory of “Correspondence between Human and Heaven, with “seasonal health preservation” and “regular routine” at its core. It covers techniques such as routine management, environmental management, clothing for health, balancing work and rest, and sexual moderation ^[3, 9]. The management focus is on “translating traditional theory into actionable modern life management plans”.

2.2.1. Management effectiveness: Preliminary formation of theoretical support and practical norms

Theoretically, the Yellow Emperor’s Inner Canon constructed a theoretical system for time-based health preservation, proposing living taboos like “prolonged lying damages “Qi”, prolonged sitting damages flesh”, providing basis for routine management ^[8]. Zhang Zhongjing inherited the concept of “Correspondence between Human and Heaven”, emphasizing “cautious nurturing” before illness occurs, including concepts like following the four seasons and sexual moderation. Ge Hong’s Baopuzi listed daily precautions like “rising and resting should be regular” and “spit not far, walk not fast”, detailing the management specifics of daily living regulation. Tao Hongjing’s Records on Nourishing Nature and Prolonging Life emphasized “in spring and summer, enjoy high mountains; in autumn and winter, dwell low and deep”, and listed numerous dos and don’ts regarding clothing, food, housing, and transportation, providing references for environment and clothing management ^[5]. Zhu Danxi’s Danxi’s Mastery of Medicine proposed guiding principles like “modeling on “Yin” and “Yang””, “harmonizing with the four “Qi”, and “having constant daily living”, further strengthening the normative nature of daily living regulation ^[9]. These theories collectively form the traditional foundation for managing daily living regulation techniques.

2.2.2. Management challenges: Contradiction between individualized needs and large-scale management

The management of daily living regulation techniques faces the challenge of “diverse scenarios but difficulty in standardizing”. On one hand, different populations (e.g., the elderly, office workers, chronic disease patients) have significantly different living habits, requiring personalized plans (e.g., the elderly need to focus on “keeping the back warm and the chest protected”), but it’s difficult to achieve “one strategy per person” in large-scale promotion ^[5]. On the other hand, modern lifestyles (e.g., staying up late, prolonged sitting, indoor air-conditioned environments) conflict with the traditional concept of “seasonal health preservation”, making “compliance management” for technical guidance difficult. Furthermore, a long-term monitoring system for the effects of daily living regulation has not been established, lacking follow-

up assessments of health outcomes (e.g., sleep quality, immunity changes) after technical implementation, which affects the optimization of management decisions.

2.3. Management of dietary regulation techniques: Building industrial chains and regulatory systems under the “medicinal food homology” concept

Dietary regulation, with the theory that “the spleen and stomach are the root of acquired constitution” at its core, combines the principle of “five flavors nourishing the five zang organs”. It covers techniques such as food compatibility, medicinal food application, and constitution-based dietary guidance^[3]. Its management involves the entire process “from ingredient selection to dietary services”, making it the component of “Preventive Treatment of Disease” technology most closely integrated with daily health management.

2.3.1. Management status: Accumulation of theoretical system and practical principles

Theoretically, the Yellow Emperor’s Inner Canon proposed the principles of food compatibility, “five grains for nourishment, five fruits for assistance, five animals for benefit, five vegetables for supplementation” and the core management concept of “dietary moderation and careful harmonization of the five flavors”^[2]. Peng Zu’s Theory on Preserving Life and Nurturing Nature emphasized “not being partial to any of the five flavors”, pointing out that flavor preferences damage corresponding organs. Li Shizhen’s Compendium of Materia Medica deeply discussed the beneficial and detrimental relationships between dietary flavors and the five zang organs, providing basis for refined dietary regulation management^[10]. Zhang Zhongjing’s Synopsis of the Golden proposed “food damaging the spleen and stomach”, consistent with the Yellow Emperor’s Inner Canon’s “dietary moderation”, integrating dietary regulation into the “cautious nurturing” concept of “Preventive Treatment of Disease”^[9]. Sun Simiao’s Essential Formulas for Emergency Worth a Thousand Gold believed that “the foundation of bodily peace necessarily relies on food”, listing 154 foods for health preservation and dietary therapy, promoting the practical application of dietary regulation techniques^[3]. Li Dongheng’s “Spleen and Stomach Theory” proposed

“internal damage of the spleen and stomach gives rise to all diseases”, further clarifying the hazards of dietary immoderation and providing theoretical support for risk control in dietary management. Zhang Jingyue first proposed that “the spleen and stomach are the root of health preservation”, emphasizing “cautious diet” as the core method for protecting the spleen and stomach^[9]. Zhang Xichun’s Records of Traditional Chinese Medicine in Combination with Western Medicine strongly advocated dietary therapy, considering it “very mild in nature, suitable for frequent and prolonged use”. Nearly 20 of his created formulas were dietary or contained food ingredients, enriching the technical reservoir of dietary regulation^[3].

2.3.2. Management pain points: Lack of standards and practical chaos

The management of dietary regulation techniques has three major shortcomings. First, standards for meals and medicinal foods are inconsistent. Different institutions have varying interpretations of the compatibility ratios for “five grains for nourishment” and dosages for medicinal food ingredients (e.g., Astragalus, Chinese yam). For instance, the dosage of Poria in “Spleen-invigorating and Dampness-eliminating” medicinal food ranges from 10 g to 20 g, affecting technical safety and efficacy. Second, individualized guidance lacks norms. Professor Wang Qi advocates formulating nutritional plans based on constitution, but the current integration of constitution identification and dietary regulation lacks unified processes, causing “pattern-based dietary therapy” to become a mere formality^[2]. Third, health education is insufficient. Public awareness of concepts like “preference for a particular flavor damages the corresponding organ” is weak. For example, the concept that long-term preference for salty flavor damages the kidney is not widely known, affecting the implementation effectiveness of dietary regulation techniques^[10].

2.4. Management of exercise regulation techniques: Balancing standardization and popularization under the principle of “nourishing both body and spirit”

Exercise regulation is guided by the principles of “combining movement and stillness” and “nourishing both body and spirit”. It covers daily exercises like

walking and running, as well as traditional exercises such as Five-Animal Frolics, Eight-Section Brocade, and Tai Chi ^[11]. The management focus is on “promoting the standardized promotion and popularization of traditional exercises”.

2.4.1. Management progress: Accumulation of technical system and practical norms

Theoretically, the Yellow Emperor’s Inner Canon advocates “physical labor without exhaustion”, opposes “prolonged sitting” and “prolonged lying”, emphasizes “harmony with techniques”, and records primitive exercise methods like walking, Daoyin, and Anqiao ^[12]. Zhang Zhongjing’s Synopsis of the Golden Chamber proposed “when the limbs feel heavy and sluggish, use Daoyin, breathing exercises, acupuncture, moxibustion, and ointment rubbing”, incorporating exercise regulation into the disease prevention system. Hua Tuo’s creation of the Five-Animal Frolics marked the move towards routine-based development of exercise-based health preservation techniques. Tao Hongjing’s Records on Nourishing Nature and Prolonging Life recorded the prototype of the standing Eight-Section Brocade, enriching the traditional exercise system ^[3]. Sun Simiao proposed “constant desire for mild labor” and “movement prevents decline, use prevents retreat”, emphasizing the management principle of moderate exercise ^[12]. During the Ming and Qing dynasties, exercises like Five-Animal Frolics, Eight-Section Brocade, and Yi Jin Jing were gradually perfected, forming an exercise regulation model focusing on “limb movement supplemented by breathing and “Qi” circulation” ^[3]. In contemporary research, practices like Professor Yan Runming’s teeth tapping and abdomen rubbing, Dong Demao’s stake standing, and Professor Lu Zhizheng’s “Lu-style Eight-Section Brocade” provide practical references for the individualized management of exercise regulation techniques ^[12]. Professor Wang Qi’s advocacy for formulating exercise plans based on constitution further promotes the precise management of exercise regulation ^[2].

