

Exploring Traditional Chinese Medicine Prevention and Treatment Strategies for Prediabetes Based on the “Treating the Disease Before It Occurs” Theory

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Abstract: *Prediabetes, which includes impaired fasting glucose and impaired glucose tolerance, is a necessary stage in the progression to diabetes. Patients at this stage often lack obvious clinical symptoms and are easily overlooked. Timely identification of high-risk individuals and those with prediabetes and active intervention are key to preventing the development of diabetes. The Traditional Chinese Medicine (TCM) theory of “Treating the Disease Before It Occurs” originates from the Huangdi Neijing (The Yellow Emperor’s Inner Canon). Through millennia of accumulation, it has formed a complete system of “preventing disease before it occurs, preventing disease progression after onset, and preventing recurrence after recovery.” Its concepts of holistic regulation and syndrome-differentiated care are highly compatible with the needs of prediabetes prevention and management. This paper, starting from the core connotation of the “Treating the Disease Before It Occurs” theory, analyzes the TCM etiology and pathogenesis of prediabetes. It focuses on elaborating the specific application of the “Treating the Disease Before It Occurs” concept in the “preventing disease before it occurs” and “preventing disease progression after onset” stages of prediabetes. Based on the advantages of integrated Chinese and Western medicine diagnosis and treatment, it provides theoretical basis and practical ideas for clinical intervention in prediabetes.*

Keywords: Treating the Disease Before It Occurs, Prediabetes, Etiology and Pathogenesis, Preventing Disease Before It Occurs, Preventing Disease Progression After Onset.

1. Introduction

With changes in lifestyle and an intensifying aging population, the global incidence of diabetes is on the rise, making it a major public health issue [1]. Prediabetes is mainly manifested as impaired fasting glucose or impaired glucose tolerance. While typical symptoms of “Xiao Ke” (wasting-thirst) are absent at this stage, 5% to 10% of individuals progress to type 2 diabetes annually, and the risk of developing macrovascular diseases (heart, brain, kidney) and microvascular complications is significantly elevated [2]. Western medicine primarily employs lifestyle interventions or metformin for treating prediabetes, but issues such as poor compliance, concerns about long-term medication, and a lack of specific treatments exist [3]. In contrast, the TCM “Treating the Disease Before It Occurs” theory emphasizes “preventing disease before it occurs and preventing progression after onset,” possessing unique advantages in reversing abnormal glucose metabolism, improving constitution, and blocking disease progression. This paper aims to explore the TCM understanding and prevention strategies for prediabetes from the perspective of the “Treating the Disease Before It Occurs” theory, hoping to provide new ideas for clinical diagnosis and treatment.

2. Theoretical Origin and Core Connotation of the TCM “Treating the Disease Before It Occurs” Concept

2.1 Theoretical Origin

The TCM “Treating the Disease Before It Occurs” theory is a concentrated expression of TCM preventive thought and an important component of the TCM theoretical system. The concept first appeared in the Suwen·Siqi Shenglun (Plain Questions · On Regulating the Spirit According to the Four Seasons): “Thus the sages did not treat diseases that had already arisen but treated those that had not yet arisen; they did not regulate disorders that had already arisen but those that had not yet arisen. This is what it means. To administer medicine after the disease has fully developed, or to bring order after chaos has arisen, is akin to drilling a well when one is thirsty, or casting a weapon when the battle has already begun—is it not too late?” [4]. This statement laid the foundation for the preventive thought of “Treating the Disease Before It Occurs.” Later physicians continuously enriched its connotation: Zhang Zhongjing proposed in Jin Gui Yao Lue (Synopsis of the Golden Chamber) that “the superior physician treats disease before it occurs; seeing disease in the liver, one knows it will transmit to the spleen and should first fortify the spleen,” establishing the principle of “preventing progression after onset” based on visceral transmission [4]. Sun Simiao advocated in Bei Ji Qian Jin Yao Fang (Essential Prescriptions Worth a Thousand Gold for Emergencies) that “food can expel pathogens and calm the viscera, gladden the spirit and refresh the mind to nourish qi and blood,” integrating dietary nourishment into “Treating the Disease Before It Occurs” practice. Physicians like Zhu Danxi and Ye Tianshi further combined it with constitution theory, perfecting the intervention system of “tailoring treatment to the individual,” allowing the “Treating the Disease Before It Occurs” concept to gradually form an academic system integrating both theory and practice.

