



Discussion on the Application Strategy of TCM “Preventing Disease” Concept in Tuberculosis Prevention and Treatment

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Abstract

The impact of tuberculosis on health cannot be ignored, and tuberculosis prevention is a global issue that urgently needs to be addressed. The concept of “preventive treatment of disease” is the essence of traditional Chinese medicine, originating from the “Huangdi Neijing.” It integrates disease prevention, treatment, and recurrence prevention, serving as an important theoretical basis for disease prevention and treatment in traditional Chinese medicine. Applying the “preventive treatment of disease” concept in traditional Chinese medicine to tuberculosis prevention is significant in reducing the incidence of tuberculosis, controlling its progression, and preventing recurrence. This article explores the application strategies of the “preventive treatment of disease” concept in traditional Chinese medicine for tuberculosis prevention and treatment.

Keywords

Tuberculosis
Preventive medicine
Prevention and treatment
Traditional Chinese medicine therapy

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1. Introduction

According to the “Global Tuberculosis Report 2024” released by the World Health Organization (WHO), it is estimated that there were 10.8 million cases of tuberculosis globally in 2023, higher than the 10.7 million cases in 2022 and 10.4 million cases in 2021. The number of

new cases of multidrug-resistant tuberculosis/rifampicin-resistant tuberculosis (MDR/RR-TB) worldwide was approximately 400,000 ^[1]. It is estimated that there were 741,000 tuberculosis cases in China (accounting for 6.8% of the global total), ranking third in the world, and 29,000 MDR/RR-TB cases (accounting for 7.3% of the global total), ranking fourth in the world ^[1]. This suggests that the prevention and treatment of pulmonary tuberculosis

is a clinical challenge that requires serious exploration. In the “Essential Prescriptions Worth a Thousand Gold” by Tang Dynasty physician Sun Simiao, it is stated that “the superior doctor treats diseases before they arise, the mediocre doctor treats diseases that are about to arise, and the inferior doctor treats diseases that have already arisen”, emphasizing the importance of preventative medicine in traditional Chinese medical theory ^[2]. The application of the three aspects of traditional Chinese medicine’s “preventive treatment of disease” —preventing disease before it occurs, preventing progression after disease onset, and preventing recurrence after recovery — in the prevention and treatment of pulmonary tuberculosis is discussed below.

2. Understanding of pulmonary tuberculosis in traditional Chinese medicine

During the Qin and Han dynasties, the “Su Wen: Yu Ji Zhen Zang Lun” stated: “The large bones are withered, the large muscles are sunken, the chest is full of qi, breathing is difficult, pain radiates to the shoulders and neck, and the body is hot...” This describes clinical manifestations similar to the main symptoms of pulmonary tuberculosis and attributes it to “deficiency and exhaustion.” Pulmonary tuberculosis has been known by many names in traditional Chinese medicine over the course of history. Due to its infectiousness and poor prognosis, it has been named ghost infliction, consumptive infliction, worm infliction, and corpse transmission. Based on the characteristic symptoms of tuberculosis, it has also been named lung atrophy disease, bone steaming, latent connection, consumptive cough, and acute consumption. The name “ghost infliction” first appeared in the “Shennong Bencao Jing” ^[3]. In the “Three Causes and One Syndrome Disease Theory and Prescriptions” by Chen Yan of the Song Dynasty, the disease was first named “consumptive disease” ^[4]. After the discovery of *Mycobacterium tuberculosis* by Western medicine, traditional Chinese medicine compared the traditional “consumptive worm” to *Mycobacterium tuberculosis* and adopted the Western medical term “pulmonary tuberculosis” to indicate the lesion, which has been used ever since ^[5]. In the “Wai Tai Mi Yao: Volume 16” by Tang Dynasty physician Wang Tao, it is stated that “lung

heat causes damage to the lungs and gives rise to worms,” proposing the theory of pathogenic lung worms ^[6]. In the “Ji Sheng Fang” by Yan Yonghe of the Song Dynasty, it is pointed out that “the transmission and transformation are variable, and years of infestation can even lead to the extinction of a family”, indicating its infectiousness and special characteristics ^[7]. This shows that ancient Chinese medical practitioners had a clear understanding of the infectiousness of pulmonary tuberculosis and had already considered the issue of biological pathogens, proposing the concept of “consumptive worms” ^[8].