2.4.2. Management challenges: Inheritance discontinuity and insufficient standardization

The management of exercise regulation techniques faces the dual challenges of “weakened traditional inheritance

and lack of standardization”. On one hand, traditional exercises (e.g., ““Qi” sensation” training in Tai Chi) rely on “master-disciple” transmission, making it difficult to transform core techniques into unified standards, leading to “form similarity but spirit dissimilarity” during promotion. On the other hand, technical classification management is imperfect. The applicable populations and practice frequencies for daily exercises (e.g., walking, hiking) versus traditional exercises (e.g., Five-Animal Frolics, Eight-Section Brocade) lack clear definitions. Some institutions exhibit phenomena like “blind recommendation” (e.g., recommending squat-intensive exercises to individuals with knee joint injuries). Furthermore, scientific research support for exercise regulation is insufficient, lacking large-sample studies to verify its specific effects on constitution improvement, which affects the scientific nature of management decisions ^[12].

2.5. Management of appropriate TCM techniques: Promotion and quality control under the characteristics of “simple, convenient, effective, and inexpensive”

Appropriate TCM techniques (e.g., herbal medicine, acupuncture, cupping, fumigation, massage/Tui Na, scraping/Gua Sha, application) are the core carriers of “Preventive Treatment of Disease” services, characterized as “simple, convenient, effective, and inexpensive” ^[3]. Their management involves the entire process of technology screening, promotion training, and quality supervision, making it a key area within the “Preventive Treatment of Disease” technical system management.

2.5.1. Management effectiveness: Preliminary formation of promotion system and practical foundation

The management of appropriate TCM techniques relies on accumulated historical practice: The Yellow Emperor’s Inner Canon records techniques like acupuncture and Daoyin, laying the theoretical foundation. Zhang Zhongjing’s Synopsis of the Golden Chamber incorporated acupuncture, moxibustion, and ointment rubbing into disease prevention and conditioning, promoting clinical application. Sun Simiao’s Essential Formulas for Emergency Worth a Thousand Gold detailed operational methods for techniques like Tui Na and moxibustion, providing early references for

technical standardization^[3]. In contemporary promotion, appropriate TCM techniques have covered primary healthcare services, but management effectiveness still relies on practical feedback, existing systematic reviews indicate that satisfaction among medical institutions, managers, healthcare providers, and patients is generally high, reflecting good acceptance at the primary level and laying the foundation for further standardized management^[13,14].

2.5.2. Management shortcomings: Poor research quality and inadequate supervision system

According to existing research, significant deficiencies exist in the management of appropriate TCM techniques. First, research quality is low. Most evaluations of promotion effectiveness are based on subjective reports (e.g., healthcare worker satisfaction), lacking objective indicators (e.g., technology application rate, constitution improvement rate). Moreover, study designs are mostly single-center, small-sample, and methodologically inconsistent, making it difficult to form evidence-based management foundations^[13,14]. Second, operational standards are not unified. There is a lack of nationwide uniform standards for acupuncture point localization, cupping negative pressure control, scraping intensity and frequency, etc., leading to significant variations in technical effects among different institutions. Third, the supervision mechanism is imperfect. Issues at the primary level include “operation by non-professionals” (e.g., performing acupuncture without certification) and “technology misuse” (e.g., frequent cupping causing skin damage). Additionally, the adverse reaction reporting system is underdeveloped, increasing the risks associated with technology application^[14].

3. Core problems and underlying reasons in the management of the TCM “preventive treatment of disease” technical system

3.1. Core problems: Multi-dimensional contradictions restricting management efficiency

3.1.1. Contradiction between individualization and standardization

TCM “Preventive Treatment of Disease” technologies

focus on “pattern-based regulation” (e.g., strengthening exercise for phlegm-dampness constitution, focusing on emotional intervention for liver depression constitution)^[2]. However, standardized management requires technologies to be “replicable, measurable, and promotable”, creating an inherent contradiction. For instance, “pattern-based dietary therapy” in dietary regulation struggles to establish unified formulas, and “constitution adaptation” in exercise regulation is difficult to quantify. This leads to management being either “too broad, losing distinctive features” or “too detailed, difficult to implement”. Emotional regulation therapies like “emotion restriction therapy” rely heavily on the practitioner’s experience and cannot form unified operational standards, further exacerbating the conflict between individualization and standardization^[4].

3.1.2. Disconnection between traditional experience and modern evidence-based practice

Many “Preventive Treatment of Disease” techniques originate from ancient records and clinical experience, lacking support from large-sample, high-quality research required by modern evidence-based medicine. While “seven emotions regulation” in emotional regulation has case records from Confucians’ Duties to Their Parents, it lacks modern validation of its efficacy mechanisms and applicable populations^[4]. Evaluations of the promotion effectiveness of appropriate TCM techniques are often based on subjective feedback, lacking objective health indicators (e.g., constitution identification scores, visceral function test data)^[13,14]. The effects of exercise regulation on constitution improvement and dietary regulation on spleen-stomach function all lack data from multi-center randomized controlled trials^[9,12]. This situation of “experience outweighing evidence” makes it difficult for technical management to gain widespread recognition, hindering its promotion in the public health field.

3.1.3. Mismatch between technical system and management framework

The current “Preventive Treatment of Disease” technical system covers five components, but the management framework remains “fragmented”. First, there is a lack of comprehensive management standards. Current management mostly targets single technologies (e.g.,

operational standards for acupuncture, practice standards for Eight-Section Brocade), without forming an overall management plan covering “emotion-daily living-diet-exercise-appropriate techniques”^[12–14]. Second, informatization management lags. Records of technical interventions, constitution identification data, and efficacy assessment results are scattered across different institutions, making it difficult to achieve “one file per person” for whole-process management, affecting long-term tracking and optimization of technical effects. Third, talent management is missing. “Preventive Treatment of Disease” technical personnel need both TCM theory and management capabilities. However, current training often focuses on technical operations (e.g., manual skills for appropriate techniques), neglecting management thinking cultivation, leading to “emphasis on practice, neglect of norms” in technology promotion^[13].

3.2. Underlying reasons: Triple constraints from theory, practice, and management

3.2.1. Theoretical level: Differences between TCM holism and modern management paradigms

TCM “Preventive Treatment of Disease” takes “holism” as its core (e.g., “body-spirit unity”, “correspondence between human and heaven”), emphasizing the systematic and individualized nature of technical interventions^[8]. In contrast, the modern management paradigm pursues “standardization, scalability, and quantifiability”, creating a logical difference. This difference leads to: on one hand, the effects of “Preventive Treatment of Disease” techniques being difficult to measure with “single indicators” of modern management (e.g., the impact of emotional regulation on “genuine “Qi” ” cannot be quantified by routine physical examination data); on the other hand, holistic technical systems (e.g., comprehensive intervention of “emotion + diet + exercise”) are difficult to decompose into independent management modules, increasing the difficulty of categorized management^[3].