2.2 Core Connotation

Through continuous enrichment and development by successive physicians, its core connotation can be summarized into three levels: preventing disease before it occurs, preventing disease progression after onset, and preventing recurrence after recovery.

“Preventing disease before it occurs” is the core, emphasizing conforming to nature, regulating the spirit, moderating diet, and exercising to consolidate and protect healthy qi (Zheng Qi), embodying the preventive view that “if healthy qi exists within, pathogenic factors cannot invade” [5]. Next, “preventing disease progression after onset” is key, advocating for early diagnosis, early treatment, and preemptive intervention based on the laws of disease transmission (e.g., “seeing disease in the liver, one knows it will transmit to the spleen and should first fortify the spleen”) to block disease progression [6]. Finally, “preventing recurrence after recovery” is the safeguard, consolidating therapeutic effects through medicinal regulation, dietary nourishment, and lifestyle guidance to prevent disease relapse [7]. The three are interconnected, reflecting TCM’s profound understanding of the laws of disease occurrence, development, and outcome, and also providing a theoretical framework for staged intervention in prediabetes.

3. TCM Etiology and Pathogenesis of Prediabetes

3.1 Disease Name Attribution

Prediabetes has no directly corresponding disease name in ancient TCM texts. However, manifestations such as “sweet taste in the mouth,” “fullness in the middle,” and “frequent hunger” bear a high resemblance to “Pi Dan” (spleen heat) described in the Suwen·Qibing Lun (Plain Questions · On Strange Diseases): “This is an overflow of the five qi, named Pi Dan... This person must have frequently eaten sweet, rich, and fatty foods. Fatty foods cause internal heat, sweet foods cause fullness in the middle, so their qi overflows upward, transforming into Xiao Ke (wasting-thirst).” Therefore, prediabetes can be summarized as “Pi Dan” [8].

3.2 TCM Etiology and Pathogenesis

The etiology of prediabetes includes constitutional insufficiency, dietary irregularities, emotional disturbances, and improper work-rest balance. The core pathogenesis can be summarized as the dynamic evolution of “stagnation, heat, and deficiency.” Initially, it centers on “six stagnations” (food, qi, blood, phlegm, dampness, heat). In the middle stage, prolonged stagnation transforms into heat (damp-heat encumbering the spleen or yin deficiency with heat effulgence). In the later stage, intense heat damages yin and consumes qi, ultimately leading to deficiency of both qi and yin, or deficiency of both yin and yang.

Physicians through the ages have enriched its theoretical connotation from different perspectives: The Neijing (Inner Canon) first proposed the concept of “Pi Dan,” pointing out that “frequently eating sweet, rich, and fatty foods” leading to “internal heat and fullness in the middle” is its core, and

emphasized the constitutional factor of “frailty of the five viscera,” laying the theoretical foundation [9]. Zhang Zhongjing of the Han Dynasty, while not specifically discussing prediabetes, his understanding of “stomach heat damaging fluids” and the formulation of Baihu Jia Renshen Tang (White Tiger Decoction plus Ginseng) (clearing heat, boosting qi, and generating fluids) provided ideas for treating the stage of “stagnation-heat damaging yin” [10]. Liu Wansu, one of the Four Great Masters of the Jin and Yuan Dynasties, advocated that “the six qi all transform into fire,” proposing that the main pathogenesis of Xiao Ke is “dry-heat constraint and stagnation,” emphasizing that “stagnation transforming into heat” is the key pathological mechanism, highly consistent with the view of “six stagnations” transforming into heat [11]. Zhu Danxi established the “six stagnations” theory—qi, blood, phlegm, fire, dampness, and food stagnation—directly providing solid theoretical support for the pathogenesis of “stagnation being primary” in prediabetes, and emphasized the role of damp-heat. Zhang Jingyue of the Ming Dynasty emphasized that prolonged Xiao Ke leads to “yin damage affecting yang,” indicating the need to focus on yang qi deficiency in the later stages, completing the understanding of the entire pathogenesis evolution [12]. Ye Tianshi of the Qing Dynasty, from the perspectives of “liver wind” and “collateral disease,” proposed that emotions causing “internal stirring of liver wind” affect the spleen and stomach, and that “chronic disease enters the collaterals” leads to collateral vessel stasis, enriching the understanding of emotional causation and complications [13].