3. Traditional Chinese medicine’s “preventive treatment” approach to tuberculosis

The concept of “preventive treatment” is one of the important theories in traditional Chinese medicine (TCM) for disease prevention and treatment. As stated in the ancient medical text “Su Wen — Si Qi Diao Shen Da Lun”, “The sage does not treat diseases that have already occurred, but prevents those that have not. They do not address the chaos that has already ensued, but forestall potential disorder. This is what it means. To treat a disease after it has already formed, or to address chaos after it has begun, is like digging a well when you’re already thirsty, or forging a spear when you’re already in a fight. Isn’t that too late?” The TCM approach to tuberculosis prevention and treatment based on the “preventive treatment” philosophy mainly involves three aspects: cautious prevention to avoid the occurrence of tuberculosis, early diagnosis and treatment to prevent the condition from worsening, and emphasis on recuperation to prevent recurrence after recovery.

3.1. Prevention before illness: Preserving vital qi

Preventive measures should be taken before the onset of tuberculosis. This involves nourishing and preserving the body’s vital qi (life energy) to enhance the body’s resistance to disease, achieving the goal of prevention before illness. Increasing clinical evidence suggests that tuberculosis is not only an infectious disease but also an immunological one. The strength of the body’s immune function is closely related to the occurrence, development, and prognosis of tuberculosis ^[9]. As stated in the ancient medical text “Shi Yao Shen Shu” by Ge Kejiu of the Yuan

Dynasty, “Human life is formed by the qi of heaven and earth. It is advisable to maintain true yuan (primordial qi) and preserve the fundamentals, so that no illness will arise and the body will remain healthy. If one does not nourish the true yuan and preserve the fundamentals, illness will arise. The fundamentals refer to qi, blood, essence, and body fluids”^[10]. Similarly, Xu Chunfu of the Ming Dynasty wrote in “Gu Jin Yi Tong Da Quan”, “If one takes care of their yuan qi and cherishes their essence and blood, they will not be susceptible to tuberculosis. However, those who indulge in excessive desires and unknowingly deplete their essence and blood become vulnerable to external pathogens... Weak qi and blood can easily lead to tuberculosis.” Therefore, before the occurrence of tuberculosis, it is crucial to take preventive measures, avoid infection, nourish vital qi, enhance immunity, and strengthen the body’s resistance to disease, thus achieving the goal of prevention before illness.

3.2. Strengthening the body’s resistance and eliminating pathogens, preventing progression of the disease

The idea of preventing disease progression is particularly important in the treatment of tuberculosis. According to Yu Tuan’s “Medical Orthodoxy: Exhaustion” during the Ming Dynasty, “One should kill the worms to eliminate their root cause, and the other should nourish the deficiency to restore the genuine essence”^[8]. Li Zhongzi’s “Essentials of Medical Masters: Deficiency and Tuberculosis” during the late Ming and early Qing dynasties stated, “The method should nourish deficiency to restore the essence, and kill worms to eliminate their roots”^[11]. Tuberculosis is divided into four types: lung yin deficiency syndrome, deficiency fire burning lung syndrome, qi and yin consumption syndrome, and yin and yang deficiency syndrome. Lung yin deficiency syndrome is more common in the early stage of tuberculosis, with yin deficiency and lung dryness. The degree of yin deficiency is relatively light, and there is no obvious fire excess phenomenon. The lungs lose moisture, lung injury, and collateral damage, and the disease mainly affects the lungs. The treatment method is to nourish yin and moisturize the lungs, clear heat, and kill worms. Deficiency fire burning lung syndrome is mostly manifested in the middle stage of tuberculosis, with a longer course of disease, a more severe degree of yin deficiency, and a fire excess

phenomenon. Lung and kidney yin injury, dryness and heat burning internally, collateral damage, and blood overflow. The treatment method is to nourish the lungs and kidneys, nourish yin, and reduce fire. Qi and yin consumption syndrome is more common in the middle and late stages of tuberculosis, with a longer course of disease, yin injury and qi consumption, unclear lung qi, spleen dysfunction, and lung and spleen co-morbidity. The treatment method is to nourish yin and moisturize the lungs, tonify qi, and strengthen the spleen. Yin and yang deficiency syndrome belongs to the late stage of the disease, which continues to develop from qi and yin consumption syndrome. Long-term tuberculosis, yin injury and yang damage, lungs, spleen, and kidneys are all damaged, the condition is severe, and the prognosis is mostly poor. The treatment method is to nourish yin and tonify yang, cultivate the essence, and consolidate the foundation. The purpose of preventing disease progression is to ensure that patients with light or common types do not transition to severe or critical types. “Medical Source and Flow Theory: Exterior and Interior, Upper and Lower Theory” states, “A good doctor knows that when the disease is strong, it will spread. They should take preventive measures to prevent it from accumulating, flooding, or merging. This is what the superior doctor means by treating pre-disease conditions.”^[12]. The theory of disease transmission and transformation in traditional Chinese medicine is a theory that studies the mechanisms, trends, and outcomes of disease development. In the diagnosis and treatment of tuberculosis, it is necessary to grasp the laws of tuberculosis occurrence and development and its transmission pathways. Based on Western medicine anti-tuberculosis treatment, effective early treatment with Chinese medicine should be provided according to the classification of tuberculosis to prevent its transmission and progression.