3.2.2. Practical level: Mismatch between technical diversity and management resources

The diversity of “Preventive Treatment of Disease” techniques (e.g., over 10 methods in emotional regulation,

7 major categories of appropriate techniques) places high demands on management resources, but current management resources are clearly insufficient^[3,6]. First, there is a shortage of professional management talents. The scarcity of composite talents who understand both TCM theory and modern management methods makes it difficult to advance work like technical standard formulation and quality supervision. Second, primary-level management capacity is weak. Most community health service centers lack full-time personnel for “Preventive Treatment of Disease” technical management. Technology promotion often relies on healthcare personnel “taking on part-time responsibilities”, making it difficult to guarantee management quality. Third, investment in scientific research resources is insufficient. Research focused on technical management (e.g., standardization methods, efficacy evaluation systems) is far less than clinical research on the technologies themselves, constraining the improvement of management levels^[13,14].

3.2.3. Normative level: Imperfect standard system and supervision mechanism

The existing normative system for “Preventive Treatment of Disease” technical management has obvious gaps. First, standards are fragmented. Operational standards have only been formulated for some technologies (e.g., acupuncture, Eight-Section Brocade), while standards for emotional regulation and daily living regulation are almost non-existent^[12,14]. Second, the supervision mechanism is unsound. There is a lack of specialized regulatory bodies for “Preventive Treatment of Disease” technologies. Daily supervision mostly relies on the medical quality supervision system, making it difficult to cover the entire process of technology promotion, application, and evaluation. Third, the evaluation system is singular. Technical effect evaluations often focus on “whether it is effective”, neglecting management dimensions like “whether it is standardized” and “whether it is safe”, leading to a deviation in management orientation^[13,14].

4. Optimization paths: Constructing a new management system for “preventive treatment of disease” technologies based on TCM constitution theory

4.1. Core idea: Using constitution identification as the link to achieve the unity of “individualization and standardization”

Professor Wang Qi's TCM constitution theory classifies the human body into nine basic constitutions, providing a scientific classification basis for the management of “Preventive Treatment of Disease” technologies^[2]. Through constitution identification, individualized needs can be transformed into “standardized management for the same constitution type”. For example, individuals with phlegm-dampness constitution uniformly apply the regulation standard of “low-salt, low-fat diet + moderate intensity exercise”; those with “Yang” deficiency constitution uniformly follow the management plan of “warm-nature diet + gentle exercise”^[2]. This preserves the characteristic of TCM “pattern-based regulation” while solving the problem of standardized management. Simultaneously, constitution identification data can serve as core indicators for technical management. By tracking constitution changes (e.g., the reduction magnitude in phlegm-dampness constitution score), the technical effects can be quantified, providing an objective basis for management decisions.

4.2. Specific paths: Coordinated efforts across five dimensions

4.2.1. Standard dimension: Constructing a “constitution-adapted” technical classification standard system

Based on the constitution theory, refine the management standards for the five technical components: First, for emotional regulation, formulate standard protocols for liver depression constitution (prone to anxiety/depression), such as “music therapy + rational explanation”, and for “Qi” deficiency constitution (prone to fatigue/low mood), establish standardized procedures for “social recreation + emotional counseling”^[2,6]. Second, for daily living regulation, combine the “correspondence between human and heaven” theory to develop seasonal living standards for different constitutions (e.g., “Yin” deficiency constitution should avoid “extreme coolness”

in summer, “Yang” deficiency constitution should “keep feet warm” in winter)^[5,8]. Third, for dietary regulation, based on the principle of “five flavors nourishing the five zang organs”, clarify dietary taboos for each constitution (e.g., damp-heat constitution should avoid pungent foods, blood stasis constitution should consume blood-activating ingredients), and standardize the dosage of medicinal food ingredients (e.g., Astragalus dosage in “Qi”-tonifying medicinal food should be 10–15 g)^[2,10]. Fourth, for exercise regulation, differentiate the applicable constitutions for daily exercise versus traditional exercises (e.g., phlegm-dampness constitution is suitable for the “Bear Play” in Five-Animal Frolics, “Yin” deficiency constitution is suitable for “Hands Hold up the Heavens to Regulate the Triple Burner” in Eight-Section Brocade), and standardize practice frequency (e.g., 3–5 times per week, 30 minutes each time)^[12]. Fifth, for appropriate TCM techniques, clarify the constitution adaptation scope for each technique (e.g., cupping is suitable for cold-dampness constitution, scraping is suitable for damp-heat constitution), and unify operational standards (e.g., acupuncture point localization error should not exceed 0.5 cm, cupping negative pressure maintenance time should be 5–10 minutes)^[3,14].

4.2.2. Promotion dimension: Establish a “layered and categorized” technical promotion management mechanism

Targeting technical characteristics and primary-level needs, build a differentiated promotion system: First, core technologies (e.g., Eight-Section Brocade, basic acupuncture, constitution-based dietary guidance) should be included in the national TCM appropriate technology promotion project, conducting standardized training through the “national-provincial-municipal-county” four-level network to ensure 100% mastery by primary healthcare personnel^[13,14]. Second, characteristic technologies (e.g., “Lu-style Eight-Section Brocade”, individualized emotional regulation) should rely on tertiary hospital “Preventive Treatment of Disease” centers to establish training bases, promoting them to qualified primary institutions^[6, 12]. Third, innovative technologies (e.g., exercise guidance combined with smart devices) should be piloted in collaboration with research institutes, and gradually promoted after efficacy

verification. Simultaneously, establish an evidence-based evaluation mechanism for promotion effectiveness, introducing objective indicators (e.g., technology application rate, constitution improvement rate) to replace single subjective evaluations, enhancing the scientific nature of promotion management^[12-14].

4.2.3. Supervision dimension: Improve the “whole-process” technical quality supervision system

Construct a “pre-event, in-process, post-event” full-chain supervision: First, pre-event access: clarify the qualification requirements for “Preventive Treatment of Disease” technical service institutions (e.g., equipped with at least one certified constitution identification specialist), and establish a technology filing system (new technologies must submit safety assessment reports). Second, in-process supervision: rely on information platforms to monitor technical operations in real-time (e.g., acupuncture point selection, cupping negative pressure value), conduct regular primary-level inspections (quarterly), and promptly correct non-standard operations. Third, post-event assessment: establish an adverse reaction reporting system, track health risks after technology application (e.g., skin infections from scraping), and revoke service qualifications for institutions with serious violations. Additionally, introduce third-party evaluation, commissioning independent research institutions to assess technical management quality annually, ensuring fair and transparent supervision^[14].

4.2.4. Informatization dimension: Build a “constitution-centric” smart management platform

With constitution identification data at the core, construct a “Preventive Treatment of Disease” technical management information system: First, a data integration module aggregates individual constitution data, technical intervention records (e.g., dietary plans, exercise logs), and efficacy evaluation results (e.g., changes in constitution scores), achieving “one file per person”. Second, an intelligent guidance module automatically recommends technical plans based on constitution (e.g., recommending “blood-activating diet + Tai Chi” for blood stasis constitution) and reminds users of key operational points in real-time (e.g., warm-up before exercise, processing of medicinal food ingredients). Third,

a supervision and analysis module automatically statistics technology application status (e.g., usage frequency of various techniques) and quality issues (e.g., number of non-standard operations) within a region, providing data support for management decisions. Through informatization management, address the problems of scattered technical data and low regulatory efficiency, promoting the intelligent upgrade of “Preventive Treatment of Disease” technical management^[3].

4.2.5. Talent dimension: Cultivate composite technical management talents with “TCM + management” skills

Establish a tiered talent cultivation system: First, the basic layer: provide primary healthcare personnel with training in “technical operation + basic management” (e.g., constitution identification methods, technology promotion processes), ensuring mastery of standardized management requirements^[13,14]. Second, the backbone layer: cultivate “Preventive Treatment of Disease” technical management specialists in tertiary hospitals, focusing on learning standard formulation, quality supervision, informatization operation, etc., responsible for guiding technical management within their regions. Third, the expert layer: collaborate with universities to conduct interdisciplinary training in “TCM Constitutionology + Health Management”, promoting theoretical innovation and research in technical management^[2]. Simultaneously, establish a talent assessment and certification system, incorporating technical management capabilities (e.g., standard implementation rate, supervision problem resolution rate) into professional title evaluation indicators to stimulate talent engagement in management.