Modern physicians, while inheriting ancient theories and combining them with modern medical knowledge, emphasize “spleen deficiency” as the root of the disease, “liver stagnation” as an important predisposing factor, and that “collateral vessel stasis” exists early on [14]. They believe that even in prediabetes, due to poor qi and blood circulation, stasis in the tiny collaterals begins to form, laying the groundwork for later vascular complications, suggesting the necessity of early activating blood circulation and unblocking collaterals.

4. Specific Application of the “Treating the Disease Before It Occurs” Concept in Prediabetes Prevention and Treatment

4.1 Preventing Disease Before It Occurs: Regulating Constitution, Avoiding Predisposing Factors

Preventing disease before it occurs refers to taking measures before the disease manifests to prevent its occurrence. Corresponding to prediabetes, this means targeting diabetes high-risk groups (those with family history, obesity, metabolic syndrome, prolonged sedentary behavior). The core is cultivating healthy qi (Zheng Qi) through health preservation and regulation, correcting constitutional imbalances or extremes, avoiding pathogenic factors, and reducing the risk of disease onset, embodying the core essence of “Treating the Disease Before It Occurs” and “preventing trouble before it happens.”

Dietary Regulation adheres to the principles of “syndrome-differentiated diet and dietary moderation,” optimizing dietary structure based on constitutional

characteristics [6]. For yin deficiency with dry-heat constitution, consume more bitter melon, cucumber, lily bulb, tremella fungus, and other heat-clearing, fluid-generating foods. Bitter melon saponins can mimic insulin action, promoting glucose metabolism; lily bulb and tremella fungus nourish yin and moisten dryness. For spleen deficiency with phlegm-dampness constitution, prioritize Chinese yam, coix seed, red bean, winter melon, and other spleen-fortifying, dampness-eliminating ingredients. These can be made into Chinese yam and coix seed congee or red bean and winter melon soup for long-term consumption to enhance spleen and stomach transportation/transformation functions and reduce phlegm-dampness generation. For liver stagnation with qi constraint constitution, frequently consume tangerine peel, bergamot, rose bud, mint, and other liver-soothing, qi-regulating items. Rose bud tea can effectively relieve emotional depression and improve qi stagnation. Simultaneously, strictly control daily staple food intake (200-300 grams/day), prioritize whole grains and mixed beans over refined grains, avoid sugary drinks, fried foods, and rich, fatty foods. Cooking methods should favor steaming, boiling, stewing, and cold tossing, aligning with the Huangdi Neijing's health preservation concept of "the five grains are for nourishment, the five fruits for assistance, the five vegetables for supplementation" [15].

Emotional Regulation follows the principle of "tranquility and emptiness, so that genuine qi follows." It employs diversified methods to relieve negative emotions. Engage in artistic activities like calligraphy, painting, or guqin music to shift attention and calm the mind. Persistently practice traditional exercises such as the Baduanjin (Eight-Section Brocade) movement "Shaking the Head and Wagging the Tail to Dispel Heart Fire" or the Wuqinxi (Five-Animal Frolics) "Bear Play," combined with deep breathing and meditation to soothe the liver and relieve stagnation, harmonizing qi and blood. Actively build a social support network, communicate with friends and family, and seek professional psychological intervention if necessary to avoid emotional disturbances inducing blood glucose fluctuations and maintain smooth qi circulation [16].