3.3. Prevention of recurrence after recovery, nourishing the spleen to generate lung qi, and restoring both physical and mental health

Prevention of recurrence after recovery involves timely and effective guidance on traditional Chinese medicine (TCM) healthcare to promote the recovery of vital qi, eliminate lingering pathogens of tuberculosis, and prevent the recurrence of tuberculosis and the reactivation of *Mycobacterium tuberculosis*.

In the theory of TCM, the lungs and spleen represent the respiratory and digestive systems, respectively. As stated in “Qian Jin Yi Fang” by Sun Simiao of the Tang Dynasty, “Weakness of the spleen and stomach leads to the emergence of various diseases, while sufficiency of spleen yang brings an end to all illnesses.” The “Su Wen Jing Mai Bie Lun” also mentions, “The spleen disperses nutrients, which ascend to nourish the lungs.” Weakness in the lungs can lead to weakness in the spleen, and vice versa. When the spleen is unable to transform food into nutrients to nourish the lungs, both the lungs and spleen become deficient, resulting in a concurrent disorder of the lungs and spleen, where the spleen fails to generate lung qi. The spleen is the source of phlegm production, while the lungs are the reservoir of phlegm. The lungs are the hub of qi regulation, and the spleen is the source of qi generation. The lungs and spleen are mutually dependent and coordinated in the production of qi, blood, and body fluids, as well as in the regulation of qi movement and water metabolism. Western anti-tuberculosis medications often have significant side effects that can easily affect the spleen and stomach, and may even interfere with the application of these medications. Concurrent disorders of the lungs and spleen can lead to prolonged and recurrent tuberculosis. Nourishing the spleen to generate lung qi allows for harmonious interaction between the lungs and spleen, yin and yang balance, sufficient spleen qi, and a robust source of qi and blood generation. This naturally leads to adequate lung qi, strong defensive qi, and restored vital qi, making the body resistant to pathogenic factors.

Due to the long-term uncertainty of tuberculosis recovery, patients often experience fear, discrimination, and isolation from surrounding individuals because of the infectiousness and difficulty in curing the disease. This can lead to feelings of shame and concerns about their future, causing them to become mired in negative

emotions. Research by Wang Huijuan and others has shown that the detection rate of depression among tuberculosis patients is 50.96%. During the recovery phase of tuberculosis, patients often experience weakness of vital qi and have not fully recovered. The psychosocial stress and emotional ups and downs caused by tuberculosis can lead to symptoms such as insomnia, anxiety, and depression. As the saying goes, “When the spirit remains inward, whence comes disease?” Therefore, during the recovery phase, it is important to prioritize psychological health counseling for patients to restore both their physical and mental health, returning them to a state where both their body and spirit are in harmony.

4. Summary

The prevention and control of pulmonary tuberculosis are urgent, and traditional Chinese medicine is a major feature of China’s prevention and treatment of the disease. The concept of “preventive treatment of disease” in traditional Chinese medicine can play an advantageous role in the prevention and control of pulmonary tuberculosis at various stages. In the pre-illness stage, the main focus is on nourishing the body and preventing pathogens, thereby achieving the goal of preventing the onset of the disease and rescuing it at its earliest stage. In the illness stage, early treatment should be emphasized, and the evolution characteristics of pulmonary tuberculosis should be used as the basis for syndrome differentiation and treatment to prevent further progression of the disease. In the post-recovery stage, strengthening the spleen and lungs, and restoring both physical and mental health are strategies to prevent recurrence, promote patient recovery, and cut off the source of recurrence. The long-standing concept and theory of “preventive treatment of disease” in traditional Chinese medicine has very important

guiding significance for clinicians in the prevention and treatment of pulmonary tuberculosis.

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