5. Outlook

The optimization of the management of the TCM “Preventive Treatment of Disease” technical system is a key link in promoting the transition of TCM from “traditional experience” to “modern service”. The new management system based on TCM constitution theory achieves a balance between individualization and standardization through “constitution identification”. Through the five paths of “categorized standards, layered promotion, whole-process supervision, smart

platforms, and composite talents”, it addresses the core contradictions in current technical management. This system can not only improve the service quality of “Preventive Treatment of Disease” technologies but also promote their management towards standardization, normalization, and informatization, providing support for the large-scale application of TCM health services under the Healthy China strategy^[15–17].

In the future, the management of “Preventive Treatment of Disease” technologies need to further strengthen two directions: First, deepen evidence-based research, conduct multi-center, large-sample studies to

verify the effects of constitution-adapted technologies, providing more sufficient evidence support for management standards^[2,12]. Second, promote international integration, merging the “constitution management” model with international health management standards, facilitating the international dissemination of TCM “Preventive Treatment of Disease” technical management experience. Through continuous innovation, the TCM “Preventive Treatment of Disease” technical system will become a model for TCM management, providing a “Chinese Solution” for global health management.

Disclosure statement

The authors declare no conflict of interest.

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Geographical Characteristics and Traditional Chinese Medicine Strategies for Chronic Pharyngitis in Jiangxi: An Etiological and Therapeutic Analysis

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Abstract

Background: Chronic pharyngitis, a prevalent upper respiratory inflammatory condition, significantly impairs quality of life due to its high incidence and persistent symptoms such as throat pain, dryness, and obstruction. Modern medical approaches, including anti-inflammatory and antiviral therapies, often provide inconsistent efficacy and require prolonged use, highlighting the need for more sustainable solutions. Despite the established advantages of Traditional Chinese Medicine (TCM) in managing chronic pharyngitis through holistic and personalized methods, there remains a notable research gap regarding region-specific studies in Jiangxi, an area defined by its distinctive climatic and dietary patterns. **Objective:** This study systematically investigates the impact of Jiangxi's unique environmental and lifestyle factors, such as its humid climate and spicy, sweet dietary habits, on the pathogenesis of chronic pharyngitis. Based on this analysis, we propose a tailored TCM framework for its prevention and treatment. **Conclusion:** By integrating regional characteristics with TCM theory, this study provides a theoretical foundation for applying the TCM principle of “customizing treatment to individual, time, and locality” in Jiangxi. The findings are expected to enhance clinical efficacy and inform future region-specific TCM interventions for chronic pharyngitis.

Keywords

Chronic pharyngitis
Jiangxi
Regional characteristics
Traditional Chinese Medicine
Etiology
Prevention and treatment
Syndrome differentiation
Climate and health

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1. Introduction

Chronic inflammatory disorders of the upper aerodigestive tract pose a substantial challenge to global healthcare systems. Chronic pharyngitis, a prevalent condition defined by persistent inflammation of the pharyngeal mucosa, submucosa, and associated lymphoid tissues, exemplifies this burden. Current estimates indicate that the disease affects approximately one-third of the population worldwide ^[1,2]. Patients frequently present with a constellation of debilitating symptoms, including throat obstruction, pain, pruritus, dryness, burning sensations, and persistent dry cough, which collectively exert a profound negative impact on daily functioning and psychological health ^[1-3]. Conventional management strategies, predominantly reliant on anti-inflammatory, antiviral, or anti-anxiety medications, often yield suboptimal results. These treatments typically require prolonged and repeated administration, are characterized by significant inter-individual variability in response, and fail to provide consistent, long-lasting relief, highlighting a critical unmet need in patient care ^[4,5].

Amidst the limitations of conventional therapy, Traditional Chinese Medicine (TCM) has emerged as a prominent and well-regarded complementary approach for chronic pharyngitis, known in TCM as slow throat obstruction “Màn Hóu Bì”. Substantial evidence from clinical studies and meta-analyses increasingly supports the efficacy of TCM protocols, demonstrating not only significant symptom improvement but also lower recurrence rates and a favorable safety profile compared to standard Western treatments ^[6,7]. This evidence positions TCM as a valuable therapeutic alternative. Nevertheless, a comprehensive scientific understanding of its mechanisms of action and the development of standardized, context-specific application guidelines, particularly tailored to distinct geographical populations, remain imperative and insufficiently addressed research priorities.

The therapeutic framework of TCM is fundamentally guided by “treatment based on syndrome differentiation” *Biàn Zhèng Lùn Zhì*, which intrinsically advocates for the “customizing treatment to individual, time, and locality” *Sān Yīn Zhì Yí* principle, customizing interventions according to individual constitution, temporal factors, and geographical environment ^[8]. The

influence of regional variations in climate, diet, and lifestyle on disease etiology and phenotypic expression is increasingly acknowledged. Research on related conditions, such as Laryngopharyngeal Reflux (LPR), has demonstrated that geographical and cultural contexts can significantly shape clinical presentations and therapeutic outcomes ^[9,10]. Jiangxi Province, situated in the humid subtropical region of South China, possesses distinct environmental and cultural attributes, notably a pervasive damp-hot climate and a deeply ingrained culinary habit of consuming pungent and spicy foods. These unique regional characteristics are clinically theorized in TCM to predispose the local population to chronic pharyngitis, potentially manifesting through a specific pathogenic pattern centered on “dampness-heat” (*Shī Rè*) ^[11,12].

Despite the logical connection between regional factors and disease patterns, a significant scholarly void persists. There is a conspicuous absence of systematic epidemiological and theoretical research dedicated to elucidating the regional peculiarities of chronic pharyngitis within Jiangxi. While bibliometric analyses have effectively charted the global research landscape for gastroesophageal reflux disease (GERD) and LPR, no study has specifically focused on the nexus of chronic pharyngitis, TCM syndrome evolution, and the unique socio-ecological milieu of Jiangxi ^[13,14]. Previous investigations into chronic laryngitis have identified associations with etiological factors like bacterial biofilms and systemic comorbidities, yet an integrative analysis that synthesizes local TCM theory with region-specific predisposing factors is currently lacking.

Consequently, this study is designed to address this identified gap. A theoretically-grounded clinical analysis focusing exclusively on Jiangxi Province was provided. By synthesizing available clinical insights and core TCM principles, this work seeks to systematically delineate the regional predispositions, causative factors, and characteristic TCM syndrome patterns of chronic pharyngitis in this locale. The ultimate objective is to formulate a tailored, evidence-informed TCM strategy for prevention and treatment, thereby operationalizing the TCM tenet of “considering geographical conditions” into tangible and effective clinical practice for the benefit of the local population.

2. Analysis of the association between regional characteristics of Jiangxi and the pathogenesis of chronic pharyngitis

2.1. Climatic factors – “dampness-heat steaming” as an external pathogen

The distinct subtropical humid monsoon climate of Jiangxi Province plays a pivotal role in shaping local disease patterns, particularly chronic pharyngitis. During the extended summer and the plum rain season, the region experiences persistent high temperatures coupled with excessive humidity. This environmental “dampness-heat” constitutes a significant external pathogenic factor in Traditional Chinese Medicine (TCM). From a TCM patho-mechanism perspective, external dampness readily encumbers the Spleen, the organ responsible for transformation and transportation, leading to its functional impairment^[15]. This dysfunction results in the internal accumulation of fluid, which congeals into phlegm. This turbid phlegm then tends to ascend along the meridians to harass the throat, manifesting as swelling, a sensation of obstruction, and excess mucus^[16]. Modern research corroborates this, indicating that dampness-heat environments can exacerbate inflammatory responses and potentially disrupt mucosal immunity, providing a biomedical parallel to this TCM concept^[14,17].