Exercise Intervention follows the principle of "the body labors but does not become exhausted," choosing gentle, easy-to-persist forms of exercise. Taijiquan can regulate visceral functions, enhance insulin sensitivity, and improve glucose metabolism. Recommended: 3-5 times per week, 30-45 minutes each session, movements should be soft and continuous [17]. Baduanjin movements like "Both Hands Hold Up the Heavens to Regulate the Triple Burner" and "Regulating the Spleen and Stomach Requires Single Lifting" can directly harmonize triple burner qi and strengthen spleen-stomach transportation/transformation. Practice 1 set each morning and evening; combining with abdominal breathing can enhance the intervention effect [18]. For aerobic exercises like brisk walking and jogging, control intensity, maintaining heart rate at (170 - age) beats per minute, avoiding excessive fatigue that damages healthy qi. Also, avoid prolonged sitting; stand up and move for 5-10 minutes every hour to promote qi and blood circulation [19].

Herbal Regulation focuses on "gently nourishing healthy qi," avoiding potent or harsh ingredients. For qi deficiency

constitution, use Astragalus root (Huangqi), Codonopsis root (Dangshen), and Atractylodes macrocephala rhizome (Baizhu) as tea to supplement qi and fortify the spleen. For yin deficiency constitution, use Ophiopogon root (Maidong), Goji berry (Gouqizi), and Fragrant Solomonseal rhizome (Yuzhu) to nourish yin and moisten dryness. For phlegm-dampness constitution, consume small amounts of tangerine peel (Chenpi) and Poria powder (Fuling) to fortify the spleen and eliminate dampness. During regulation, regular syndrome-differentiated follow-ups are needed to adjust the plan based on constitutional changes, achieving the goal of "supporting healthy qi and avoiding pathogens."

4.2 Preventing Disease Progression After Onset: Syndrome-Differentiated Treatment, Intercepting Disease Momentum

Preventing disease progression after onset refers to preventing a disease that has already occurred from worsening or transmitting further. For individuals already diagnosed with prediabetes, the core is reversing abnormal glucose metabolism and blocking progression to type 2 diabetes through syndrome-differentiated intervention, while also preventing microvascular and macrovascular complications. This embodies the intervention principles of "Treating the Disease Before It Occurs": "recognizing the subtle to know the evident" and "intercepting transmission." It combines TCM internal regulation and external treatment with Western medical approaches for synergistic effects [20].

Syndrome-Differentiated Herbal Treatment requires precise matching of formulas to syndrome types, optimizing compatibility. For Qi and Yin Deficiency type (symptoms: fatigue, dry mouth, restlessness), use a combination of Astragalus root (Huangqi), Salvia miltiorrhiza root (Danshen), Kudzu root (Gegen), Ophiopogon root (Maidong), and Schisandra berry (Wuwei Zi). Astragalus supplements qi and raises yang; Salvia activates blood and resolves stasis; Kudzu generates fluids and lowers blood sugar; Ophiopogon and Schisandra nourish yin and astringe sweat. Together, they regulate blood glucose and qi/blood circulation, reversing the state of qi and yin deficiency [21]. For Phlegm-Dampness Internal Obstruction type (symptoms: obesity, chest tightness, abdominal distension, thick greasy tongue coating), use Atractylodes rhizome (Cangzhu), Poria (Fuling), Lotus leaf (Heye), and Alisma rhizome (Zexie). Atractylodes dries dampness and fortifies the spleen; Poria and Alisma promote diuresis and drain dampness; Lotus leaf raises the clear and lowers the turbid, improving metabolic disorders caused by internal phlegm-dampness [22]. For Liver Stagnation Transforming into Fire type (symptoms: irritability, bitter taste in mouth, insomnia), use Bupleurum root (Chaihu), Moutan bark (Mudanpi), Gardenia fruit (Zhizi), and White peony root (Baishao). Bupleurum soothes the liver and regulates qi; Moutan and Gardenia clear heat and cool blood; White peony nourishes blood and softens the liver, mitigating the impact of emotions on glucose metabolism [7]. Herbs can be prepared as decoctions or granules, taken continuously for 3-6 months. Blood glucose should be monitored every 1-2 months during this period, and prescriptions adjusted dynamically based on symptom improvement and blood glucose changes to achieve "syndrome-differentiated treatment and precise regulation" [23].