Conversely, the autumn and winter seasons introduce another set of challenges. The lingering summer heat in autumn, known as the “Indian Summer” or “Autumn Tiger,” brings about warm-dryness (Wēn Zào), while winter is characterized by cold-dryness (Hán Zào). These alternating warm-dryness conditions are intrinsically predisposed to consume and hurt Lung Yin, the Yin aspect of the Lung system responsible for moistening the respiratory tract^[9]. As the throat is considered the gateway of the Lungs, a deficiency of Lung Yin directly leads to a loss of moisture and nourishment in the throat, giving rise to the characteristic symptoms of dryness, itching, and a dry, hacking cough^[18]. This Yin deficiency state can also render the laryngeal mucosa more vulnerable to other irritants^[10].

2.2. Dietary factors – “pungent-sweet rich flavors” as an internal cause

Dietary habits in Jiangxi, most notably the prominence of pungent and spicy flavors in Gan cuisine, represent a

major internal etiological factor. The long-term and often excessive consumption of such foods, which possess warm and dispersing properties in TCM terminology, tends to promote internal heat and injure bodily fluids (Yin)^[8]. This process directly “scorches” the vessels and collaterals supplying the throat, leading to pain, redness, and a burning sensation^[7]. Furthermore, a regional preference for greasy, fatty, and sweet foods (e.g., various braised and stewed dishes) further contributes to the internal generation of dampness and heat. These dietary choices impede Spleen function, fostering the production of turbid phlegm, which complicates the clinical picture of chronic pharyngitis^[4].

Compounding these dietary issues is the prevalent local culture of smoking and alcohol consumption. In TCM theory, both tobacco and alcohol are classified as acrid, hot, and turbid substances. They act as direct irritants to the delicate laryngopharyngeal mucosa, significantly aggravating existing inflammation and serving as crucial triggers and exacerbating factors for symptom flare-ups^[2,3]. Research on laryngopharyngeal reflux (LPR) has shown that similar irritants can compromise mucosal integrity, and the symptom overlap with chronic pharyngitis suggests a possible shared pathway of mucosal vulnerability^[19,20].

2.3. Lifestyle and occupational factors

Certain professions within Jiangxi contribute to the high prevalence of chronic pharyngitis through mechanical strain. Individuals in occupations requiring extensive voice use, such as teachers and sales personnel, are at particular risk. Prolonged and often improper phonation places a continuous strain on the laryngeal structures, leading to the TCM-defined pattern of Qi and Yin deficiency through chronic over-exertion, which weakens the body’s defensive and nourishing capacities^[21,22]. This makes the throat more susceptible to pathogenic factors.

Modern lifestyles introduce additional risk factors. Frequent movement between air-conditioned environments and the hot, humid outdoors creates significant thermal stress and sudden temperature changes, which can challenge the body’s adaptive capacity (Zheng Qi). Moreover, chronic sleep deprivation and irregular daily routines, common in contemporary society, are understood in TCM to deplete the fundamental Qi and

weaken the body's constitution. This overall decline in righteous Qi lowers resistance against external pathogens, making individuals more prone to recurrent and lingering throat infections and inflammation ^[23,24].

3. Discussion on TCM pathomechanisms based on the regional characteristics of Jiangxi

Building upon the regional predisposing factors, the pathogenesis of chronic pharyngitis in Jiangxi can be conceptualized through a characteristic TCM pattern. The core pathomechanism is identified as “accumulation and binding of dampness-heat, accompanied by dual damage to Qi and Yin” (Shī Rè Yùn Jié, Qì Yīn Liǎng Shāng).

The disease manifestations are centered on the Lung, Spleen, and Stomach organ systems. TCM physiology posits that the “Lung opens into the nose and throat,” the “Stomach channel traverses the throat,” and the “Spleen is the source of phlegm production” ^[9]. Consequently, the external contraction of dampness-heat from the climate and the internal damage from improper diet primarily affect these three organs. The Spleen's failure in transportation due to dampness encumbrance leads to internal phlegm formation, while dysfunction of the Lung in dispersion and descent and Stomach heat ascending along its channel directly manifest as pathology in the throat ^[3,9].

Clinically, the disease progression often follows a recognizable pattern. In the initial or acute exacerbation phase, the presentation is predominantly one of “congestion and obstruction by dampness-heat” (Shī Rè Yōng È). This stage is marked by pronounced inflammatory signs such as burning pain and severe swelling in the throat, intense mucosal hyperemia, and the production of thick, tenacious sputum that is difficult to expectorate ^[7,20]. This mirrors the robust pathological excess resulting from the combined assault of external and internal pathogens.

As the condition progresses into the protracted or chronic phase, the persistent pathological factors induce a shift in the pattern. The pattern often evolves into “dampness-heat injuring Yin” (Shī Rè Shāng Yīn) or “dampness-heat complicated by blood stasis” (Shī Rè Jiā Yū). Here, the enduring heat pathogen consumes

and damages the body's Yin fluids, while the lingering dampness obstructs the channels and collaterals ^[15,19]. This pathomechanistic transformation clinically manifests with a higher prevalence of symptoms like chronic dryness, irritating cough, a persistent foreign body sensation (globus pharyngeus), dark red or purplish mucosal coloration, and hyperplasia of the lymphoid follicles ^[10,16].

In summary, the pathogenic evolution of chronic pharyngitis in the Jiangxi population can be systematically theorized. “Dampness-heat” serves as the initiating pathogen, triggered by the local climate and diet. The subsequent “consumption of Qi and Yin” constitutes the core pathological transition, resulting from the protracted struggle between the body's Zhèng Qì and these persistent pathogens. Finally, the chronic interplay between impaired Zhèng Qì, deficient Yin, and lingering pathogens leads to “phlegm and blood stasis binding together,” which forms the pathological root of the disease's recalcitrance and tendency to linger ^[2,14]. This conceptual framework provides a coherent TCM theoretical foundation for understanding and treating this regional health issue.

4. TCM prevention and treatment strategies for chronic pharyngitis in Jiangxi

4.1. Therapeutic principles

The treatment strategy for chronic pharyngitis in Jiangxi must be tailored to its core pathomechanism. The overarching therapeutic principles are: Clearing Heat and Resolving Dampness, Protecting Qi and Nourishing Yin, and Assisted by Unblocking Collaterals. A critical aspect of clinical practice is to accurately differentiate the relative severity and predominance of Dampness, Heat, Deficiency (Qi and Yin), and Blood Stasis in each individual case to ensure a precise and personalized treatment approach ^[3,25].

4.2. Syndrome differentiation and treatment

(1) For the Dampness-Heat Accumulation Pattern

The treatment should focus on clearing heat and resolving dampness to soothe the throat and alleviate pain. Modified classical formulas such as San Ren Tang (Three-Nut Decoction) or Gan

Lu Xiao Du Dan (Sweet Dew Toxin-Dispelling Elixir) are appropriate. Herbs specifically targeting the throat, like Platycodon Radix (Jie Geng), Glycyrrhizae Radix (Gan Cao), and Sophorae Tonkinensis Radix (Shan Dou Gen), can be added to enhance the efficacy ^[8,26].

- (2) For the Dampness-Heat Injuring Yin Pattern
The strategy should combine clearing heat and resolving dampness with nourishing Yin and benefiting the throat. Formulas such as Bai He Gu Jin Tang (Lily Bulb Decoction to Preserve the Metal) combined with Er Chen Tang (Two Matured Substances Decoction), or Sha Shen Mai Dong Tang (Adenophora and Ophiopogon Decoction) supplemented with Coicis Semen (Yi Yi Ren) and Lophatheri Herba (Dan Zhu Ye), can be effectively employed ^[5].
- (3) For the Qi Deficiency with Phlegm Congealing Pattern
The treatment aims to tonify Qi, strengthen the Spleen, resolve phlegm, and dissipate nodules. A combination of Bu Zhong Yi Qi Tang (Center-Supplementing and Qi-Boosting Decoction) and Ban Xia Hou Po Tang (Pinellia and Magnolia Bark Decoction) with modifications is often suitable for addressing both the root deficiency and the branch excess ^[9].

4.3. Application of characteristic external therapies and Chinese patent medicines

External therapies can provide significant symptomatic relief and are highly suitable for local application. Methods such as herbal atomization inhalation, medicinal gargles, acupuncture-like throat therapy (“pecking” technique), and acupoint application can directly target the affected laryngopharyngeal region, reducing inflammation and discomfort ^[21,23].

For convenience and adherence, specific Chinese patent medicines aligned with the local patterns are recommended. These include Qingre Qushi Granules for dampness-heat, Jinsang Liyan Pills for phlegm-dampness obstructing the throat, and Xuanmai Ganjie Granules for Yin deficiency with throat dryness ^[4].

4.4. Prevention and health guidance based on

regional characteristics

4.4.1. Dietary therapy

- (1) Spring and summer
Consume foods like Adzuki Bean and Coix Seed Porridge, soups with Smilacis Glabrae Rhizoma (Tu Fu Ling), and Mung Bean Soup to drain dampness and resolve toxicity.
- (2) Seasonal Transition/After Spicy Food
Drink Honey and Honeysuckle Flower Tea or Snow Pear and Lily Bulb Porridge to clear heat and moisten dryness

4.4.2. Autumn and winter

Incorporate foods such as Water Chestnut (Bi Qi), White Radish, Tremella (Bai Mu Er), and Lotus Seed (Lian Zi) to nourish Lung Yin and moisten the throat ^[24].

4.4.3. Lifestyle guidance

- (1) Moderation in spicy food
Advise consuming spicy foods in moderation and pairing them with “cooling” ingredients like winter melon or bitter melon to counteract their pungent and drying nature.
- (2) Dampness prevention
Ensure living spaces are well-ventilated and dehumidified to prevent external dampness from aggravating internal dampness
- (3) Judicious use of air conditioning
Avoid direct exposure to cold air and minimize significant temperature differences between indoor and outdoor environments to reduce thermal stress on the body
- (4) Emotional regulation
Encourage maintaining a calm and cheerful mood, as emotional stagnation and anger can transform into fire that flares upward to scorch the throat ^[2,18].

5. Conclusion and future perspectives

In conclusion, this analysis delineates a clear conceptual framework for chronic pharyngitis within the Jiangxi population. The pathogenesis is intimately linked to the region’s characteristic humid-hot climate and a dietary pattern favoring pungent and sweet flavors. The core

TCM pathomechanism is identified as “dampness-heat” forming the primary pathogenic foundation, which frequently progresses to involve “dual deficiency of Qi and Yin” and the secondary pathological products of “phlegm and blood stasis binding together.”

This theoretical exploration underscores the indispensable value of the TCM principle of “customizing treatment to individual, timing, and locality”. For clinical practice in Jiangxi, this translates to a mandatory consideration of these regional determinants. The development and application of diagnostic assessments and management strategies must be tailored to the local context (Jiangxi), seasonal variations (seasons), and patient constitutions (individual) to achieve true personalized medicine and effective prevention.

Looking forward, the theoretical model proposed

herein requires empirical validation and further refinement. Future research should prioritize large-scale, prospective clinical epidemiological studies conducted within Jiangxi to objectively quantify the prevalence of the identified TCM patterns and correlate them with the regional factors discussed. Furthermore, building upon this localized understanding, dedicated efforts are warranted to develop and clinically evaluate novel, optimized herbal formulations and integrated treatment protocols that are specifically designed to address the unique “dampness-heat” etiology and “Qi-Yin deficiency” sequelae prevalent in this population. Such endeavors will bridge the gap between regional TCM theory and evidence-based practice, ultimately improving patient outcomes.

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Disclosure statement

The author declares no conflict of interest.

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Clinical Study on TROPIS Procedure Combined with Thread-Dragging and Cotton-Padding Therapy for the Treatment of Perianal Abscess

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Abstract

Objective: To evaluate the efficacy of TROPIS procedure combined with thread-dragging and cotton-padding therapy in the treatment of perianal abscess.

Methods: Sixty patients were randomly divided into an observation group (n = 30) and a control group (n = 30) using a random number table. The observation group underwent the TROPIS procedure combined with thread-dragging and cotton-padding therapy, while the control group received conventional incision and drainage with standard postoperative care. Clinical efficacy, wound healing time, wound exudation score, pain score, anal function, and fistula formation rate were compared between the two groups. **Results:** The total effective rate was significantly higher in the observation group than in the control group. Wound exudation scores were lower in the observation group at postoperative days 5, 7, and 14, and the pain score was lower on day 14. The wound healing time was significantly shorter in the observation group compared to the control group. The incidence of fistula formation was significantly lower in the observation group. No statistically significant differences were observed in anal resting pressure or anal squeeze pressure between the two groups, while the Wexner score was lower in the observation group. **Conclusion:** The combination of TROPIS procedure and thread-dragging and cotton-padding therapy for perianal abscess can shorten wound healing time, reduce the risk of fistula formation, alleviate pain, and better preserve anal function, making it worthy of clinical promotion.

Keywords

Perianal abscess

TROPIS procedure

Thread-dragging and cotton-padding therapy

Anal function assessment

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1. Introduction

Perianal abscess, defined as an acute suppurative infection occurring in the perianal and perirectal spaces, represents the most common type of anorectal abscess. With changes in dietary habits, its incidence in China has been rising consistently, particularly among males aged 20–40 years, where the prevalence reaches approximately 2%^[1]. Perianal abscess is characterized by acute onset and rapid progression. Delayed or inadequate treatment may lead to aggravated infection, sinus tract formation, and negative impacts on patients' physical and psychological health^[2]. The primary treatment principle involves thorough debridement of the infected focus and adequate drainage, for which surgical intervention is often required. Conventional surgical approaches, however, carry risks of anal sphincter injury and potential anal incontinence. Incomplete drainage may also contribute to fistula formation, leading to anal fistula^[3]. The TROPIS procedure enables effective removal of infectious tissues while minimizing damage to anal function^[4,5]. Thread-dragging and cotton-padding therapy, a characteristic technique in traditional Chinese medicine, facilitates thorough drainage and promotes adhesion between muscle layers. This study reported the outcomes of combining the TROPIS procedure with thread-dragging and cotton-padding therapy for the treatment of perianal abscess.