TCM External Therapies serve as auxiliary means to enhance intervention effects. Moxibustion on acupoints like Zusanli (ST36), Sanyinjiao (SP6), Guanyuan (CV4), and Zhongwan (CV12): Zusanli fortifies the spleen and harmonizes the stomach; Sanyinjiao regulates and supplements the liver and kidney; Guanyuan warms yang and boosts qi; Zhongwan regulates qi and harmonizes the stomach. Apply moxibustion for 15-20 minutes per session, 2-3 times per week, to warm and unblock channels, and invigorate viscera function [24]. Acupressure on points like Hegu (LI4), Taichong (LR3), Pishu (BL20), and Shenshu (BL23), rubbing for 2-3 minutes daily, promotes qi and blood circulation and regulates visceral functions. Herbal foot baths using blood-activating, collateral-unblocking herbs like *Artemisia argyi* leaves (Aiye), Chinese angelica root (Danggui), *Ligusticum* rhizome (Chuanxiong), and *Salvia miltiorrhiza* root (Danshen). Water temperature should be around 40°C, for 15 minutes each time, 2-3 times per week, to improve lower limb circulation and prevent early microvascular lesions, achieving synergistic effects of internal regulation and external treatment [15].

Integrated Chinese and Western Medicine Monitoring and Intervention is key to preventing disease progression. Regularly monitor fasting blood glucose, 2-hour postprandial blood glucose, and HbA1c to assess glucose metabolism status in real-time. For those with significant blood glucose fluctuations, combine TCM regulation with Western medical lifestyle intervention guidelines. Use hypoglycemic drugs like metformin when necessary, avoiding the sole pursuit of “lowering blood sugar” while neglecting constitutional regulation, to achieve the dual goals of “glucose control + constitution regulation” [25]. Simultaneously, screen annually for indicators like fundus examination, urine microalbumin, and blood lipids to be alert to early signals of complications like retinopathy and nephropathy, intervening early to block progression. Additionally, strengthen patient health education to improve their understanding of prediabetes and intervention compliance, forming a prevention and control model of “doctor guidance + patient self-management” [26].

5. Discussion and Outlook

The prevention and treatment of prediabetes align with the core philosophy of “prevention first, combining prevention and treatment” in the Healthy China Strategy. The TCM “Treating the Disease Before It Occurs” concept, with its unique holistic and dialectical perspective, provides important theoretical support for the staged and individualized prevention and control of prediabetes [27]. Unlike Western medicine’s singular focus on blood glucose control, the “Treating the Disease Before It Occurs” concept emphasizes addressing the root cause, regulating constitution before disease onset and blocking progression after onset. This approach can not only effectively reverse abnormal glucose metabolism but also improve patients’ overall health status and reduce complication risks, forming complementary advantages with Western medical interventions [14]. Clinical practice confirms that TCM-Western medicine integrated intervention programs based on the “Treating the Disease Before It Occurs” theory are superior to single-mode interventions in terms of improving compliance and reducing diabetes conversion rates [28].

From an integrated Chinese and Western medicine perspective, the application of the “Treating the Disease Before It Occurs” concept in prediabetes prevention and treatment still requires further deepening. On one hand, clinical evidence-based research needs strengthening — expanding sample sizes, extending follow-up times, clarifying objective indicators (e.g., constitution, biochemical markers) for different syndrome types, optimizing herbal combinations and external therapy protocols, and establishing standardized intervention plans [29]. On the other hand, promoting the popularization and education of the “Treating the Disease Before It Occurs” concept is essential. Integrating it with community healthcare services to conduct early screening and health management for prediabetes, guiding the public to incorporate health preservation and regulation into daily life, thereby improving intervention compliance [15]. Concurrently, leveraging modern technological means to establish integrated platforms for constitution identification and blood glucose monitoring can enable precise and intelligent prevention and control.

The TCM “Treating the Disease Before It Occurs” concept holds significant clinical value and academic significance in the prevention and treatment of prediabetes. The comprehensive intervention model of integrated Chinese and Western medicine can achieve full-process management of “prevention-treatment-rehabilitation,” providing effective means to reduce diabetes incidence and improve patient prognosis [30]. Future efforts need to further explore the academic connotation of the “Treating the Disease Before It Occurs” concept, combine it with modern medical technology, refine diagnosis and treatment protocols, promote its widespread clinical application, and contribute TCM wisdom to public health prevention and control endeavors.

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