2. Materials and methods

2.1. Study subjects

A total of 60 patients with perianal abscess who underwent surgical treatment at the Department of Proctology, Jiangxi Provincial Hospital of Traditional Chinese Medicine between June 2024 and June 2025 were selected as the study subjects. They were randomly assigned to either an observation group or a control group, with 30 patients in each group. The observation group comprised 21 males and 9 females, with a mean age of 33.73 ± 6.59 years, disease duration of 3.3 ± 0.91 days, and BMI of 24.82 ± 1.06 kg/m². The control group included 20 males and 10 females, with a mean age of 33.06 ± 6.88 years, disease duration of 3.16 ± 1.01 days, and BMI of 24.69 ± 1.12 kg/m². No statistically significant differences were observed in baseline

characteristics between the two groups ($p > 0.05$).

2.1.1. Inclusion criteria

- (1) Meeting both Chinese and Western diagnostic criteria for perianal abscess
- (2) Age between 18 and 65 years
- (3) Tolerance to the treatment methods used in this study, with no significant abnormalities in relevant laboratory tests
- (4) Willingness to participate in the clinical trial and provision of signed informed consent
- (5) Agreement to undergo postoperative follow-up

2.1.2. Exclusion criteria

- (1) Comorbidities such as other perianal diseases, enteritis, malignant tumors, or HIV
- (2) Pregnant or lactating women
- (3) Severe cardiovascular and cerebrovascular diseases, psychiatric disorders, autoimmune diseases, or malignant tumors
- (4) Participation in other drug trials
- (5) Other factors potentially influencing the study outcomes
- (6) Unwillingness to participate in follow-up

2.2. Therapeutic methods

2.2.1. Preoperative preparation

- (1) Both groups completed comprehensive preoperative examinations, including routine blood, urine, and stool tests, liver and kidney function, coagulation profile, infectious disease screening, electrocardiography, and perianal MRI, to exclude surgical contraindications.
- (2) Preoperative education was provided to alleviate patient anxiety, and surgical consent forms were signed.
- (3) Standard preoperative protocols were implemented: perianal skin preparation was performed one day before surgery, fasting and water restriction were initiated preoperatively, and cleansing enema was administered on the day of surgery.

2.2.2. Surgical procedures

- (1) Observation group

TROPIS procedure and thread-dragging therapy

After anesthesia took effect: Incision and drainage were performed, and the purulent cavity was debrided. Based on preoperative imaging and intraoperative exploration, the infected anal gland was incised at the identified site, followed by an intersphincteric approach to incise the internal sphincter and remove necrotic tissue within the intersphincteric space. The cavity was repeatedly irrigated with 3% diluted hydrogen peroxide to achieve thorough eradication of the infectious focus. Depending on the cavity size, a No. 7 silk thread was threaded between the intersphincteric incision and the abscess drainage incision, with both ends knotted to maintain a slack state. Wound edges were trimmed to facilitate drainage, hemostasis was achieved, and a pressure dressing was applied.

(2) Control group

Incision and drainage procedure

After anesthesia took effect, a radial incision was made at the site of maximum fluctuance to drain the purulent material. The loculations within the abscess cavity were bluntly dissected using hemostatic forceps, and the extent of the cavity was explored. The cavity was thoroughly debrided, a drainage gauze strip was placed, hemostasis was achieved, and a pressure dressing with gauze was applied.

2.2.3. Postoperative management

(1) Routine Care

On the day of surgery, patients were advised to rest in bed, maintain a liquid diet, and avoid defecation. Both groups received antibiotics for infection prevention. Daily sitz baths with hospital-formulated solutions were administered postoperatively, twice daily for 5–10 minutes per session. Daily wound dressing changes were performed, including thorough irrigation with normal saline. From postoperative day 2, patients resumed a normal diet while avoiding spicy or irritative foods. Nonsteroidal anti-inflammatory drugs were routinely administered for analgesia.

(2) Observation group

In addition to routine care, during dressing changes, a herbal formulation for pus removal and tissue regeneration was applied along the silk thread. The thread was removed 10–14 days postoperatively based on the presence or absence of wound exudate. Concurrently, cotton padding was applied with pressure bandaging, secured firmly with wide adhesive tape. A sandbag was externally placed over the wound to maintain continuous pressure until healing was achieved. Patients were instructed to maintain pressure primarily in a sitting position for 3–5 days, with each sitting session lasting ≥ 4 hours. A 30-minute rest interval was required after every 30 minutes of sitting pressure.

2.3. Observation indicators

2.3.1. Overall efficacy rate

Based on the Traditional Chinese Medicine Industry Standards of the People's Republic of China. Diagnostic and Efficacy Criteria for Anorectal Diseases, the following criteria were established

- (1) Cured
Wound healing rate of 100%
- (2) Markedly effective
 $100\% > \text{Wound healing rate} \geq 75\%$
- (3) Effective
 $75\% > \text{Wound healing rate} \geq 25\%$
- (4) Ineffective
Wound healing rate $< 25\%$
- (5) Overall efficacy rate
 $(\text{Cured} + \text{Markedly Effective} + \text{Effective}) / \text{Total cases} \times 100\%$.

2.3.2. Wound healing time

Defined as the time required for complete wound healing with no secretions or inflammatory exudate.

2.3.3. Wound secretion assessment

Recorded on postoperative days 1, 5, 7, and 14 during dressing changes. Scoring based on the number of gauze layers penetrated: 0 points: None; 1 point: Minimal (does not penetrate one gauze layer); 2 points: Moderate (penetrates one gauze layer); 3 points: Severe (penetrates two or more gauze layers).

2.3.4. Pain assessment

Evaluated using the Visual Analog Scale (VAS) before dressing changes on postoperative days 1, 3, 7, and 14. A 10 cm scale was used with the following classifications: 0 points: No pain; 1 point: Mild pain (tolerable); 2 points: Moderate pain (affects sleep but tolerable); 3 points: Severe pain (intolerable).

2.3.5. Anal function

Measured preoperatively and 3 months postoperatively using anorectal manometry to assess anal resting pressure and anal squeeze pressure. Wexner scores were also recorded for both time points.

2.3.6. Fistula formation rate

Evaluated at 3-month follow-up through digital rectal examination and perianal MRI. Fistula formation rate = (Number of patients with anal fistula / Total patients) × 100%.

2.4. Statistical analysis

Data were analyzed using SPSS 25.0. Categorical data were compared using chi-square tests. Continuous data, presented as mean ± standard deviation ($\bar{x} \pm s$), underwent normality and homogeneity of variance tests. Normally distributed data with equal variances were analyzed with *t*-tests; otherwise, Wilcoxon rank-sum tests were applied.

Ordinal data were analyzed using Mann-Whitney U tests. A *p*-value < 0.05 was considered statistically significant.

3. Results

3.1. Treatment outcomes

Following treatment, the observation group demonstrated 9 cured cases, 19 effective cases, and 2 ineffective cases, yielding an efficacy rate of 93.33%. In contrast, the control group showed 5 cured cases, 17 effective cases, and 8 ineffective cases, with an efficacy rate of 73.33%. The TROPIS procedure combined with thread-dragging and cotton-padding therapy exhibited significantly superior efficacy compared to the control group (*p* < 0.05), as detailed in **Table 1**.

3.2. Wound healing time

Statistical analysis revealed that the observation group exhibited significantly shorter wound healing time compared to the control group, with the difference being statistically significant (*p* < 0.05), refer **Table 2**.

3.3. Wound exudation and pain score

The observation group demonstrated significantly lower wound exudation scores at postoperative days 5, 7, and 14, as well as lower pain scores at day 14, compared to the control group, with all differences being statistically

Table 1. Comparison of clinical efficacy between the two groups (Unit: %)

Group	Cases	Cured	Effective	Ineffective	Total Effective
Observation group	30	9 (30%)	19 (63.33%)	2 (6.66%)	28 (93.33%)
Control group	30	5 (16.66%)	17 (56.66%)	8 (26.66%)	22 (73.33%)
<i>t</i> -value					4.32
<i>p</i> -value					0.03

Table 2. Comparison of wound healing time between the two groups (Unit: days)

Group	Cases	Wound healing time (days)
Observation Group	30	31.8 ± 3.14
Control Group	30	40.4 ± 2.29
<i>t</i> -value		12.09
<i>p</i> -value		< 0.05

Table 3. Wound exudation and pain scores (points)

Group	Case	Wound exudate score				Postoperative pain score			
		Post-operative day 1	Post-operative day 5	Post-operative day 7	Post-operative day 14	Post-operative day 1	Post-operative day 3	Post-operative day 7	Post-operative day 14
Observation group	30	2.4 ± 0.49	1.46 ± 0.5	1 ± 0.64	0.16 ± 0.37	2.6 ± 0.49	2.46 ± 0.57	1.5 ± 0.5	0.53 ± 0.5
Control group	30	2.56 ± 0.5	2.2 ± 0.48	1.83 ± 0.37	1.06 ± 0.36	2.53 ± 0.5	2.66 ± 0.47	1.7 ± 0.46	1.23 ± 0.43
<i>t</i> -value		1.28	5.72	6.11	9.36	0.51	1.46	1.58	5.76
<i>p</i> -value		0.2	< 0.05	< 0.05	< 0.05	0.61	0.14	0.11	< 0.05

Table 4. Comparison of anal function (mmHg/points)

Group	Cases	Anal resting pressure		Anal squeeze pressure		Wexner score	
		Pre-operative	3 months post-operatively	Pre-operative	3 months post-operatively	Pre-operative	3 months post-operatively
Observation group	30	66.3 ± 1.2	65.9 ± 1.44	143.66 ± 1.72	144.56 ± 2.55	11.3 ± 0.65	0.9 ± 0.54
Control group	30	66.33 ± 1.12	66.2 ± 1.18	143.83 ± 1.8	143.13 ± 3.04	11.33 ± 0.66	3.7 ± 0.65
<i>t</i> -value		0.11	0.87	0.36	1.97	0.19	18.02
<i>p</i> -value		0.91	0.38	0.71	0.05	0.84	< 0.05

Table 5. Comparison of fistula formation rate (%)

Group	Cases	Number of anal fistula cases	Fistula formation rate
Observation group	30	5	16.66%
Control group	30	12	40%
χ^2			4.02
<i>p</i> -value			0.04

significant ($p < 0.05$), refer **Table 3**.

3.4. Comparison of anal function

At the 3-month postoperative follow-up, no statistically significant differences were observed in anal resting pressure or anal squeeze pressure between the observation group and the control group ($p > 0.05$). However, the Wexner score was significantly lower in the observation group compared to the control group ($p < 0.05$), indicating better preservation of anal function in the observation group, refer **Table 4**.

3.5. Fistula formation rate

At the 6-month postoperative follow-up, the observation group exhibited a significantly lower fistula formation rate compared to the control group, with the difference being statistically significant ($p < 0.05$), refer **Table 5**.

4. Conclusion

Perianal abscess, the most common type of anorectal abscess, refers to an acute suppurative infection occurring

in the perianal and perirectal spaces^[6,7]. With societal development and dietary changes, its incidence has been continuously increasing. In China, perianal abscess accounts for 8–25% of anorectal diseases, predominantly affecting males aged 20–40 years^[8,9].

Studies indicate that perianal abscess primarily results from nonspecific obstruction leading to secondary infection of rectal or anal gland crypts, with common risk factors including smoking, HIV, immunosuppressive therapy, and diabetes^[9–11]. Crohn's disease also represents a significant risk factor. Typical clinical manifestations include perianal pain, fluctuant masses, purulent discharge, or indurated perianal nodules, with some patients experiencing fever, constipation, or diarrhea^[12]. Due to the continuity of perianal anatomical structures and rapid disease progression, delayed treatment may lead to infection extension into the ischiorectal or intersphincteric spaces, increasing patient discomfort, treatment costs, and adversely affecting prognosis. Furthermore, the perianal spaces surrounding the anus connect with gluteal fat tissue, and abscess rupture with pus dissemination can form sinus tracts and cavities, severely impacting patients' physical and psychological health.

The treatment principles for perianal abscess involve managing the internal opening, eliminating the infectious focus, and ensuring adequate drainage. Conservative antibiotic therapy alone is insufficient, making surgery the optimal treatment approach. Common surgical techniques include incision and drainage, incision with seton placement, and three-space drainage. The transsphincteric incision and drainage procedure, a variant of three-space drainage, precisely incises the internal sphincter at the infected intersphincteric space under MRI guidance, maintaining the intersphincteric space open for continuous drainage.

This approach offers several advantages

- (1) Most anal gland infections locate within the intersphincteric space, and TROPIS facilitates complete debridement
- (2) Opening the affected intersphincteric space ensures sufficient drainage, allowing secondary healing which promotes infected wound recovery compared to primary healing, thereby improving treatment success rates

- (3) Avoiding external sphincter injury preserves anal function and reduces postoperative incontinence risk. However, TROPIS alone has limitations, including potential inadequate drainage and prolonged secondary healing, which may lead to infection recurrence.

Thread-dragging and cotton-padding therapy, a characteristic traditional Chinese medicine technique, involves threading a medicated silk suture through the fistula tract. Daily dressing changes create friction through suture movement, achieving debridement and promoting tissue regeneration. After suture removal, cotton padding provides compression, facilitating better integration between perianal skin and muscle tissue, effectively clearing wound secretions and promoting tissue closure. Research demonstrates satisfactory clinical outcomes of thread-dragging and cotton-padding therapy for complex anal fistula, effectively reducing complications, improving cure rates, lowering recurrence rates, and minimizing anal sphincter injury^[13]. Combining TROPIS with thread-dragging and cotton-padding therapy achieves thorough infection control and adequate drainage. The thread-dragging component compensates for potential inadequate drainage in TROPIS, while cotton-padding promotes tissue adhesion and addresses the limitation of prolonged secondary healing, ultimately resulting in better anal function recovery.

In this study, the observation group demonstrated higher overall treatment efficacy, reduced wound exudation at postoperative days 5, 7, and 14, lower pain scores at day 14, shorter wound healing time, and significantly lower fistula formation rates compared to the control group. These benefits likely relate to TROPIS ensuring complete infection clearance, thread-dragging maintaining patent drainage, and cotton-padding promoting tissue adhesion.

Anorectal manometry serves as the primary method for assessing anal function, providing objective indicators for pre- and postoperative evaluation^[14]. As fundamental and crucial parameters in anorectal manometry, anal resting pressure and anal squeeze pressure significantly contribute to continence maintenance. Anal resting pressure mainly reflects internal sphincter function, while anal squeeze pressure results from external sphincter and puborectalis muscle contraction. The Wexner score

effectively evaluates postoperative fecal incontinence severity ^[15]. Conventional incision and drainage cause minimal damage to both sphincters and doesn't alter anorectal pressures. In our study, three-month follow-up revealed no statistically significant differences in anal resting pressure or squeeze pressure between groups, indicating that the combined approach minimizes sphincter injury. However, the observation group showed

significantly lower Wexner scores ($p < 0.05$), suggesting better preserved anal function postoperatively.

In conclusion, TROPIS procedure combined with thread-dragging and cotton-padding therapy for perianal abscess shortens wound healing time, reduces fistula formation risk, alleviates pain, and better preserves anal function, warranting clinical promotion.

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Disclosure statement

The authors declare no conflict of interest.

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